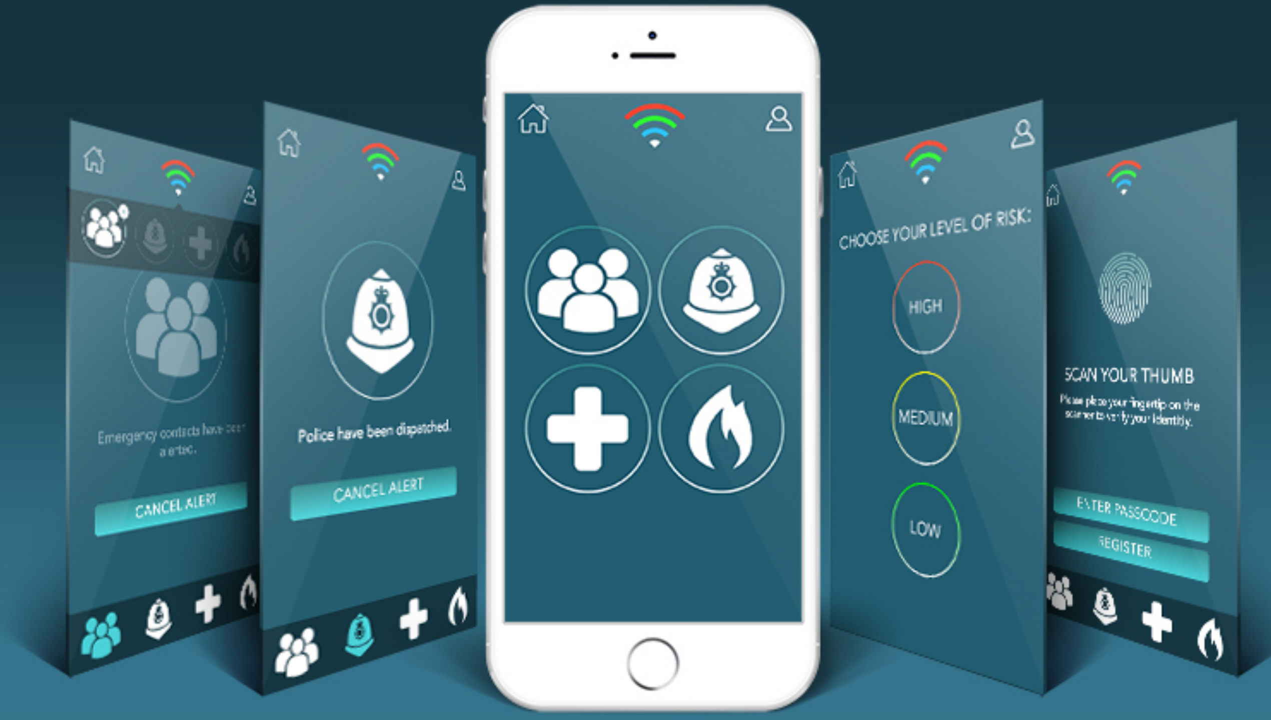
EE3609/3610 - Major Project

ARTEFACT, IMPLEMENTATION & EVALUATION


Emergency contacts have been alerted.
CANCEL ALERT
Police have been dispatched.
CANCEL ALERT
CHOOSE YOUR LEVEL OF RISK:
HIGH
MEDIUM
LOW
SCAN YOUR THUMB
Please place your fingertip on the scanner to verify your identity.
ENTER PASSCODE
REGISTER

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CONTENTS

1 ARTEFACT & IMPLEMENTATION

PROJECT AIM

To design and develop an emergency alert mobile app for the elderly in life-threatening situations.

OBJECTIVES

1. Sourced, investigated and analysed research literature on already existing apps, wearables and technology for the elderly as well as branding for inspiration.

2. Identified, investigated and analysed initial design detail e.g. personas and scenarios.

3. Designed a brand identity which includes a name, logo and colour scheme which is reflective of what the app has to offer and is present in app user interface designs.

4. Designed a user interface for the emergency alert app and response side program, incorporating one-touch icons for the emergency services, a login and profile screen.

5. **Develop a suitable mobile app for the emergency alert system.**

INTRODUCTION

Bealert is an emergency alert mobile app for the elderly in life-threatening situations, immediately notifying the emergency services and family members alerting them of an emergency once the one-touch icons have been clicked immediately. As a result, response times are shortened and provides an improved collaboration between the elderly and emergency services, on-site personnel and first responders, improving communication and saving lives.

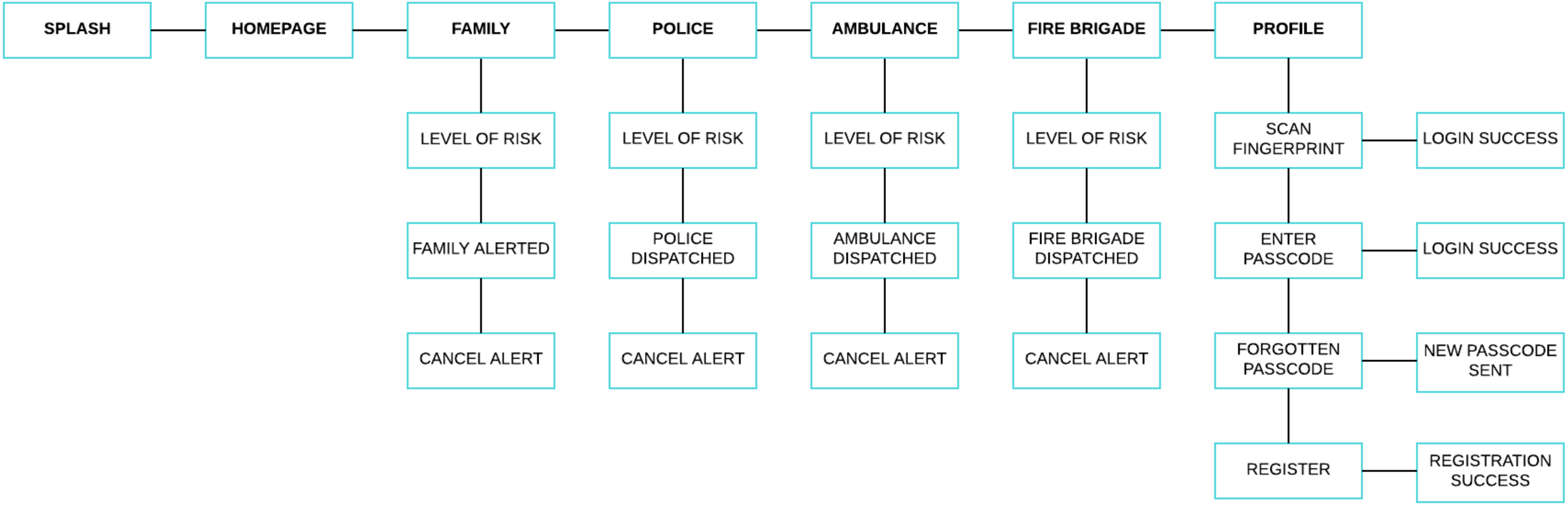
Within this project I will be focusing on my artefact and implementation, this will include looking in to the path to my artefact implementation where I will be using Sketch for low and high-fidelity wireframes, InVision for high-fidelity prototyping as well as coding key aspects of the app using Phonegap.

Alongside the above, I will be conducting two questionnaires as part of user testing, the first one will be for the emergency services, allowing me to see their thoughts on the high-fidelity prototype of the BeAlert app. The second questionnaire being aimed at the elderly to see whether they feel the app user interface is suitable to the apps purpose, as well as asking various questions on the apps functionality and ease of use on a day-to-day basis.

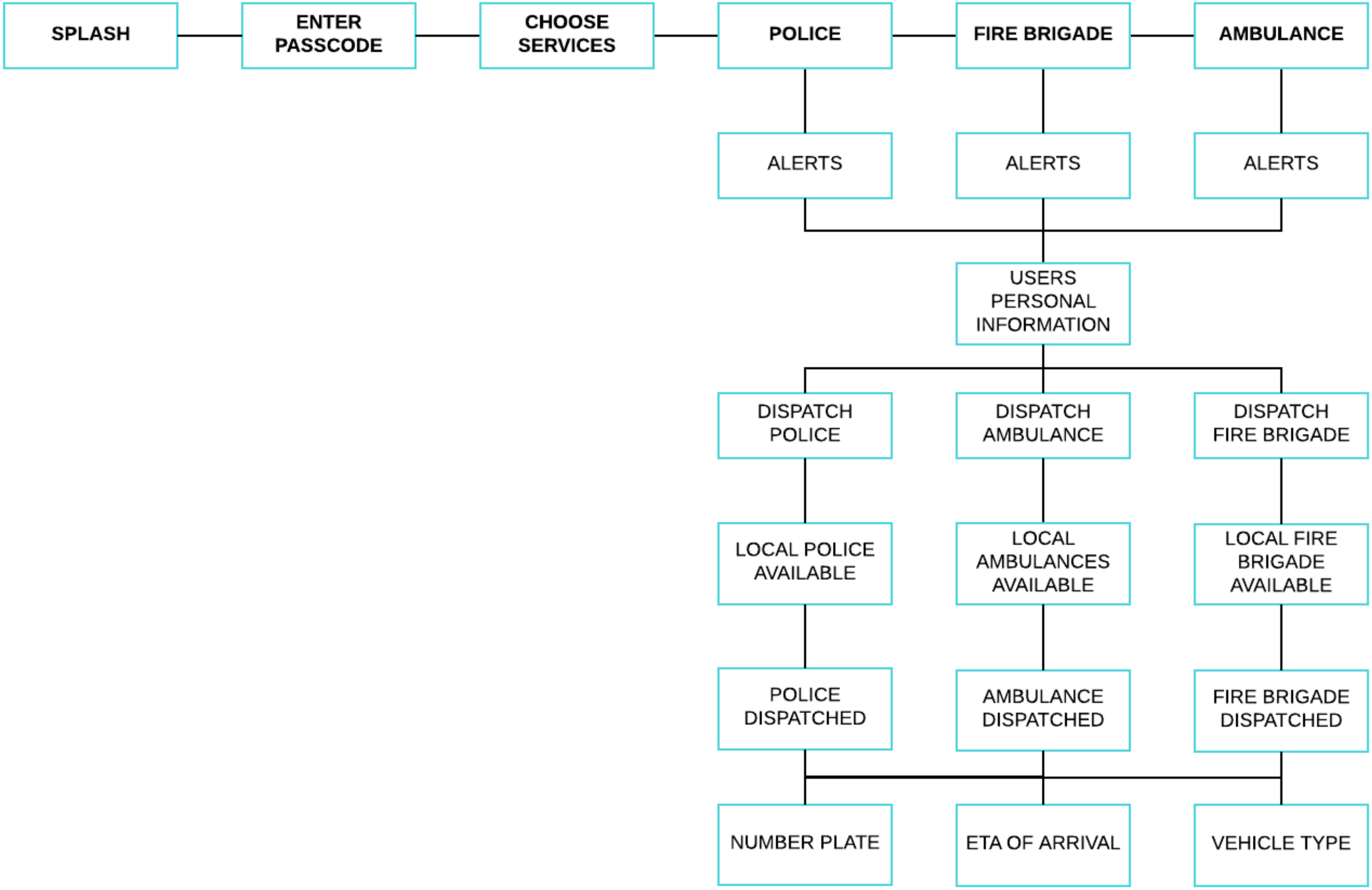
1.1 TECHNICAL STRUCTURE

Two separate site maps have been created displaying the technical structure for the balert app and balert response side program. Top row shows the name of the main screen pages and below displays how each main screen links to another. The site map for the balert app is bigger as more pages were needed to display the screens clearly, ensuring text is large enough for the elderly user to see.

BEALERT APP SITE MAP



BEALERT RESPONSE SIDE PROGRAM



SPLASH

ENTER PASSCODE

CHOOSE SERVICES

POLICE

FIRE BRIGADE

AMBULANCE

ALERTS

ALERTS

ALERTS

USERS PERSONAL INFORMATION

DISPATCH POLICE

DISPATCH AMBULANCE

DISPATCH FIRE BRIGADE

LOCAL POLICE AVAILABLE

LOCAL AMBULANCES AVAILABLE

LOCAL FIRE BRIGADE AVAILABLE

POLICE DISPATCHED

AMBULANCE DISPATCHED

FIRE BRIGADE DISPATCHED

NUMBER PLATE

ETA OF ARRIVAL

VEHICLE TYPE

1.2 FUNCTIONALITY

Below I identify the functionality the app and response side dispatch program displaying the features they provide.

Function	Emergency Icons
Description	One-touch emergency icons displayed for family, police, fire brigade and ambulance.
Inputs	User is required to click an emergency icon to request emergency services.
Source	Images of all icons within root images folder.
Outpouts	If user does not click an icon to request an emergency service they remain on the home screen.
Destination	Emergency services have been dispatched screen.
Action	When the user clicks one of the emergency icons, they are redirected to the alert requested screen where they are able to cancel the alert if needed.
Requirements	At least one emergency service icon must be selected when in an emergency for the responder to dispatch.
Side effects	If an icon is not selected the user will remain on the home page.

Function	Cancel Buttons	Dispatch Buttons
Description	Cancel alert buttons allow the user to cancel an alert if they no longer need emergency assistance.	Dispatch buttons allow the responder to dispatch a service if an elderly person sends an alert.
Inputs	An optional function depending on whether the user wants to cancel the alert or not.	Responder is required to dispatch the emergency services to an elderly person.
Source	Data stored within javascript to fade out the emergency service requested from the dropdown.	InVision prototype.
Outpouts	If user does not click cancel alert, they are able to navigate back to the home page or view alerts requested.	If responder does not click dispatch, an emergency service will not be dispatched to the elderly person.
Destination	Redirects user back to home page.	States emergency services have been dispatched.
Action	When the user clicks a cancel alert button, alert is cancelled and a notification is sent to the dispatcher notifying them that emergency services are no longer needed.	When a responder clicks the dispatch button, emergency service is dispatched and a notification is sent to the elderly person notifying them of this.
Requirements	An optional function depending on whether the user wants to cancel the alert or not.	Dispatch button must be selected to dispatch emergency services.
Side effects	If cancel alert button is not clicked the user will remain on this screen unless they navigate back to the home page.	If the responder does not dispatch the emergency services, there will be a delay and the elderly person will be in pain for a longer period of time.

Function	Login	Register
Description	A login keypad allowing the user to enter their 4 digit passcode.	A registration form allowing the user to input key information that will be beneficial to the emergency services.
Inputs	User is required to enter their 4 digit passcode to view their profile information.	User is required to enter key information and create a unique 4 digit passcode to create a profile.
Source	Database storing each users unique 4 digit passcode and personal information inputted from the registration form.	
Outpouts	If user does not enter their 4 digit passcode to log in, the user will be able to continue using the app without logging in.	If the user does not register, they will not have a personal profile allowing the emergency services to access further information on them.
Destination	Lightbox displaying the user is successfully logged in.	Lightbox displaying the user has successfully registered.
Action	When the user enters their 4 digit passcode, the system will recognise whether this is correct and display a 'login success' or 'registration success' message which then allows the user to view their personal profile.	
Requirements	All 4 passcode digits must be entered to allow the user to log in successfully.	All fields must be inputted and the 'register' button clicked for the user to successfully register their account.
Side effects	None.	

Function	Logo dropdown lightbox
Description	A dropdown displaying emergency services requested or hiding the services that have not been requested using icons for family, police, fire brigade and ambulance.
Inputs	User is required to click the balert logo to view emergency services that have been requested.
Source	Images of all icons within root images folder.
Outpouts	None unless the user has requested an emergency service, if so they are able to click on the icon to cancel an alert from the dropdown if they have requested emergency services.
Destination	None unless the user cancels an alert using the dropdown they are redirected to the home page.
Action	When the user clicks on an icon to cancel an alert, they are redirected to the home page where they are able to request a new emergency service if necessary.
Requirements	At least one emergency service would need to have been requested for the drop down to display this.
Side effects	None.

1.3 DESIGN REQUIREMENTS

APP FUNCTIONAL REQUIREMENTS

- Touch screen interface branded for bealert.
- Display one-touch emergency service icons, including police, ambulance and fire brigade on the app home page and response side program, locating the user once clicked using GPS location services.
- User should have the option to choose the level of risk for their emergency request, this will be displayed on the response side program so the dispatch teams are able to respond to alerts depending on the severity.
- Allow the user to log in by scanning their thumb or by typing in a 4 digit passcode or register if an account has not already been created.
- User should be able to view their profile information once registered including their name, age, telephone number, location, emergency contact numbers and medical history
- Automatically dispatch the emergency services requested once the user has clicked an icon.
- Allow the user to cancel emergency services once requested if they are no longer needed.
- Redirect the user back to the home page once emergency service requests have been cancelled.
- App will display emergency alerts sent by the user, this will display when the user clicks the logo at the top, any alerts sent will be bright with any not requested being faded out. If an alert is cancelled, the service originally requested fades out.
- User should be able to cancel the request using buttons as well as from the drop down menu.

NON-FUNCTIONAL REQUIREMENTS

- Provide an efficient way for the elderly to alert the emergency services, avoiding questions from the response team.
- Visually appealing using bealert branding.
- Must respond immediately to users touch and must not freeze when in use.
- Usability should be simple and straight forward by incorporating relevant icons for the emergency services.
- Text size must be large and clear enough for elderly people to read.

RESPONSE SIDE FUNCTIONAL REQUIREMENTS

- Allow dispatch teams to dispatch police, fire brigade or ambulance services depending on the alert sent from a user via the bealert app.
- Allow dispatch teams to navigate between the 3 different services using a navigation bar at the top of the program in case multiple services need to be dispatched at once.
- Program should display the closest services to the app user using their location on the map.
- Program should display key information about the app user such as level of risk, full name, age and current location.
- A drop down should be present that can be activated when clicked to display further information on the app user such as telephone number and medical history
- Display the location of the emergency services once the response team have dispatched them, this should include the officers/paramedics or fire fighters full name, image, registration plate, estimated time of arrival and the type of vehicle that is being driven.

DATA

- Store app users key data such as location and personal profile information even if user is not running the app.
- Store app users emergency service requests so they are able to view services requested at all times no matter what page the user is on.

1.4 DESIGN PRINCIPLES

Interactive (UX Collective, 2018)

Principle: Interactive capturing user interest

- Allowing the user to immediately request emergency services captures user attention and makes the experience more emotionally satisfying as they can visually see the when the emergency services have been dispatched and are on their way.

Aesthetics (UX Collective, 2018)

Principle: First impressions matter

- Eye-catching icons on the home page including balert branding such as logo and colour scheme, allowing for immediate knowledge the app is by bealert.

Principle: Delightful

- Bealert branding and consistent icons make the app pleasant to view throughout the experience due to the consistency in design.

Visible Navigation (UX Collective, 2018)

Principle: Make navigation visible

- By using a fixed stack navigation at the top of the app that is present on every screen, this allows the user to either go home or login/view their profile when necessary.

Consistency (UX Collective, 2018)

Principle: Consistent user interface

- Allows users to develop usage patterns when using the balert app. Using standard controls and gestures such as tap to navigate around the app consistently.

Principle: Consistent use of established patterns

- User will recognise patterns they are already familiar with such as the home icon or profile icon when they are using the app, shortening the learning process and making the digital experience easier to use for the elderly.

Efficiency (UX Collective, 2018)

Principle: User experience is seamless

- Icons instead of heavy text speeds up the overall process by avoiding the elderly user needing to read information. The emergency request process is immediate, allowing the user to request services without needing to answer any questions over the phone.

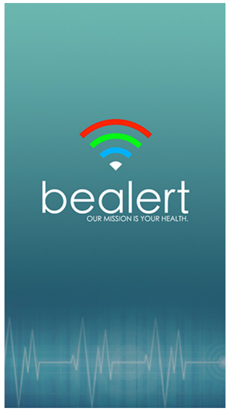
Principle: Efficient systems respect your time

- App responds to users touch instantly when something is tapped, this is key to requesting emergency services as fast as possible, potentially saving lives.

1.5 DESIGN PATTERNS

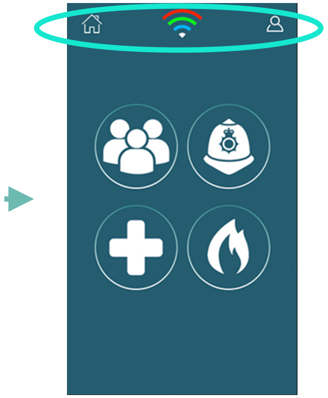
LAUNCHER (Cooper et al., 2014)

There is a launcher screen visible as soon as the user opens the balert app, allowing them to begin using the emergency alert app.



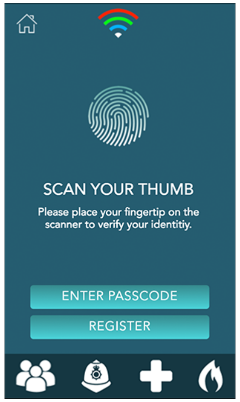
STACKS (Cooper et al., 2014)

Stacks are present at the top and bottom of every page allowing the user to return to the home page or view profile.



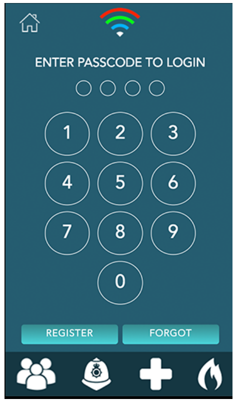
LOGIN (A. Mendoza, 2013)

There is a login screen allowing the user to either login using their fingerprint or enter a unique 4 digit code where they are able to view and edit their personal profile information.



SCAN YOUR THUMB

Please place your fingertip on the scanner to verify your identitiy.



ENTER PASSCODE TO LOGIN

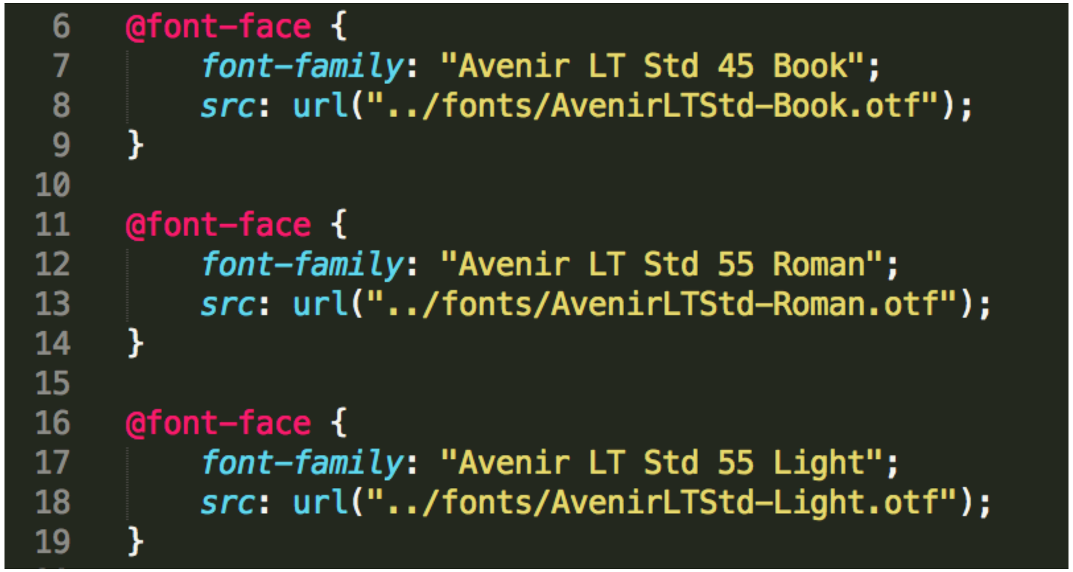
1.5 PATH TO ARTEFACTS IMPLEMENTATION - BEALERT APP

InVision link: https://invis.io/3MFZ5TRTRA6

The bealert app has been designed and coded using Sublime and Phonegap to view how the app is displayed on an iPhone screen. Bealert app has been designed to be used by the elderly enabling them to request emergency services easier and more efficiently. An alert would be sent to the emergency services dispatch program once the elderly person has sent an alert using the app or pairing wearable device, to which the response team can dispatch services based on the app users request. I tested the artefact in TOWC on computer number C2449022.

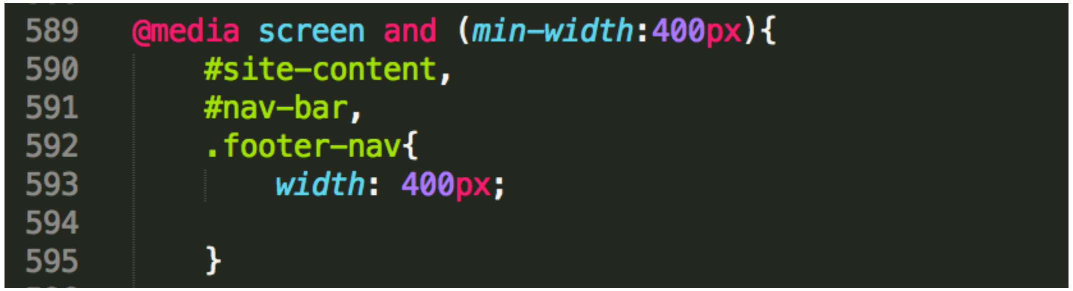
FONT FACE & MEDIA QUERY

I decided to use the font family Avenir LT Std book, roman and light as these were the fonts used within my designs on Sketch. To apply these to the coded version of my app, I needed to identify these within the CSS using @font-face and ensure the off files were present in a font folder within the root directory of my project. Within the code i needed to include the src link to these files in order for the font to display throughout the app.

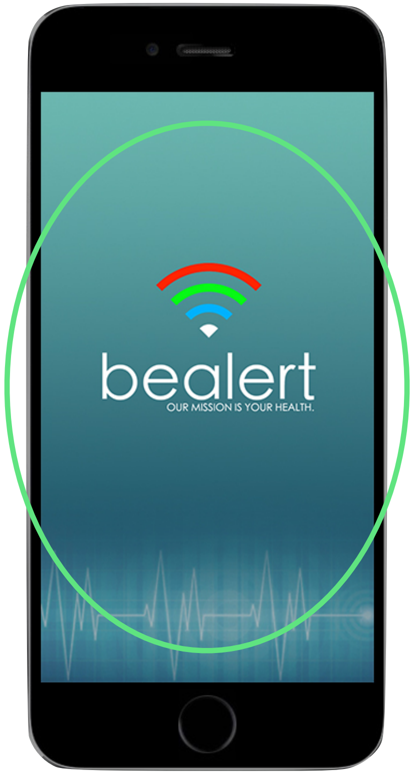


```
@font-face {
    font-family: "Avenir LT Std 45 Book";
    src: url("../fonts/AvenirLTStd-Book.otf");
}

@font-face {
    font-family: "Avenir LT Std 55 Roman";
    src: url("../fonts/AvenirLTStd-Roman.otf");
}

@font-face {
    font-family: "Avenir LT Std 55 Light";
    src: url("../fonts/AvenirLTStd-Light.otf");
}
```

A media query was used to identify the width of the screen to be 400px, the correct width of the viewport for an iPhone 6. This media query would help place all elements directly in the centre of the screen, making sure no elements are hidden or are positioned past this width. I have also identified the footer-nav width as 400px so this is also centred.

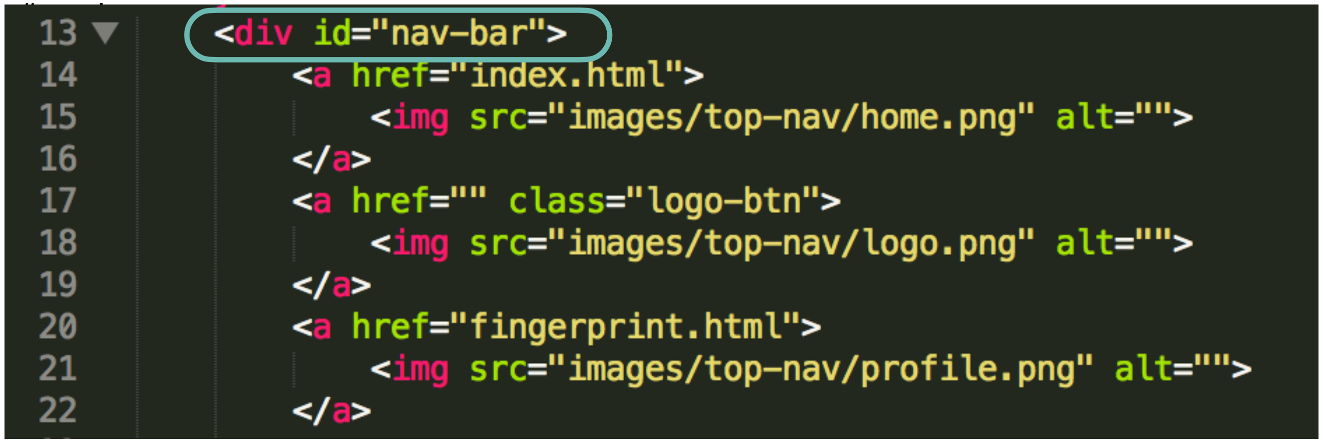


```
@media screen and (min-width:400px){
    #site-content,
    #nav-bar,
    .footer-nav{
        width: 400px;

    }
```

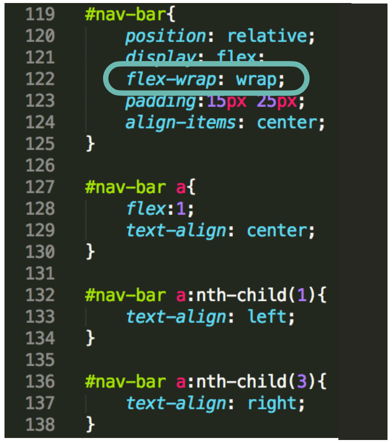


HOME PAGE

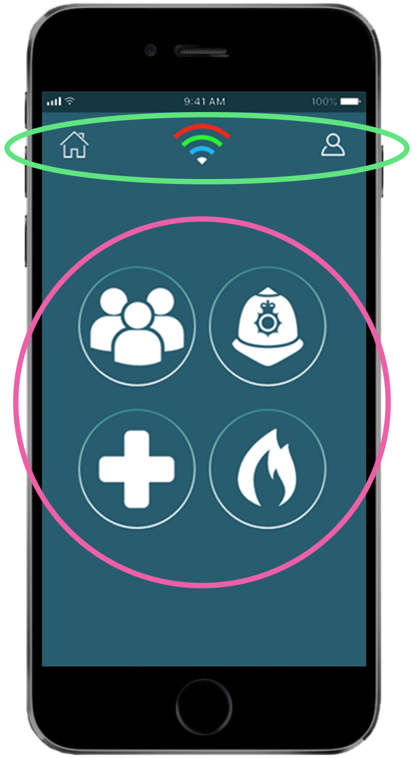
A navigation bar has been added to the top of the page using a <div id> to identify this. The home and profile icon has been added using <img src> and has been linked to the root folder which contains the images in png form. I have used <a href> to link each icon to the correct location. Within the navigation bar, the home icon links to the bealert homepage and the profile icon links to the login screen allowing the user to login by fingerprint or passcode. I have used flexwrap: wrap to avoid overflow of flex items and align-items: centre to align all the flex-items vertically centre in



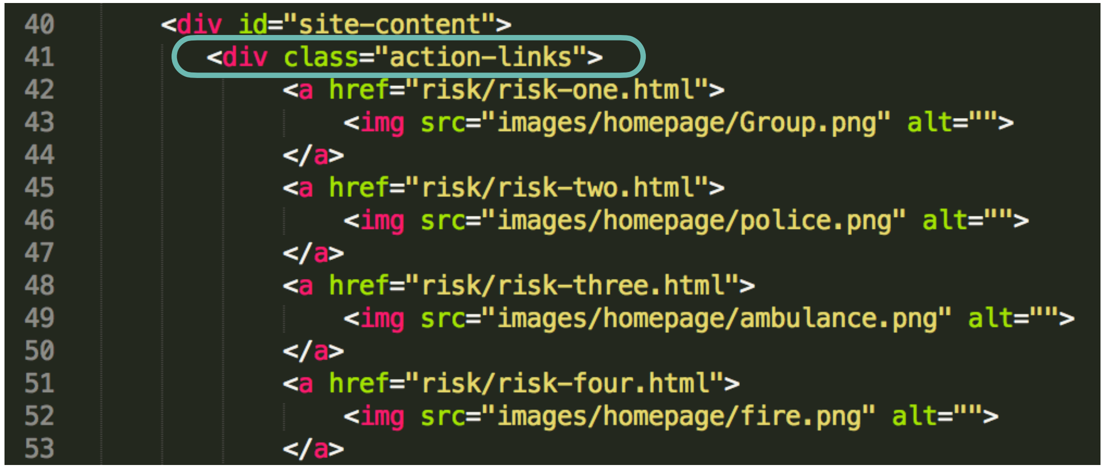
```
<div id="nav-bar">
    <a href="index.html">
        <img src="images/top-nav/home.png" alt="">
    </a>
    <a href="" class="logo-btn">
        <img src="images/top-nav/logo.png" alt="">
    </a>
    <a href="fingerprint.html">
        <img src="images/top-nav/profile.png" alt="">
    </a>
```



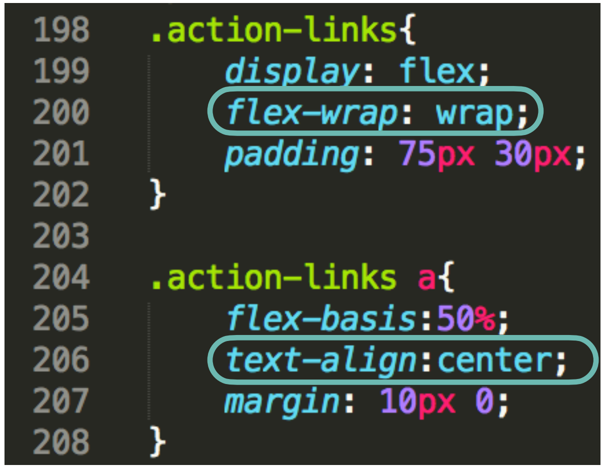
```
#nav-bar{
    position: relative;
    display: flex;
    flex-wrap: wrap;
    padding:15px 25px;
    align-items: center;
}

#nav-bar a{
    flex:1;
    text-align: center;
}

#nav-bar a:nth-child(1){
    text-align: left;
}

#nav-bar a:nth-child(3){
    text-align: right;
}
```



Emergency action icons have been added to the middle of the page using a <div class> to identify this. Each icon has been added using <img src>, as I designed the icons they are linked to the root folder containing the icons in png form. I have used <a href> to link each icon to the correct location, all icons link to choose level of risk page. Within the CSS, Flex-wrap: wrap and text-align: center were used to align the icons directly in the middle of the screen.



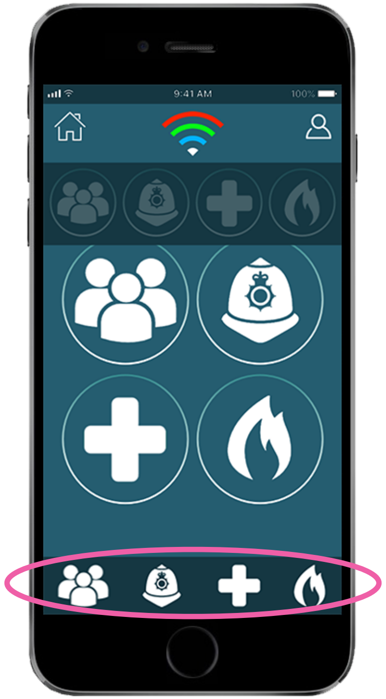
```
    <div id="site-content">
        <div class="action-links">
            <a href="risk/risk-one.html">
                <img src="images/homepage/Group.png" alt="">
            </a>
            <a href="risk/risk-two.html">
                <img src="images/homepage/police.png" alt="">
            </a>
            <a href="risk/risk-three.html">
                <img src="images/homepage/ambulance.png" alt="">
            </a>
            <a href="risk/risk-four.html">
                <img src="images/homepage/fire.png" alt="">
            </a>
```



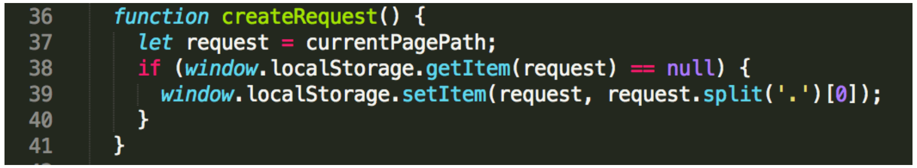
```
.action-links{
    display: flex;
    flex-wrap: wrap;
    padding: 75px 30px;
}

.action-links a{
    flex-basis:50%;
    text-align:center;
    margin: 10px 0;
}
```

Challenges faced here were to align the icons in the centre and have two rows by two, creating a square. Initially I used in-line CSS positioning but found this was not working as all the icons kept shifting. was unsure how to do this but after researching I found that flex-wrap was the best way to align all the icons.

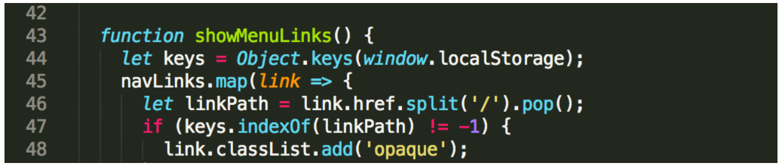
● DESIGN PRINCIPLES ● DESIGN PATTERNS ● FUNCTIONAL REQUIREMENTS



The first function createRequest() will call when the risk pages (family.html, police.html, ambulance.html and fire-brigade.html) load in the browser, this function stores the currentPagePath in localStorage if it is not available in localStorage. This will only disappear from the dropdown once the user has cancelled the alert. Second function gets all requests stored from localStorage and maps over each nav-link finding the match and adds an opaque class to nav-links that have not been requested.



```
function createRequest() {
  let request = currentPagePath;
  if (window.localStorage.getItem(request) == null) {
    window.localStorage.setItem(request, request.split('.')[0]);
  }
}
```

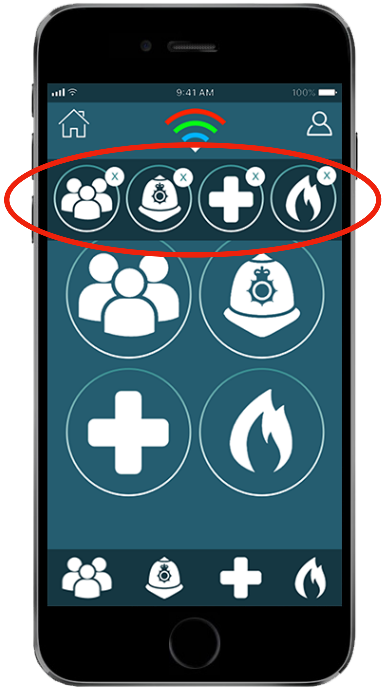


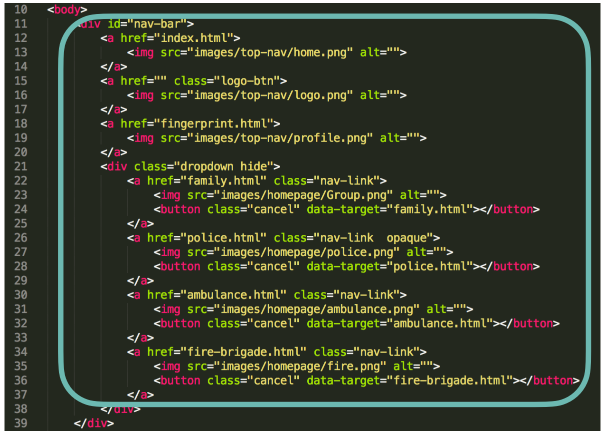
```

function showMenuLinks() {
  let keys = Object.keys(window.localStorage);
  navLinks.map(link => {
    let linkPath = link.href.split('/').pop();
    if (keys.indexOf(linkPath) != -1) {
      link.classList.add('opaque');
```

A drop down menu has been added and is displayed once the logo is clicked to show alerts requested by the user, a <div class> has been used to identify this. Each icon has been added using <img src> and each icon is linked to the root folder containing the icons in png form. A button class has been added called cancel with a data target to the correct html page, this shows the small X circles next to each icon allowing the user to cancel a request.

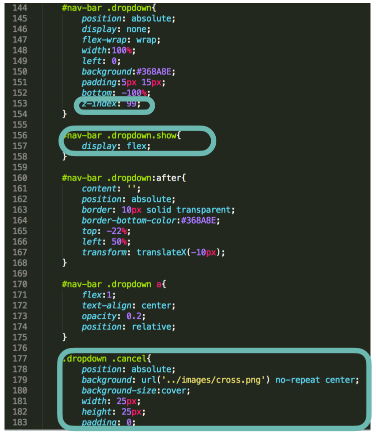
Within the CSS, I have specified opacity for the drop down to be 0.2 to show no services have been requested. Display: flex has also been used to evenly space each icon in the middle of the screen, as well as this z-index has been used to position the drop down in front of the icons. A cross.png image has been added within the dropdown cancel, this displays within the drop down allowing the user to cancel the request from the drop down.

Within the javascript, all the dropdown items have click eventListener attached. The goal here is to cancel the request when the user clicks the cross icon on top of the anchor link. The javascript stops the default anchor actio, in this case redirect to index.html. By using the event element I am checking the clicked element has a cancel class defined. If yes, nothing happens or else the user is redirected to index.html which is shown within the anchor attribute.

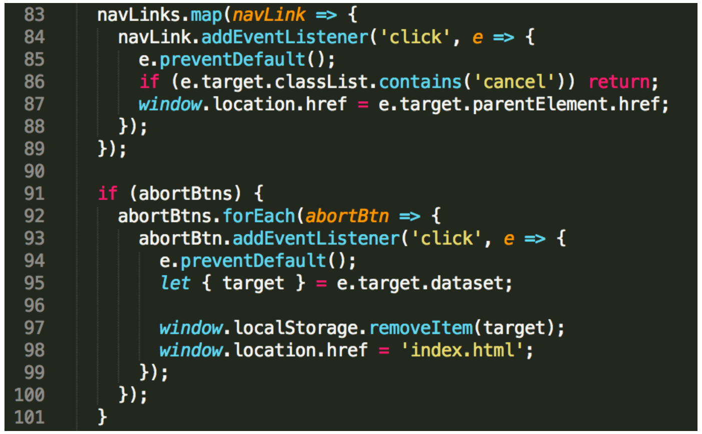




```
<body>
  <div id="nav-bar">
    <a href="index.html">
      <img src="images/top-nav/home.png" alt="">
    </a>
    <a href="" class="logo-btn">
      <img src="images/top-nav/logo.png" alt="">
    </a>
    <a href="fingerprint.html">
      <img src="images/top-nav/profile.png" alt="">
    </a>
    <div class="dropdown hide">
      <a href="family.html" class="nav-link">
        <img src="images/homepage/Group.png" alt="">
        <button class="cancel" data-target="family.html"></button>
      </a>
      <a href="police.html" class="nav-link  opaque">
        <img src="images/homepage/police.png" alt="">
        <button class="cancel" data-target="police.html"></button>
      </a>
      <a href="ambulance.html" class="nav-link">
        <img src="images/homepage/ambulance.png" alt="">
        <button class="cancel" data-target="ambulance.html"></button>
      </a>
      <a href="fire-brigade.html" class="nav-link">
        <img src="images/homepage/fire.png" alt="">
        <button class="cancel" data-target="fire-brigade.html"></button>
      </a>
    </div>
  </div>
```

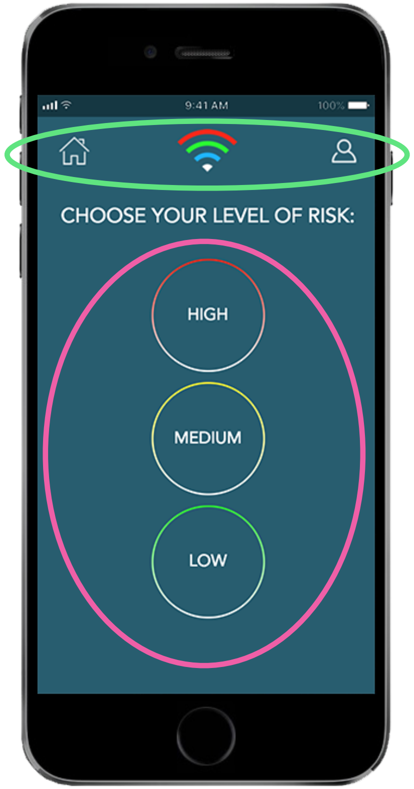


```
#nav-bar .dropdown{
    position: absolute;
    display: none;
    flex-wrap: wrap;
    width:100%;
    left: 0;
    background:#368A8E;
    padding:5px 15px;
    bottom: -100%;
    z-index: 99;
}

#nav-bar .dropdown.show{
    display: flex;
}

#nav-bar .dropdown:after{
    content: '';
    position: absolute;
    border: 10px solid transparent;
    border-bottom-color:#368A8E;
    top: -22%;
    left: 50%;
    transform: translateX(-10px);
}

#nav-bar .dropdown a{
    flex:1;
    text-align: center;
    opacity: 0.2;
    position: relative;
}

.dropdown .cancel{
    position: absolute;
    background: url('../images/cross.png') no-repeat center;
    background-size:cover;
    width: 25px;
    height: 25px;
    padding: 0;
```



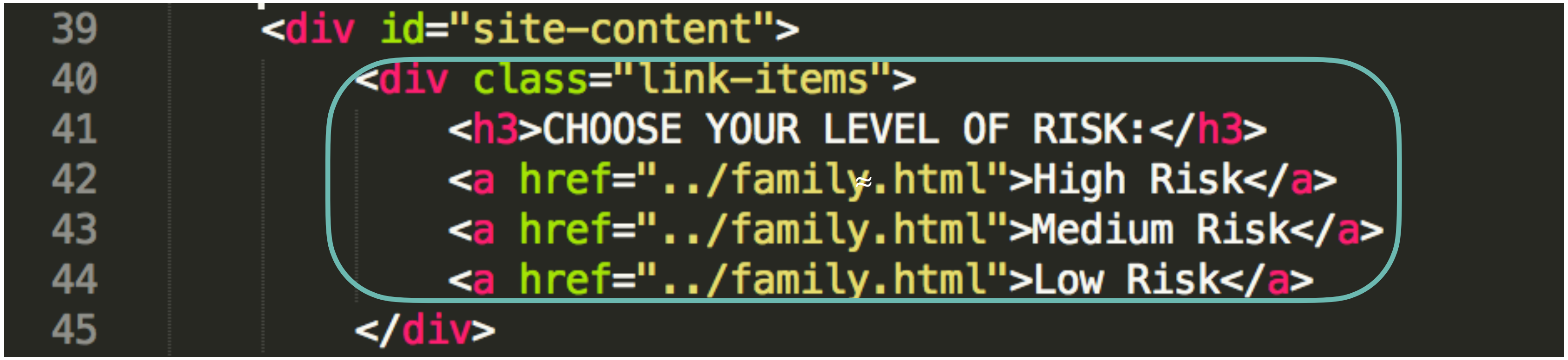
```
  navLinks.map(navLink => {
    navLink.addEventListener('click', e => {
      e.preventDefault();
      if (e.target.classList.contains('cancel')) return;
      window.location.href = e.target.parentElement.href;
    });
  });

  if (abortBtns) {
    abortBtns.forEach(abortBtn => {
      abortBtn.addEventListener('click', e => {
        e.preventDefault();
        let { target } = e.target.dataset;

        window.localStorage.removeItem(target);
        window.location.href = 'index.html';
      });
    });
  }
```

● DESIGN PRINCIPLES ● DESIGN PATTERNS ● FUNCTIONAL REQUIREMENTS

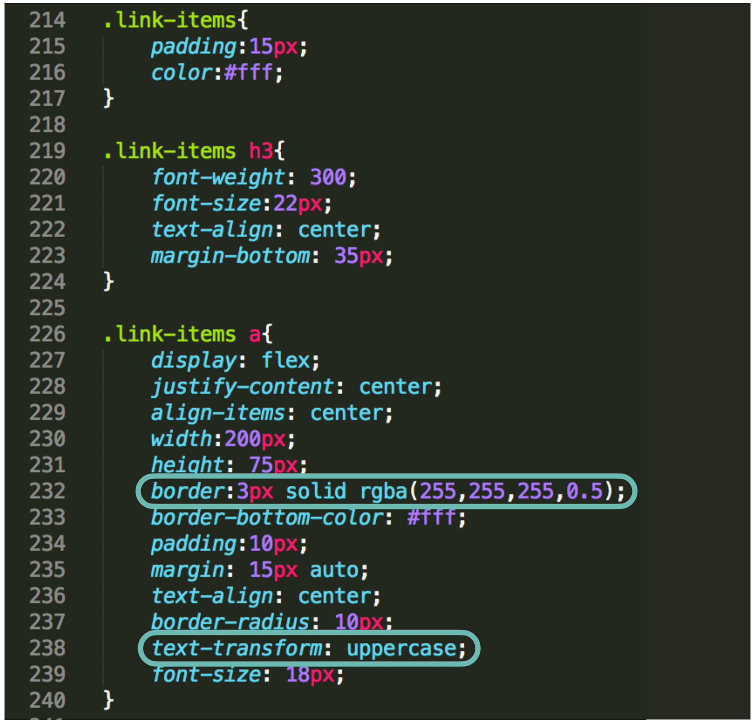


LEVEL OF RISK

A <div class> has been defined called link-items with text added to the top of the page, asking the user to choose their level of risk with the options high, medium and low risk. This was added using a h3 tag with the CSS font-size to display this. Each text element links to the correct alert page using <a href> depending on which item was clicked by the user on the home page.



```
        <div id="site-content">
            <div class="link-items">
                <h3>CHOOSE YOUR LEVEL OF RISK:</h3>
                <a href="../family.html">High Risk</a>
                <a href="../family.html">Medium Risk</a>
                <a href="../family.html">Low Risk</a>
            </div>
```

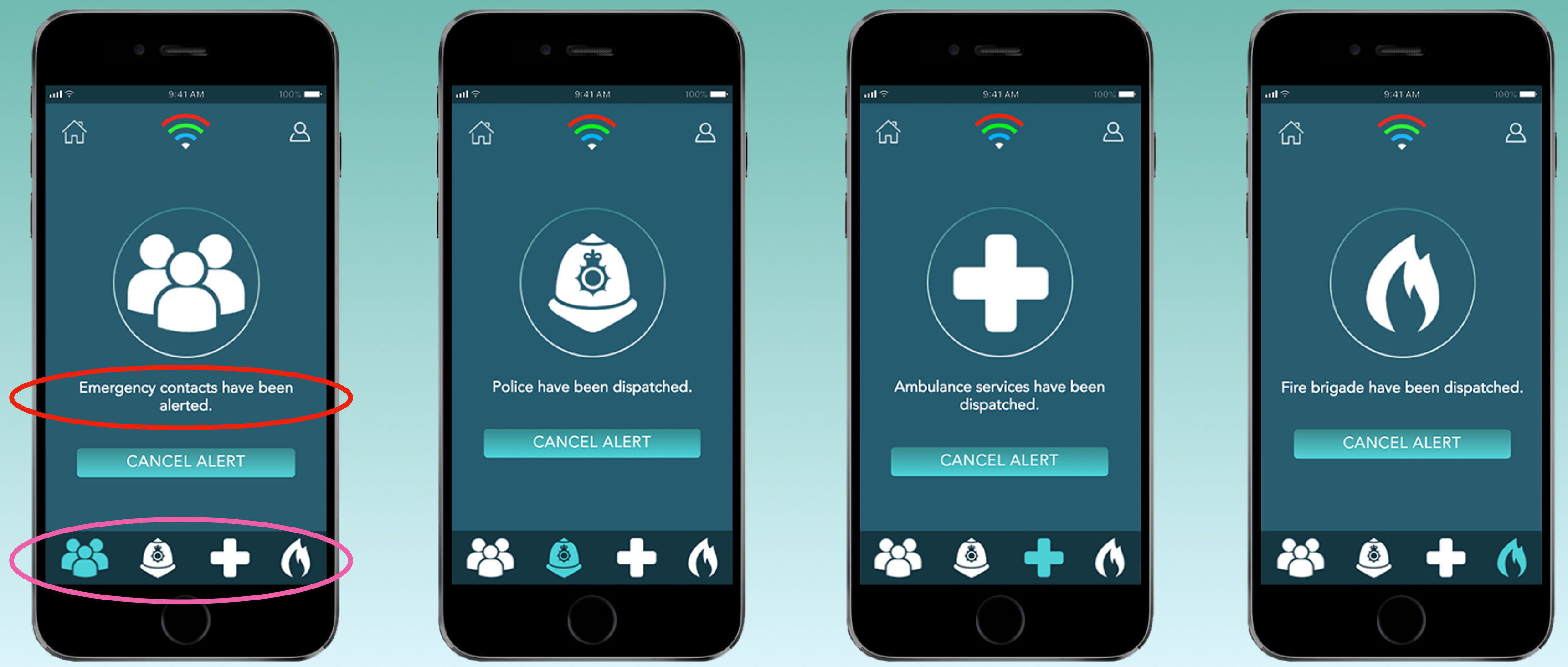


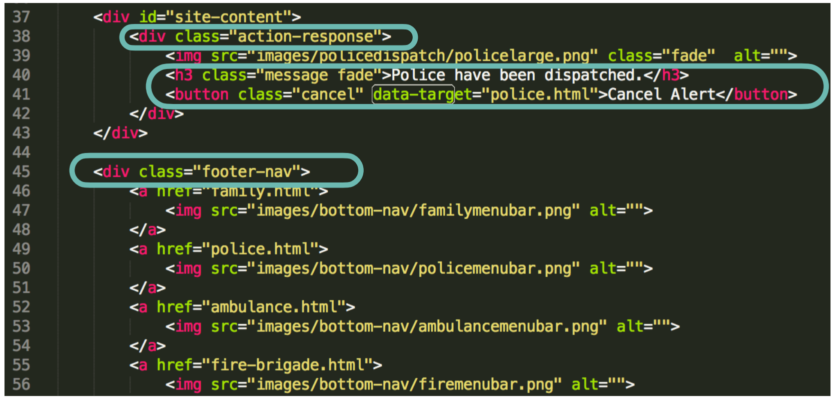
```
.link-items{
    padding:15px;
    color:#fff;
}

.link-items h3{
    font-weight: 300;
    font-size:22px;
    text-align: center;
    margin-bottom: 35px;
}

.link-items a{
    display: flex;
    justify-content: center;
    align-items: center;
    width:200px;
    height: 75px;
    border:3px solid rgba(255,255,255,0.5);
    border-bottom-color: #fff;
    padding:10px;
    margin: 15px auto;
    text-align: center;
    border-radius: 10px;
    text-transform: uppercase;
    font-size: 18px;
}
```

Text-transform has been identified within the CSS to keep all text (low, medium and high) in uppercase letters. A border of 3px has been added to each risk option with the colour identified as 255, fading in to white.

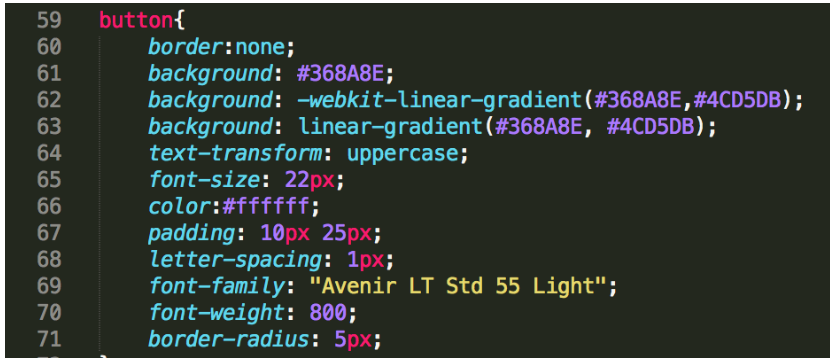
Challenge faced on this screen was to align each risk div one below another in the centre of the screen. To do this I used justify-content and defined this as center, with align-items also defined as center.

● **DESIGN PRINCIPLES** ● **DESIGN PATTERNS** ● **FUNCTIONAL REQUIREMENTS**


9:41 AM
100%
Emergency contacts have been alerted.
CANCEL ALERT
Police have been dispatched.
CANCEL ALERT
Ambulance services have been dispatched.
CANCEL ALERT
Fire brigade have been dispatched.
CANCEL ALERT



```
    <div id="site-content">
        <div class="action-response">
            <img src="images/policedispatch/policelarge.png" class="fade"  alt="">
            <h3 class="message fade">Police have been dispatched.</h3>
            <button class="cancel" data-target="police.html">Cancel Alert</button>
        </div>
    </div>

    <div class="footer-nav">
        <a href="family.html">
            <img src="images/bottom-nav/familymenubar.png" alt="">
        </a>
        <a href="police.html">
            <img src="images/bottom-nav/policemenubar.png" alt="">
        </a>
        <a href="ambulance.html">
            <img src="images/bottom-nav/ambulancemenubar.png" alt="">
        </a>
        <a href="fire-brigade.html">
            <img src="images/bottom-nav/firemenubar.png" alt="">
```

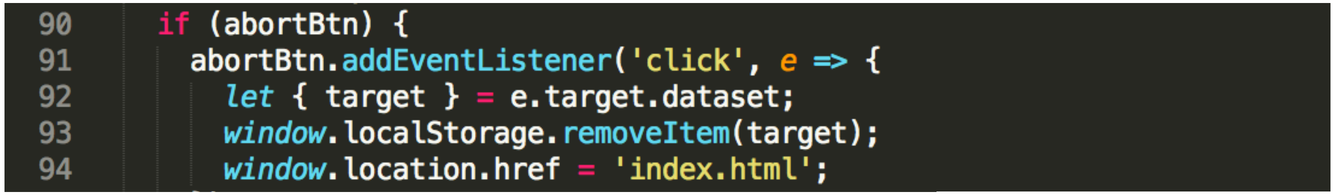


```
button{
    border:none;
    background: #368A8E;
    background: -webkit-linear-gradient(#368A8E,#4CD5DB);
    background: linear-gradient(#368A8E, #4CD5DB);
    text-transform: uppercase;
    font-size: 22px;
    color:#ffffff;
    padding: 10px 25px;
    letter-spacing: 1px;
    font-family: "Avenir LT Std 55 Light";
    font-weight: 800;
    border-radius: 5px;
```

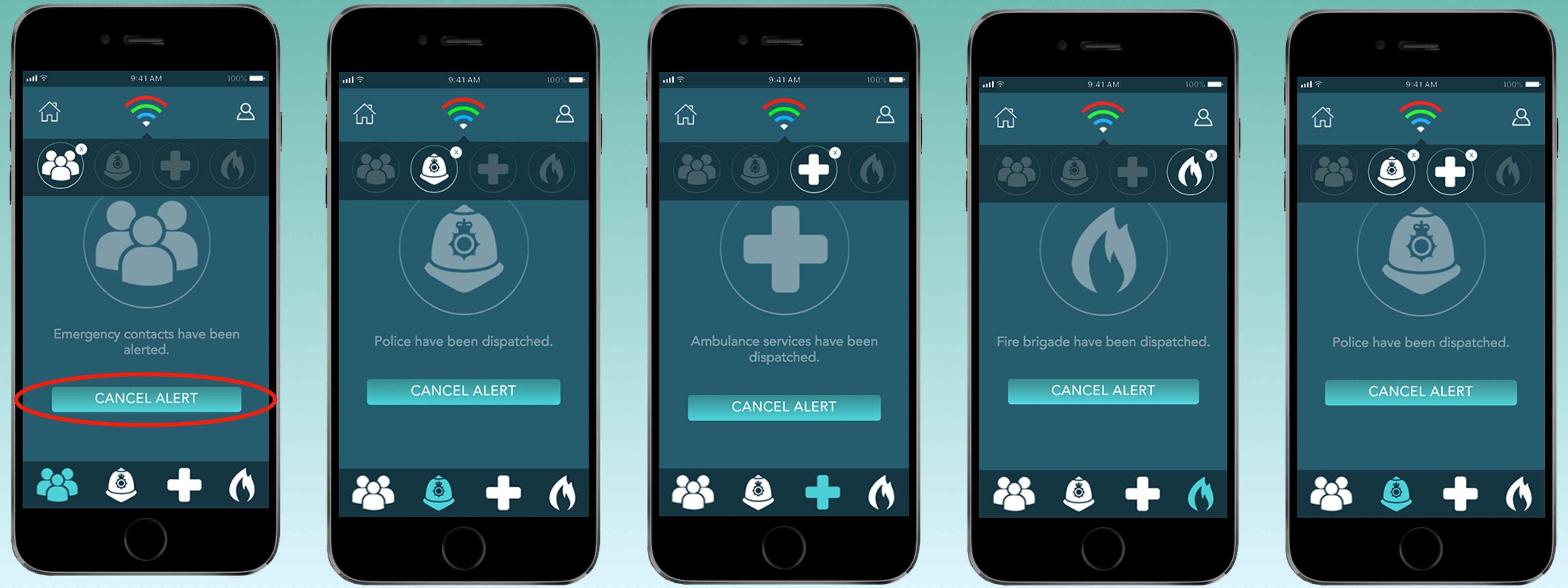
EMERGENCY ALERTS SENT

A footer nav has been added within a <div class> to display the emergency icons at the bottom of the screen. Each icon has been added using <img src> and a <a href> tag redirecting each icon to the correct location when clicked. An action response class has been used to display the text stating the emergency services have been dispatched. A button has been added below the text allowing the user to cancel the alert and when cancelled, data-target specifies the page the user is cancelling the alert for, in this example it is police.html. A gradient has been added within the CSS for each button in the correct colours #368A8E and fades in to #4CD5DB.

Javascript function states if a cancel button is present in DOM, it adds a click eventlistener on that button and stores the targeted request in a variable called target and will remove the target element from localStorage, redirecting the user back to index.html.



```
if (abortBtn) {
  abortBtn.addEventListener('click', e => {
    let { target } = e.target.dataset;
    window.localStorage.removeItem(target);
    window.location.href = 'index.html';
```



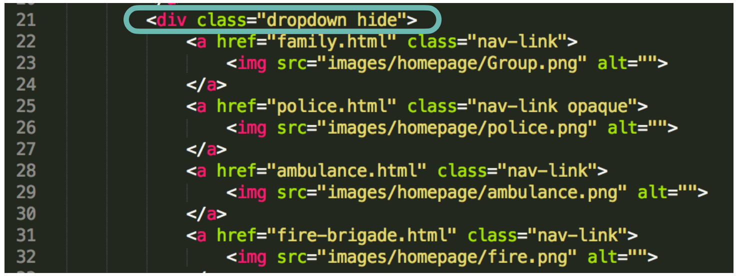
Emergency contacts have been alerted.

Police have been dispatched.

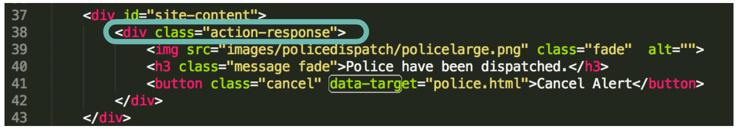
Ambulance services have been dispatched.

Fire brigade have been dispatched.

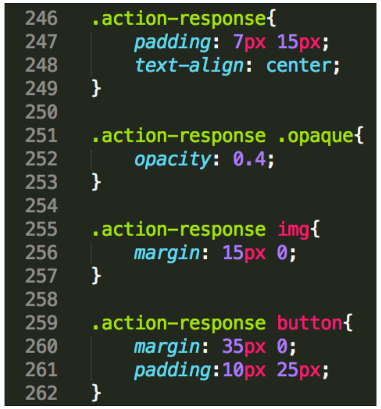
Police have been dispatched.



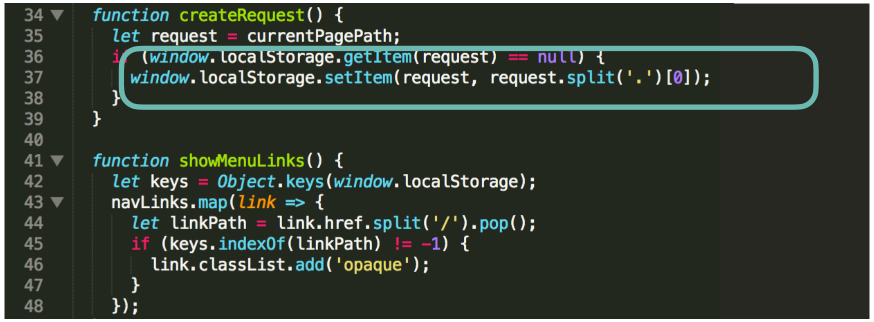
```
        <div class="dropdown hide">
            <a href="family.html" class="nav-link">
                <img src="images/homepage/Group.png" alt="">
            </a>
            <a href="police.html" class="nav-link opaque">
                <img src="images/homepage/police.png" alt="">
            </a>
            <a href="ambulance.html" class="nav-link">
                <img src="images/homepage/ambulance.png" alt="">
            </a>
            <a href="fire-brigade.html" class="nav-link">
                <img src="images/homepage/fire.png" alt="">
```



```
    <div id="site-content">
        <div class="action-response">
            <img src="images/policedispatch/policelarge.png" class="fade"  alt="">
            <h3 class="message fade">Police have been dispatched.</h3>
            <button class="cancel" data-target="police.html">Cancel Alert</button>
        </div>
    </div>
```



```
.action-response{
    padding: 7px 15px;
    text-align: center;
}

.action-response .opaque{
    opacity: 0.4;
}

.action-response img{
    margin: 15px 0;
}

.action-response button{
    margin: 35px 0;
    padding:10px 25px;
}
```



```
function createRequest() {
  let request = currentPagePath;
  if (window.localStorage.getItem(request) == null) {
    window.localStorage.setItem(request, request.split('.')[0]);
  }
}

function showMenuLinks() {
  let keys = Object.keys(window.localStorage);
  navLinks.map(link => {
    let linkPath = link.href.split('/').pop();
    if (keys.indexOf(linkPath) != -1) {
      link.classList.add('opaque');
    }
  });
```

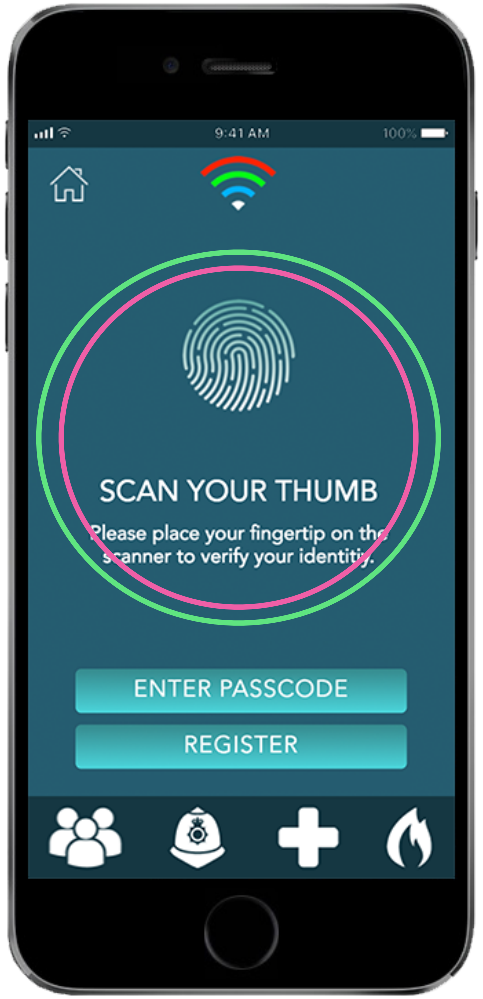
EMERGENCY ALERTS SENT DROPDOWN

A drop down menu is displayed once the logo is clicked to display alerts requested by the user, a <div class> has been used to identify this. If the user sends multiple alerts at one time such as police and then fire brigade both are stored in localstorage.

First javascript function creates a request once the user has requested the emergency services by clicking one of the icons, the function then adds the request to localstorage which displays the request within the drop down menu once the logo is clicked. This will only disappear from the drop down once the user has cancelled the alert. Second function gets all requests stored from localStorage and maps over each nav-link finding the match and adds an opaque class to nav-links that have not been requested.

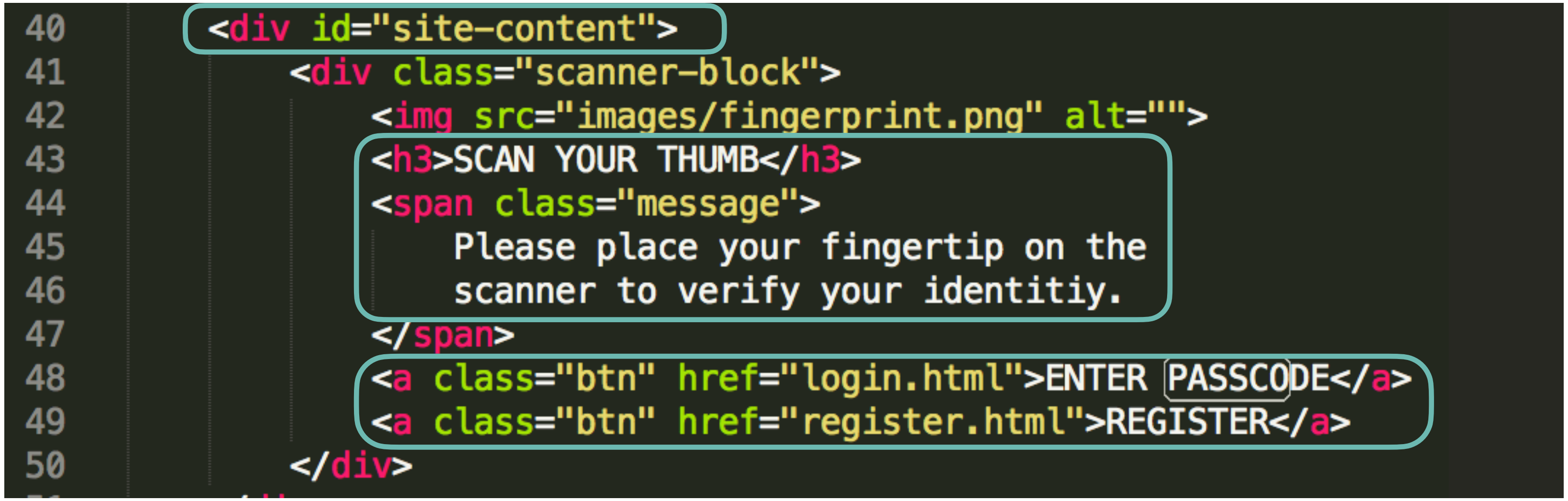
● DESIGN PRINCIPLES ● DESIGN PATTERNS ● FUNCTIONAL REQUIREMENTS

LOGIN - SCAN FINGERPRINT


9:41 AM
100%
SCAN YOUR THUMB
Please place your fingertip on the scanner to verify your identity.
ENTER PASSCODE
REGISTER

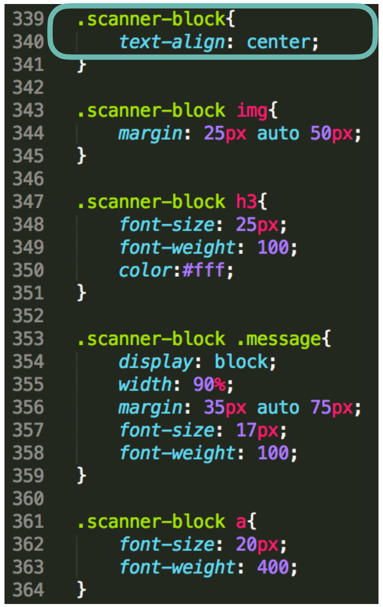
The fingerprint icon has been added using <img src> and has been aligned using text-align: center. A h3 tag with the CSS font-size has been added to direct the user to scan their fingerprint and a span class has been used to add this message to the screen.

I have added a class of btn to display the text enter passcode and register within each one, these are linked to the correct pages using <a href>.



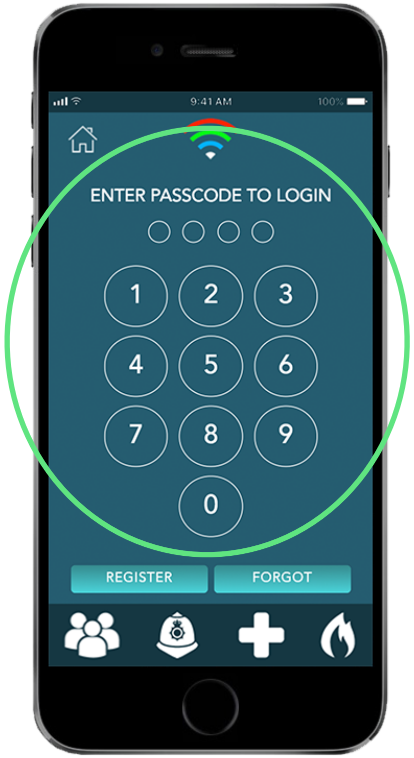
```html
    <div id="site-content">
        <div class="scanner-block">
            <img src="images/fingerprint.png" alt="">
            <h3>SCAN YOUR THUMB</h3>
            <span class="message">
                Please place your fingertip on the
                scanner to verify your identitiy.
            </span>
            <a class="btn" href="login.html">ENTER PASSCODE</a>
            <a class="btn" href="register.html">REGISTER</a>
        </div>
```

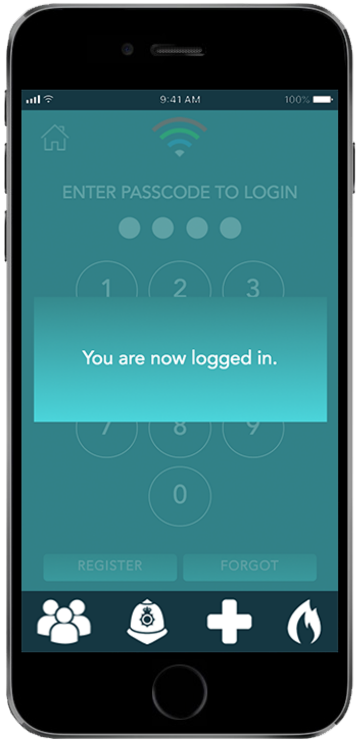
The main challenge faced on this screen was when I attempted to get a javascript API to implement this within the code, making the fingerprint scanner work when a user scans their thumb. Unfortunately I could not get this feature to work and the user must therefore use the enter passcode button to login which then displays as login successful once the user has entered the passcode. Fingerprint scanner could be included as a further development feature.



```css
.scanner-block{
    text-align: center;
}

.scanner-block img{
    margin: 25px auto 50px;
}

.scanner-block h3{
    font-size: 25px;
    font-weight: 100;
    color:#fff;
}

.scanner-block .message{
    display: block;
    width: 90%;
    margin: 35px auto 75px;
    font-size: 17px;
    font-weight: 100;
}

.scanner-block a{
    font-size: 20px;
    font-weight: 400;
}
```

● DESIGN PRINCIPLES ● DESIGN PATTERNS ● FUNCTIONAL REQUIREMENTS

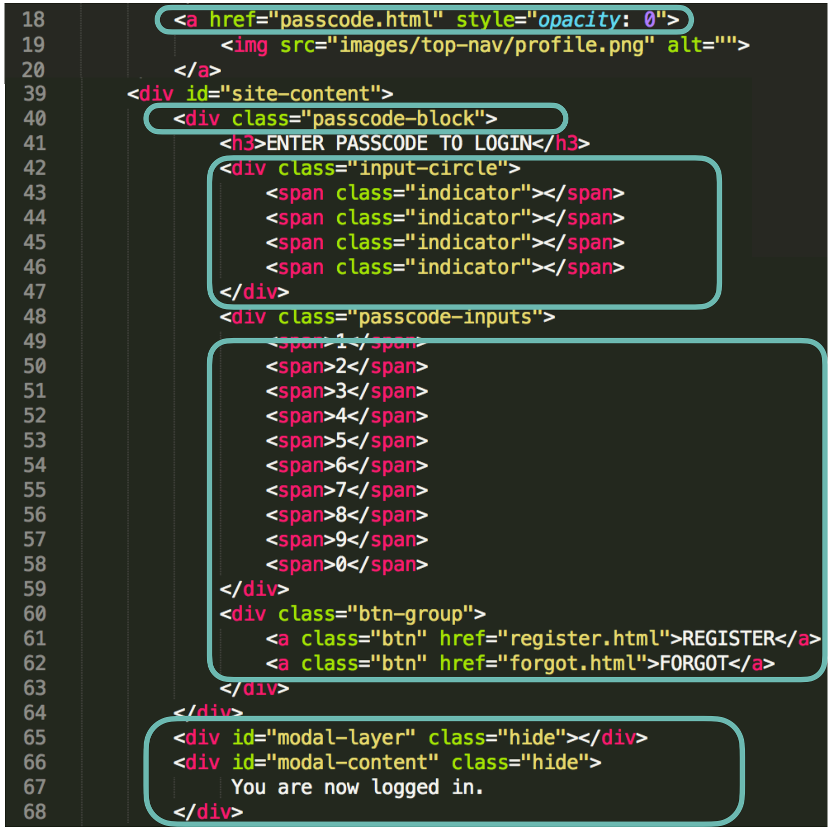




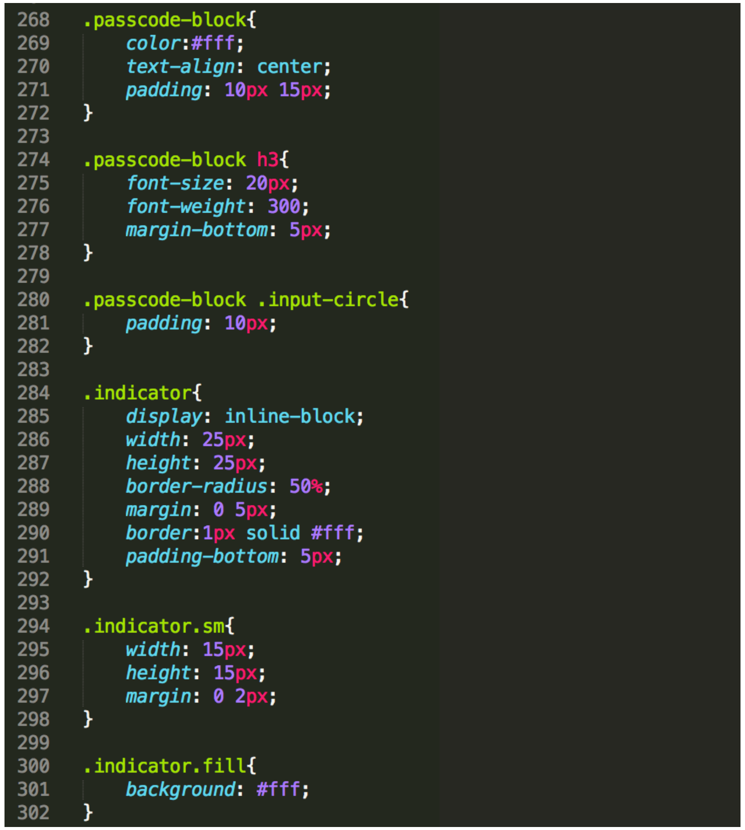
LOGIN - ENTER PASSCODE

The profile icon is hidden once the user has clicked on it using <a href> and defining the style as opacity 0. A span class has been used to group the 4 indicator elements as well as the passcode input numbers the user can tap when entering their passcode. The 4 indicators at the top are filled in once the user has entered their 4 digit passcode. A btn class has been added for the register and forgot buttons to display.

Modal-layer and modal-content have been given the class hide in order to fade out all the information on the screen and displays the message ‘you are now logged in.’

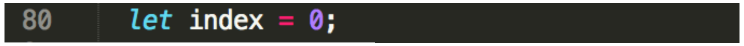


```html
        <a href="passcode.html" style="opacity: 0">
            <img src="images/top-nav/profile.png" alt="">
        </a>
    <div id="site-content">
        <div class="passcode-block">
            <h3>ENTER PASSCODE TO LOGIN</h3>
            <div class="input-circle">
                <span class="indicator"></span>
                <span class="indicator"></span>
                <span class="indicator"></span>
                <span class="indicator"></span>
            </div>
            <div class="passcode-inputs">
                <span>1</span>
                <span>2</span>
                <span>3</span>
                <span>4</span>
                <span>5</span>
                <span>6</span>
                <span>7</span>
                <span>8</span>
                <span>9</span>
                <span>0</span>
            </div>
            <div class="btn-group">
                <a class="btn" href="register.html">REGISTER</a>
                <a class="btn" href="forgot.html">FORGOT</a>
            </div>
        </div>
        <div id="modal-layer" class="hide"></div>
        <div id="modal-content" class="hide">
            You are now logged in.
        </div>
```

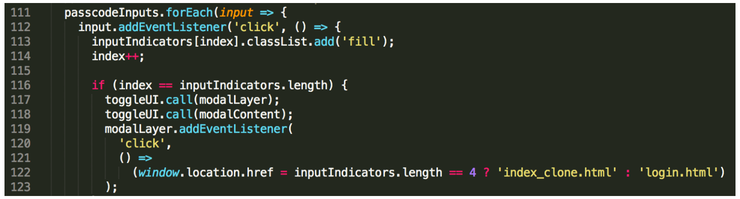


```css
.passcode-block{
    color:#fff;
    text-align: center;
    padding: 10px 15px;
}

.passcode-block h3{
    font-size: 20px;
    font-weight: 300;
    margin-bottom: 5px;
}

.passcode-block .input-circle{
    padding: 10px;
}

.indicator{
    display: inline-block;
    width: 25px;
    height: 25px;
    border-radius: 50%;
    margin: 0 5px;
    border:1px solid #fff;
    padding-bottom: 5px;
}

.indicator.sm{
    width: 15px;
    height: 15px;
    margin: 0 2px;
}

.indicator.fill{
    background: #fff;
}
```

Javascript firstly tracks index for passcode digits to redirect user and then adds a click event listener to each input button. If index is equal to the total of indicators length, this shows the modal lightbox for login success and adds an event listener on the modal layer, redirecting back to index_clone.html when clicked off the lightbox which will then display the users information.



```javascript
let index = 0;
```

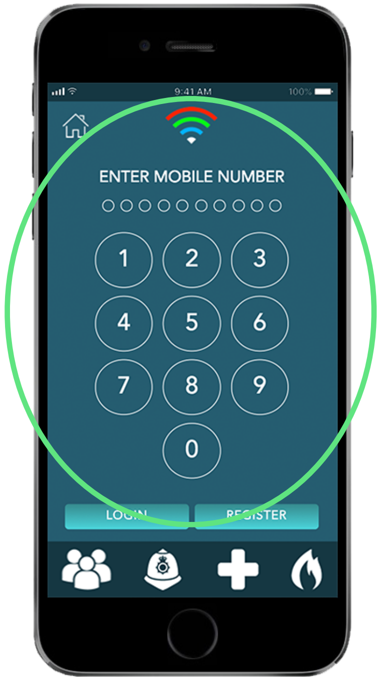


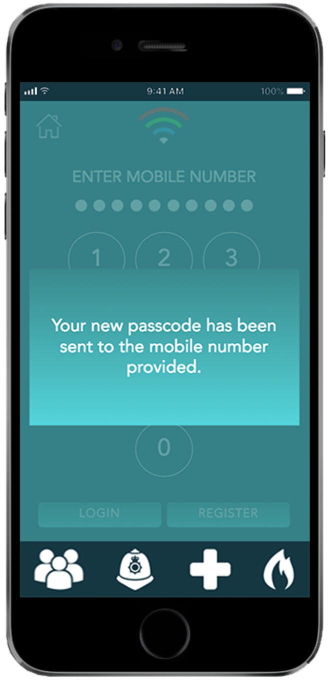
```javascript
passcodeInputs.forEach(input => {
  input.addEventListener('click', () => {
    inputIndicators[index].classList.add('fill');
    index++;

    if (index == inputIndicators.length) {
      toggleUI.call(modalLayer);
      toggleUI.call(modalContent);
      modalLayer.addEventListener(
        'click',
        () =>
          (window.location.href = inputIndicators.length == 4 ? 'index_clone.html' : 'login.html')
      );
```

● DESIGN PRINCIPLES ● DESIGN PATTERNS ● FUNCTIONAL REQUIREMENTS

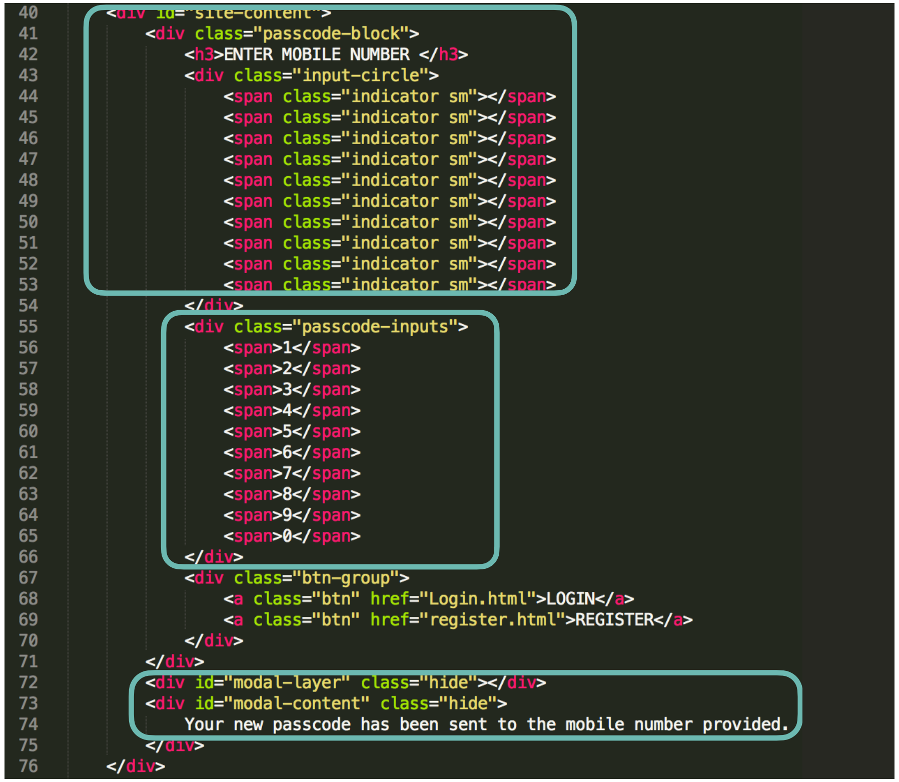
FORGOT PASSCODE

The profile icon is hidden once the user has clicked on it using <a href> and defining the style as opacity 0. A span class has been used to group the 10 indicator elements for mobile number as well as the input numbers the user can tap when entering their mobile number. The 10 indicators at the top are filled in once the user has entered their mobile number. A btn class has been added for the login and register buttons to display. Modal-layer and modal-content have been given the class hide in order to fade out all the information on the screen and displays the message 'your new passcode has been sent to the mobile number provided.'

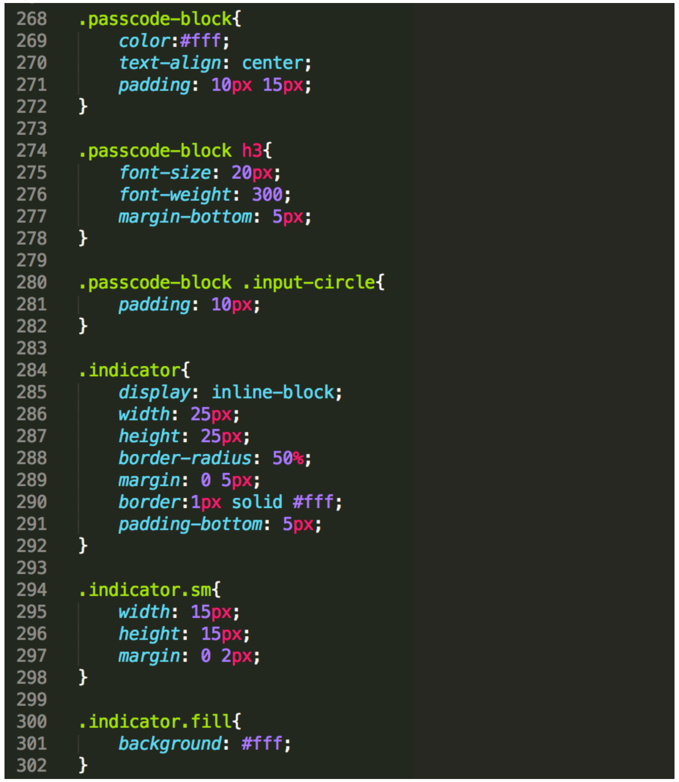




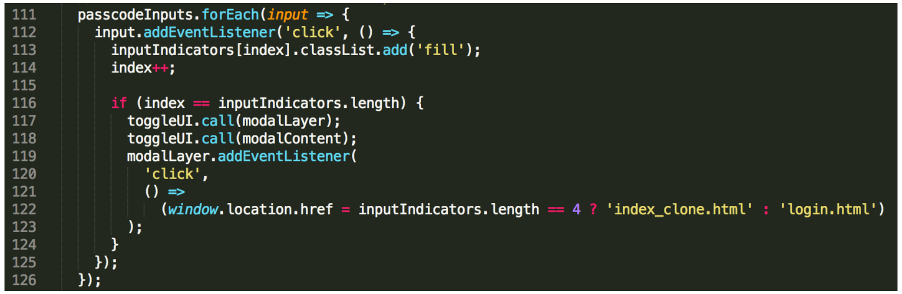
Your new passcode has been sent to the mobile number provided.



```html
    <div id="site-content">
        <div class="passcode-block">
            <h3>ENTER MOBILE NUMBER </h3>
            <div class="input-circle">
                <span class="indicator sm"></span>
                <span class="indicator sm"></span>
                <span class="indicator sm"></span>
                <span class="indicator sm"></span>
                <span class="indicator sm"></span>
                <span class="indicator sm"></span>
                <span class="indicator sm"></span>
                <span class="indicator sm"></span>
                <span class="indicator sm"></span>
                <span class="indicator sm"></span>
            </div>
            <div class="passcode-inputs">
                <span>1</span>
                <span>2</span>
                <span>3</span>
                <span>4</span>
                <span>5</span>
                <span>6</span>
                <span>7</span>
                <span>8</span>
                <span>9</span>
                <span>0</span>
            </div>
            <div class="btn-group">
                <a class="btn" href="Login.html">LOGIN</a>
                <a class="btn" href="register.html">REGISTER</a>
            </div>
        </div>
        <div id="modal-layer" class="hide"></div>
        <div id="modal-content" class="hide">
            Your new passcode has been sent to the mobile number provided.
        </div>
    </div>
```



```css
.passcode-block{
    color:#fff;
    text-align: center;
    padding: 10px 15px;
}

.passcode-block h3{
    font-size: 20px;
    font-weight: 300;
    margin-bottom: 5px;
}

.passcode-block .input-circle{
    padding: 10px;
}

.indicator{
    display: inline-block;
    width: 25px;
    height: 25px;
    border-radius: 50%;
    margin: 0 5px;
    border:1px solid #fff;
    padding-bottom: 5px;
}

.indicator.sm{
    width: 15px;
    height: 15px;
    margin: 0 2px;
}

.indicator.fill{
    background: #fff;
}
```



```javascript
passcodeInputs.forEach(input => {
  input.addEventListener('click', () => {
    inputIndicators[index].classList.add('fill');
    index++;

    if (index == inputIndicators.length) {
      toggleUI.call(modalLayer);
      toggleUI.call(modalContent);
      modalLayer.addEventListener(
        'click',
        () =>
          (window.location.href = inputIndicators.length == 4 ? 'index_clone.html' : 'login.html')
      );
    }
  });
});
```

Javascript adds a click event listener to each input button and if index is equal to the total of indicators length in the current DOM, this shows the modal lightbox for new passcode sent and adds an event listener on the modal layer to redirect back to login.html when clicked off which will then display the users information.

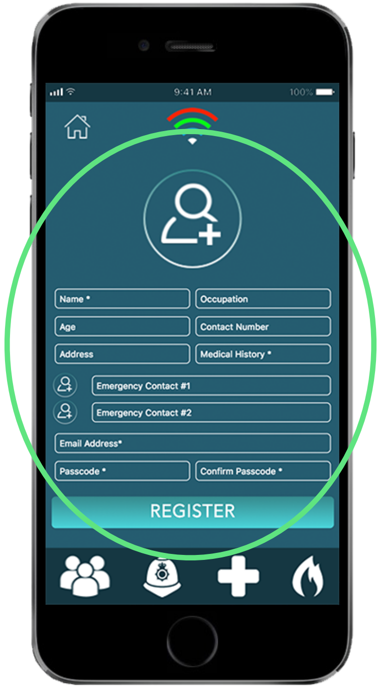
● DESIGN PRINCIPLES ● DESIGN PATTERNS ● FUNCTIONAL REQUIREMENTS

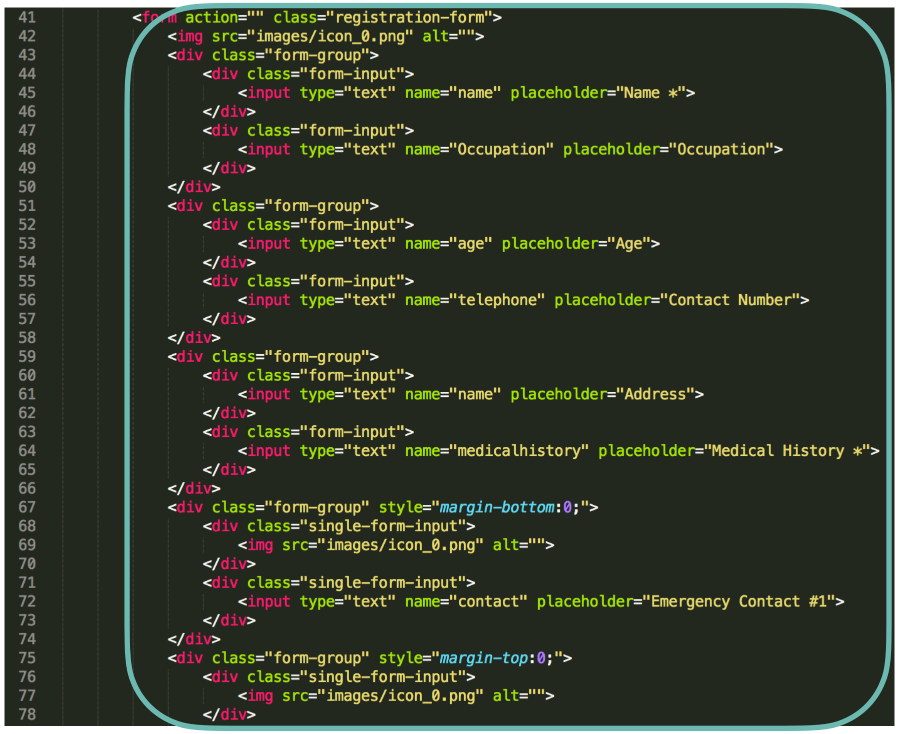
REGISTRATION FORM

A <div class> called form-group has been defined for each form label which are the titles that appear within the text box such as name, occupation, age etc. Within this the input type has been defined as text which allows the user to input information within the box as text. The passcode has a different input type of password which allows the passcode to be hidden, I have also defined the max length as 4, this ensures the passcode is only 4 digits.

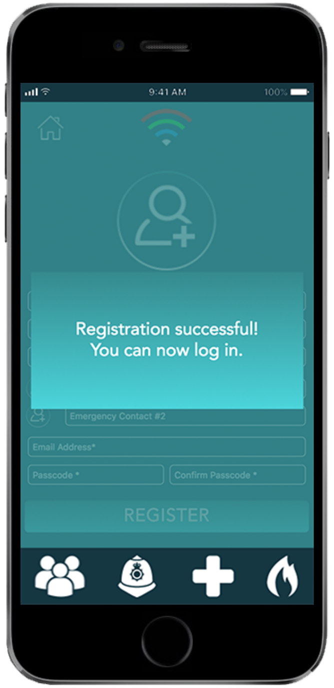
Modal-layer and modal-content have been given the class hide in order to fade out all the information on the screen when register is clicked and displays the message ‘Registration successful! You can now log in.’

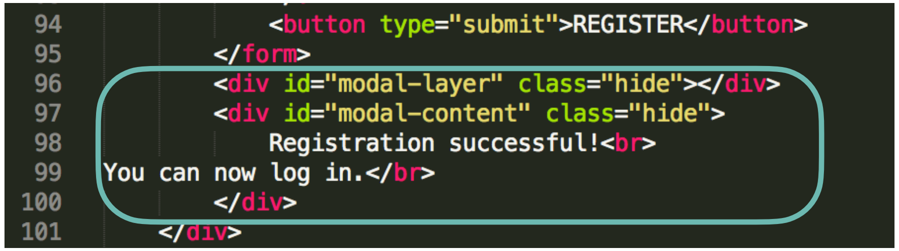
Within the javascript, if there is a register form within the DOM, a bind submit event listener is used and this will stop the default action of the form displaying the modal lightbox layer, adding a click event listener to the modal layers and redirecting the user to the login page.



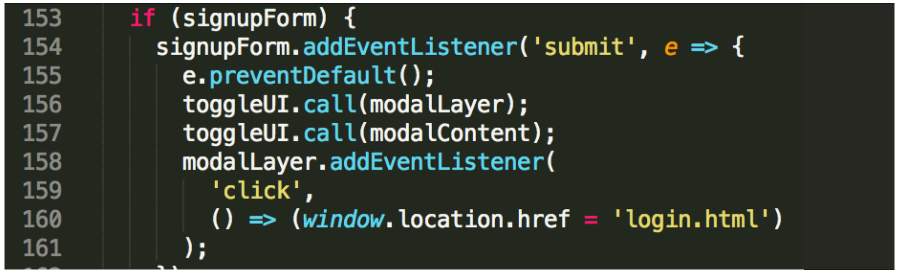


```html
        <form action="" class="registration-form">
            <img src="images/icon_0.png" alt="">
            <div class="form-group">
                <div class="form-input">
                    <input type="text" name="name" placeholder="Name *">
                </div>
                <div class="form-input">
                    <input type="text" name="Occupation" placeholder="Occupation">
                </div>
            </div>
            <div class="form-group">
                <div class="form-input">
                    <input type="text" name="age" placeholder="Age">
                </div>
                <div class="form-input">
                    <input type="text" name="telephone" placeholder="Contact Number">
                </div>
            </div>
            <div class="form-group">
                <div class="form-input">
                    <input type="text" name="name" placeholder="Address">
                </div>
                <div class="form-input">
                    <input type="text" name="medicalhistory" placeholder="Medical History *">
                </div>
            </div>
            <div class="form-group" style="margin-bottom:0;">
                <div class="single-form-input">
                    <img src="images/icon_0.png" alt="">
                </div>
                <div class="single-form-input">
                    <input type="text" name="contact" placeholder="Emergency Contact #1">
                </div>
            </div>
            <div class="form-group" style="margin-top:0;">
                <div class="single-form-input">
                    <img src="images/icon_0.png" alt="">
                </div>
```

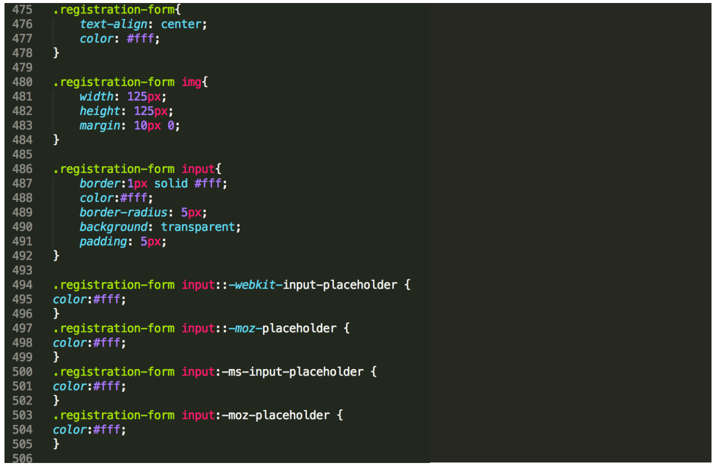




```html
                <button type="submit">REGISTER</button>
            </form>
            <div id="modal-layer" class="hide"></div>
            <div id="modal-content" class="hide">
                Registration successful!<br>
You can now log in.</br>
            </div>
        </div>
```



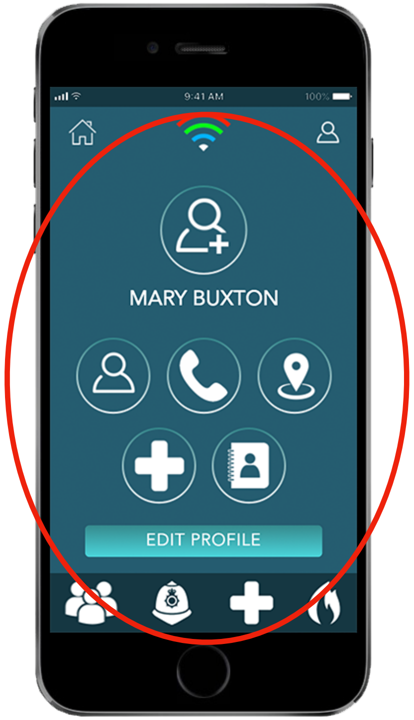
```javascript
    if (signupForm) {
      signupForm.addEventListener('submit', e => {
        e.preventDefault();
        toggleUI.call(modalLayer);
        toggleUI.call(modalContent);
        modalLayer.addEventListener(
          'click',
          () => (window.location.href = 'login.html')
        );
```

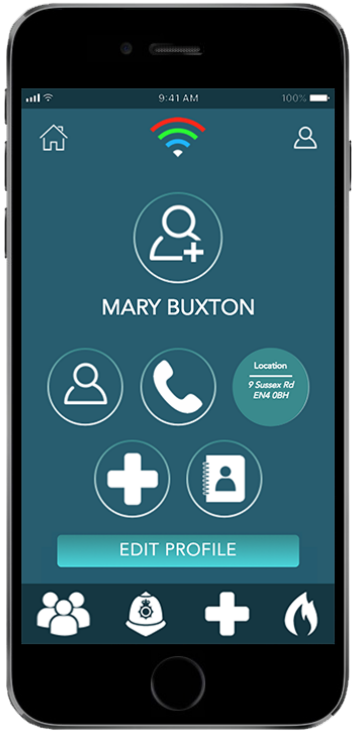


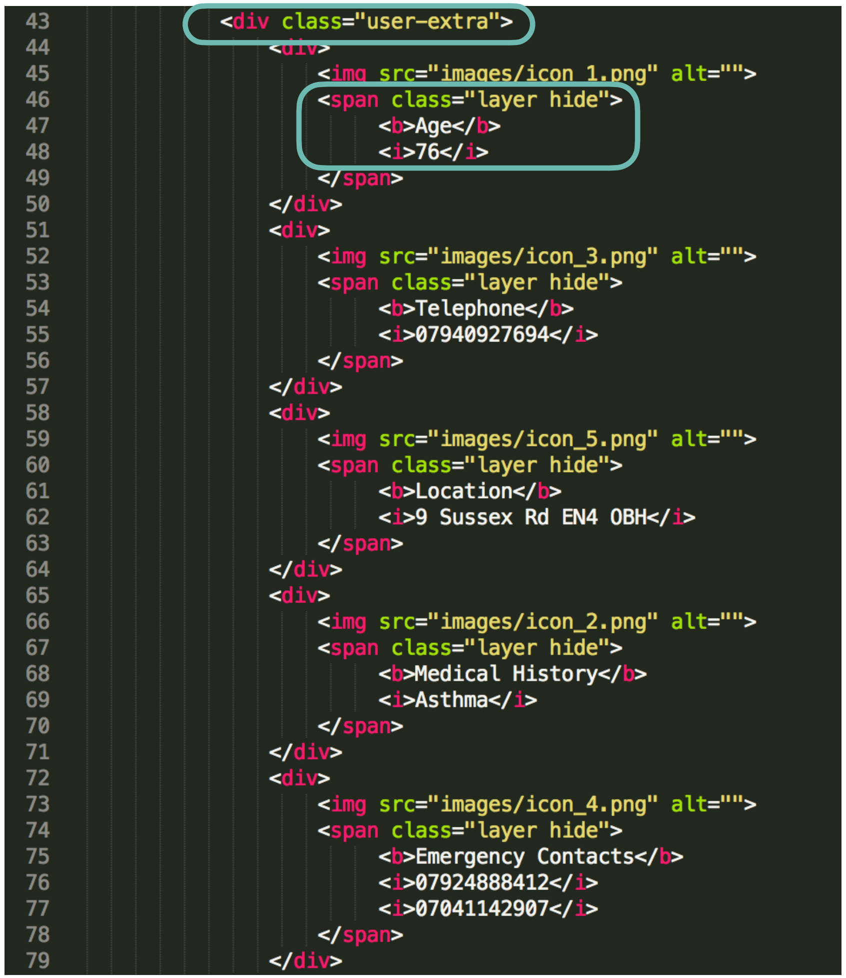
```css
.registration-form{
    text-align: center;
    color: #fff;
}

.registration-form img{
    width: 125px;
    height: 125px;
    margin: 10px 0;
}

.registration-form input{
    border:1px solid #fff;
    color:#fff;
    border-radius: 5px;
    background: transparent;
    padding: 5px;
}

.registration-form input::-webkit-input-placeholder {
color:#fff;
}
.registration-form input::-moz-placeholder {
color:#fff;
}
.registration-form input:-ms-input-placeholder {
color:#fff;
}
.registration-form input:-moz-placeholder {
color:#fff;
}
```

● DESIGN PRINCIPLES ● DESIGN PATTERNS ● FUNCTIONAL REQUIREMENTS

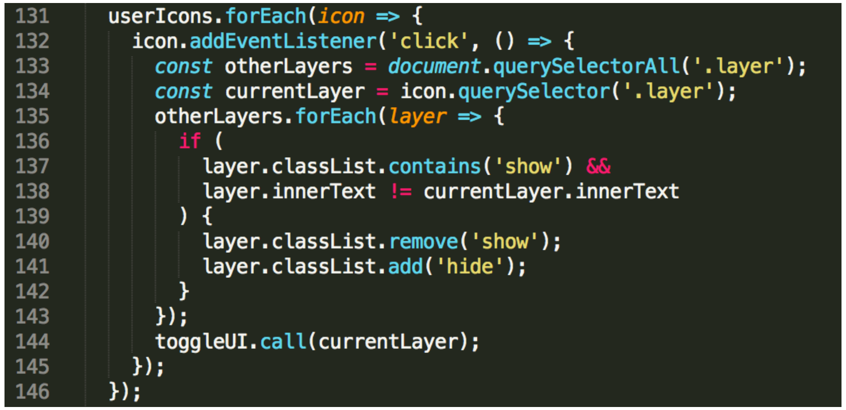
USER PROFILE







```html
<div class="user-extra">
    <div>
        <img src="images/icon_1.png" alt="">
        <span class="layer hide">
            <b>Age</b>
            <i>76</i>
        </span>
    </div>
    <div>
        <img src="images/icon_3.png" alt="">
        <span class="layer hide">
            <b>Telephone</b>
            <i>07940927694</i>
        </span>
    </div>
    <div>
        <img src="images/icon_5.png" alt="">
        <span class="layer hide">
            <b>Location</b>
            <i>9 Sussex Rd EN4 0BH</i>
        </span>
    </div>
    <div>
        <img src="images/icon_2.png" alt="">
        <span class="layer hide">
            <b>Medical History</b>
            <i>Asthma</i>
        </span>
    </div>
    <div>
        <img src="images/icon_4.png" alt="">
        <span class="layer hide">
            <b>Emergency Contacts</b>
            <i>07924888412</i>
            <i>07041142907</i>
        </span>
    </div>
```

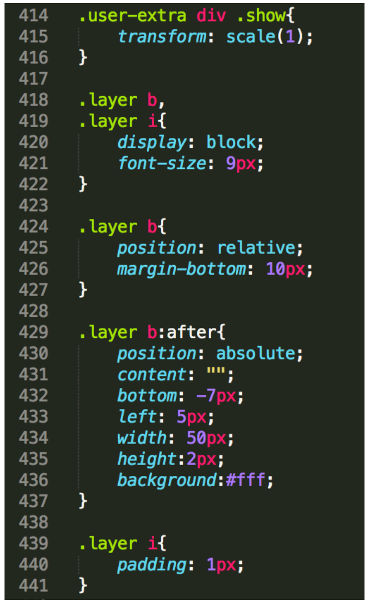


```javascript
userIcons.forEach(icon => {
  icon.addEventListener('click', () => {
    const otherLayers = document.querySelectorAll('.layer');
    const currentLayer = icon.querySelector('.layer');
    otherLayers.forEach(layer => {
      if (
        layer.classList.contains('show') &&
        layer.innerText != currentLayer.innerText
      ) {
        layer.classList.remove('show');
        layer.classList.add('hide');
      }
    });
    toggleUI.call(currentLayer);
  });
});
```

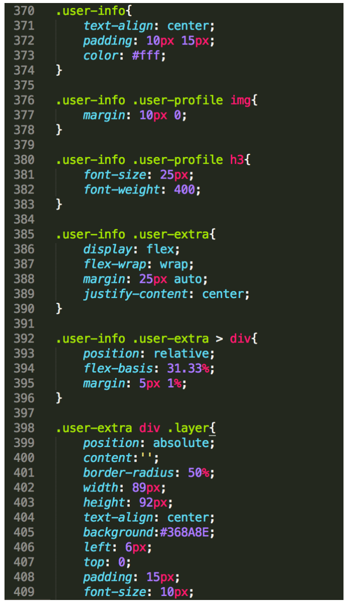
A <div class> called user-extra has been defined for the user information to be stored, within this a <span class> has been used to hide the layer storing the information so this will only be displayed when the icon is clicked.

Javascript has been used by adding a click event listener on each user icon which activates when clicked. This then hides other layers if the layer contains the class ‘show’ and toggles the visibility of the current layer being clicked.

The challenge I faced for this screen was the edit profile icon does not work on the coded prototype however this can be implemented as further development by linking the app to a user database which would recognise the data inputted in to the registration form and would add this information within each icon, allowing the user to later edit their personal information.



```css
.user-extra div .show{
    transform: scale(1);
}

.layer b,
.layer i{
    display: block;
    font-size: 9px;
}

.layer b{
    position: relative;
    margin-bottom: 10px;
}

.layer b:after{
    position: absolute;
    content: "";
    bottom: -7px;
    left: 5px;
    width: 50px;
    height:2px;
    background:#fff;
}

.layer i{
    padding: 1px;
}
```

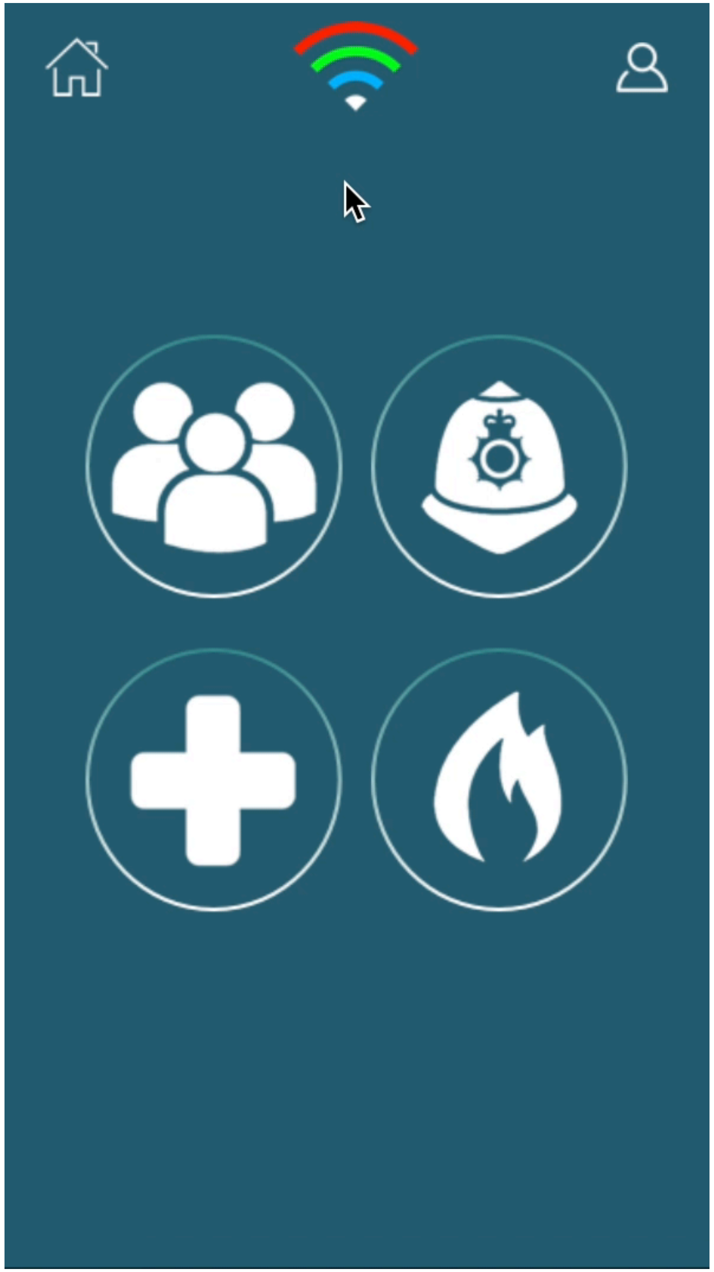


```css
.user-info{
    text-align: center;
    padding: 10px 15px;
    color: #fff;
}

.user-info .user-profile img{
    margin: 10px 0;
}

.user-info .user-profile h3{
    font-size: 25px;
    font-weight: 400;
}

.user-info .user-extra{
    display: flex;
    flex-wrap: wrap;
    margin: 25px auto;
    justify-content: center;
}

.user-info .user-extra > div{
    position: relative;
    flex-basis: 31.33%;
    margin: 5px 1%;
}

.user-extra div .layer{
    position: absolute;
    content:'';
    border-radius: 50%;
    width: 89px;
    height: 92px;
    text-align: center;
    background:#368A8E;
    left: 6px;
    top: 0;
    padding: 15px;
    font-size: 10px;
```

● DESIGN PRINCIPLES ● DESIGN PATTERNS ● FUNCTIONAL REQUIREMENTS

BEALERT APP WALKTHROUGH

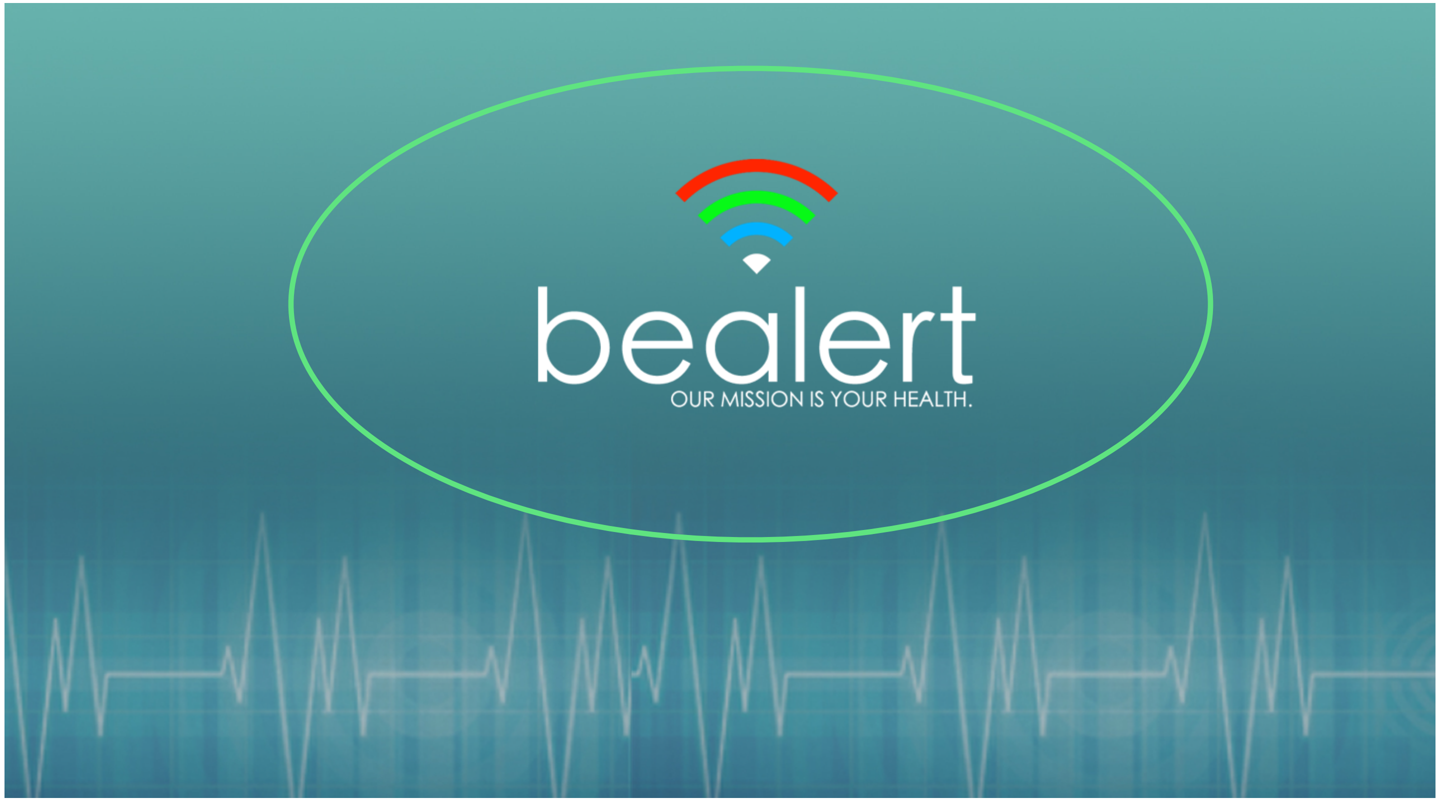
Below I have shown a walkthrough video of the bealert app designed and coded using Sublime text editor.
For better quality videos refer to the 'walkthrough videos' folder which is placed within the main assignments folder.



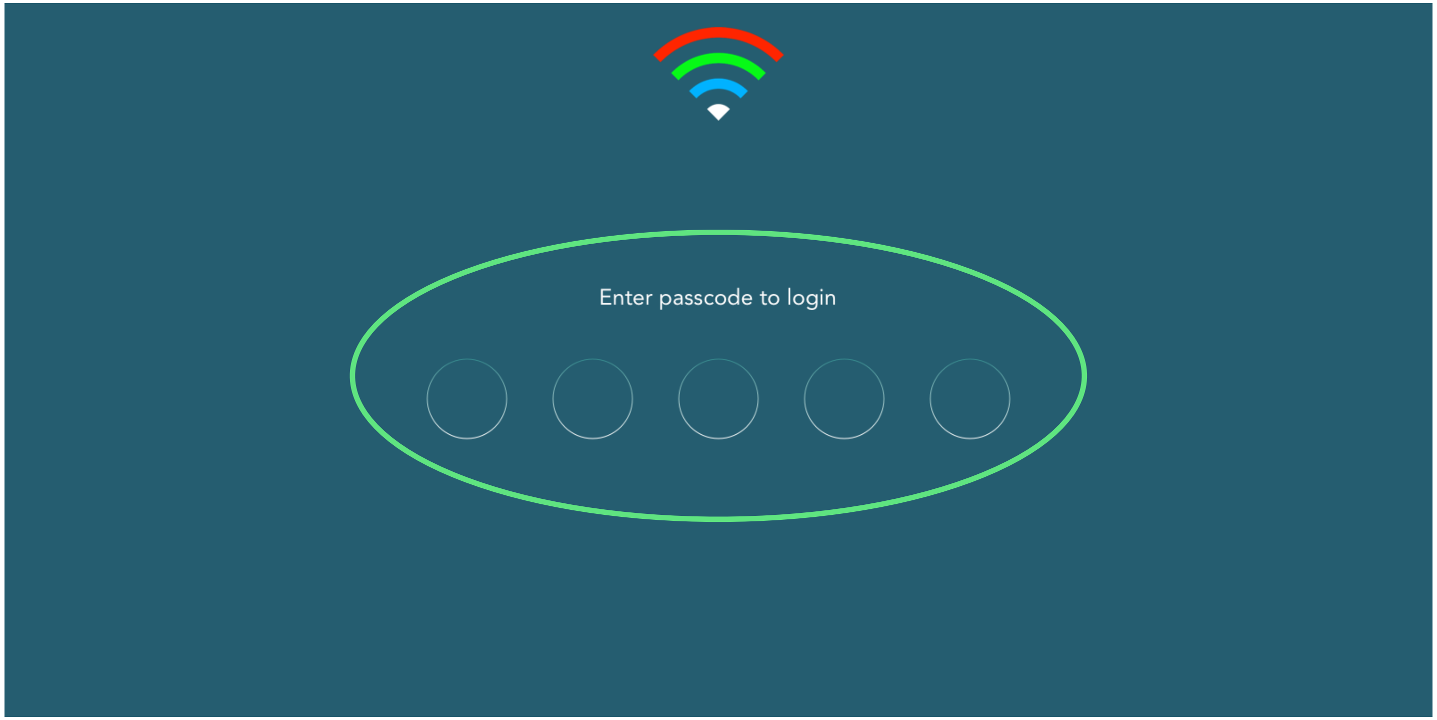
BEALERT RESPONSE SIDE PROGRAM

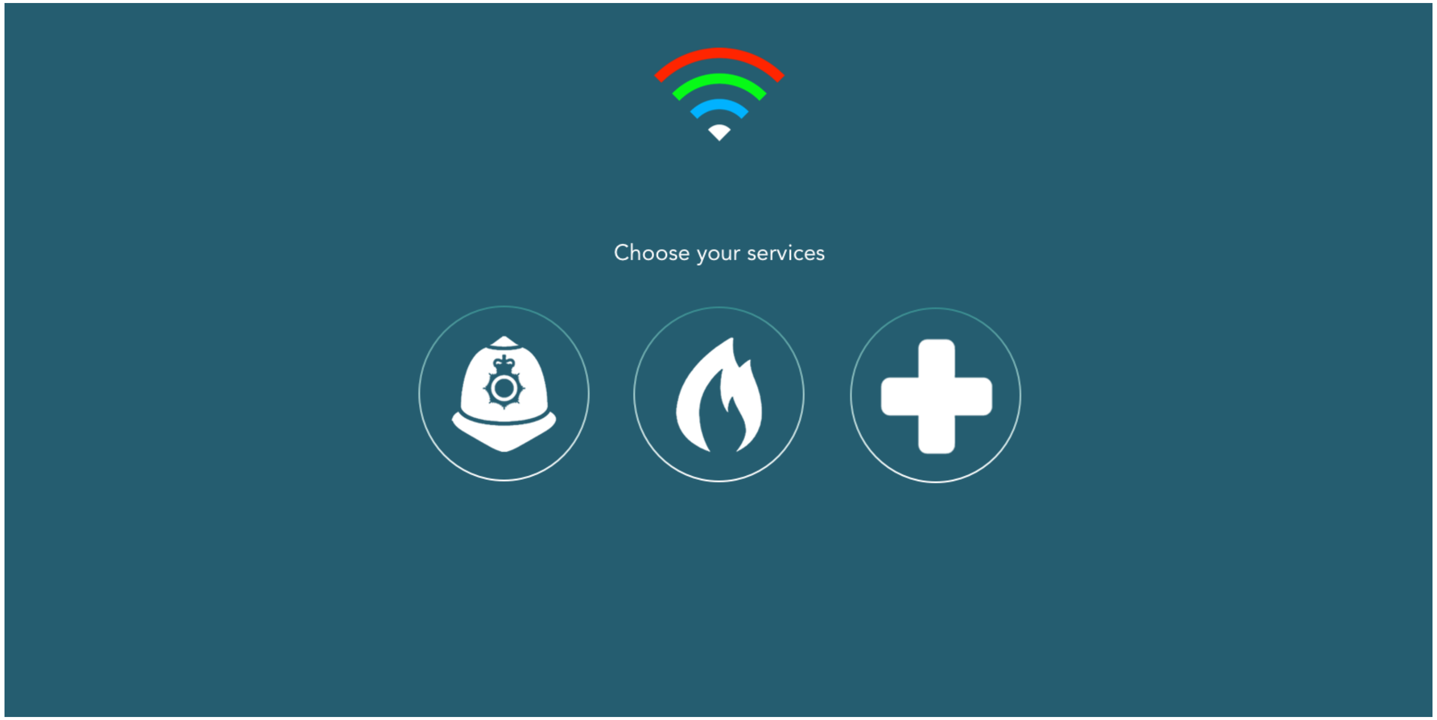
InVision link: https://invis.io/JTGMKWZH25M#/284993651_splash

The balert response side program has been designed and prototyped using InVision and is a concept idea for emergency services dispatch teams to connect with elderly people who are in an emergency. An alert would display on the system from the elderly person using the app or pairing wearable device, to which the response team can dispatch services based on the app users request.



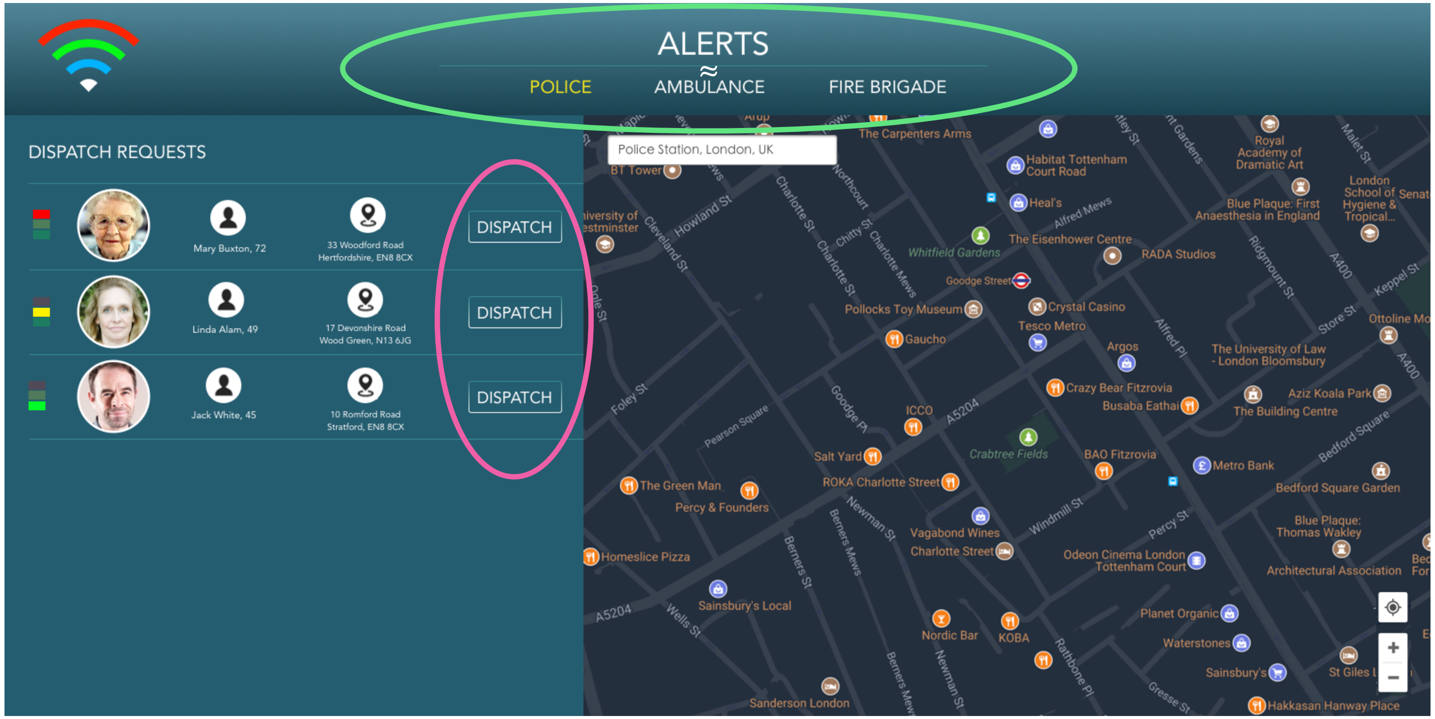
A loading screen is visible including the bealert logo, this will appear on an emergency services dispatch computer when the computer has been turned on and the user has logged in successfully. The program will then run and open automatically, to get to the next screen the user must click the page.


Enter passcode to login


Choose your services

The response team must now enter a unique 5 digit passcode that would be distributed to all employees allowing them access to the alert response system.

The response team are then displayed with emergency service icons including police, fire brigade and ambulance services, they must choose which service they are part of in order to begin distributing emergency services to users who have sent an alert via the app.

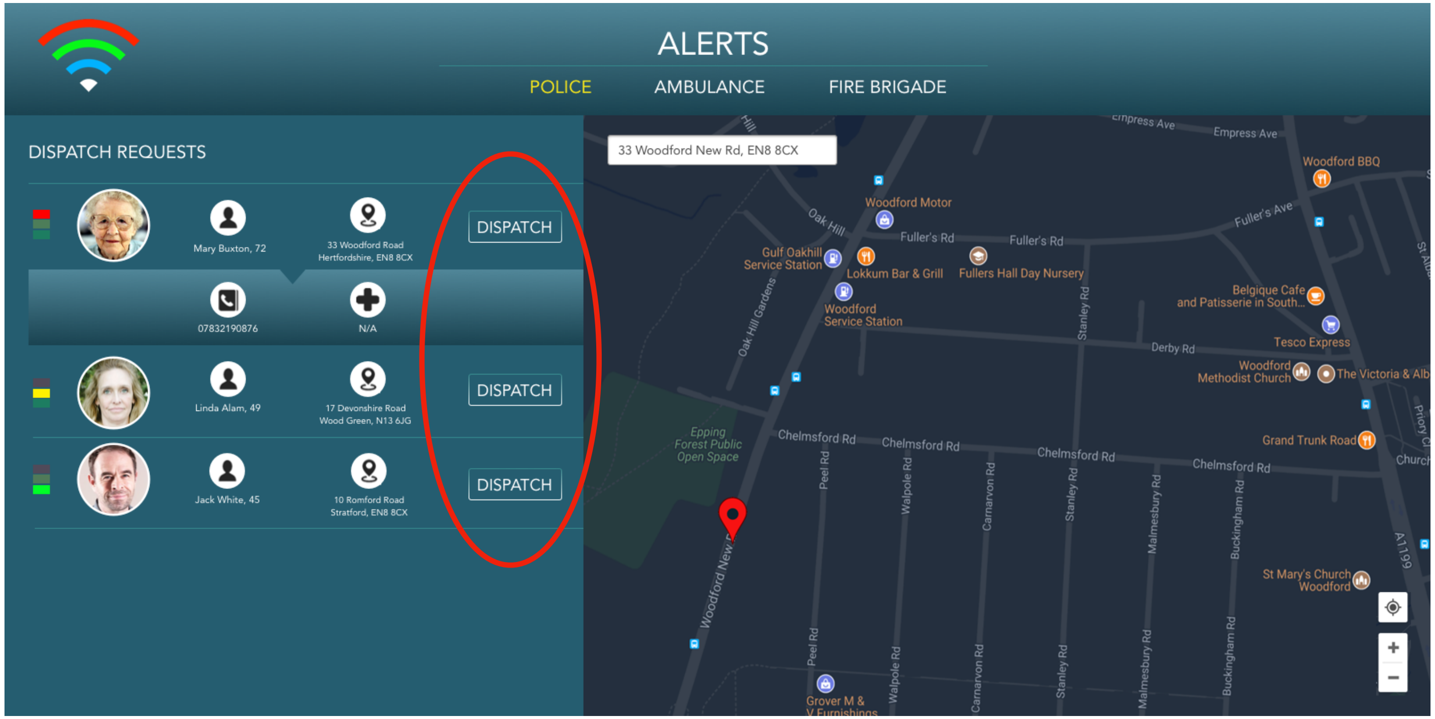


Police Station, London, UK

Mary Buxton, 72 — 33 Woodford Road Hertfordshire, EN8 8CX

Linda Alam, 49 — 17 Devonshire Road Wood Green, N13 6JG

Jack White, 45 — 10 Romford Road Stratford, EN8 8CX



33 Woodford New Rd, EN8 8CX

Mary Buxton, 72 — 33 Woodford Road Hertfordshire, EN8 8CX

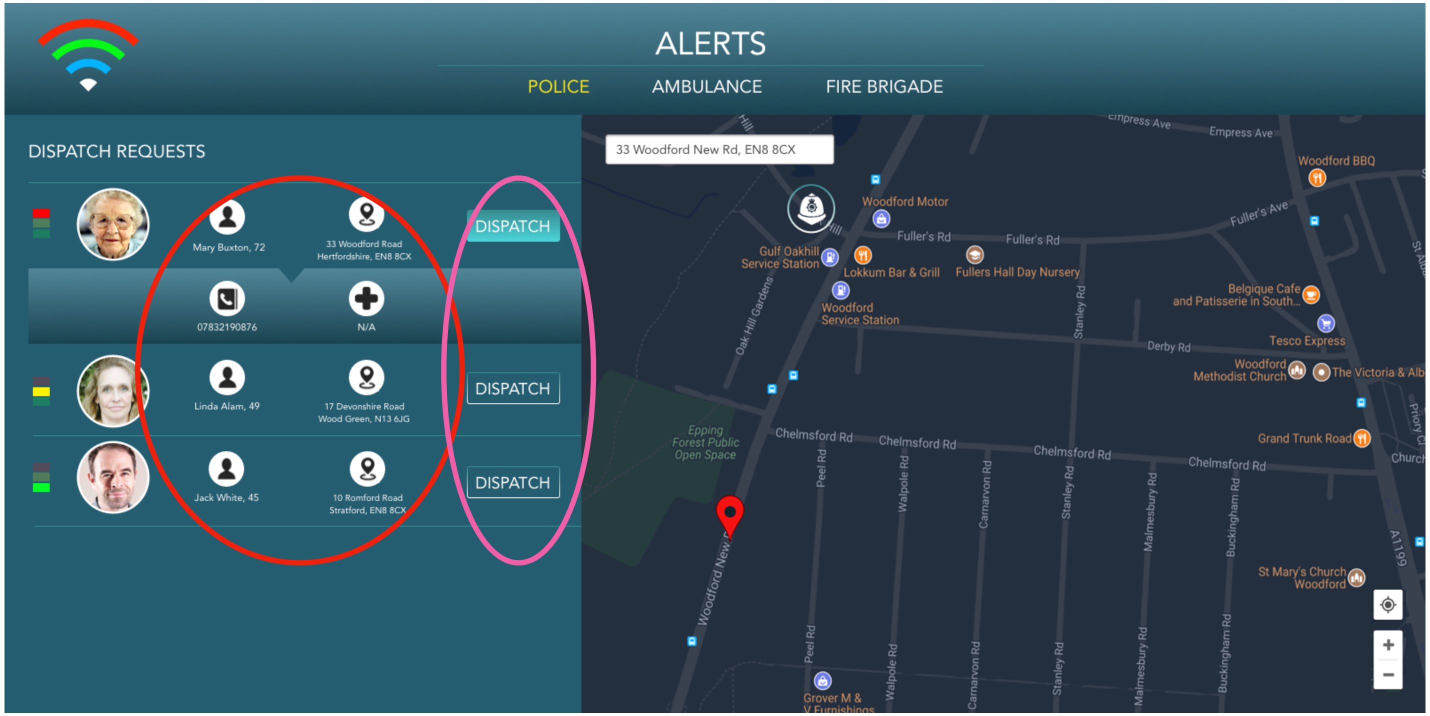
07832190876 — N/A

Linda Alam, 49 — 17 Devonshire Road Wood Green, N13 6JG

Jack White, 45 — 10 Romford Road Stratford, EN8 8CX

This is the landing page the police response team will see once they have successfully logged in to the system. A navigation bar is fixed at the top of the page and allows the response teams to alternate between services in the instance they need to dispatch more than one service to an emergency.

This page focuses on the first alert which is high risk and includes key information about the app user that has sent an alert to the emergency services, information includes the level of risk the emergency carries, an image of the elderly person, full name and age, location that has been picked up using GPS location services, as well as this a drop down can be activated by clicking the elderly persons visible information which provides more in depth information such as mobile number and medical history. Once the elderly persons information has been clicked, the map redirects to that persons exact location on the map.



ALERTS

POLICE AMBULANCE FIRE BRIGADE

DISPATCH REQUESTS

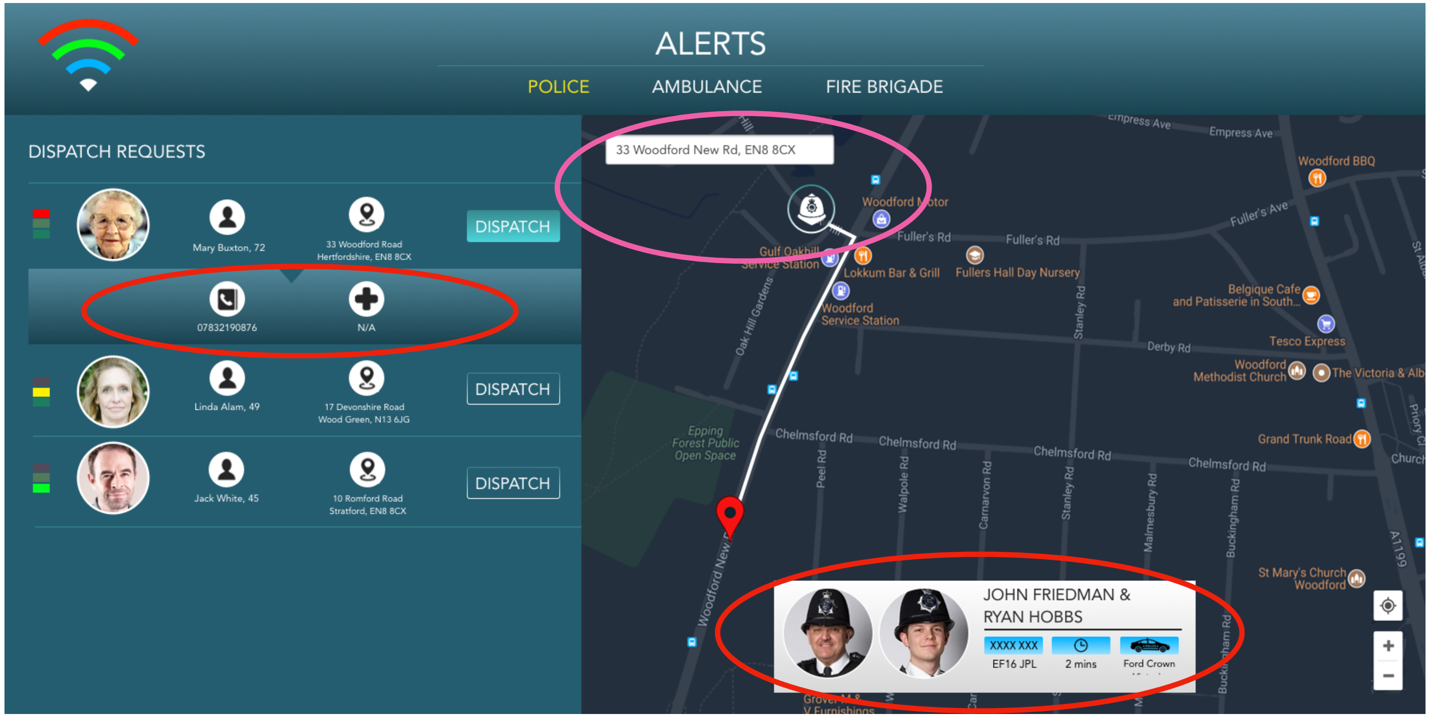
Mary Buxton, 72 — 33 Woodford Road Hertfordshire, EN8 8CX — DISPATCH

07832190876 — N/A

Linda Alam, 49 — 17 Devonshire Road Wood Green, N13 6JG — DISPATCH

Jack White, 45 — 10 Romford Road Stratford, EN8 8CX — DISPATCH

33 Woodford New Rd, EN8 8CX



ALERTS

POLICE AMBULANCE FIRE BRIGADE

DISPATCH REQUESTS

Mary Buxton, 72 — 33 Woodford Road Hertfordshire, EN8 8CX — DISPATCH

07832190876 — N/A

Linda Alam, 49 — 17 Devonshire Road Wood Green, N13 6JG — DISPATCH

Jack White, 45 — 10 Romford Road Stratford, EN8 8CX — DISPATCH

33 Woodford New Rd, EN8 8CX

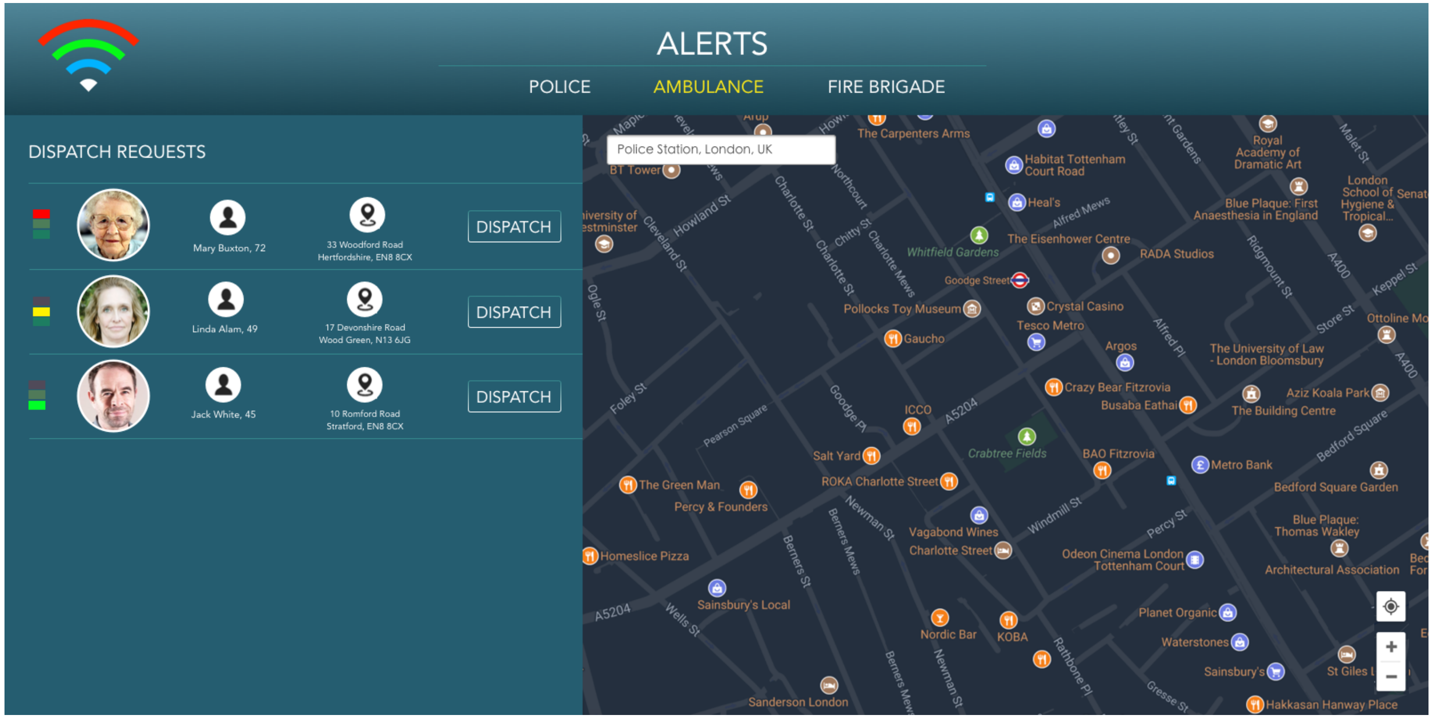
JOHN FRIEDMAN & RYAN HOBBS

XXXX XXX — EF16 JPL

2 mins

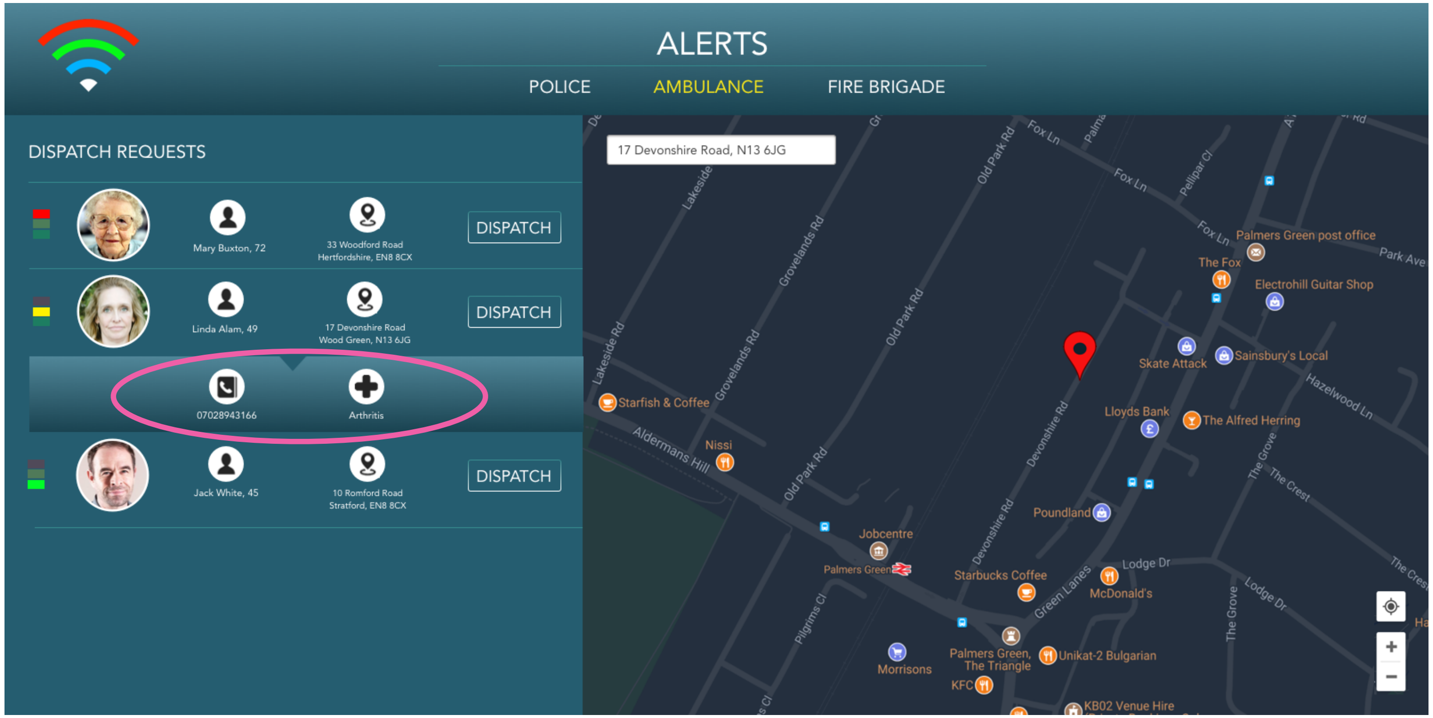
Ford Crown

These screens are examples of a police dispatcher being on the police alerts page and clicking the first alert which is high risk, the closest police officers are displayed on the map and once clicked, they have been dispatched to attend to the emergency. The dispatcher is then shown the officers that are attending to the scene with key information listed such as their full names, car registration, estimated arrival time and the vehicle they are driving in.



Police Station, London, UK

Mary Buxton, 72	33 Woodford Road Hertfordshire, EN8 8CX	DISPATCH
Linda Alam, 49	17 Devonshire Road Wood Green, N13 6JG	DISPATCH
Jack White, 45	10 Romford Road Stratford, EN8 8CX	DISPATCH

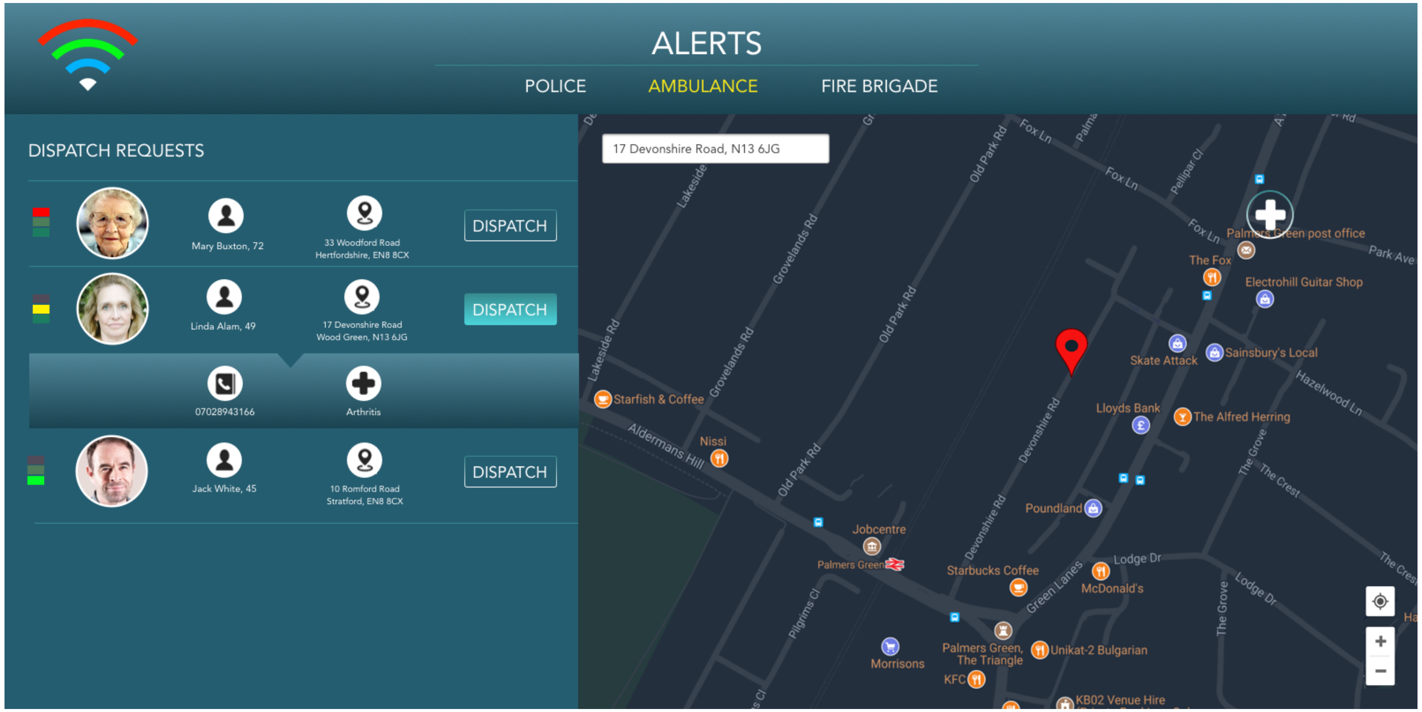


17 Devonshire Road, N13 6JG

Mary Buxton, 72	33 Woodford Road Hertfordshire, EN8 8CX	DISPATCH
Linda Alam, 49	17 Devonshire Road Wood Green, N13 6JG	DISPATCH
07028943166	Arthritis	
Jack White, 45	10 Romford Road Stratford, EN8 8CX	DISPATCH

This is the landing page the ambulance services response team will see once they have logged in to the system.

This page is laid out the same as the police and fire brigade dispatch pages to keep consistency throughout. This page focuses on the second alert which is medium risk and includes key information about the app user that has sent an alert to the emergency services, information includes the level of risk the emergency carries, an image of the elderly person, full name and age, location that has been picked up using GPS location services, as well as this a drop down can be activated by clicking the elderly persons visible information which provides more in depth information such as mobile number and medical history. Once the elderly persons information has been clicked, the map redirects to that persons exact location on the map.



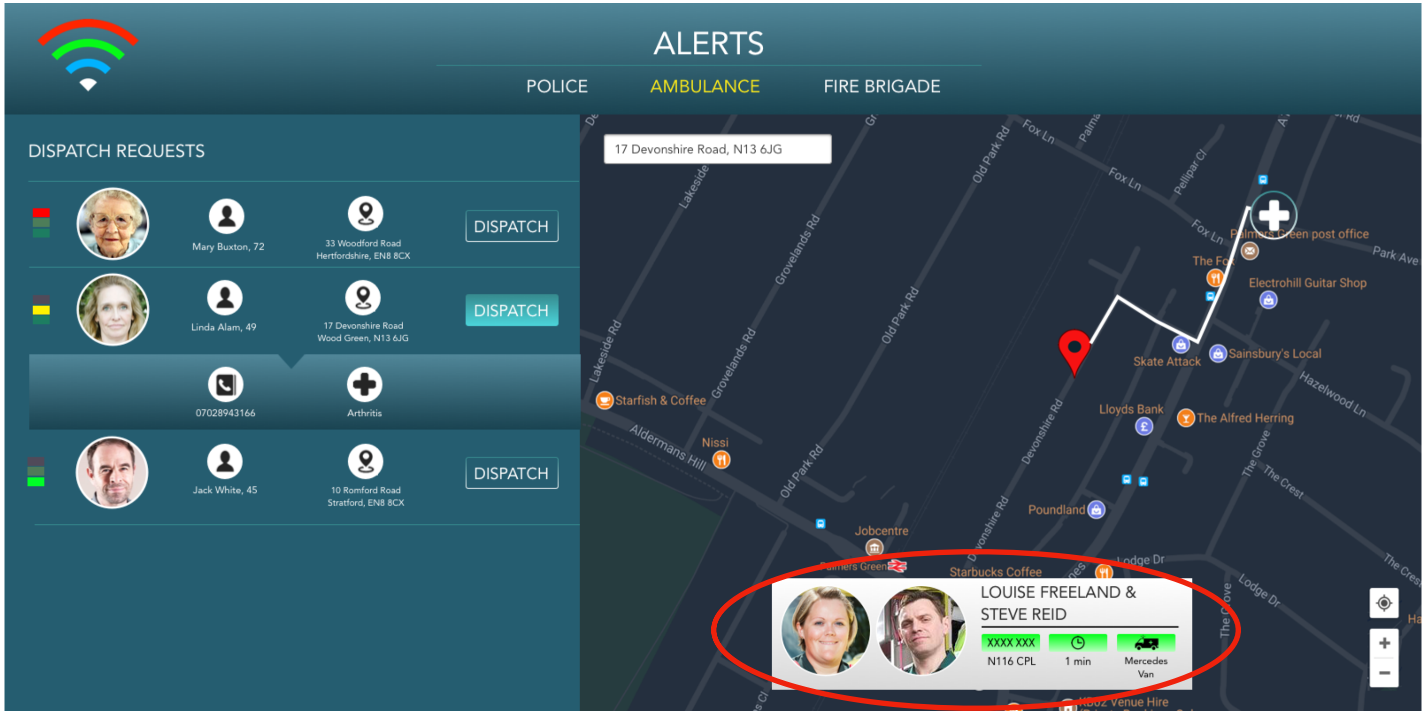
ALERTS

POLICE AMBULANCE FIRE BRIGADE

DISPATCH REQUESTS

Mary Buxton, 72	33 Woodford Road Hertfordshire, EN8 8CX	DISPATCH
Linda Alam, 49	17 Devonshire Road Wood Green, N13 6JG	DISPATCH
07028943166	Arthritis	
Jack White, 45	10 Romford Road Stratford, EN8 8CX	DISPATCH

17 Devonshire Road, N13 6JG



ALERTS

POLICE AMBULANCE FIRE BRIGADE

DISPATCH REQUESTS

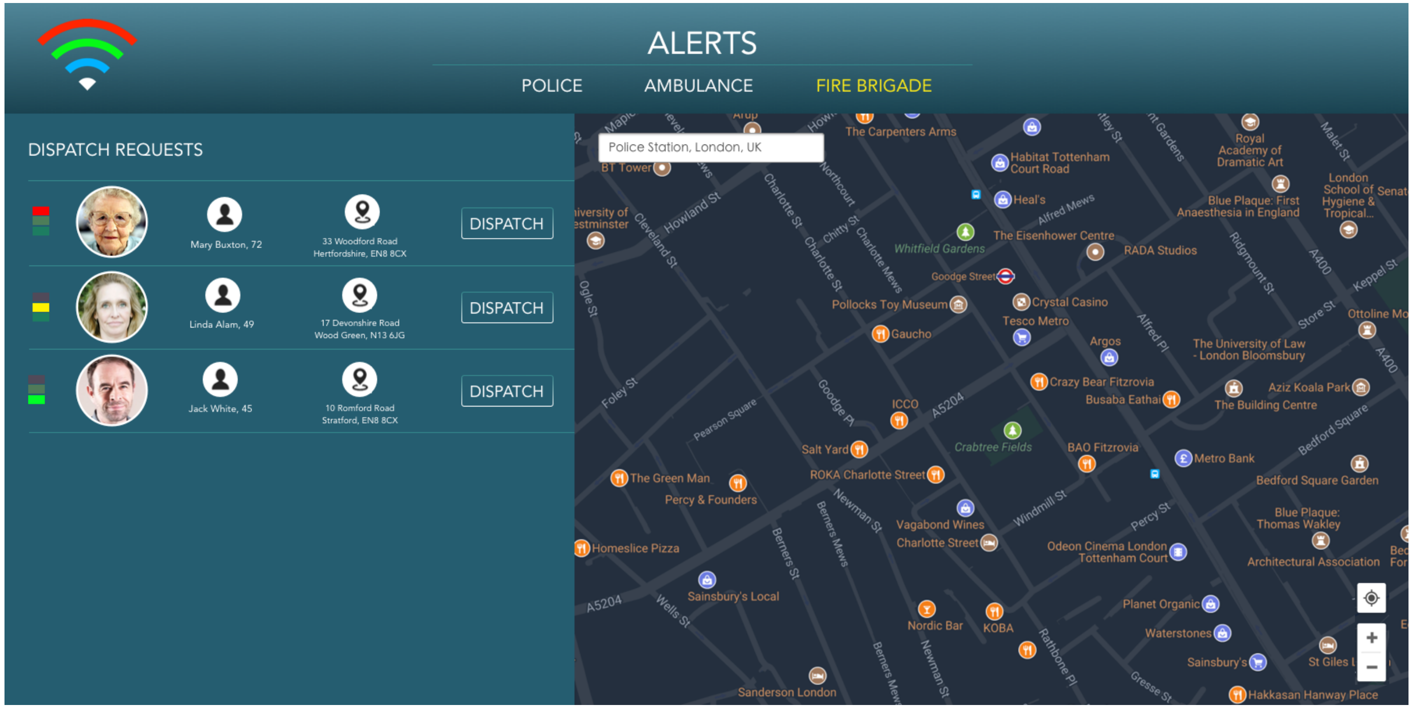
Mary Buxton, 72	33 Woodford Road Hertfordshire, EN8 8CX	DISPATCH
Linda Alam, 49	17 Devonshire Road Wood Green, N13 6JG	DISPATCH
07028943166	Arthritis	
Jack White, 45	10 Romford Road Stratford, EN8 8CX	DISPATCH

17 Devonshire Road, N13 6JG

LOUISE FREELAND & STEVE REID

XXXX XXX N116 CPL | 1 min | Mercedes Van

These screens are examples of an ambulance responder being on the ambulance alerts page and clicking the second alert which is medium risk, the closest ambulance paramedics are displayed on the map and once clicked, they have been dispatched to attend to the emergency. The dispatcher is then shown the paramedics that are attending to the scene with key information listed such as their full names, car registration, estimated arrival time and the vehicle they are driving in.



Police Station, London, UK

Mary Buxton, 72

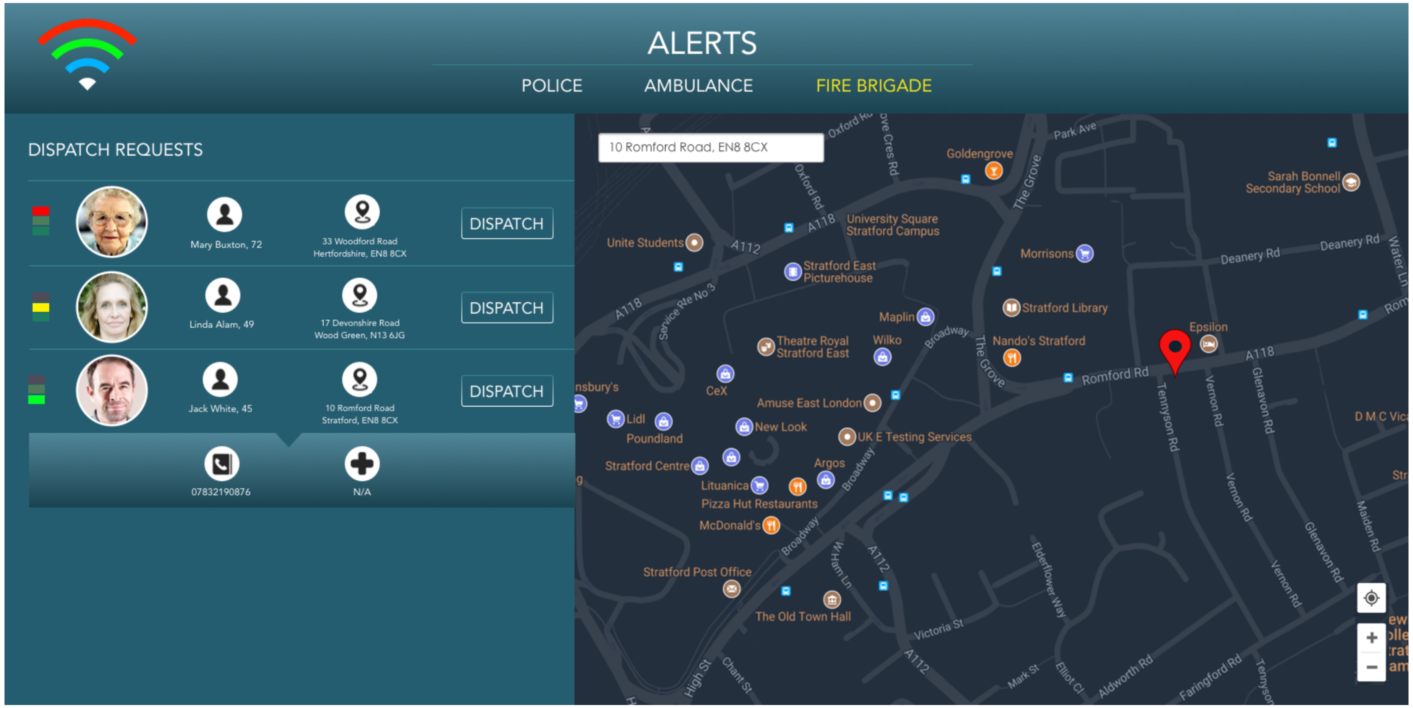
33 Woodford Road
Hertfordshire, EN8 8CX

Linda Alam, 49

17 Devonshire Road
Wood Green, N13 6JG

Jack White, 45

10 Romford Road
Stratford, EN8 8CX



10 Romford Road, EN8 8CX

Mary Buxton, 72

33 Woodford Road
Hertfordshire, EN8 8CX

Linda Alam, 49

17 Devonshire Road
Wood Green, N13 6JG

Jack White, 45

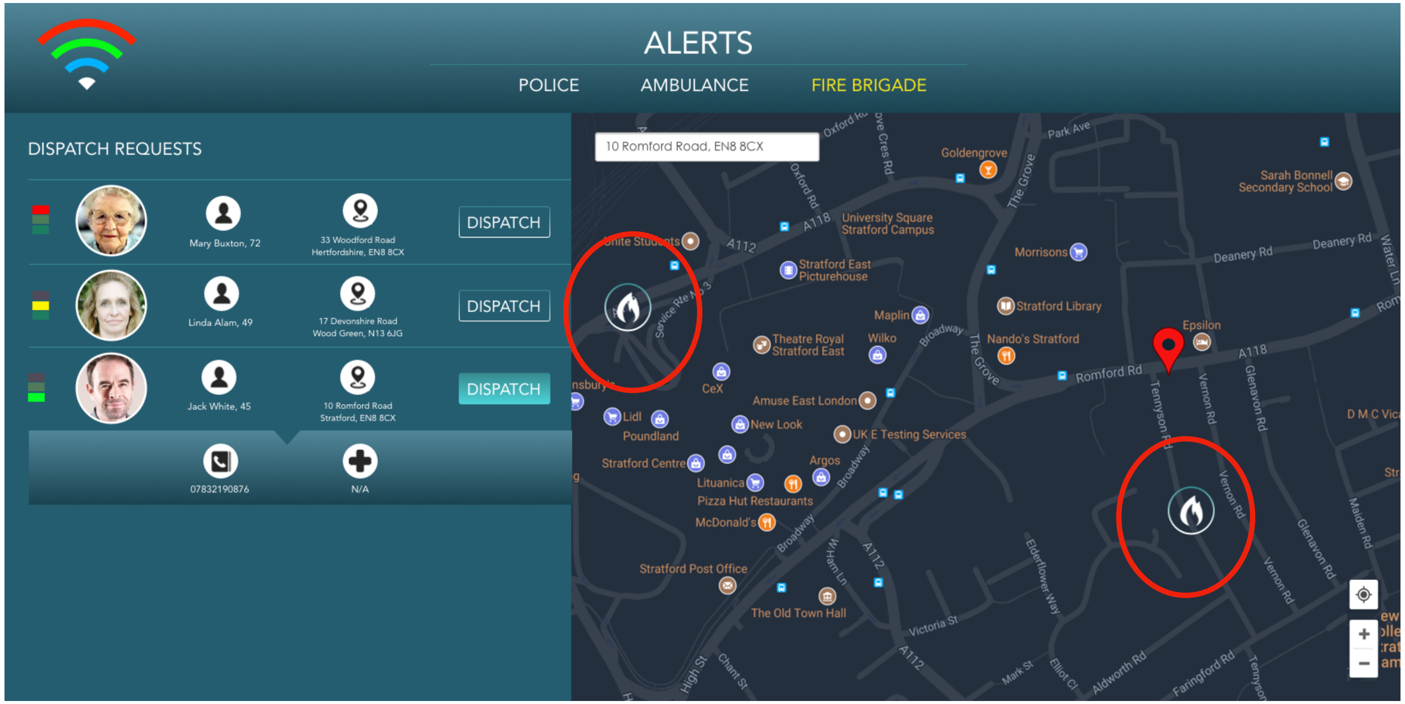
10 Romford Road
Stratford, EN8 8CX

07832190876

N/A

This is the landing page the fire brigade response team will see once they have logged in to the system.

This page is laid out the same as the police and ambulance dispatch pages to keep consistency throughout. This page focuses on the third alert which is low risk and includes key information about the app user that has sent an alert to the emergency services, information includes the level of risk the emergency carries, an image of the elderly person, full name and age, location that has been picked up using GPS location services, as well as this a drop down can be activated by clicking the elderly persons visible information which provides more in depth information such as mobile number and medical history. Once the elderly persons information has been clicked, the map redirects to that persons exact location on the map.



ALERTS

POLICE AMBULANCE FIRE BRIGADE

DISPATCH REQUESTS

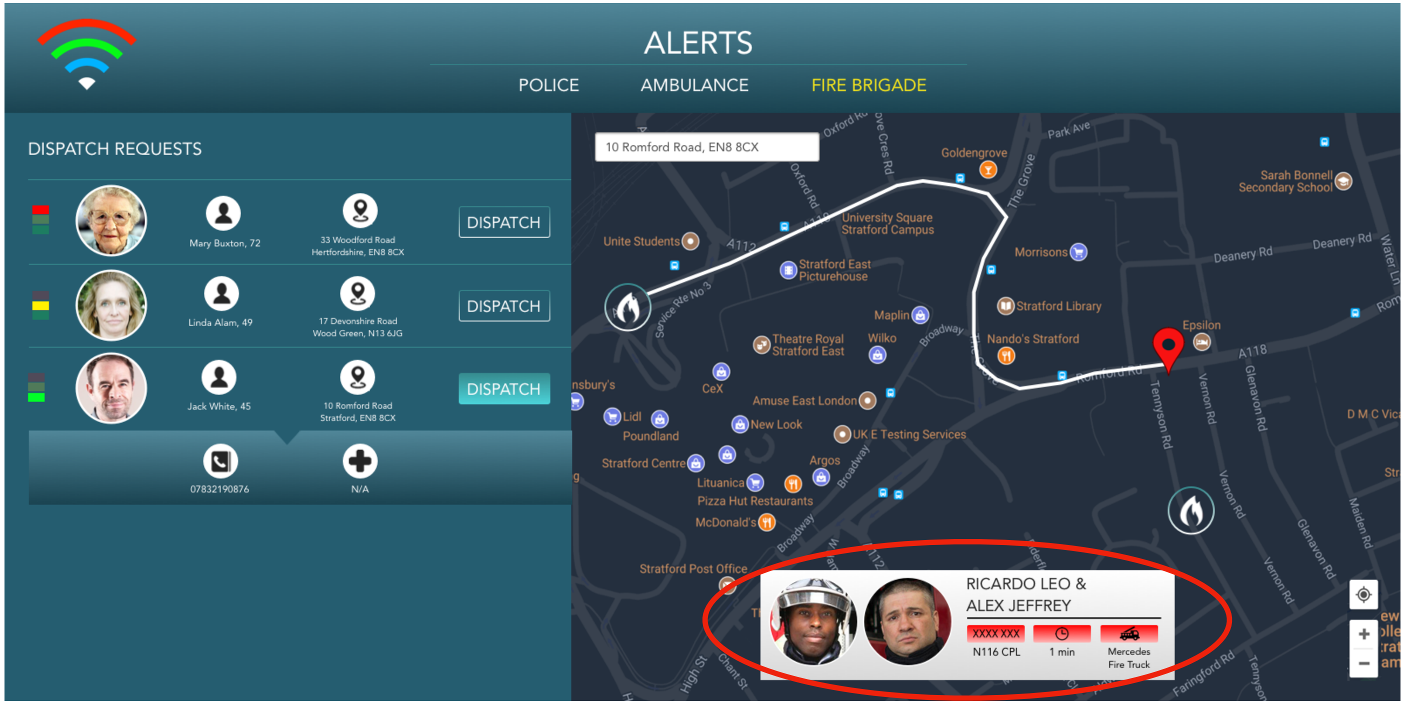
Mary Buxton, 72 — 33 Woodford Road Hertfordshire, EN8 8CX — DISPATCH

Linda Alam, 49 — 17 Devonshire Road Wood Green, N13 6JG — DISPATCH

Jack White, 45 — 10 Romford Road Stratford, EN8 8CX — DISPATCH

07832190876 — N/A

10 Romford Road, EN8 8CX



ALERTS

POLICE AMBULANCE FIRE BRIGADE

DISPATCH REQUESTS

Mary Buxton, 72 — 33 Woodford Road Hertfordshire, EN8 8CX — DISPATCH

Linda Alam, 49 — 17 Devonshire Road Wood Green, N13 6JG — DISPATCH

Jack White, 45 — 10 Romford Road Stratford, EN8 8CX — DISPATCH

07832190876 — N/A

10 Romford Road, EN8 8CX

RICARDO LEO & ALEX JEFFREY

XXXX XXX — N116 CPL — 1 min — Mercedes Fire Truck

These screens are examples of a fire brigade responder being on the fire brigade alerts page and clicking the third alert which is low risk, the closest fire fighters are displayed on the map and once clicked, they have been dispatched to attend to the emergency. The dispatcher is then shown the fire fighters that are attending to the scene with key information listed such as their full names, car registration, estimated arrival time and the vehicle they are driving in.

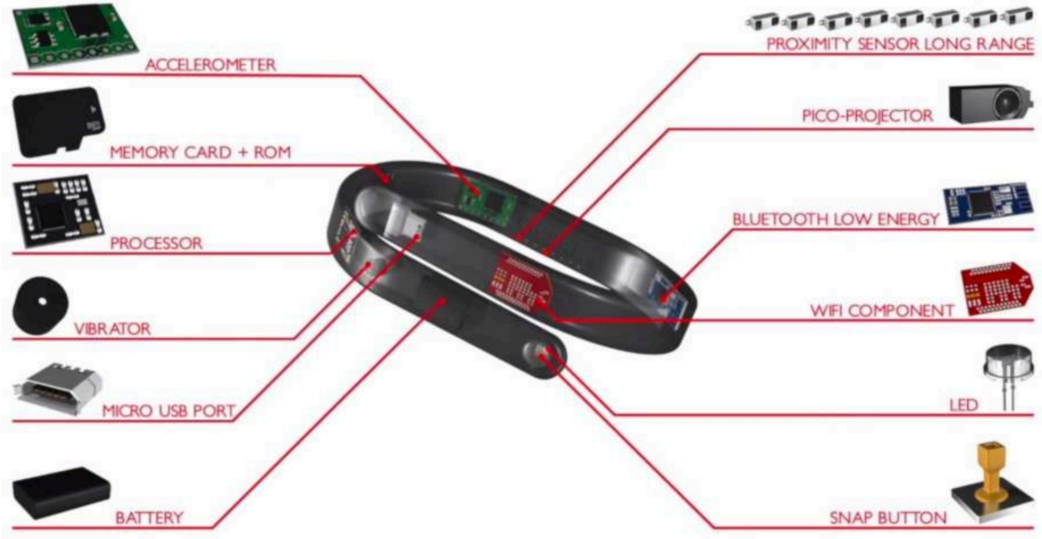
If an alert needs to be cancelled only the user who has sent the alert via the app can do this.

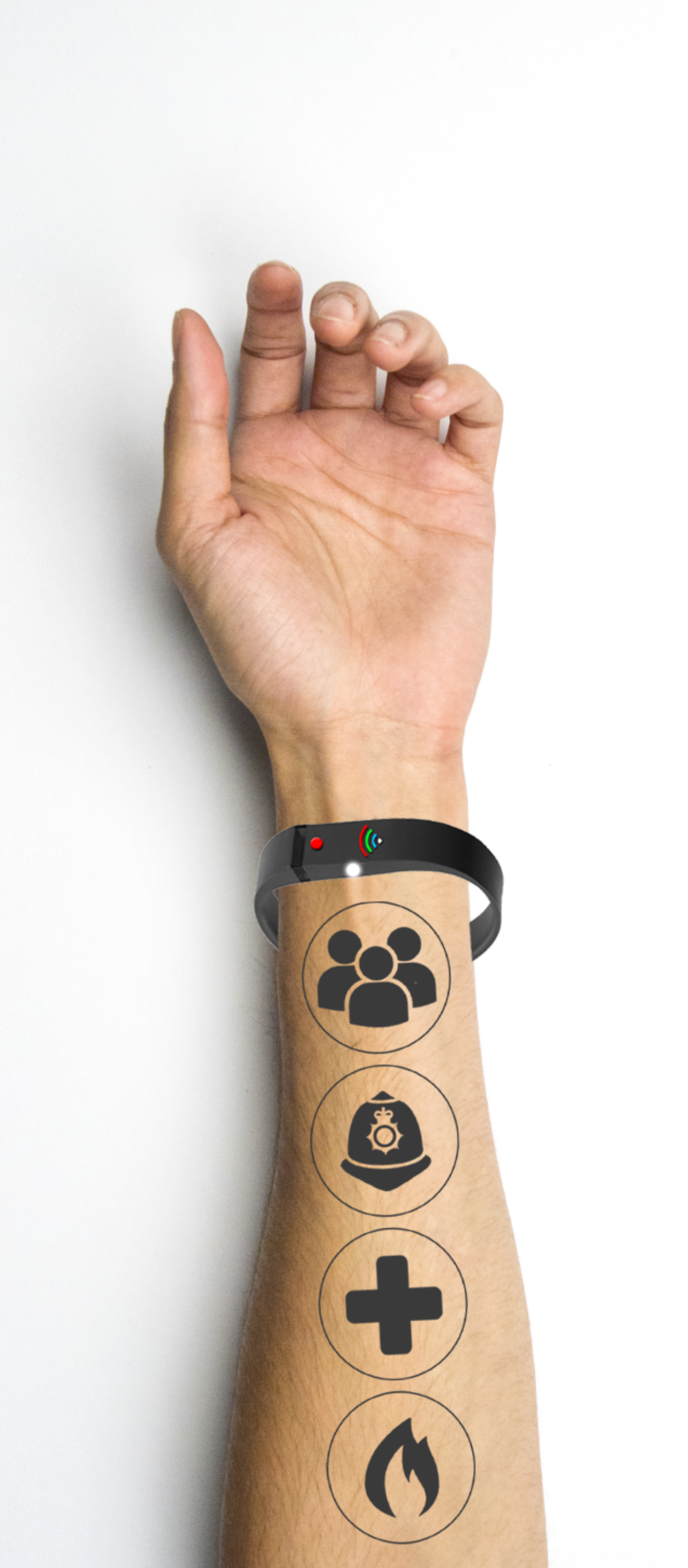
BEALERT RESPONSE SIDE PROGRAM WALKTHROUGH

Below I have shown a walkthrough video of the bealert response side program designed and prototyped using InVision.
For better quality videos refer to the ‘walkthrough videos’ folder which is placed within the main assignments folder.

1.8 WEARABLE BAND

A wearable band has been designed that includes a red panic button and bealert branding. The band would be available in a wide variety of colours and is adjustable using a locking clasp depending on wrist size. The band would project the app on the users arm once the panic button is pressed using a motion sensing system on the forearm to work, as well as a pico projector to project the image. Below is an image containing the components that would be needed to make the wearable band fully functional in order to project onto the elderly users hand displaying the emergency services icons to mimic the app. (media, 2018)





KEY FEATURES

Works on every skin colour

Phone screen mirroring

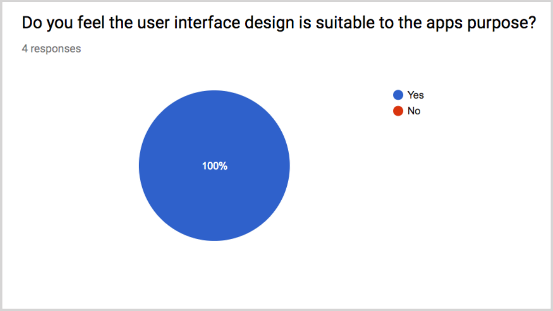
Removable battery

Water resistant

2 EVALUATING THE ARTEFACT

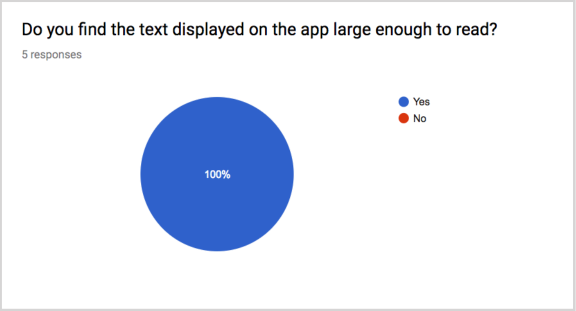
2.1 USER TESTING - BEALERT APP

I used the quick and dirty approach to conduct face to face interviews with the elderly to find out how beneficial they found the emergency alert app to use and whether they found the app to be useful when they are involved in an emergency. As well as this I asked the users to identify at any pain points or improvements they may have. To locate elderly users to test the app I visited an old peoples home and used already existing family contacts.



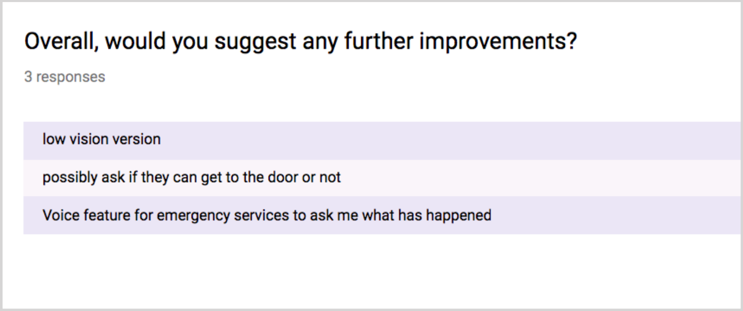
Do you feel the user interface design is suitable to the apps purpose?

4 responses



Do you find the text displayed on the app large enough to read?

5 responses



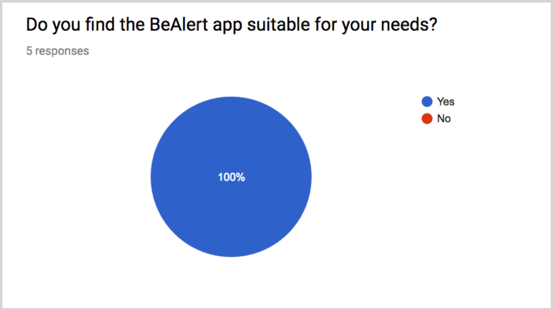
Overall, would you suggest any further improvements?

3 responses

low vision version

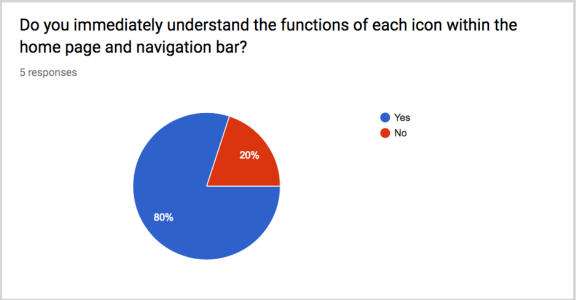
possibly ask if they can get to the door or not

Voice feature for emergency services to ask me what has happened



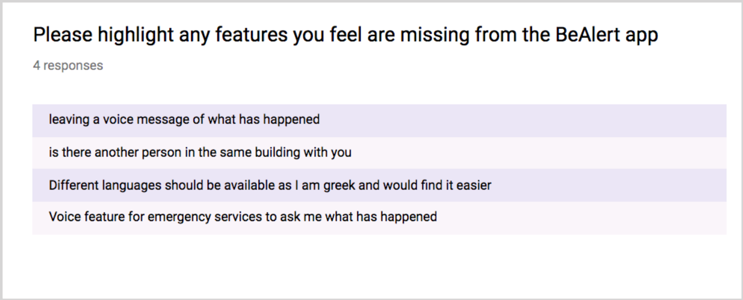
Do you find the BeAlert app suitable for your needs?

5 responses



Do you immediately understand the functions of each icon within the home page and navigation bar?

5 responses



Please highlight any features you feel are missing from the BeAlert app

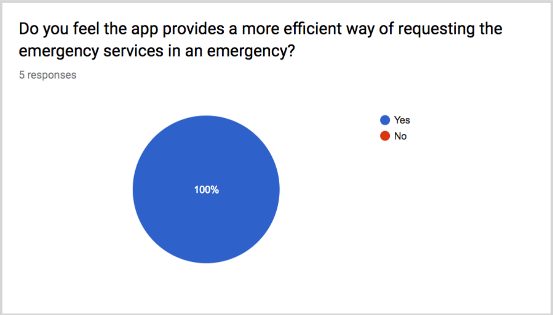
4 responses

leaving a voice message of what has happened

is there another person in the same building with you

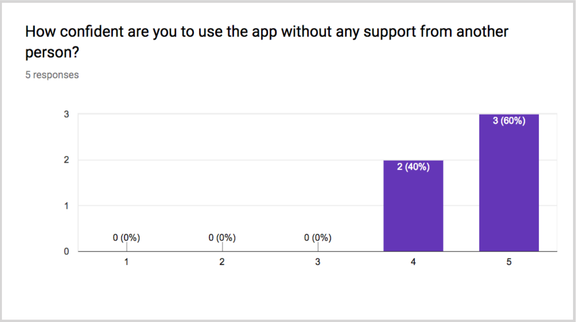
Different languages should be available as I am greek and would find it easier

Voice feature for emergency services to ask me what has happened



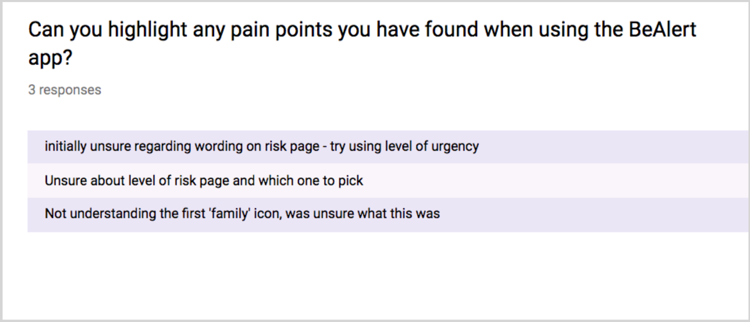
Do you feel the app provides a more efficient way of requesting the emergency services in an emergency?

5 responses



How confident are you to use the app without any support from another person?

5 responses



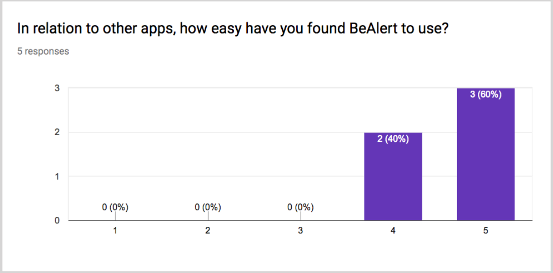
Can you highlight any pain points you have found when using the BeAlert app?

3 responses

initially unsure regarding wording on risk page - try using level of urgency

Unsure about level of risk page and which one to pick

Not understanding the first 'family' icon, was unsure what this was

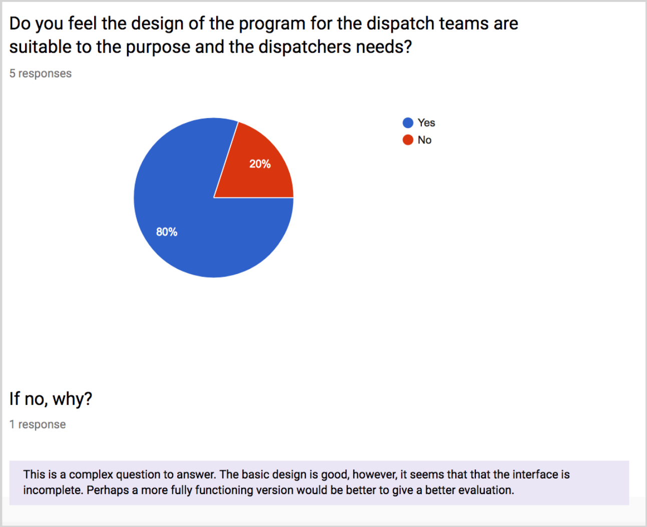


In relation to other apps, how easy have you found BeAlert to use?

5 responses

2.1 USER TESTING - BEALERT DISPATCH PROGRAM

I used the quick and dirty approach to conduct a survey with emergency services dispatch teams to find out how beneficial they found the new dispatch program to use and whether they feel this would be a more efficient way of dispatching emergency services. As well as this I asked the users to identify at any pain points or improvements they may have. To locate dispatchers to test the prototype I used social media and already existing contacts.



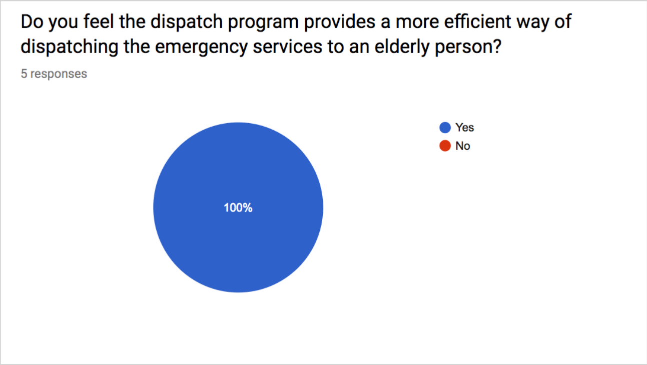
Do you feel the design of the program for the dispatch teams are suitable to the purpose and the dispatchers needs?

5 responses

If no, why?

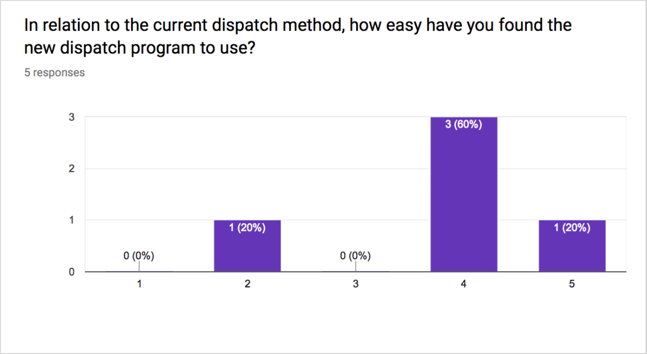
1 response

This is a complex question to answer. The basic design is good, however, it seems that that the interface is incomplete. Perhaps a more fully functioning version would be better to give a better evaluation.



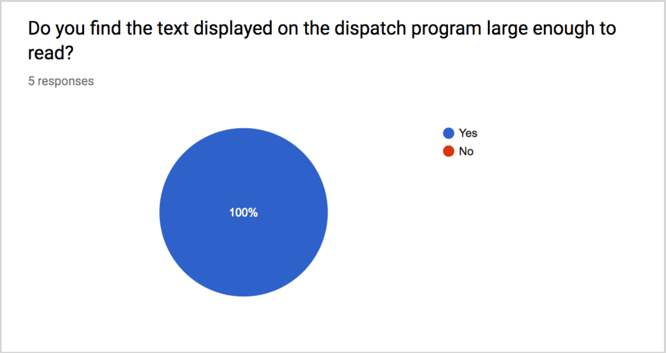
Do you feel the dispatch program provides a more efficient way of dispatching the emergency services to an elderly person?

5 responses



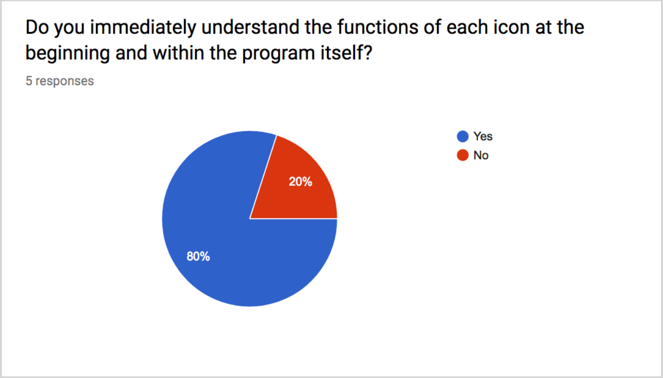
In relation to the current dispatch method, how easy have you found the new dispatch program to use?

5 responses



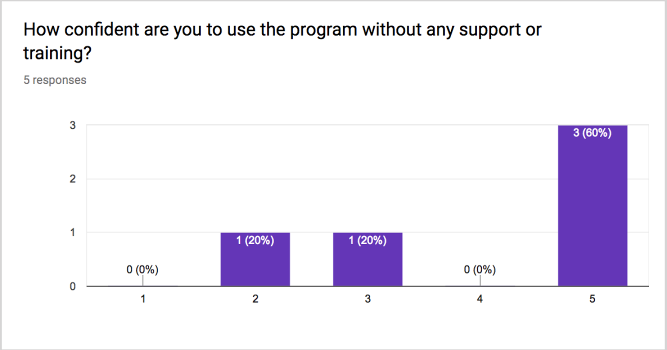
Do you find the text displayed on the dispatch program large enough to read?

5 responses



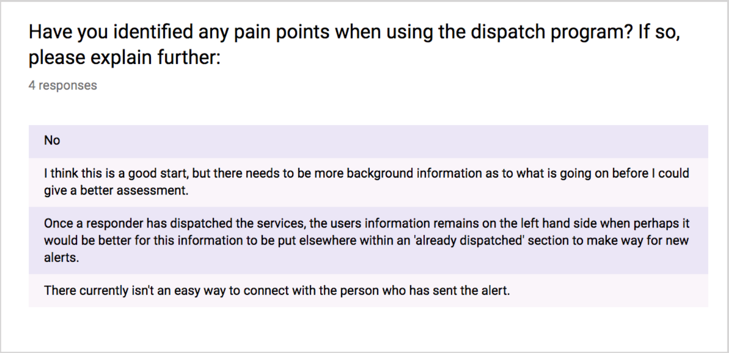
Do you immediately understand the functions of each icon at the beginning and within the program itself?

5 responses



How confident are you to use the program without any support or training?

5 responses



Have you identified any pain points when using the dispatch program? If so, please explain further:

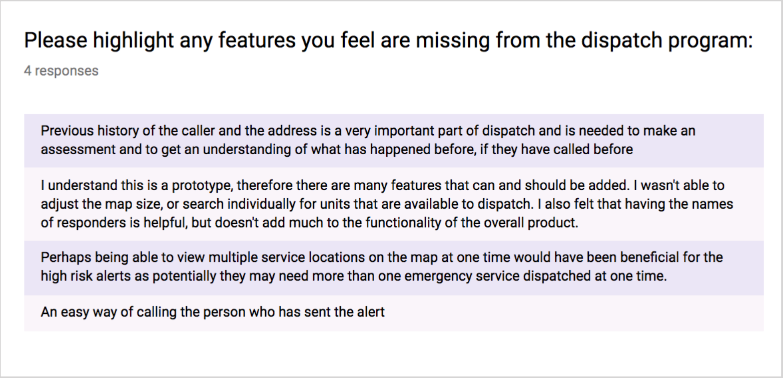
4 responses

No

I think this is a good start, but there needs to be more background information as to what is going on before I could give a better assessment.

Once a responder has dispatched the services, the users information remains on the left hand side when perhaps it would be better for this information to be put elsewhere within an 'already dispatched' section to make way for new alerts.

There currently isn't an easy way to connect with the person who has sent the alert.



Please highlight any features you feel are missing from the dispatch program:

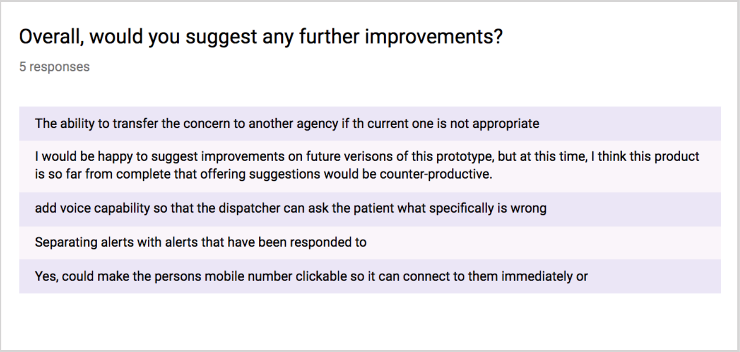
4 responses

Previous history of the caller and the address is a very important part of dispatch and is needed to make an assessment and to get an understanding of what has happened before, if they have called before

I understand this is a prototype, therefore there are many features that can and should be added. I wasn't able to adjust the map size, or search individually for units that are available to dispatch. I also felt that having the names of responders is helpful, but doesn't add much to the functionality of the overall product.

Perhaps being able to view multiple service locations on the map at one time would have been beneficial for the high risk alerts as potentially they may need more than one emergency service dispatched at one time.

An easy way of calling the person who has sent the alert



Overall, would you suggest any further improvements?

5 responses

The ability to transfer the concern to another agency if th current one is not appropriate

I would be happy to suggest improvements on future verisons of this prototype, but at this time, I think this product is so far from complete that offering suggestions would be counter-productive.

add voice capability so that the dispatcher can ask the patient what specifically is wrong

Separating alerts with alerts that have been responded to

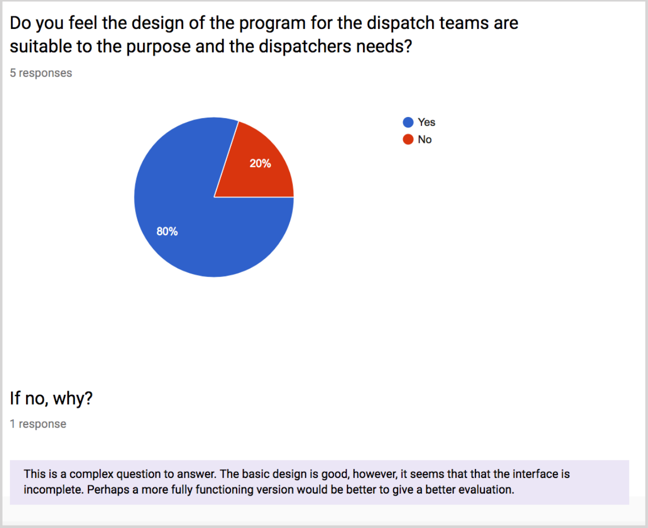
Yes, could make the persons mobile number clickable so it can connect to them immediately or

2.1 USER TESTING - BEALERT APP ANALYSIS

Using the quick and dirty approach allowed me to identify some key attributes to analyse from my user testing of the bealert app. 100% of elderly users that tested the app felt the design was suitable for the apps purpose and felt the app is suitable for their needs to alert emergency services in an emergency. Alongside this, they felt the text displayed on the app was large enough to read. This is a positive response and shows my app UI design is suitable and easily understandable for elderly users. 80% of elderly users said they immediately understand the functions of each icon within the home page and navigation bar, 20% said they did not and their reason for this was the family icon being unclear which I needed to explain.

100% of elderly users feel the app provides a more efficient way of requesting emergency services in an emergency, this was one of the main goals identified in the project plan which shows this has been achieved successfully. 60% of elderly users said they are extremely confident in using the app without guidance once the app has been initially explained, with 40% saying they are very confident also. This is key to the success of the app as it is extremely important the elderly user will be able to use the app as they are often alone and could potentially be in vulnerable situations so it is important they understand how to navigate around the app.

The main pain points that were identified were two users being initially unsure about the level of risk page due to the way it has been written and suggested level of urgency may be better. I will look in to redesigning this aspect of the app as a part of the potential further development. Second pain point identified was not understanding the first family icon as they felt this was slightly unclear and therefore needed me to explain what this icon was and how the family feature would work. Some features identified that could be added to the app from the user testing include leaving a voice message or being able to call the emergency services to explain what has happened, they felt this would be good in an instance where they are unable to get to the front door to open or to discuss the type of emergency they have if they are able to. One elderly user felt the ability to localise the app in different languages would be beneficial as she could not read English very well. Some further improvements that were identified were to have a feature that allows the user to change the settings within the app to a low vision version for those with high prescription and limited sight.



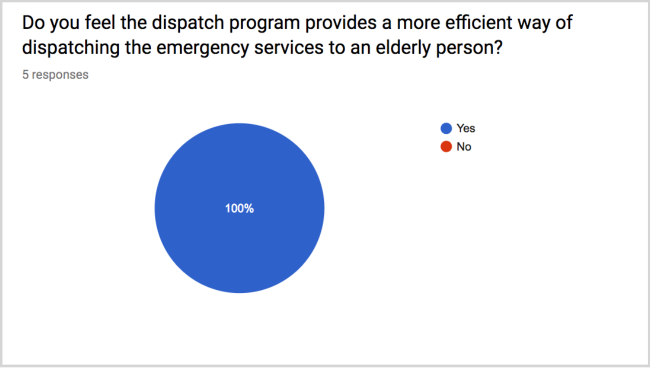
Do you feel the design of the program for the dispatch teams are suitable to the purpose and the dispatchers needs?

5 responses

If no, why?

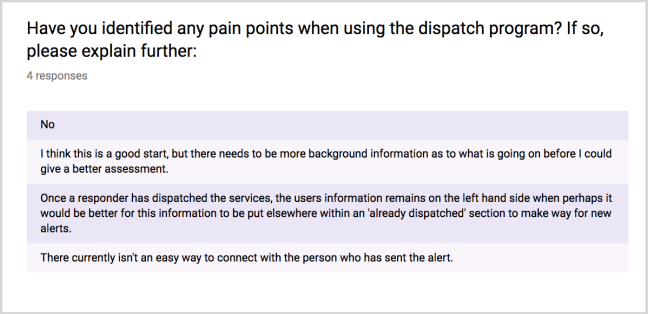
1 response

This is a complex question to answer. The basic design is good, however, it seems that that the interface is incomplete. Perhaps a more fully functioning version would be better to give a better evaluation.



Do you feel the dispatch program provides a more efficient way of dispatching the emergency services to an elderly person?

5 responses



Have you identified any pain points when using the dispatch program? If so, please explain further:

4 responses

No

I think this is a good start, but there needs to be more background information as to what is going on before I could give a better assessment.

Once a responder has dispatched the services, the users information remains on the left hand side when perhaps it would be better for this information to be put elsewhere within an 'already dispatched' section to make way for new alerts.

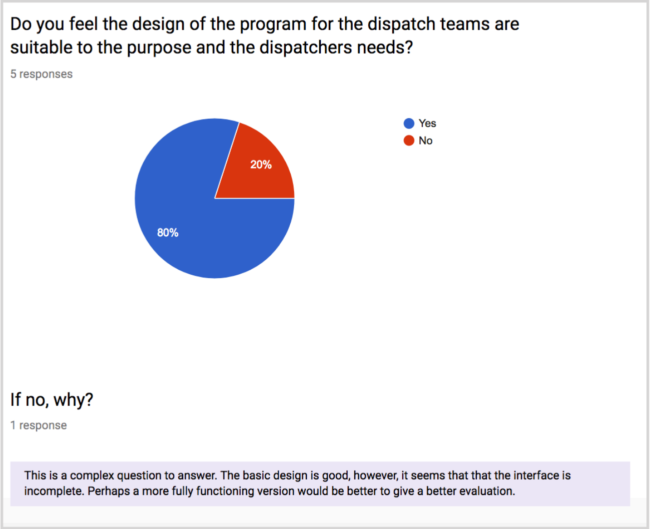
There currently isn't an easy way to connect with the person who has sent the alert.

USER TESTING - BEALERT DISPATCH PROGRAM ANALYSIS

Using the quick and dirty approach allowed me to identify some key attributes to analyse from my user testing of the bealert dispatch program. 80% of emergency responders who tested the dispatch program felt it was suitable for the purpose and dispatchers needs, 20% said they felt it was not and this was due to the prototype not being fully functional due to it being made on InVision.

All 5 dispatchers who tested felt the program would provide a more efficient way of dispatching the emergency services to an elderly person, this is essential to the dispatch program being a success to ensure response times are faster, potentially saving peoples lives. 20% of users felt the new dispatch method is extremely easy to use with 60% saying it is very easy to use. 80% of these users immediately understood the features of each icon at the beginning of the program and within the dispatch screen itself. Most responders believe they would be extremely confident in using the program without any guidance, with 40% saying they were not so sure this would be possible and perhaps training would be best for a new program like this.

The first pain point identified was once a responder has dispatched the services, the users information remains on the left hand side and suggested it would be best for this information to be put elsewhere within an ‘already dispatched’ section to make way for new alerts that are being sent. Secondly, there currently is not an easy way to connect with the elderly person who has sent the alert by phone. Lastly, to be able to adjust the map size would be beneficial for a responder to see what key points are close to the elderly person who has sent the alert. Features identified to be added to further development include previous history of the caller and current address should be included to help dispatchers get an understanding of what has happened before and if they have previously called the services regarding the same issue. Another feature that was identified is the ability to view multiple services locations on the map at one time, this would be beneficial for high risk alerts as potentially the elderly person may need more than one emergency service dispatched at one time. The last feature identified was to be able to phone the user who has sent the alert using the phone icon. Lastly, the ability to transfer the concern to another agency if appropriate would be useful to dispatchers, a voice capability for the dispatcher to connect with the elderly user and lastly, being able to separate alerts that have been responded to.



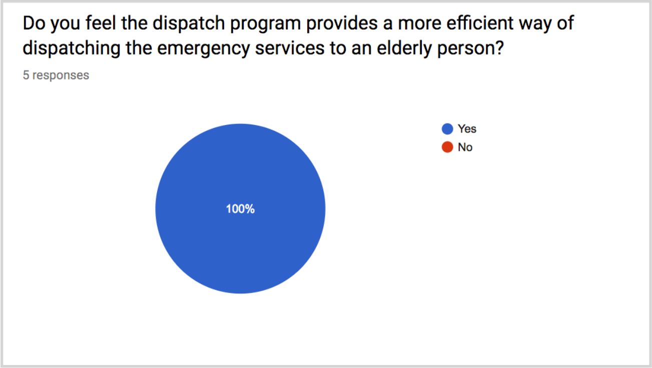
Do you feel the design of the program for the dispatch teams are suitable to the purpose and the dispatchers needs?

5 responses

If no, why?

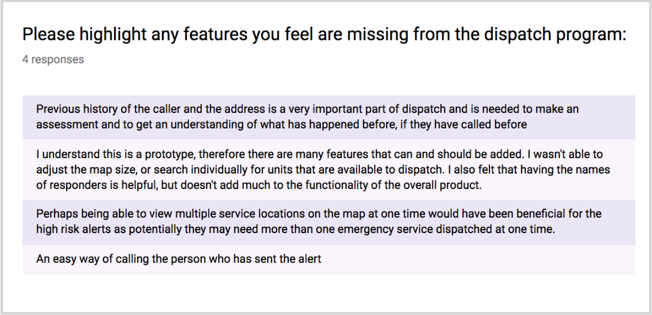
1 response

This is a complex question to answer. The basic design is good, however, it seems that that the interface is incomplete. Perhaps a more fully functioning version would be better to give a better evaluation.



Do you feel the dispatch program provides a more efficient way of dispatching the emergency services to an elderly person?

5 responses



Please highlight any features you feel are missing from the dispatch program:

4 responses

Previous history of the caller and the address is a very important part of dispatch and is needed to make an assessment and to get an understanding of what has happened before, if they have called before

I understand this is a prototype, therefore there are many features that can and should be added. I wasn't able to adjust the map size, or search individually for units that are available to dispatch. I also felt that having the names of responders is helpful, but doesn't add much to the functionality of the overall product.

Perhaps being able to view multiple service locations on the map at one time would have been beneficial for the high risk alerts as potentially they may need more than one emergency service dispatched at one time.

An easy way of calling the person who has sent the alert

2.2 EVALUATION

PROJECT OBJECTIVES & PROJECT PLAN

At the beginning of this project I identified key objectives within my project plan that have been achieved successfully. I sourced, investigated and analysed research literature on already existing apps, wearables and technology for the elderly as well as branding for inspiration within research and design, highlighting factors or issues found from the research literature and any potential risks involved. I successfully identified, investigated and analyse initial design detail by identifying primary personas and scenarios to help aid my design for the mobile web app and dispatch program. I identified the target audience using interviews and questionnaires as my method for this within research and design. I successfully designed a brand identity for bealert which includes the logo and colour scheme, this is reflective of what the web app has to offer using relevant branding and icons, this is present in the web app user interface designs as well as the bealert dispatch program. Originally, within my designs I began using the colour scheme to reflect the emergency services which are red, blue and green, however once the design had been completed I felt it was too busy and the elderly user would get confused due to all the different colours, I used contingency planning and decided to change the design to a more simple user interface colour scheme and kept the different colours only within the logo itself. All other icons were changed to white, this allowed for a more simple look which would help elderly users identify what each icon does easier. The user interface was designed to incorporate one-touch icons for the emergency services, a login and profile screen and GPS location services. Once all the design aspects had been completed for the app, I began developing a suitable, responsive mobile web app for the emergency alert system using Sublime and Phonegap to test how the app looked on a mobile phone.

Objective	Met	How objective was met	Method used	Challenges faced
Source, investigate and analyse research literature on already existing apps, wearables and technology for the elderly as well as branding for inspiration.	✓	I looked in to already existing apps, wearables and technologies for the elderly as well as looking in to emergency response programs that current emergency services use.	Systematic literature review.	Difficult to find similar apps initially but a couple were found with some advice from emergency services.
Identify, investigate and analyse initial design detail e.g. personas and scenarios.	✓	I used user testing as a method for this to identify my primary and secondary persona.	Interviews and questionnaires.	None.
Design a brand identity which includes a name, logo and colour scheme which is reflective of what the app has to offer and is present in app user interface designs.	✓	Designed a brand identity using research gained as inspiration to create this which included a logo, colour scheme and brand name bealert.	Low fidelity prototyping.	Creating icons that were relevant to the emergency services and immediately understandable was tricky.
Design a user interface for the emergency alert app and response side program, incorporating one-touch icons for the emergency services, a login and profile screen.	✓	I designed a user interface for the emergency alert app and response side using Sketch and Photoshop.	Storyboarding and high fidelity prototypes.	Colour scheme chosen was not working very well with the app and was too confusing, I therefore used contingency planning and created a new more simplistic colour scheme using blue and white.
Develop a suitable mobile app for the emergency alert system.	✓	A suitable mobile web app was developed using Sublime text editor and Phonegap for testing.	Agile development.	Implementing fingerprint API was not possible.

I believe the project plan was extremely effective as it allowed me to stay on track and helped me time manage to ensure all the sections within each deliverable was met on time. The most challenging part of the project plan was time management as at times it was extremely difficult to balance designing and coding the actual artefact with writing up the report. of your project plan and project execution and whether you should or could have taken a different path to achieving your project aims and objectives.

PERSONA GOALS

Persona goals identified from my primary persona which was an elderly person within the research and design deliverable where key factors to ensure I stayed on track when creating the bealert app, it was essential to stick to the requirements identified to achieve a successful app that functions as intended and successfully allows the elderly user to request emergency services using one-touch icons.

Persona goal	Met	How goal was met	Further development
To know I will always be safe wherever I am.	✓	Ensured artefact is an app which can be used on a mobile phone and pairing wearable device.	Add localisation feature so it is available in different languages for users who have difficulty reading English.
To be able to contact the emergency services quickly and efficiently with the ability for them to view my exact location.	✓	Included one-touch icons which immediately connect the user to the emergency services.	Add a voice capability for the elderly user to call the emergency services or leave a voice message to explain what has happened.
To have an immediate response from the emergency services when an alert is sent and avoid calling the emergency services.	✓	Included one-touch icons which immediately send an alert to the emergency services dispatch teams without the user needing to phone and answer questions before they are dispatched.	Ability to view services that have already requested if the app is closed and re-opened, the app should recognise this and display which services have been requested.
To have a pairing wearable device which also allows me to contact the emergency services in case my mobile is not close.	✓	A pairing wearable band has been designed and branded for bealert. The band can be used instead of the app in the instance the user is not close to their mobile phone. The wearable mirrors the app interface on the users arm.	Look in to making the band functional, looking at cost implications and whether the projection functionality will be possible.

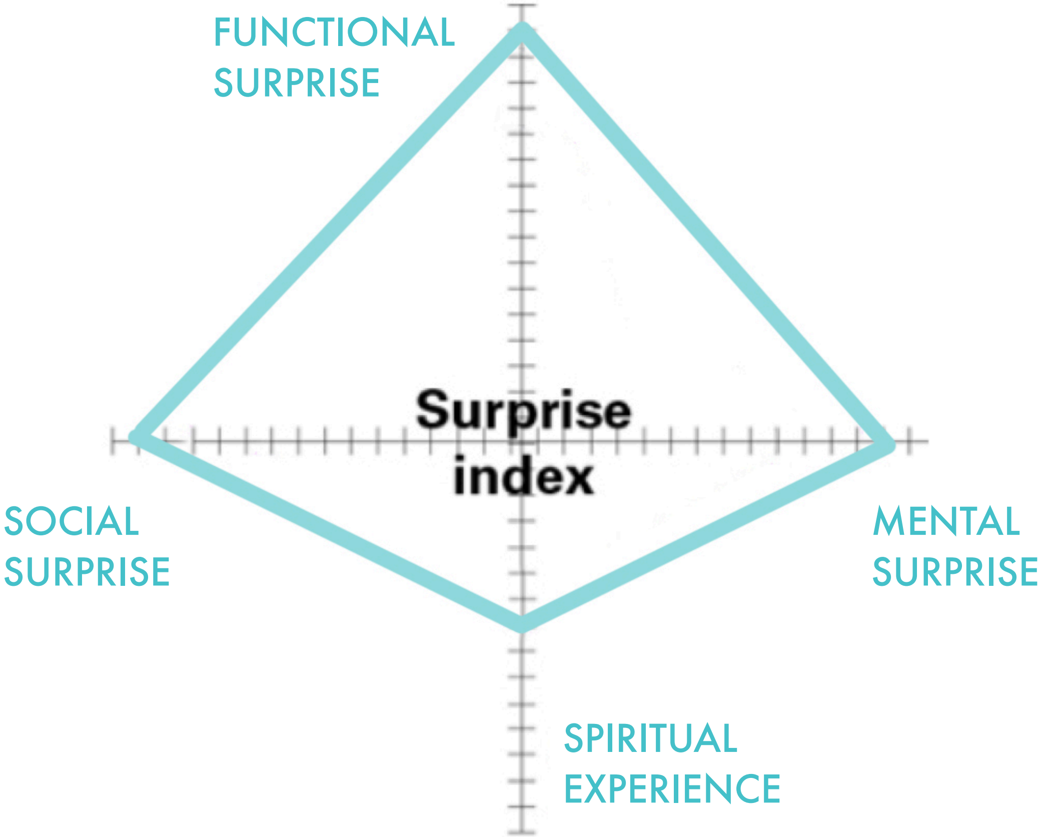
Persona goals identified from my secondary persona which was an emergency services dispatcher within the research and design deliverable where key factors to ensure I stayed on track when creating the bealert response side program, it was essential to stick to the requirements identified to achieve a successful program that functions as intended and successfully allows the responder to immediately dispatch the emergency services to the elderly user who has sent in the alert, as well as being able to view key information including the location of each person who has sent an alert.

Persona goal	Met	How goal was met	Further development
To be able to dispatch the emergency services almost instantly after receiving an alert.	✓	Ensured artefact is an app which can be used on a mobile phone and pairing wearable device.	Include previous history of the caller and current address should be included to help dispatchers get an understanding of what has happened before and if they have previously called the services regarding the same issue.
To be able to locate someone who has sent an alert more accurately.	✓	Included one-touch icons which immediately connect the user to the emergency services.	Add ability to view multiple services locations on the map at one time could be added, this would be beneficial for high risk alerts as potentially the elderly person may need more than one emergency service dispatched at one time. Add ability to transfer the concern to another agency if appropriate would be useful to dispatchers, a voice capability for the dispatcher to connect with the elderly user and lastly, being able to separate alerts that have been responded to.
To be able to dispatch emergency services without answering calls at the same time as often you cannot hear what the person is saying.	✓	Included one-touch icons which immediately send an alert to the emergency services dispatch teams without the user needing to phone and answer questions before they are dispatched.	Add a voice capability would be beneficial for the dispatcher to connect with the elderly user Separate alerts that have been responded to and have these hidden.

I believe the user testing I undertook using the quick and dirty approach with potential elderly users and dispatchers was successful and provided me with key features that could be added to both the app and dispatch program to improve it further, these have been identified in the table above. Overall from the testing, I believe the end performance of the bealert app is successful and achieves what I originally set out which was to allow elderly people to request the emergency services without calling 999, therefore it is extremely useful as it will provide a more efficient way of requesting the services, causing less delays for the dispatchers as they do not need to ask questions over the phone before sending help.

CHALLENGES FACED

The main challenges faced were when I was coding the bealert app artefact, the biggest technical challenge I had during this was when I attempted to get a javascript API and implement this within the code to make the fingerprint scanner work when a user scans their thumb. Unfortunately I could not get this feature to work and the user must therefore use the enter passcode button to login which then displays as login successful once the user has entered the passcode. Another challenge I was faced with was to align everything central to the iPhone 6s screen, including all icons and the drop down menu when the logo is clicked, this was solved using flex within the CSS and helped me ensure everything was exactly centred, initially I used in-line CSS positioning within my HTML tags but found this was not working as all the icons kept shifting, I therefore needed a contingency plan and I researched flex which was perfect for what I was trying to achieve. I was also faced with difficulty when I attempted to link a database to the code so the app would allow the user to 'edit profile' when this button is clicked on the profile screen. After many tries to get this to work unfortunately I was unsuccessful so the app does not currently link to a database to recognise the data inputted in to the registration form or allow the user to edit their profile.



Surprise index was used as an evaluation method analysing the most surprising aspect of the experience which is the user being able to request emergency services using one-touch icons. Gad (2016)

Functional surprise:

- New emergency alert app for elderly allowing them to request emergency services using one-touch icons.
- Ease of use with clear navigation icons.

Mental surprise:

- Efficiency to request emergency services without needing to phone 999, saving time and potentially lives.
- Services dispatched immediately without user needing to answer any questions over the phone.
- Able to request services via the wearable even if the users phone is not close to them.

Spiritual surprise:

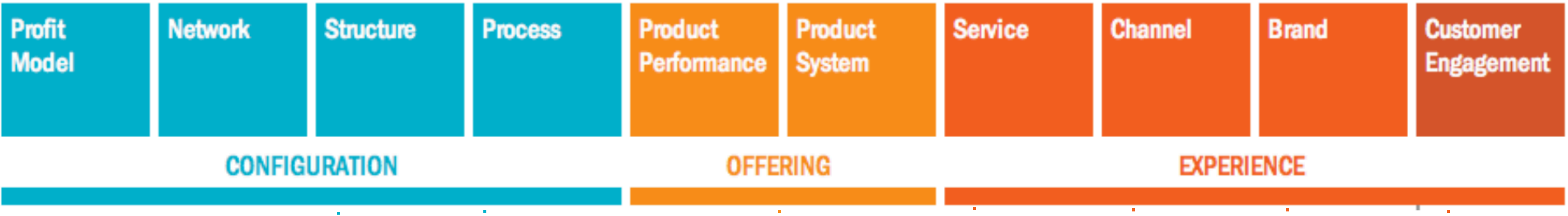
- Helps people elderly as less time in pain due to immediate response either using the app or band

Social surprise:

- Users more likely to share the experience with their friends and show as they are able to get immediate help wherever they are, with or without a mobile phone.

NOVELTY & INNOVATION

I used the below diagram taken from B. Quinn, R. Pikkel, H. Walters, L. Keeley (2013) to identify and explain novelty and innovation found for the main artefact, the bealert web app.



A unique non-profit app designed for elderly users and provided by the government allowing them to immediately connect with the emergency services using one-touch icons and no voice communication needed.

Bealert uses GPS location services to connect to the response team allowing them to locate the elderly person immediately.

No heavy capital equipment needed, however further research and design would be needed to ensure all features currently used by the emergency service dispatch teams would be provided when linked with the app.

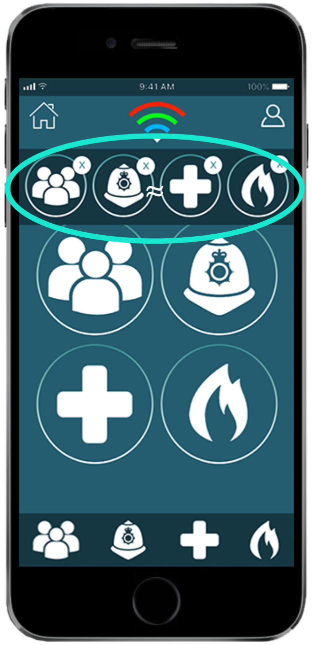
A completely new product and concept of allowing the elderly to communicate with the emergency services in a more efficient way and the emergency services responding to alerts without directly speaking to the elderly person. Improving response times and improving efficiency overall.

A web app that has incredibly simple and straight forward UX design allowing the elderly person to use the app alone without help and guidance from anyone.

Eye catching branding using emergency service colours and a communication symbol as the main icon with the brand name ‘bealert’.

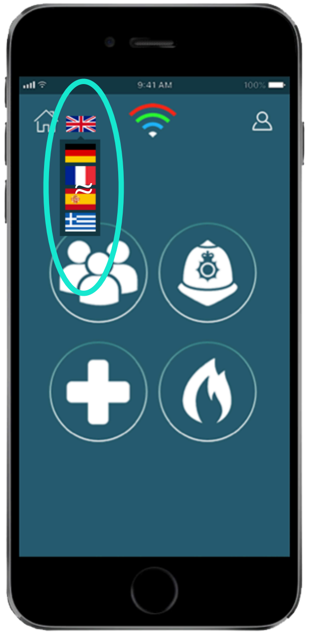
FURTHER RESEARCH & DEVELOPMENT

From the user testing I conducted with elderly users for the balert app and dispatchers for the bealert response side dispatch program I have identified some key features that could be added to both the app and dispatch program to improve it further.



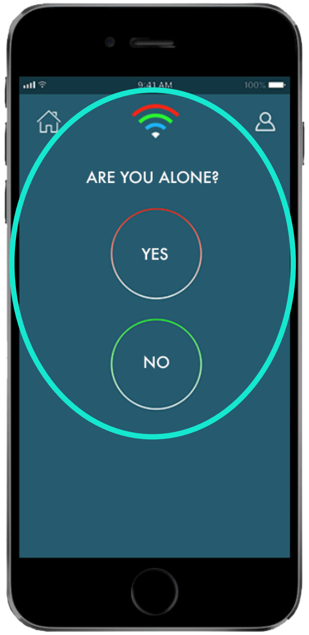
Improvement: When a user closes and reopens the app, currently the app resets itself as if the user is reopening the app for the first time, this is a flaw as it would be more beneficial for the user to be able to see the services they have already requested. If a service has already been requested, the app should recognise this and display which services have been requested once the app is closed and reopened.

New feature: An example of how the drop down menu should look if the user has requested all 4 emergency services and has closed and reopened the app.



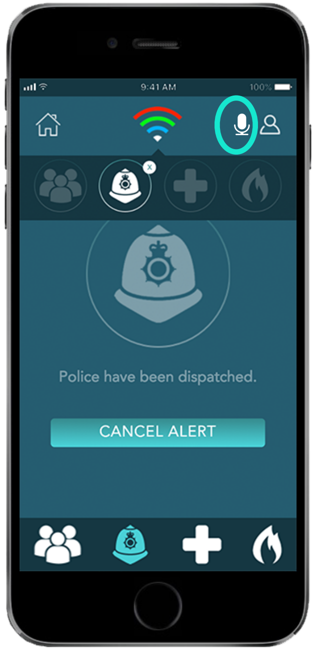
Improvement: Localisation of the app so it is available in different languages for users who have difficulty reading English.

New feature: A language choice available at the top of the screen available on every page allowing the user to click and change language.



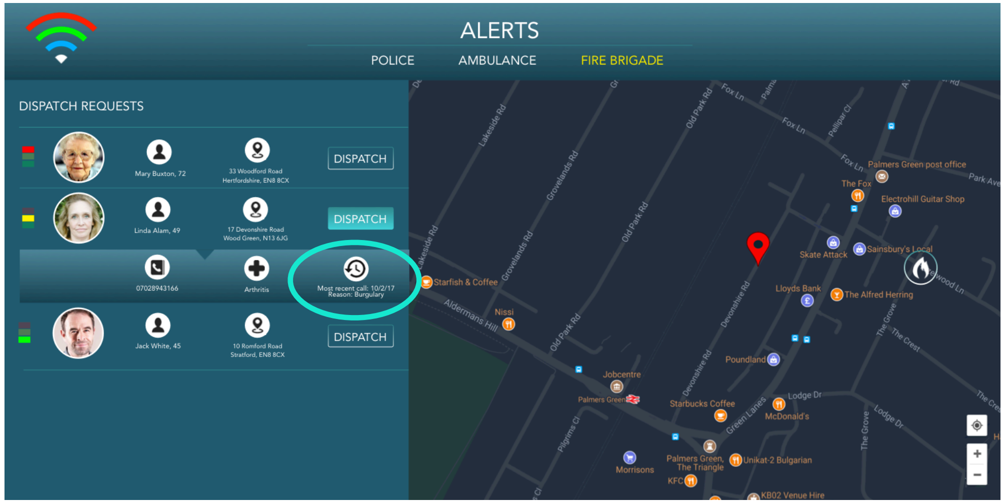
Improvement: High, medium and low risk screen within the app is a potential flaw as most elderly users are likely to choose high risk due to this being the easiest option for immediate assistance. A few users stated it was not clear what they needed to do on this screen, therefore a solution is needed to make this understandable and must also include a feature for the services to know whether the elderly person is alone.

New feature: Changed risk screen as likelihood is the emergency will be urgent if an elderly person is involved and using the app, therefore this screen has been changed to an 'are you alone' question which would allow the dispatch teams to determine the level of risk from this.



Improvement: A voice capability for the elderly user to call the emergency services or leave a voice message to explain what has happened.

New feature: A voice capability at the top of the dispatched screen appears once an emergency service has been requested, allowing the elderly user to speak to the responder if necessary.



ALERTS

POLICE AMBULANCE FIRE BRIGADE

DISPATCH REQUESTS

Mary Buxton, 72 — 33 Woodford Road Hertfordshire, EN8 8CX — DISPATCH

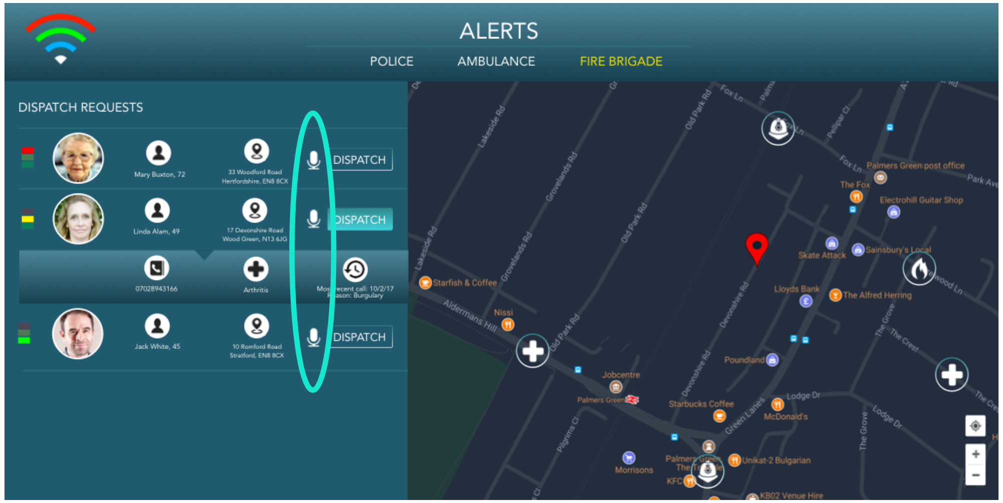
Linda Alam, 49 — 17 Devonshire Road Wood Green, N13 6JG — DISPATCH

07028943166 — Arthritis — Most recent call: 10/2/17 Reason: Burgulary

Jack White, 45 — 10 Romford Road Stratford, EN8 8CX — DISPATCH

Improvement: Include previous history of elderly caller to help dispatchers get an understanding of what has happened before and if they have previously called the services regarding the same issue.

New feature: New 'history' icon added to include further information on previous caller history on an example alert received from an elderly person.



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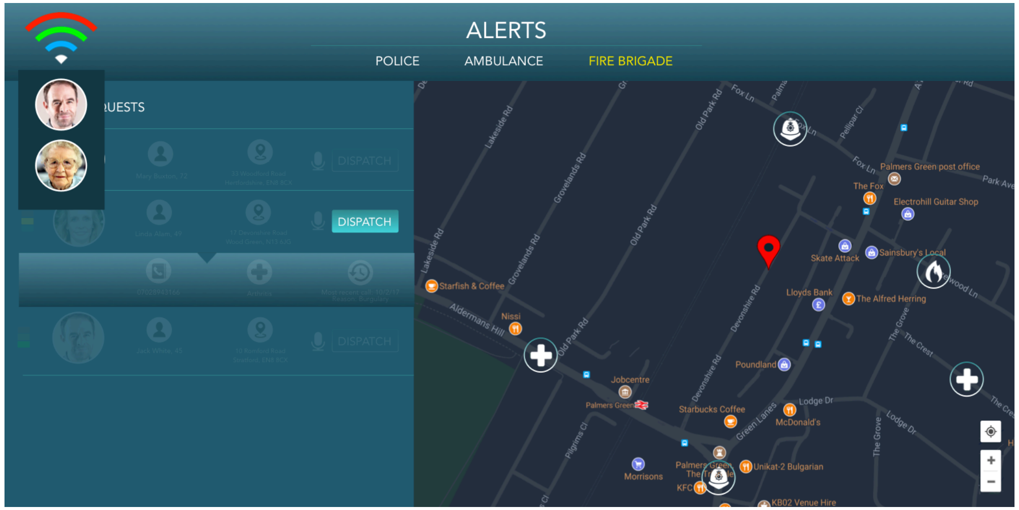
DISPATCH

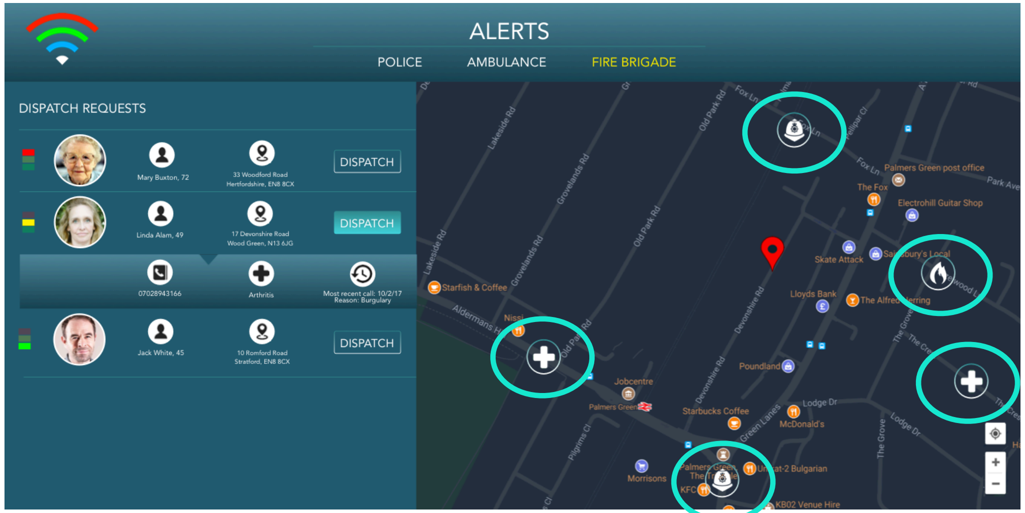
Improvement: A voice capability for the dispatcher to connect with the elderly user.

New feature: A voice capability next to each dispatch button is displayed once an alert has been received, allowing the responder to speak to the elderly person who has sent the alert if necessary.



Improvement: Be able to separate alerts that have been responded to and have these hidden.

New feature: A drop down when logo is clicked to display the alerts that have already been responded to.



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Improvement: Ability to view multiple services locations on the map at once for high risk alerts as elderly person may need more than one emergency service dispatched.

New feature: All local emergency services displayed on the map when responder clicks the dispatch button.

One aspect from my objectives that had not been met was to incorporate a database to store who is logged in and gather their information to link to the emergency services. I attempted to do this multiple times but due to many failed attempts I decided this could be something that I could add in the future if the app was to be developed, this would ensure the database would store every users information, allowing them to log in with their 4 digit passcode and the app recognising all their personal information and displaying this within the personal profile section. A feature that could be added which I have not designed a mock up for includes a setting that allows the user to change the app to a low vision version for those with high prescription and limited sight.

Another aspect of the project that could be developed is looking at the prospect of making the wearable band fully functional as currently only the aesthetics of the band can be seen. Currently, there is an already existing technology that is in prototyping stage called the Cicret bracelet that works in a similar way to how the wearable band could potentially work using a projection and sensors to mimic a phone screen on to the users arm. This technology could be implemented within the bealert band which would allow the elderly user to project the bealert app on to their arm when the red panic button is pressed, this would be beneficial as there may be times where the elderly person may not have their phone with them.

OVERALL CONCLUSION

To conclude, the project goal which was to "design and develop an emergency alert mobile app for the elderly in life-threatening situations", has been achieved successfully. To meet this goal, I had to ensure the artefact was relevant by designing and coded a simple yet effective app allowing elderly people to contact the emergency services in an an emergency without needing to phone the emergency services and answer questions before the services can be dispatched, saving time and potentially people's lives. Alongside this, I also designed and prototyped the response side program that will be used by the emergency services dispatch teams to respond to alerts and requests that have been sent through by the elderly user either via the app or wearable band. Using the response program, the dispatch teams are able to use the system to locate the closest services to the elderly person's location and dispatch within seconds. Once the services are on their way to the emergency, the dispatcher is able to see key information regarding that emergency such as the user who has requested the services' personal details including an image, full name and age, current location, telephone number and previous medical history. On the map displaying where the services are, the dispatcher is able to view the full names of the person responding to the emergency, their exact location, vehicle details such as registration plate and vehicle type, as well as their estimated time of arrival.

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