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MATRIC NO:18/ENG06/018

DEPARTMENT:MECHANICAL

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.An application to automate the irrigation system on ABAUD farm With a restricted user access, it can read the temperature of the soils by means of sensors, determine the moisture content and configure a time interval for the water system. It is also designed to trigger an alarm and mobile notification for the water reservoir refill when necessary.

SPECIFICATION;

1.A password will be used for security.

2.Temperature sensor and soil moisture sensor; sensors read temperature and moisture content.

3.Database to store data gotten from the soil moisture and temperature sensor.

4.Automatic water pump controller circuit; This is to read the water level in the tanks.

Programming language to be used is JAVA.

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.

The Software and hardware features:GUI, timer, access control, error detection

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. The name of the application will be ABUAD IRRIGATION 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 sprinkler, water tank, sensors (moisture & temperature), pipe system, pump, water gauge,spray can,security cameras and timers.

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