ENG 224 ASSIGNMENT

ALGORITHM

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SOFTWARE DEVELOPMENT PROCESS

The Software Development Process are the steps involved in building an applicationThe process involves six steps which include;

- CONCEPTUALIZATION
- SPECIFICATION
- DESIGN
- IMPLEMENTATION
- TESTING & DEBUGGING
- RELEASE & UPDATE

CONCEPTUALIZATION

This process is simply the having ideas to solve a problem, in this case, the problem at hand is the Dry season in ABUAD Farm, and as an engineer, we solve problems. In order to solve this problem, an application would be required . This application will be able to measure the soil temperature, moisture, also be able to control the timer to wet the soil and the plants.

SPECIFICATION.

This involves the Hardware and Software Features,

The hardware features include ; Soil temperature Sensor, Soil moisture sensor, sprinkler, tank, pipes, source of water, Arduino, Arduino LCD., Level sensor while the software features include; GUI, Timer, Notification system, Bluetooth system, DBMS.

DESIGN.

The **scenario** of application **begins** from **installing** the app on **the telephone** then open the application, First of all, **the primary display** of the app **will
be** loaded **when** the **consumer** will **choose** which **device is hooked up** to Bluetooth.
The **system** will **take a look at** if the **device is connected** if **it is linked** then it notifies the **person** that the **device is hooked up otherwise** notify the **user device is not connected**. In **the main screen**, the **consumer** can **immediately transfer** ON /OFF the entire **device**. Moreover, If Details Button pressed it **masses** to the details **screen**. In this Screen **consumer** will **able to** see all details **associated with** the whole **system** For **instance** if he pressed on plant1 button he **may
be capable of** see (**quantity** of water, Soil moisture, Temperature) if **there may be** a problem **only on this** line he can **transfer** ON /OFF line so **he can** control line by line on this page.

IMPLEMENTATION.

This is the process of writing the code for the application. This process can be achieved by either using a High-level language or a Low-level language.

<u>TESTING AND DEBUGGING</u>

Testing and Debugging, this is checking the performance of the system and checking for errors and removal of errors,

This process would be done after every step in the design and the implementation. After this has been done, the hardware would also be checked and see if it functions properly. After all this a general test would be done.

<u>RELEASE AND UPDATE</u>

After the web application is released to the public for usean update is usually developed then later released. The development on the application based on the user's review and is usually aimed at fixing minor or major bugs and also to keep it up to date with advancing technology.

<u>HARDWARE AND SOFTWARE FEATURES.</u>

• Arduino

Arduino is "an open-source electronics platform based totally on clean-to-use hardware and software". The Arduino control panel programmed by Arduino c and is based on C and C ++

• Arduino[LCD Liquid Crystal Library]

This library permits an Arduino board to control Liquid Crystal Display (LCD) that is on the Hitachi HD44780 chipset, which is on most text-based LCDs.

• Moisture Sensor

The soil moisture sensor comprises of two tests that are utilized to the degree the volumetric substance of water. The two tests permit the current to pass through the soil, which gives the resistance esteem to the degree the dampness esteem. When there is water in the soil there will be less resistance and the soil will handle more power. But if the soil is dry it conduct power weekly and needs less power and more resistance.

• Temperature Sensor

A temperature sensor is a sensor to measure the ambient temperature. This sensor has three pins – a positive, a ground, and a flag

• Level Sensor

The water-level pointer is utilized to demonstrate the water level in the tank, by using this sensor we can control the flood of the water as well know the level of the water in the tank, and at any time we can know the water level in the tank, it has a basic circuit

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1.Start

2.Enter password

If password correct

Print "Home Page"

Else

Print"Main Page"

3.Open Home Page

4. Read Temperature of soil

If above 40 degrees

Sprinkler rises

Else

Sprinklers remains node

5. Read Moisture of Soil

If above 400

Sprinkler rises

Else

Sprinklers remain node.