NAME: DAGOGO TAMUNOMIEBAKA SAMPSON MATRIC NO: 18/ENG05/013 COURSE CODE: ENG 224 ALGORITHM ASSIGNMENT

The name of my application is the Dagogo Tamunomiebaka Sampson machine, this application has the ability to read the temperature of the soil, determine the moisture content of the soil, detect and alarm lack of water in the tank for irrigation and enable password for the system.

This design is based on the software development cycle which is ;



The cycle of this design of starting from the

PLANNING;

The Dagogo irrigation application was created to improve the ABUAD farm and solve the irrigation problem. This application helps at creating a program that will wipe out the irrigation problem in the farm, create a device that will detect the temperature and also determine its water levels.

ANALYSIS;

This algorithm design included the average temperature of soil., night time and day time temperatures, time period the soil needs regular moisture circulation for health nourishment and also **a**verage healthy and unhealthy level of soil moisture content.

DESIGN;

A representation of the design of the application is shown below in form of a welldefined algorithm and a properly structured algorithm.

IMPLEMENTATION;

A C programming code was applied to integrate the algorithm into instructions that could be understood by the computer system.

TESTING;

This application has been tested on Dagogo Sampson's little farm, it was able to successfully determine the moisture content, read the temperature and also sound an alarm when the moisture level is below the healthy condition.

MAINTENANCE;

This application consists of a hardware device that can withstand rough conditions.

HARD WARE COMPONENTS

The hardware components of my device consists of different wireless sensors, a central base station made up of a transceiver connected to a laptop and a Graphical User Interface.

SOFTWARE COMPONENTS

The software components of my application consist of a program that was created with a C programming code, it has various sensors integrated into the system. It has an automated control system, with a wireless network across the soil. It also has a security check to only grant access to specific user.







<u>ALGORITHM</u>

- 1. Start.
- 2. Input security key.
- 3. Check soil moisture content
- 4. Read through database and determine the condition.
- 5. Sound alarm for unhealthy conditions.
- 6. Begin irrigation.
- 7. Initialize watering system.

- 8. Check for errors by debugging.
- 9. Stop.

TOP DOWN APPROACH

