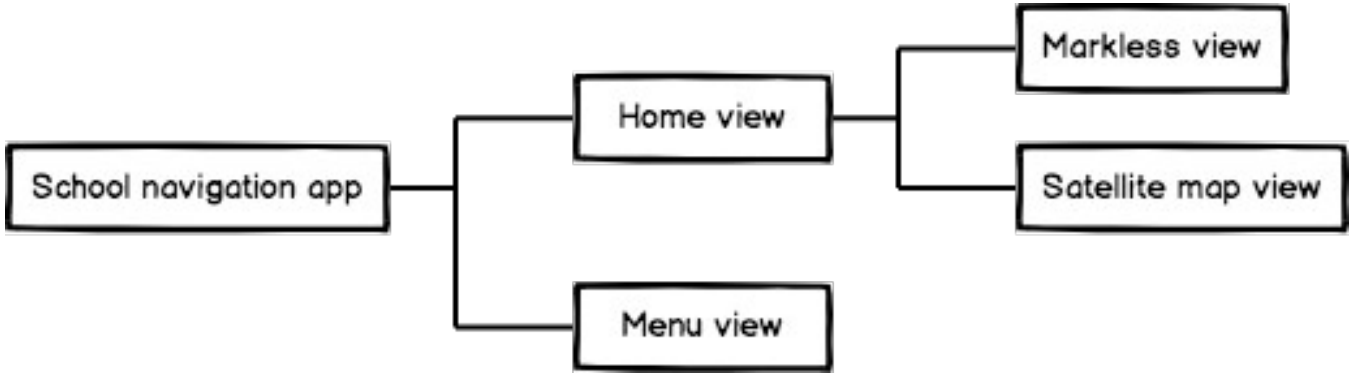
Criterion D: Product design—Overall structure



Internal structure

Home view

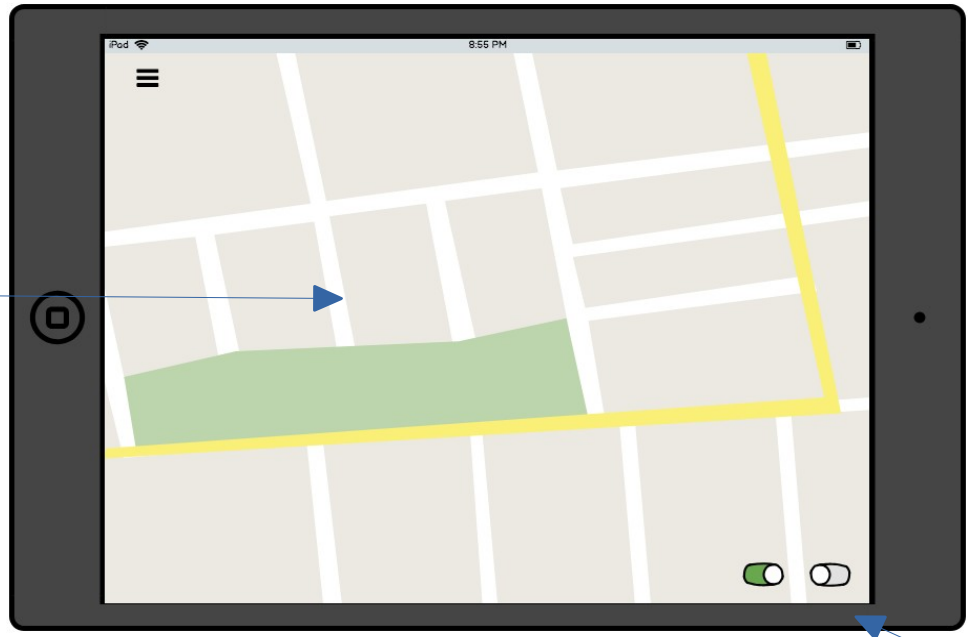
Menu button which reveals sidebar with more information

Marks denoting locations in the school along with their position and description

Switch that triggers the marks on and off

Switch that switches the map mode from the default map design to satelite

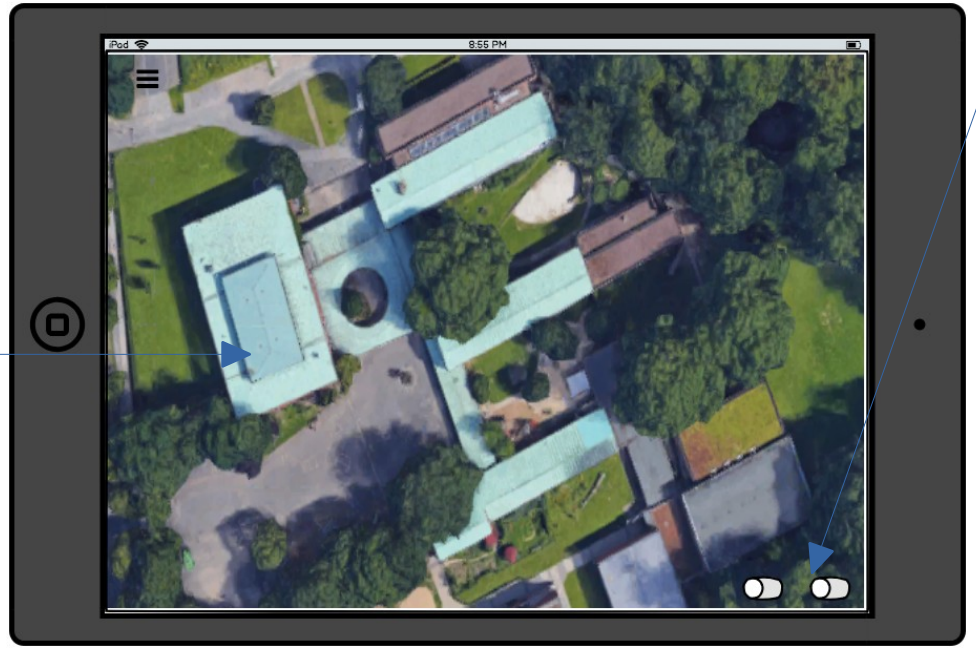
Mark-less view



Mark-less view allows a declutter view for better orientation

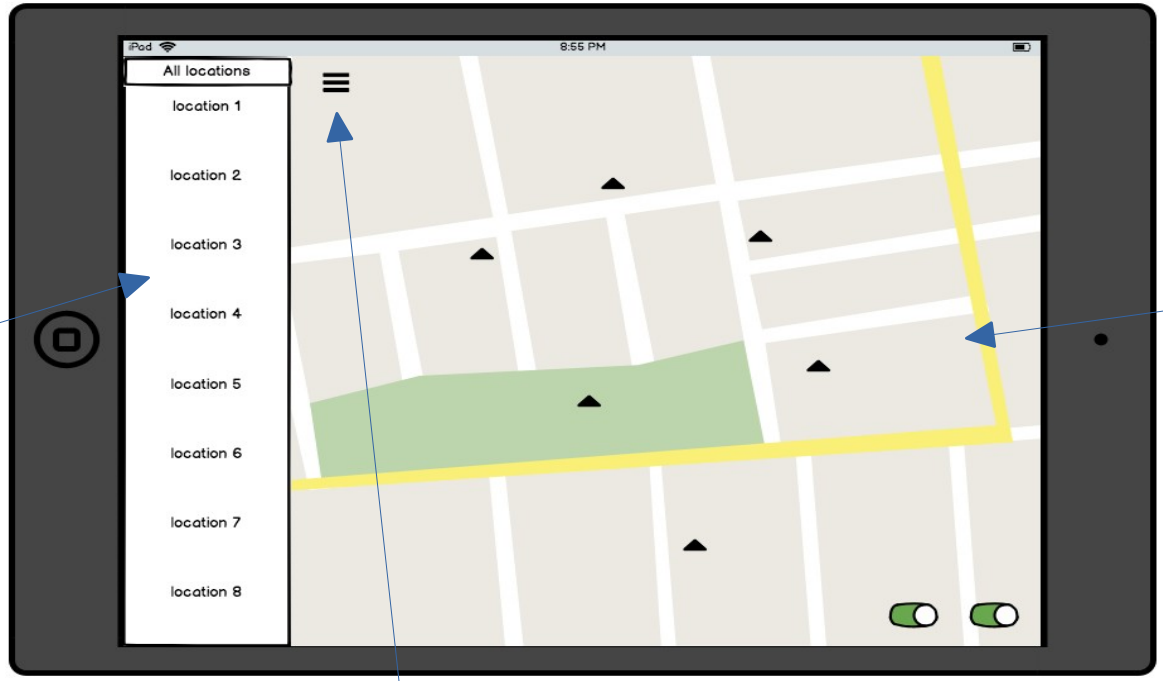
Marks can be hidden or displayed with a convenience of a simple switch as well as the map view for better user-friendliness

Satellite map view



Satellite view can also be triggered to put position into perspective

Menu view



Menu shows all locations displayed on a sidebar for general overview of all the places

The entire view becomes smaller to make space for the sidebar but the map and all marks are still visible

Button with a menu icon is placed in the left top corner for easy access

List of resources and techniques

Resources	Details
List of important locations on the school campus	A list of locations based on the consultation with client.
Descriptions of each school location	A short paragraph description of the different parts of the school
Apple's swift developer resources website	Website with a multitude of resources for developing iOS applications provided by Apple (https://developer.apple.com/swift/).

Techniques	Details
Arrays	Use of an array to store the text which will be pulled by the app in an organized form which can be iterated over.
Subroutines, parameter passing	Numerous subroutines, dividing up the flow of the application into executable blocks of code, repeated throughout with the ability to be modified with specific parameters. For example, a function that is run when user approaches specific part of the school to athat displays the particular text, based on the location name passed into the function.
Loops, if–then, exit conditions	Conditional logic determining working logic of the application i.e. whether or not to display the text (if user near set location point then display text. If user moves away a certain distance exit the current condition) Loops used to repeat a certain subroutine multiple times i.e. ping the device for location data,

	wait 50ms and repeat until the application is closed.
Object definitions	Swift supports the object oriented programming paradigm which allows me to create as set of objects that define each of the marks on the map with all of the information included in it i.e. the location of the point, the text to be displayed, the color of the mark.
File handling	In order to allow my client to easily modify the locations on the map in the future, they are defined in an easily editable file. The JSON file has to be loaded into swift and parsed into swift readable format.
Graphical user interface (GUI)	Most applications require a GUI, including this one, which will be constructed from the swift IDE's GUI design interface, including buttons, navigation and labels.

Test plan

Test item	Test data	Part of system tested	Expected outcome	Actual outcome	Comments	Ref in product
Cover page testing – REQUIRED ELEMENT FOR CRITERION G						
Web pages load from the cover page in three different locations	**File naming to ensure home page is called Index.htm**	**Links on cover page are relative**	**Loads as required from 3 different locations**	**All pages load properly in all different locations**	**Outcome as expected**	
Product testing						
Application can be run from the iPad	Error log	Integrity of the application	The application can be started without any errors	The application loads without any errors preventing the full functioning fo the application	The only errors presented in the logs are warnings about irrelevant configurations or potential layout issues.	
Application loads the background with the marks in correct places	The actual school layout to compare	GUI	The application displays the school layout correctly	The mark load simultaneously and in the correct places on start of the application	Outcome as expected	
All of the information displays correctly	Compare the JSON file storing all information	GUI, functionality	Correct text is displayed as is expected.	All information on marks matches the information in the file	Outcome as expected	

The application puts the iPads location on the map	Location	Functionality	Displays updated location as the user walks through the school	The location is displayed at all times although sometimes lacks in accuracy	There is a possibility that due to the number of access points across the school campus, the location can sometimes buffer.	
The application is easy to use	An ISHR student	GUI	The student can use all of the functionalities without any explanations.	The application was comfortable navigated by the student without issues	Outcome as expected	

Agreement of client

I confirm that the requirement specification meets my needs and the designs above are appropriate for the creation of the product.

(Chris Woodcock)