

OSANWEREN JANE

MECHANICAL

ENGINEERING

18/ENG06/063

CONCEPTUALIZATION.

The purpose of this software to improve the irrigation system currently in abudad in preparations for the various seasons. It is going to be designed to be able to read soil temperature, calculate soil moisture content along with many others.

System development cycle.

The software would be in the form of an application so that it can easily be downloaded or moved from one system to the other through the use of a storage device e.g. flash drive, hard drive.

The system would have access to a network and also a scanner, the reason for a network is so that the software application would have precise and accurate readings or measures whenever it's carrying out a process. Such processes including reading the temperature of a soil and comparing it with that of the required temperature it's supposed to have, or determination of the moisture or mineral content in a soil etc. while the reason for a scanner is to be able to scan raw physical materials and send its scanned copy into the system so as to carry out the research. Documents would be programmed into the software. The information for the software can either be found from the web or from books and personal studies. During the implementation stage all codes would be written so as to accept input documents and give an accurate result from the scans. It is then tested, if it works out fine then it is moved for mass production. Otherwise it is taken back to the workshop for defect tracking.

FEATURES

Hardware features include, a usb cord, storage device, thermocouple, pyconometer(storage tank for the soil),clock, weighing machine, scanner, 1) 8 GHz or faster processor,4 GB of RAM, 16GB (NTFS) of available hard disk space.

Software features include a platform of Microsoft Windows 10 Operating System. The Other Supported Operating systems that could work for it include:

- 1) Windows 7 SP1 (x86 and x64)
- 2) Windows 8 (x86 and x64)

ALGORITHM

Let ABUAD farm soil=x (output is displayed on the agro software's serial monitor)

Step 1: start

Step 2: enter decryption code

Step 3: if decryption code is correctly entered

Print "input password" on serial monitor

If password is correctly inputted

Unlock agro software

Else if incorrect password is inputted

Print "access denied" on serial monitor

Else

Print "access denied" on serial monitor

Step 4: enter the code letter 'x'

Step 5: check the temperature of 'x' using the thermocouple

Step 6: if 'x' is within the range of 65-75F

Print 'proceed' on serial monitor

Else

Print "do not proceed" on serial monitor

Step 7: check for the moisture content of 'x' using the pycnometer

Step 8: If 'x' is between 80-100 percent

Print 'proceed' on serial monitor

Else

Print "do not proceed" on serial monitor

Step 9: using time synchronization program, check for suitable conditions of temperature and moisture content of soil and relay signals from software

Step 10: If suitable conditions are met

Program allows suction of water from reservoir for a given period of time

Else

Program remains unchanged

Step 11: continuous sensitivity to alarm system

Step 12: If alarm is set off

Print "water level is low" on the serial monitor and send signal to the time

synchronization program

Else

The serial monitor remains changed.

Step 13: STOP

FLOW CHART



