OBEMBE TOMILAYO

MECHANICAL ENGINEERING

18/ENG06/050

The software built is intended to interact with the machine which would help by taking the sample of the soil and determining the

1. Temperature of the soil this would be done with a thermometer
2. The moisture content of the soil this would be determined by how acidic or alkaline the soil is
3. Determine the time interval for the water system to activate the irrigation system
4. Alarm trigger due to in sufficient water in the tank by checking the water level in litres

CONCEPTUALIZATION: the concept of this software is to able to tackle the dry seasonal unproductivity in the farm by determining the temperature of the soil and level of moisture content through its acidity and alkalinity also timing the irrigation system to produce water to water the plants and giving alerts when the water level is high or low

HARD WARE AND SOFTWARE FEAUTURES

This would contain some feature both hard ware and software

1. A scoop : this is for collation of soil samples from the earth crust
2. Thermometer: this is for determining the temperature of the surrounding and the soil
3. Led display: this would be used to diplay the various out put the device would give e.g temperature value
4. Level gauge :this would be installed in the water tank to read the level of water in a tank in litres
5. Alarm : this would be used to alert the owner of low water level in the tank or high water level in the tank
6. Light indicator : this would be used to display how low or high the water level is

DETERMINING THE TEMPERATURE OF THE SOIL

Start

Get sample of the soil

Read the temperature of the soil

Print temperature value

end

DETERMINING THE MOISTURE CONTENT OF SOIL

START

GET SOIL SAMPLE

ADD WATER TO THE SOIL

ADD RED LITMUS PAPER TO THE MIXTURE

IF RED LITMUS PAPER TURNS BLUE

PRINT ALKALINE

ELSE

PRINT ACIDIC

END

DETERMINING THE TIME INTERVAL FOR THE WATER SYSTEM

START

READ TIME A,B

TIME = A ACTIVATE WATER SYSTEM

TIME = B DE-ACTIVATE WATER SYSTEM

END

ALARM FOR INSUFFICIENT WATER

START

READ A LITRES

IF WATER IS ABOVE A LITRES

INDICATOR TURNS GREEN

ELSE, INDICATOR TURNS RED

ALARM IS ACTIVATED

IF WATER IS ABOVE A LITRES ALARM IS DE ACTIVATED

END

PASS WORD FOR THE SYSTEM

START

PRINT input PASSWORD

READ INPUT

IF INCORRECT

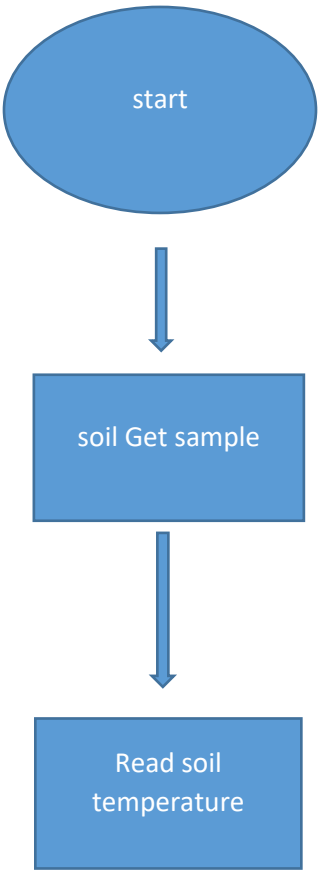
PRINT ACCESS DENIED

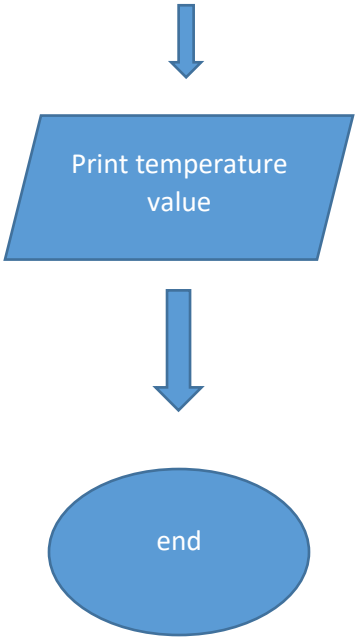
ELSE

PRINT ACCESS GRANTED

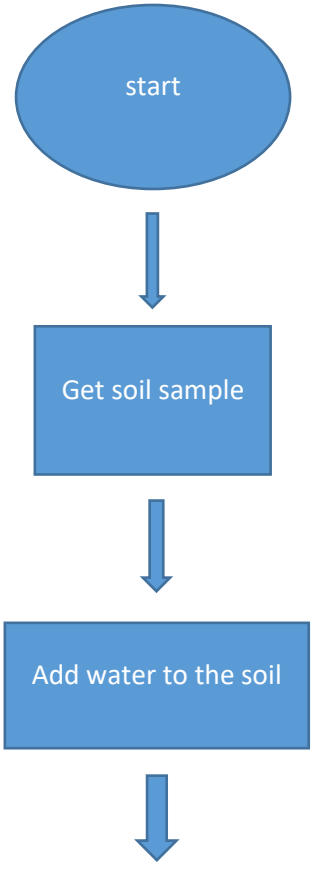
END

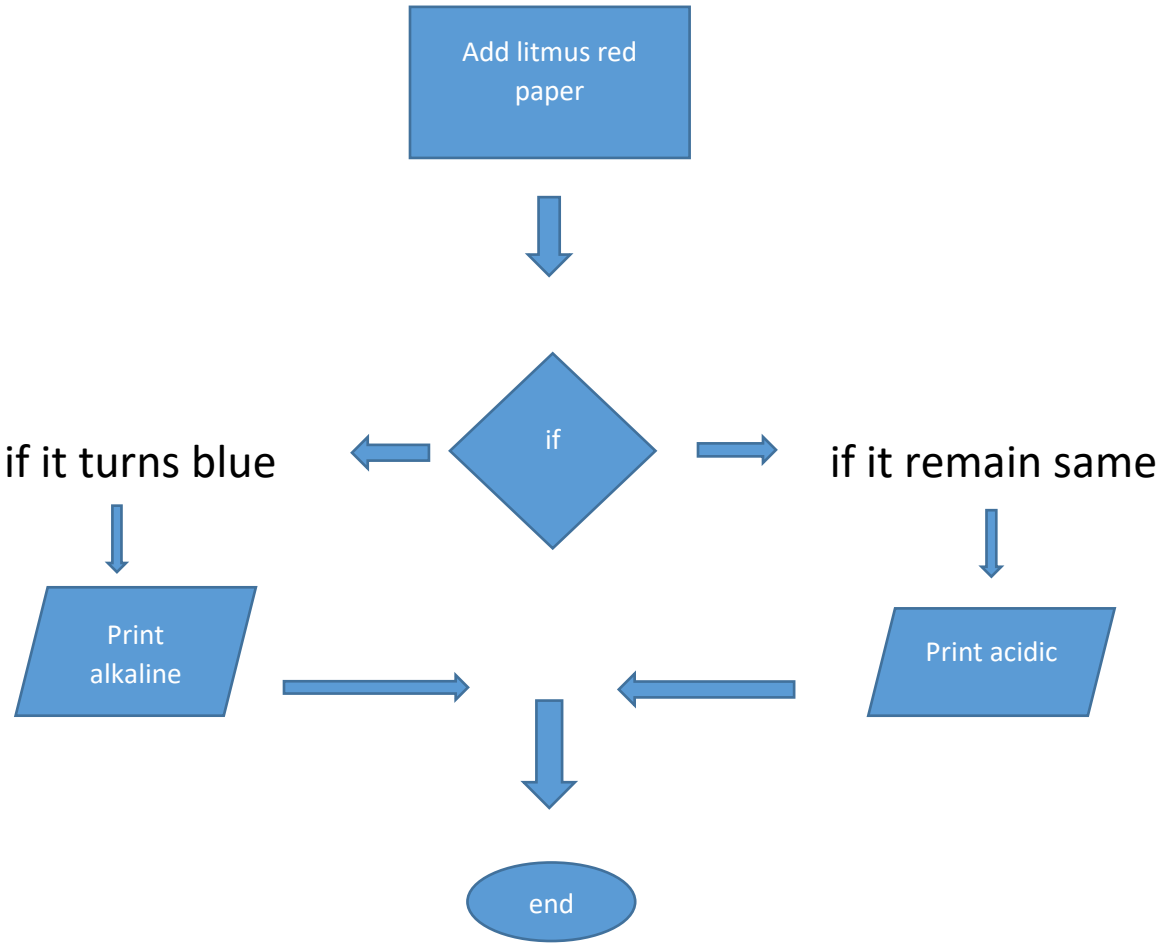
FLOW CHART FOR DETERMINING SOIL TEMPERATURE



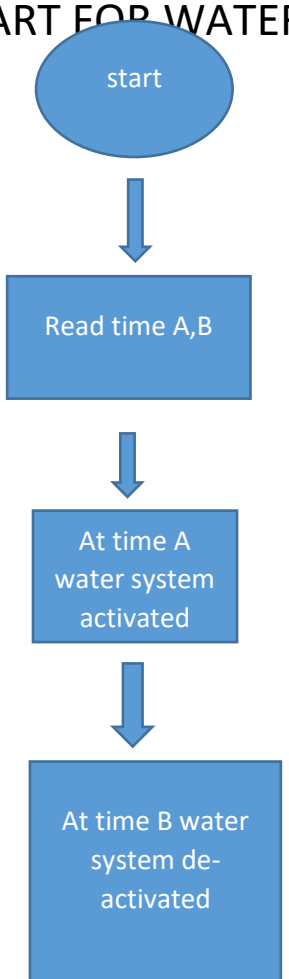


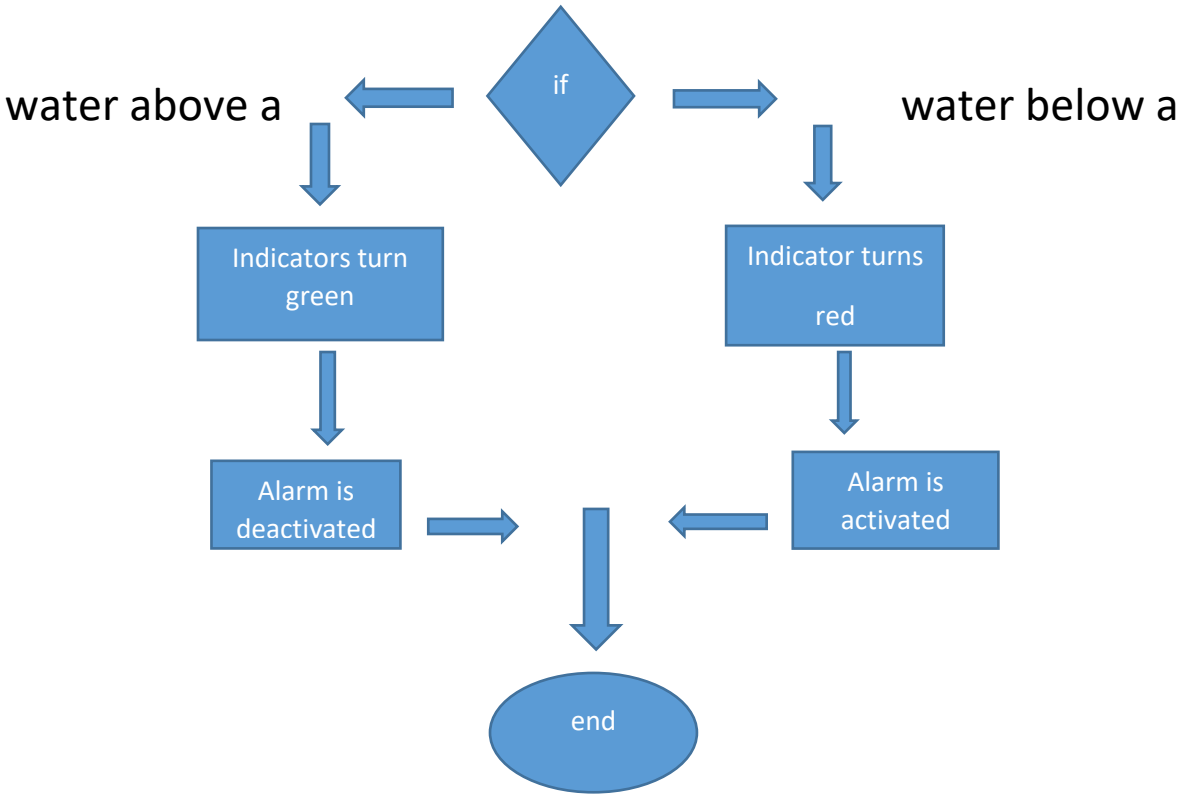
FLOW CHART FOR DETERMINING MOISTURE CONTENT

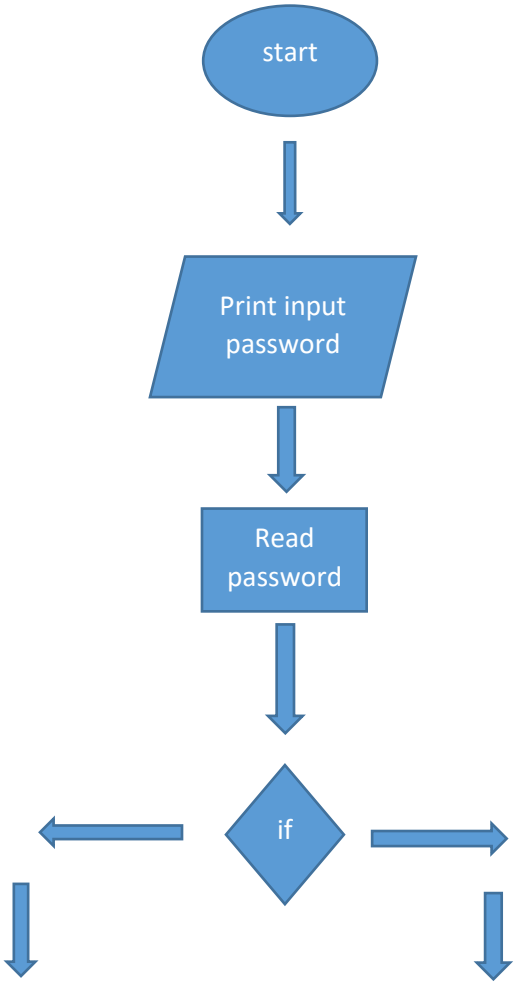


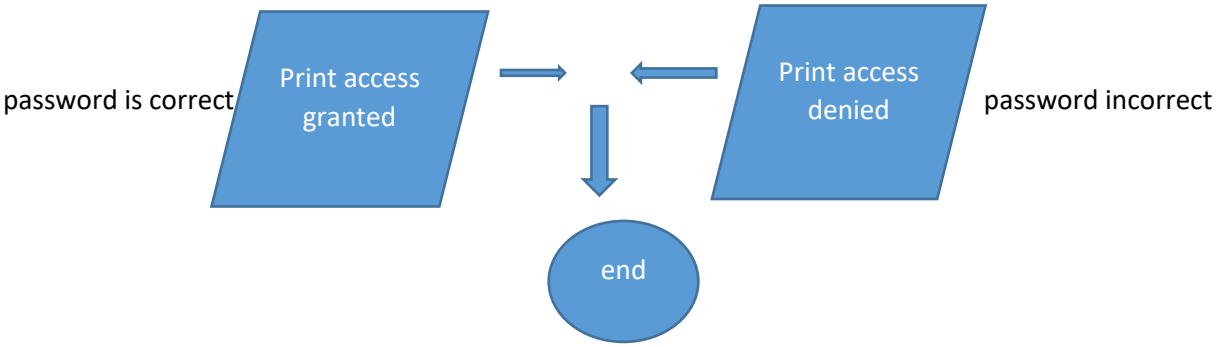
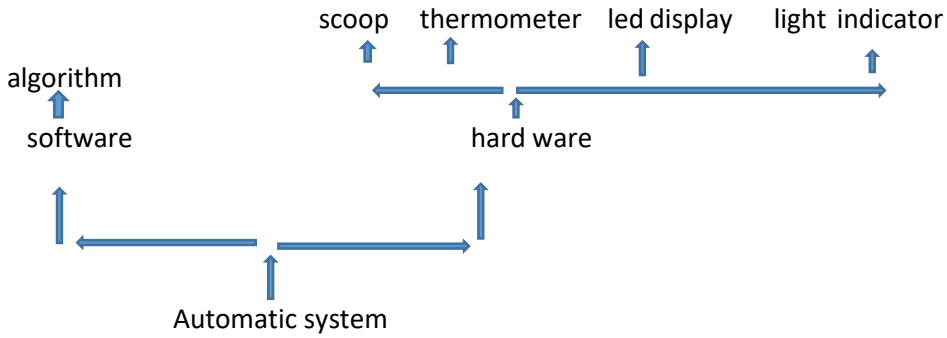


FLOW CHART FOR WATER SYSTEM




water above a
if
water below a
Indicators turn green
Indicator turns red
Alarm is deactivated
Alarm is activated
end


start
Print input password
Read password
if



A BOTTOM UP DESIGN