Android Sensing Project

Project Option 1: Bluetooth device survey

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*Abstract*  
Android Applications are created for a wide range of scenarios such as locating the nearest ATM, streaming music, and ordering food. The application outlined in this report was created as a Bluetooth Device surveyor, which scans for Bluetooth devices at different locations. The purpose of this is to determine how many Bluetooth devices are active at any one time in a single area, and in particular what kind of device it is, i.e. Laptop, Phone, Heartbeat sensor, headphones, etc. Using the phones GPS and Bluetooth sensor, latitude, longitude, and Bluetooth device information was collected and stored to Google’s own open source Database Firebase.

Keywords—Android;GPS;Bluetooth;Firebase

# Introduction

This report details the development of two Android Applications, both of which utilize GPS location. The primary aim of this task was to teach students how Android development was accomplished and how to use opensource tools such as Android Studio and Firebase to create simple yet useful applications.

This report details the background and development of an Android application which …….. Additionally, an application which performs basic sensing and graphical interaction functions have been developed.

Android is…… (details on what you learned about Android and Android development)

Mobile applications often require server backends to deal with data which needs to persist across devices. In this work we use…….

# Workshop application : GPS location Upload and Retrieval

## Application Description

## Application Code and Behaviour

## Results

Describe your results here together with some small screenshots (not just the full screen but the actual pieces you want to show nicely cut out) in figures with figure caption. Also figures should always appear after you refer to them in text, and you must always refer to figures in text.

Fig. 1. Example of a figure caption.

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Fig. 2. Example of a figure caption.

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# Project Application: Bluetooth Surveyor

The Bluetooth Surveyor Application was developed as a tool to determine how many devices leave their Bluetooth active and what kind of device was detected. This could be a useful tool for cybersecurity experts ensuring their system has no physical entry points for any hackers. Hackers can potentially gain remote access via a Bluetooth Keyboard. A cybersecurity expert can potentially use this tool to then locate any pitfalls and see how easily devices be located from a hacker’s position (i.e. public toilet next door).

## Application Description

## Application Code and Behaviour

### Application Structure

### Firebase

### GPS

### Bluetooth

## Results

Describe your results here together with some small screenshots (not just the full screen but the actual pieces you want to show nicely cut out) in figures with figure caption. Also figures should always appear after you refer to them in text, and you must always refer to figures in text.

Fig. 1. Example of a figure caption.

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Fig. 2. Example of a figure caption.

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##### Conclusions

Conclude on all that you have done and described and the outcomes of the work. Describe any difficulty that you experienced or new knowledge you acquired. This may be a slight repetition of the conclusions also shown in the abstract. You should include a few references in your work, this can take the form of web addresses, however, a web address must be accompanied by a title like a regular reference and also by a date you accessed it, as shown in [1].

##### References

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