FIT 3140 Assignment 2

Intrusion Detection System

Project Scope

Team6

1.Project Goal.

In this assignment, we are going to build a system which can communicate with a real-time database to collect and store data. A motion sensor will be used to record motion and tranmit that data to the client using an Arduino Board and an established server. Cause the firebase we are using can provide real time database and backend as service, the socket IO will no longer be needed for this project.

2. Functionality

1. Same as the project in assignment 1, this project will allow users to switch LED and PIR motion sensor on and off.

2.The system will be able to detect intrusions if it received a sequence of four motions follows a long, short, long and long pattern. A motion which continually move for 10 or more than 10 seconds will be count as long motion. The server will record all data captured PIR motion sensor by from the Arduino Board.

3.The application will communicate between the board and the server using Johnny-five (Same as it did in assignment 1).

4. Client will display the number of intrusions and long/ short motions.

5.The data will be stored in online database in real-time.

6.Added a new function that allow users to delete all recorded data from the firebase.

3.System Components

1. Client Interface: The interface will provide the client to display all the relevant motion. User can also toggle the LED and motion sensor.

2.Arduino Board: The Arduino Board used to transmit data from the sensor to the board.

3.Motion Sensor: The motion sensor can collect movement in its surroundings.

4.Node.Js server: The server will establish a connection with the board transmitting the data to the database and the client.

5. A real time database powered by Google. All motion sensor relevant data is stored here.