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18/ENG02/046

COMPUTER ENGINEERING

ENG 224

Planning: The software to be designed to perform different tasks on the soil with the aid of machines. The software would have a good user interface to enable easy usage of the software. The software would be able to perform tasks like reading soil temperature, determining soil moisture content and many other tasks using the aid of machines. The software's functions would be limited to the instructions specified by the customer and would only work in connections the machines. The software would monitor machines and devices such as soil moisture sensor, soil monitoring sensor etc.

Design: the design of the software would be a multi interface platform with different accessories put in place with corresponding applications. The software would consist of a SOIL READING SECTION which is in pair to the underground soil moisture sensor and soil monitoring sensor enabling the user to easily read soil moisture content and check soil pH, soil temperature, soil compatibility etc. The software would have an IRIGATION AND WATER CONTROL SECTION which helps to keep track of the water level in the irrigation tanks, The irrigation tanks also has a sensor at the side of the tanks which raises an alarm when not completely engulfed underwater and required to be refilled to enable sufficient irrigation of the farm land as specified by the customers' needs it also helps with the aid of the soil moisture sensor to check the soil moisture content. If low, the moisture sensor triggers the irrigation pipe sensor system to set off the irrigation system immediately . Finally, the software would require a log in ID by all staff using the software. To access the software, the user would have to put in his/her staff ID and password which would be created by individual users on the sign up interface. This means that, non-staff would not be able to have a portal due to no staff ID allocated by the company. Thus, thus portal could be used to pass general information and duties by the management board to all other staff.

Development: the program code is generated as Per Design Document Specification (DDS) which would be done in a well organised and detailed manner. All programming and coding guidelines would be followed according to specifications

#using the likes of c++ e.t.c

After development the application would be tested for bugs and all faults be corrected and bugs fixed.

Maintenance of software would be carried out on a regular basis and software updates shall be done as promptly as possible.

2) CRITICALLY DISCUSS HARDWARE AND SOFTWARE FEATURES

Hardware features: They are the machines and devices programmed by the software to detect, maintain and carryout farm irrigation operations on different levels and tiers. They include:

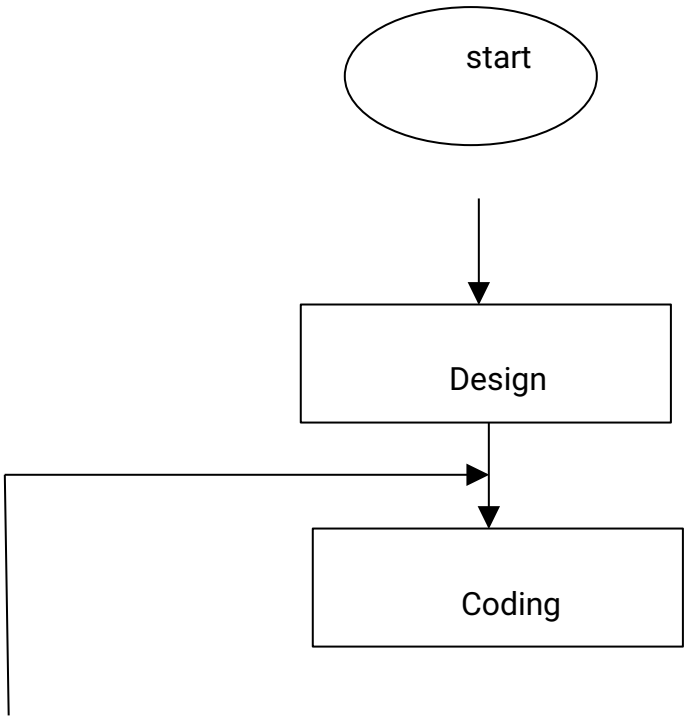
- Underground sensors e.g. Soil moisture sensors and soil monitoring sensors: these help to check soil moisture level and soil temperature respectively. These are responsible for giving commands to other irrigation sensors in order to balance the soil properties. All readings are displayed on the application software.
- Irrigation system sensors: these are set in place and paired with the underground sensors to receive commands on how to regulate irrigation levels on the farm site.
- Irrigation pipes and tanks: These are responsible for the distribution of water and moisture to the farm site as directed by the sensors put in place in order to provide near accurate and sufficient water supply to the farm.

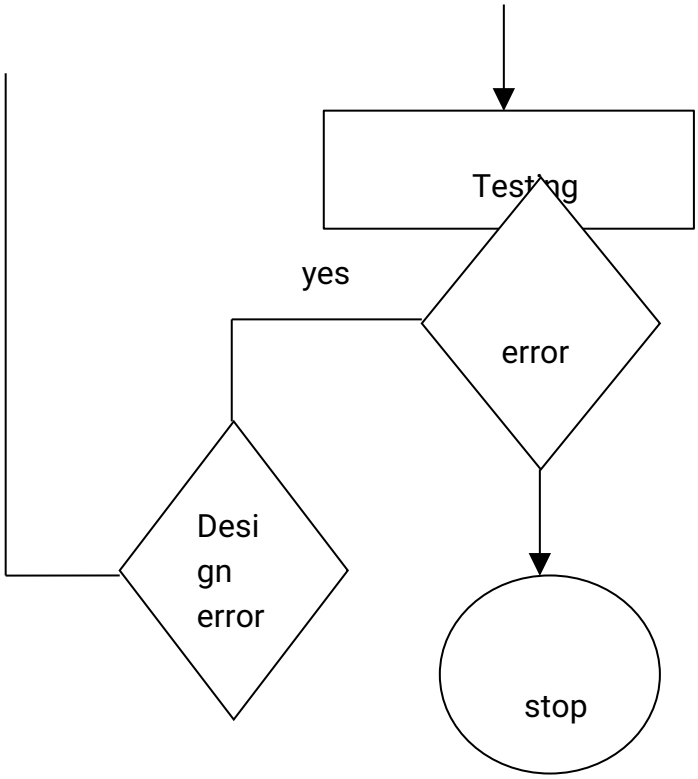
Software features: These include features put in place on the program that helps to read and maintain the hardware features. These include Soil pH scale, soil temperature meter, soil water level meter, soil moisture content reader etc. These all help to maintain the operations on the farm irrigation system.

3) step

1. Start
2. Design the application layout
3. Code the program according to application design layout.

4. Testing of software and fixinhg of bugs and errors.
5. Software maintenance and software updates.
6. Stop




Testing
yes
error
Desi
gn
error
stop