

NAME: Abdallah Sambo Hamza,
MATRIC NO.: 18/ENG09/003
DEPARTMENT: AERONAUTIC AND ASTRONAUTIC
ENGINEERING.

A. Discuss the application development following the software development cycle.

AUTOMATED IRRIGATION SYTEM.

Irrigation is the process of applying controlled amounts of water to plants at needed interval. Irrigation helps to grow agricultural crops, maintain landscape and revegetate disturbed soil in dry areas and during period of less than average rainfall. During the dry season the lack of moisture and heat affects the development of crops. With the help of an AUTOMATED IRRIGATION SYSTEM the temperature and moisture level of the soil can be controlled and monitored. The system helps control the amount of water being sprayed on the soil of the crops at an appropriate interval, which can be controlled by the software on the desktop of the farm without any physical effort.

B. Critically discuss the hardware and software features.

SOFTWARE FEATURES

- The software has a timer display screen with shows the time interval for it check up
- It also has a digital thermometer with show the reading of the thermometer placed on the soil
- It also has a digital tensiometer with shows the reading of the tensiometer placed on the soil
- It also has a button used to activate the rotors to spray and to stop spraying
- It also has a button to open the drainage when too much water has be sprayed

HARDWARE FEATURES

- Pipe: which helps pass water around
- Rotors: which helps spray water
- Pump: which help with the flow of water
- Water tank: which helps with the storage of water
- Power supply: which powers up the whole system
- Drainage: helps with the control and reduction of water quantity

C. Support your answer with flowchart and algorithm.

Step 1: start

Step 2: insert the soil thermometer into the soil

Step 3 : read temperature of soil a, b, c

Step 4: if $A > 40^{\circ}\text{C}$

Display A is larger

Else

Display 40°C is larger

Step 5: if $B > 40^{\circ}\text{C}$

Display B is larger

Else

Display 40°C is larger

Step 6: if $C > 40^{\circ}\text{C}$

Display C is larger

Else

Display 40°C is larger

Step 7: insert Tensiometers to soil

Step 8: read soil a, b, c

Step 9: if soil A is moist

Display soil A

Else

Do not display

Step 10: if soil B is moist

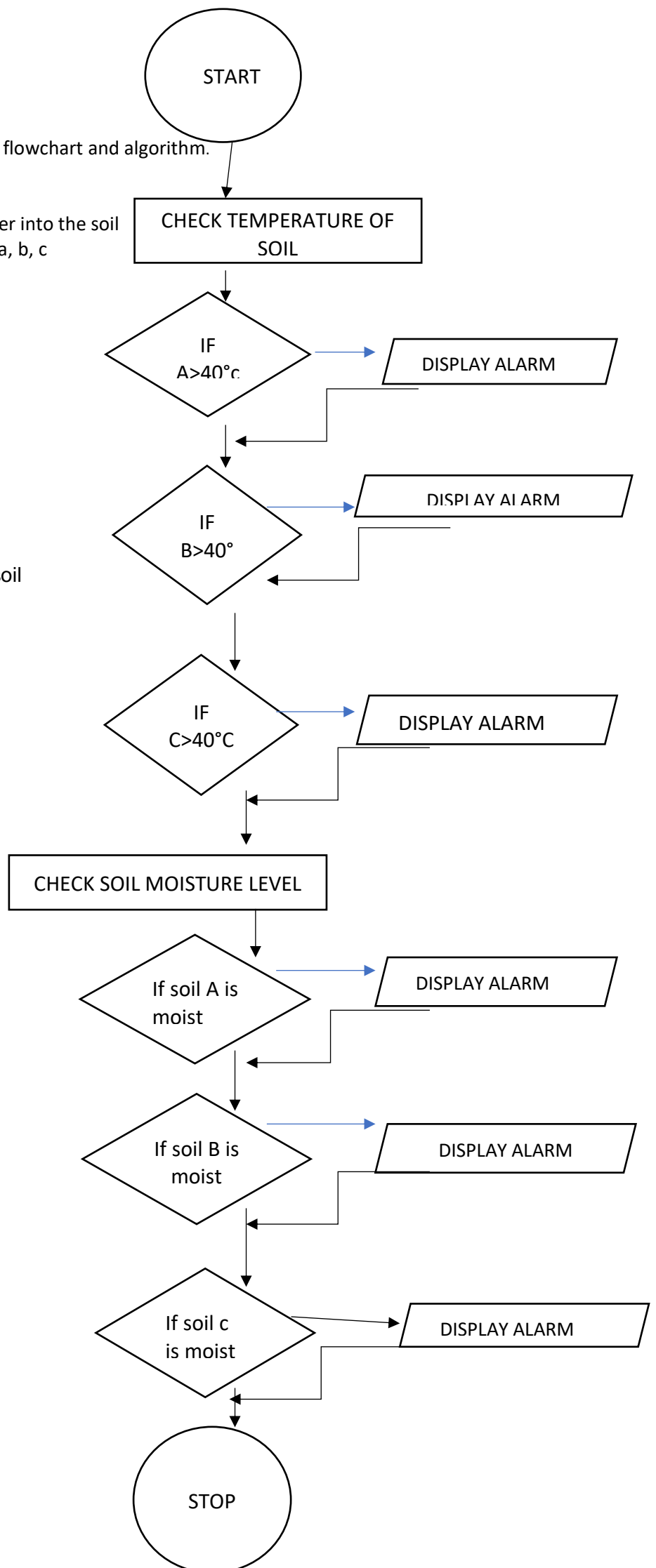
Display soil B

Else

Do not display

Step 11: if soil C is moist

Display soil C



Automated irrigation system

