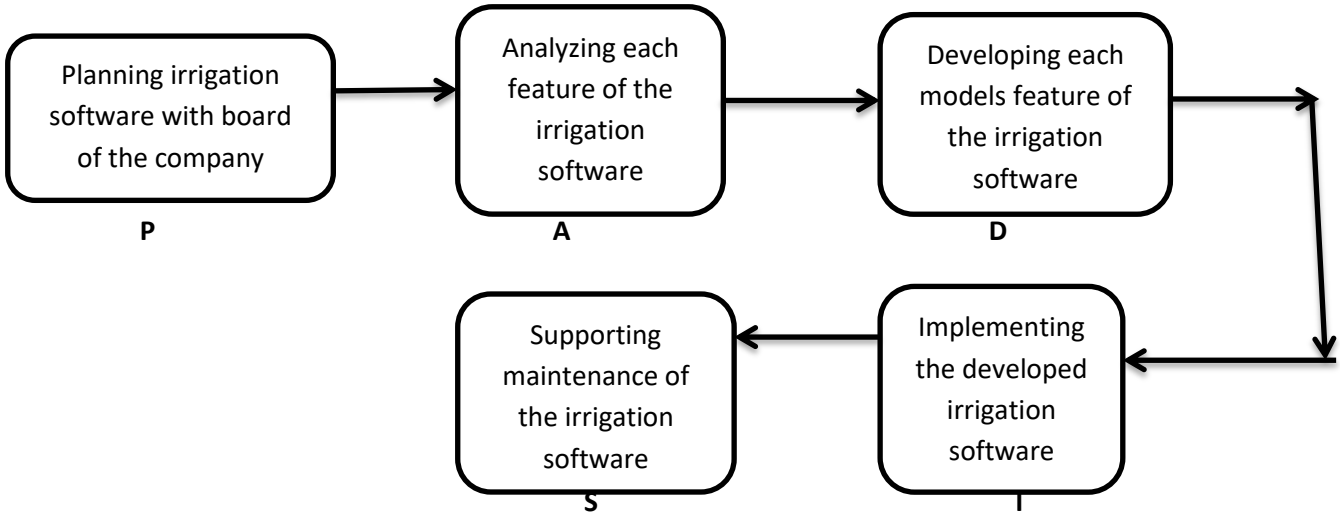
NAME: KAINE CHRISTIAN ONYEKA

DEPARTMENT: COMPUTER ENGINEERING

MATRIC NO: 18/ENG02/054

COURSE: ENG 224 (STRUCTURED COMPUTER PROGRAMMING)

A)THE SOFTWARE DEVELOPMENT CYCLE



B) i**. <u>Hardware</u>**

- Sensor : (i)For measuring temperature(heat sensor)

  (ii)For measuring moisture (humidity sensor)

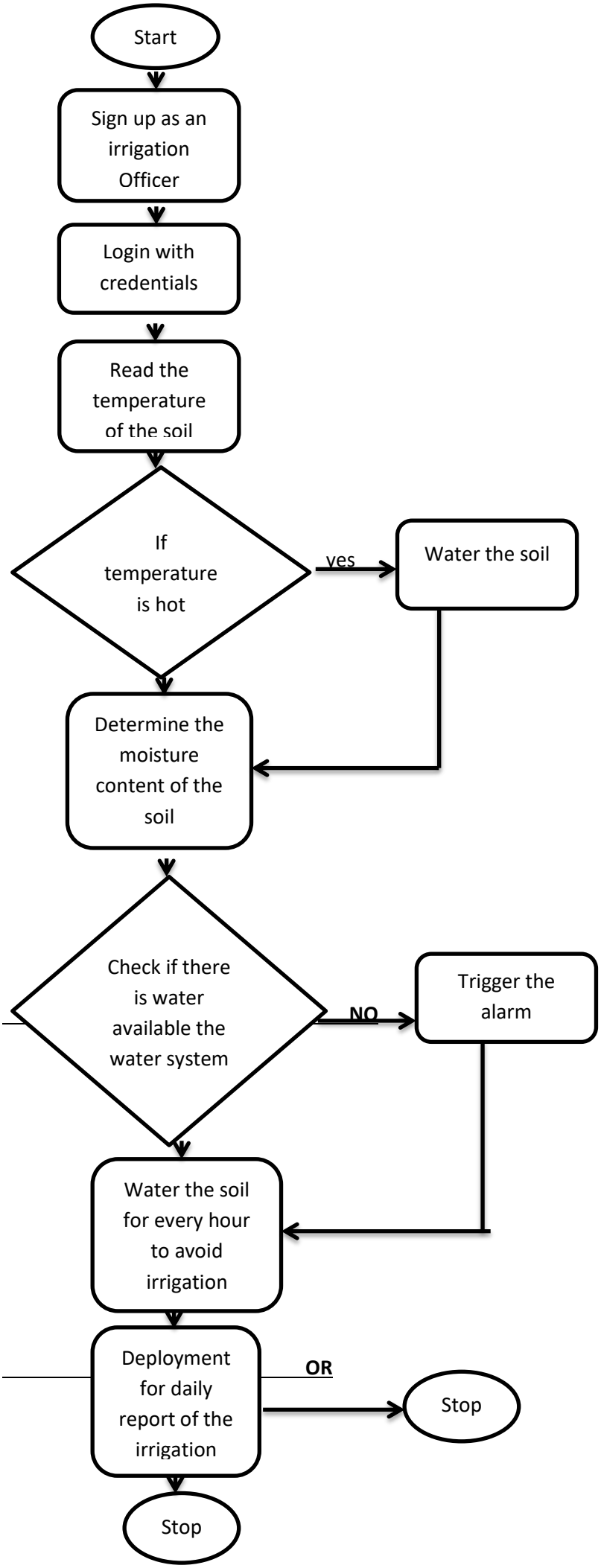
- Laptops: The software must be compactible with the system(s)
- Resistance to reduce high heat temperature
- Jumper wire
- Buzzer for the alarm system

ii. **<u>Software:</u>**

The software can be able to:

- Enable password for the system.
- Read the temperature of the soil, Determine the moisture content of the soil.
- Configure time interval for the water system.
- Triggered an alarm if there is no sufficient water in the tank for the irrigation.

C) <u>Flowchart:</u>


Start
Sign up as an irrigation Officer
Login with credentials
Read the temperature of the soil
If temperature is hot
yes
Water the soil
Determine the moisture content of the soil
Check if there is water available the water system
NO
Trigger the alarm
Water the soil for every hour to avoid irrigation
Deployment for daily report of the irrigation
OR
Stop
Stop

Algorithm:

Step 1: Start.

Step 2: Sign up as an irrigation officer.

Step 3: Login with credentials.

Step 4: Read the temperature of the soil.

Step 5: If temperature is hot. Water the soil.

Step 6: If temperature is cold, determine the moisture content of the soil.

Step 7: Check if there is water available in the water system.

Step 8: If No, Trigger the alarm.

Step 9: If Yes, water the soil for every hour to avoid irrigation.

Step 10: Display result for daily reports of the irrigation for comparison.

Step 11: Stop.

D) The Bottom-up Approach: