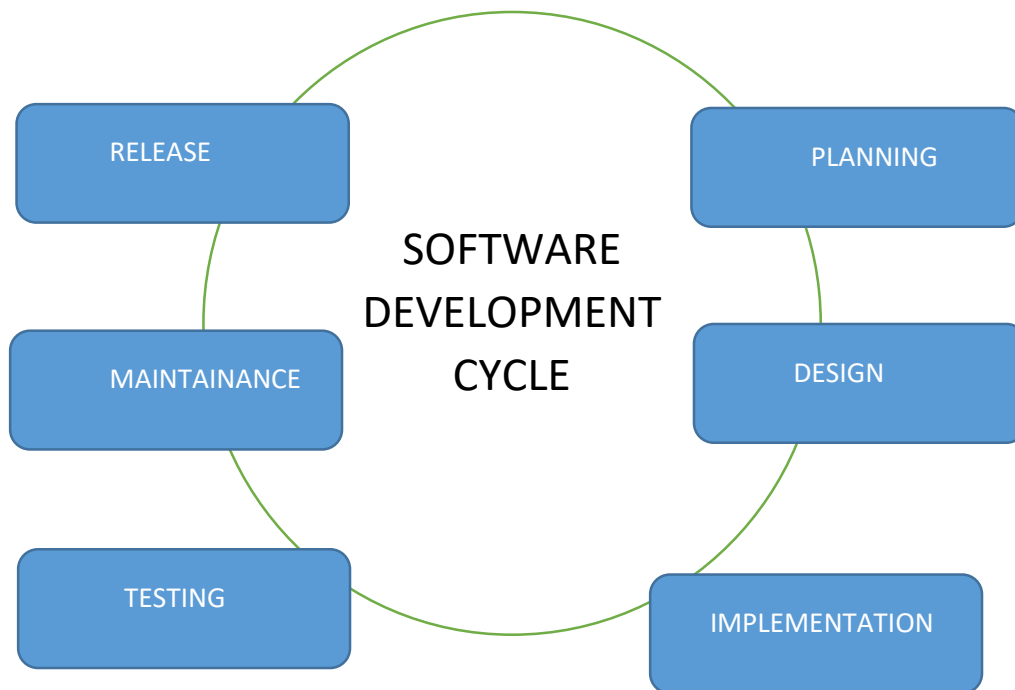NAME: ABU DAVID

MARTIC NO: 18/ENG02/002

DEPT: COMPUTER ENGINEERING

STRUCTURAL PROGRAMMING ASSIGNMENT

THE SOFTWARE DEVELOPMENT CYCLE

PLANNING: In planning the application the application must be able to agree with the terms and conditions like it should be able to read the temperature of the soil. etc.

DESIGN: In designing the application it will need both input and output layout with some processed steps. A design approach clearly defines all the architectural modules of the product along with its communication and data flow representation.

IMPLEMENTATION: Implementation represents the work (coding) that is done to meet the requirements of the scope of work and also the

realization of a technical specification and the realization of a technical program with the help of programming. The coding application will ensure that the application will be able to determine the moisture content of the soil. It will also have a sensor that will trigger it when there is not water and also a password setting to out the password.

TESTING- The application that is being developed will be tested so that there will be no logical and syntax errors. So these errors are checked by using the test data and debugging tools

MAINTENANCE: This part involves how the application is going to be maintained in order for it to be functioning properly. It can be maintained by checking the application for viruses and installing software updates.

RELEASE: The release is the final version of an application. A software is being released so that it can perform its functions.
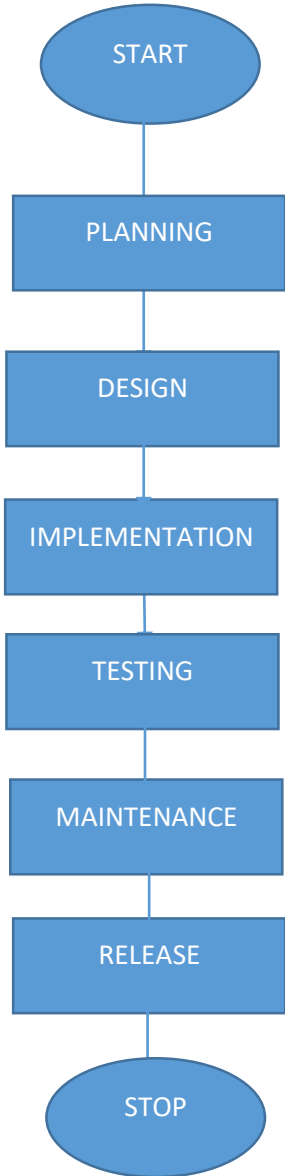
B. The Software and hardware used

The programming language that will be used will be javascript. Javascript is a very complex programming language but very powerful for application development. It is a dynamic programming language meaning that the codes can be changed if the developer wants to change it. It has a powerful frame work which is NODE.js will makes the application to be developed easily and less coding. The name of the application will be ABUAD FARM APP. In the aspect of the sensors a programming language python will be there to able its functionality. The hardware used are A sensor detector that will be able to trigger the alarm when there is no water. A temperature scale to read the temperature of the soil. A Time for time interval.

The hardware that will be used is will be Security camera that will be used to watch the farm. A sensor device that will ring an alarm that will be able to tell when there is little water remaining. A water sprayer that will be used to spray water around the farm. Also a time watch which will be used to indicate the time

C. The flowchart and Algorithm

The Flowchart

```
        START
          |
      PLANNING
          |
        DESIGN
          |
   IMPLEMENTATION
          |
       TESTING
          |
     MAINTENANCE
          |
       RELEASE
          |
        STOP
```

Algorithm

STEP 1: Start

STEP 2: Plan the application

STEP 3: Design the application

STEP 4: Implement the application

STEP 5: Test the application for errors

STEP 6: Maintain the application to ensure its functionality

STEP 7: Release the application

STEP 8: Stop

D. The Drop down approach of the application

```
                    ┌──────────────────┐
                    │     PLANNING     │
                    └──────────────────┘
                   /                    \
        ┌──────────────┐          ┌──────────────────┐
        │    DESIGN     │          │  IMPLEMENTATION  │
        └──────────────┘          └──────────────────┘
               │                            │
        ┌──────────────┐          ┌──────────────────┐
        │   TESTING     │          │   MAINTENANCE    │
        └──────────────┘          └──────────────────┘
                   \                    /
                    ┌──────────────────┐
                    │     RELEASE      │
                    └──────────────────┘
```