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Irrigation System Help and Solution

Irrigation is the artificial application of water to land for the purpose of agricultural production. Effective irrigation will influence the entire growth process from seedbed preparation, germination, root growth, nutrient utilisation, plant growth and regrowth, yield and quality.

Conceptualization: The general idea of this software is to solve the irrigation system caused during the dry season. Also, to read the temperature of the soil, determine the moisture of the soil content, configure the time interval for the water based on the soil content. In summary, the machine software would carry out functions to get rid of the irrigation.

Specification: This includes the hardware and software of the machine.

- Hardware: Pipes to convey water around, the external soil thermometer to check the soil temperature, an external tensiometer to check the soil moisture tension, water sprinklers(rotors), a display screen to show time interval of the water system, to also display the temperatures, Alarm used to alert the owner about the low water level in the tank.
- Software: It would have a GUI (The **graphical user interface** is a form of user interface that allows users to interact with electronic devices through graphical icons and audio indicator such as primary notation, instead of text-based user interfaces, typed command labels or text navigation), a security system(for the enablement of passwords),

Design: The design of this machine would be broken down using a simple but yet detailed algorithm and a detailed flowchart.

- **DETERMINING TEMERATURE OF THE SOIL**

STEP1: START

STEP2: INSERT THE SOIL THERMOMETER INTO THE SOIL

STEP3: READ THE TEMPERATURE OF THE SOIL

STEP4: DISPLAY THE TEMPERATURE

STEP5: RECORD THE TEMPERATURE

STEP6: END

- **DETERMINING THE MOISTURE CONTENT**

STEP1: START

STEP2: GET SOIL SAMPLE

STEP3: USE EITHER THE TENTIOMETER OR A RED LITMUS PAPER

STEP4: IF LITMUS PAPER TURNS BLUE

STEP5: PRINT RESULT (ALKALINITY)

STEP6: ELSE

STEP7: PRINT ACIDITY (STORE RESULT)

STEP8: STOP

- **DETERMINING THE TIME INTERVAL FOR THE WATER SYSTEM**

STEP1: START

STEP2: READ TIME A AND B

STEP3: TIME A= ACTIVATE WATER SYSTEM

STEP4: TIME B= DEACTIVATE WATER SYSTEM

STEP5: END

- **SYSTEM PASSWORD**

STEP1: START

STEP2: DISPLAY INPUT PASSWORD

STEP3: READ INPUT

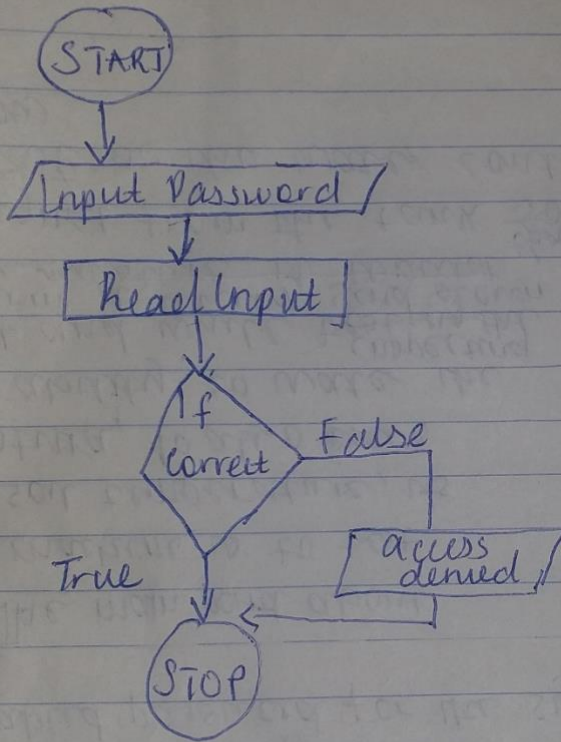STEP4: IF CORRECT

      PRINT ACCESS GRANTED

STEP5: ELSE

STEP6: IF INCORRECT

 PRINT ACCES DENIED

STEP7: END

FLOW CHART

Password

START

Input Password

Read Input

If Correct

False

True

access denied

STOP

Determining Soul Temperature

START

Get Soil Sample

Add Water to the soil

Use either tentiometer / Red litmus paper

Turs blue ← If → Remains Constant

Print alkalinity

Print Acidity

End

dirty eeel

Algorithm

Software

Hardware

rotors, soil thermomet

Pipes, tensiometer

Irrigation
System