Location Information Applications for IoT (SS1-16)

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Project Overview

Introduction

Our group chose the Final Year Project topic due to our interest in location information, which is also highly related to the Internet of Things (IoT). Although there are already inspiring current advances, they are ignoring the indoor locations and the locations of other moving objects which can be controlled by the user. Therefore, we have designed a new type of program.

Objective

There are two objectives to this group project. In the first part of this project we achieve recognition of a room number or name or course number given in vocal instructions. In the second part, we develop an algorithm to find the correct (shortest) path to destination and try to keep locating the user through Wi-Fi from time to time in order to update the location and change the path simultaneously. The updating location and path are displayed in a web browser so that the user can see the changes from the screen.

Methodology

- Voice recognition system to recognize course numbers, instructors’ names or classroom numbers and give real time feedbacks and guides to the user
- Google voice assistant is used to offer some help and improvement
- Designed algorithm to find the path from the start to the destination supplemented by existing path advisor
- Wi-Fi locating the user from time to time using the data of locations collected from certain places before, and the starting point and path also updates with time
- Real-time changing location and path are displayed in Google Chrome browser

Result

- Wi-Fi data of 60 places in total were stored and used for updating real-time location
- Location and path can be shown in the web browser using the existing path advisor map

Conclusion

Most of this system functions well. The vocal instructions can be recognized and the updating location and path can be displayed correctly. We have fulfilled the goal of the project and designed a useful program.