

OKANG EFFIONG BASSEY

18/ENG08/013

BIOMEDICAL ENGINEERING

Conceptualization: A general idea; which is providing ABUAD with an Application that can Salvage the Irrigation System problem during the dry Season.

Software;	Hardware;
① Timer	Thermometer
② Temperature detector	Pipes/sprinklers
③ Activation button	water tank
④ Alarm Notification	Pressure and Moisture gauge
⑤ Password box	Alarm
⑥ Access Control	
⑦ AI action Unpiloted action	

Design: This is a step by step breakdown of how the system works

When the app is opened the password is requested. and it leads to the access control area where the timer, Temperature detector and activation buttons are located. Alarm notifications or the timer reminds the user to use the activation button to supply water to the crops. But the AI (Artificial Intelligence) Unpiloted action comes into play when the app shows notifications and nothing is done about it the (AI UA) takes charge and accesses the activation button to supply water.

Implementation: Includes the Codes written for the software application and the programming language being used. which is the High level language since it has HTML and other valuable properties

Testing and Debugging: After creating the app there may be syntax and logical errors, so before the app is sold out it is being tested for any malfunctions to avoid any problems for the end user.

Release and Update: After the app has been released for the end user. It is the job of the producer(s) to get feedback and ~~data~~ from the end user and update the app to a better version.

B) Software features:

- i) Timer: This is the feature that sends information after a particular period to the user if they don't respond it resends the information to the AI Unpiloted to take action.
- ii) Temperature detector: Sends information to the user and AI Unpiloted to take care of the temperature of the soil.
- iii) Activation button: This is the most important feature for the user because it enables him to give instructions for water to be supplied.
- iv) Alarm Notification: This notifies the user or AI Unpiloted when the temperature of the soil is too high.

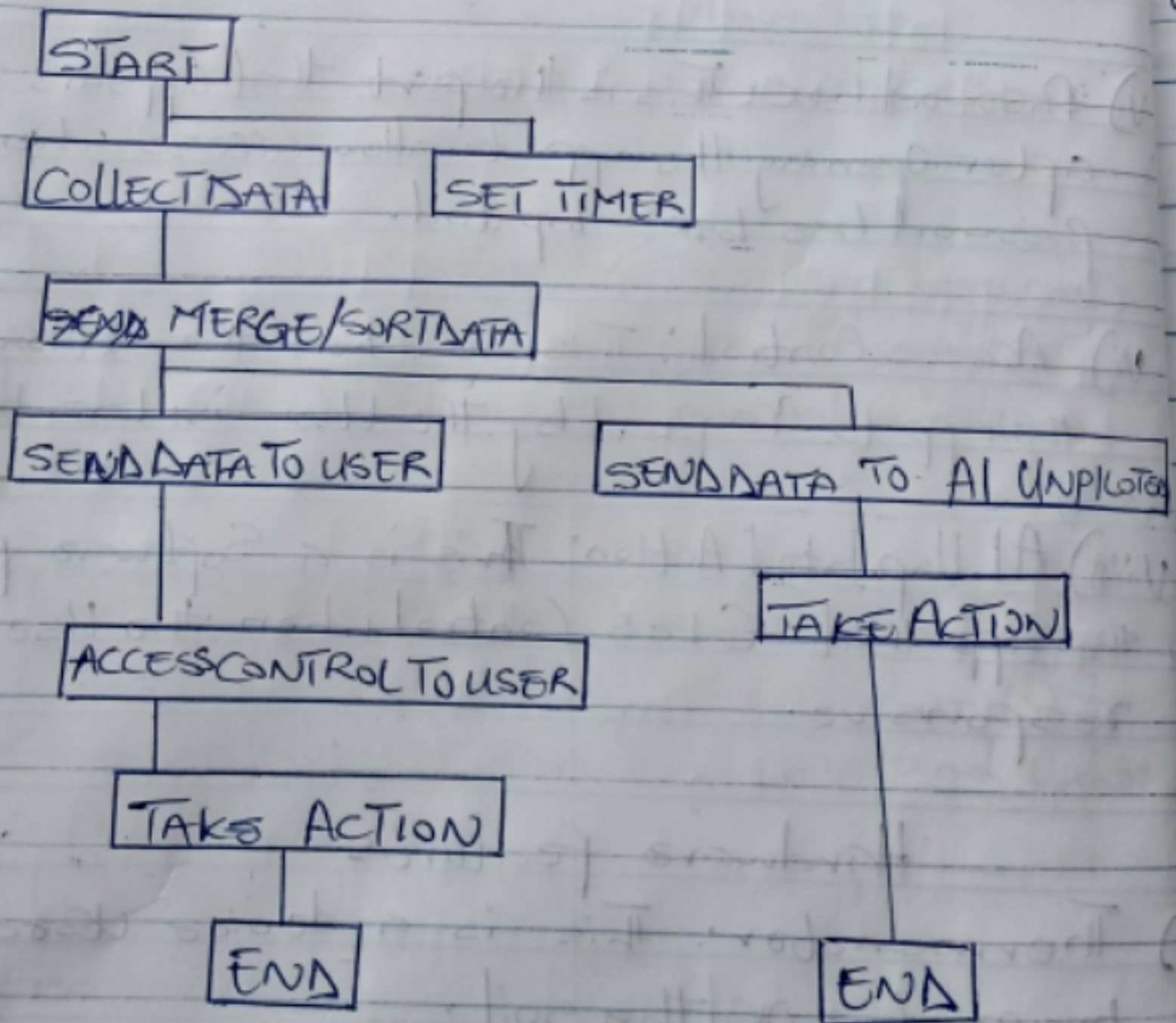
and when the moisture content of the soil is low.

- v) Password box: This is the part that appears immediately after opening the app to allow access when once the password has been inputted.
- vi) Access Control: This is where the actions given to the app to respond by the user is located.
- vii) AI Unpiloted Action: This is a software feature of the app that takes control when the user is not responsive.

Hardware features

- i) Thermometer: This is a device used to tell the temperature of the soil.
- ii) Pipes/Sprinklers: The pipes carry water to the sprinkler device from the water tank to aid irrigation.
- iii) water tank: This is where water for the plants and other activities is stored.
- iv) Pressure and Moisture gauge: These are devices used to check the moisture ^{content} of the soil and the pressure.
- v) Alarm: This is a device that goes off when there is any major sensitivity in the soil like increase in acidity.

① Top-down Approach of Application;



ii) Algorithm;

Step 1: Start

Step 2: Input password

Step 3: Press activation button

Step 4: If low moisture ^{Print} release water
else

If high moisture print withhold water

Step 5: Stop

iii) flowchart:

