PROJECT PROSAL

Group members:

Adiyah mohammed: 816014197

Jardel Davis: 816017045

David Kirton: 816016355

GROUP OPTIONS

A website that allows users too choose parts too build and but a PC.

This website will allow it's users to use the interface to choose what parts they want too build their PC with and put them into a cart before making a final purchase.

A timetable generator.

This application will take as it's input the timetable pdfs given from uwi to students. And will merge them into one time table so that students can see all their classes on one time table.

A health application

This application will display information on blood pressure such as symptoms. The ranges of blood pressure for men and women of many ages. The system would also indicate which pressure reading is high as well as low and provide advice on how to lower and raise the reading either naturally or with medication. The application can be used by doctors or any health care professional to have a virtual consult with anyone who has an account.

CHOSEN SOLUTION

The option we choose was the hydroponic system. Implementing hydroponic systems have the best economic and environmental benefits. This system could help encourage more people too get into agriculture because it takes much less work and resources too grow crops. Hydroponic systems also helps conserve water because the water in the system can be reused.

RESEARCH

In the source below hydroponic systems are using the internet to improve the reliability of the system and allow for remote monitoring.

Aliac, C. J. G., & Maravillas, E. (2018). IOT Hydroponics Management System. In *2018 IEEE 10th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment and Management (HNICEM)* (pp. 1-5). IEEE.

In the source below an android application is used to control the hydroponic system. And different sensors are used to record data.

Peuchpanngarm, C., Srinitiworawong, P., Samerjai, W., & Sunetnanta, T. (2016, May). DIY sensor-based automatic control mobile application for hydroponics. In *2016 Fifth ICT International Student Project Conference (ICT-ISPC)* (pp. 57-60). IEEE.

PROBLEM STATEMENT

This system will be used by farmers or anyone wanting to grow a garden too help decrease the amount of manual work needed to grow crops. The User's hydroponic system should be connect to the internet so that once the user has access to the internet they can use the application to control and monitor the hydroponic system. User's will be able to observe if their nutrients supply is low, water supply is low or if an error occurred in the system. User's can also use the application to control the system. A user can turn the system on or off at anytime and also set it too turned on at a scheduled time.

SINEROS

Johnson is a software engineer who works 8 hours a day. He has a small garden at home which he grows using the hydroponic system. While Johnson is at work, he takes out his phone and uses the app too turn on the hydroponic system for 10 minutes too water his garden. After ten minutes he uses the app again too turn the system off.

James is a farmer who grows a lot of crops. He grows most of his crops using the hydroponic system. James using his phone is able to program the hydroponic system too water certain crops at 10 am every day.

Joseph works a company that buys, sells and sets up the hydroponic systems for their customers. Joseph is setting up the system for a customer and he has made a mistake in how he set up some of the pipes so water cannot reach to the plants. When joseph tries too test the system, he receives an error message on his phone stating that the plants are not being watered.

DESIGN DIRECTION

The application part of the system will be designed using android studios each use will have too create an account and this information will be stored on a server. The hydroponic systems will have various sensors in the pumps, tanks and pipelines. The system is connected to a Raspberry pi which sends data collected from the sensors to the server. The Raspberry pi also receives information from the server and sends a voltage to other components of the hydroponic system to control it.

```
┌──────────────┐    send instructions    ┌──────────────┐    send instructions    ┌──────────────┐    send instructions    ┌──────────────┐
│   Andriod    │ ──────────────────────► │    Server    │ ──────────────────────► │ Raspberry PI │ ──────────────────────► │  Hydroponic  │
│ application  │                         │              │                         │              │                         │    system    │
│              │ ◄──────────────────────│              │ ◄──────────────────────│              │ ◄──────────────────────│              │
└──────────────┘      receive data       └──────────────┘      receive data       └──────────────┘      receive data       └──────────────┘
```