CS4492 Wireless and Broadband Networking

Project

Goal

To develop a multi device tracking App

Background

Today people tend to carry multiple mobile devices such as two smart phones and/or smart watch. Sometimes they forget those devices and leave only with one device, later to realize they have lost the device. While sophisticated solutions exist to track lost mobile phones, those are expensive and require mobile provider support. Objective of this project is to develop a simple app to track all your devices. If a device is not in the range with each other, all devices should notify the user. Even better, if you can detect which device is with the user and give an audible notification on that device.

Assumptions

- No infrastructure-based networks are available in the vicinity
- Mobile devices can communicate with other mobile devices in its neighborhood
- A user should be able to connect more than 2 devices

Constraints

- Network connectivity is to be provided via Bluetooth
- Devices should be smart phones, tablets, or smart watches based on Android
- App to support common screen sizes on Android devices
- Each group may contain up to 3-4 students

User Tasks

- A user installs and runs app
- He/she pair other devices he/she owns
- User moves around
- As soon as devices are not within each other range, an alert should be generated

Student Tasks

- Find out how Bluetooth works on Android
- Find out how to connect to a device with pairing
- Define application-layer protocols and relevant data/message formats
- Develop the app
- Demonstrate the solution using 3+ devices
- Upload the App to Google Play

Deliverables

Deliverables	Responsibility	Delivery Date	Marks
Data transfer using Bluetooth in Android Discuss on LMS	Individual	April 5, 2017	10
Bluetooth pairing Discuss on LMS	Individual	April 19, 2017	10
Data formats & Application-layer protocol design.	Individual	April 26, 2017	25

Discuss in class & LMS forum			
Enhanced features Discuss on LMS	Individual	May 3, 2017	10
Implementation	Group	May 17, 2017	10
Demo	Group	May 24, 2017	25
Personal statement highlighting what you learned from the project, what you liked, what you disliked, what can/should be improved, personal assessment of your contribution & contributions of your team member	Individual	May 24, 2017	10
Google Play Downloads (every 100 downloads is 1 mark)	Group	Last Day of Exams	5 (bonus)