Nwaohiri Emmanuel Chukwuemeka
Electrical/Electronics
18/ENG04/054
Structured computer Programming

Development Cycle;

1. Planning;

Automation of the entire irrigation system; the software which will check the soil temperature , Determine moisture content of the soil ,Trigger an alarm when the water is insufficient, Create a password.

2. Product design ;

The application will be scalable hence it will be able to be used on devices ranging from desktops to phones
It will be cross platformed to be able to run on Windows,Mac OS , Android etc
It will be cloud hosted

3. Coding

4. Implementation and Integration

Traditional and SPA behaviors supported.

5. Software and Testing;

Easily tested with automated tests

6. Installation and Maintenance

Software Features

The software function for the Temperature measurement will be Configuration ,
Charting ,Alarm management ,Data retrieval, Reporting .
For the alarm system , the alarm delivery methods include : Visual indicator, Audible alarm, Text message
The software will be able to time itself on the intervals which the automated water sprinkler will operate.

HARD WARE features;

There will be the integration of several hardware components to perform tasks.
Beginning with the thermometer that will be used to measure the temperature of the soil,
The Barometer that will be used to measure the moisture
Sound system(Alarm system)
The display which will enable great user interface .

Algorithm

Step 1 : Start

Step 2 : Read int T , M, t, W

Step 3 : Get values

Step 4 : Read Temperature==T

If T> 30

Print Temperature high

Else

Print Temperature normal

Read Moisture ==M

If M>18%

Print Moisture too high

Else

Print Moisture normal

Step 5: Read time==t

if Moisture <10%

Start sprinkler system for t=15 minutes

Step 6:Read weight of water in the tank==W

If W<1kg

Print Water in the tank is too low

Ring alarm

Step 7: Read code

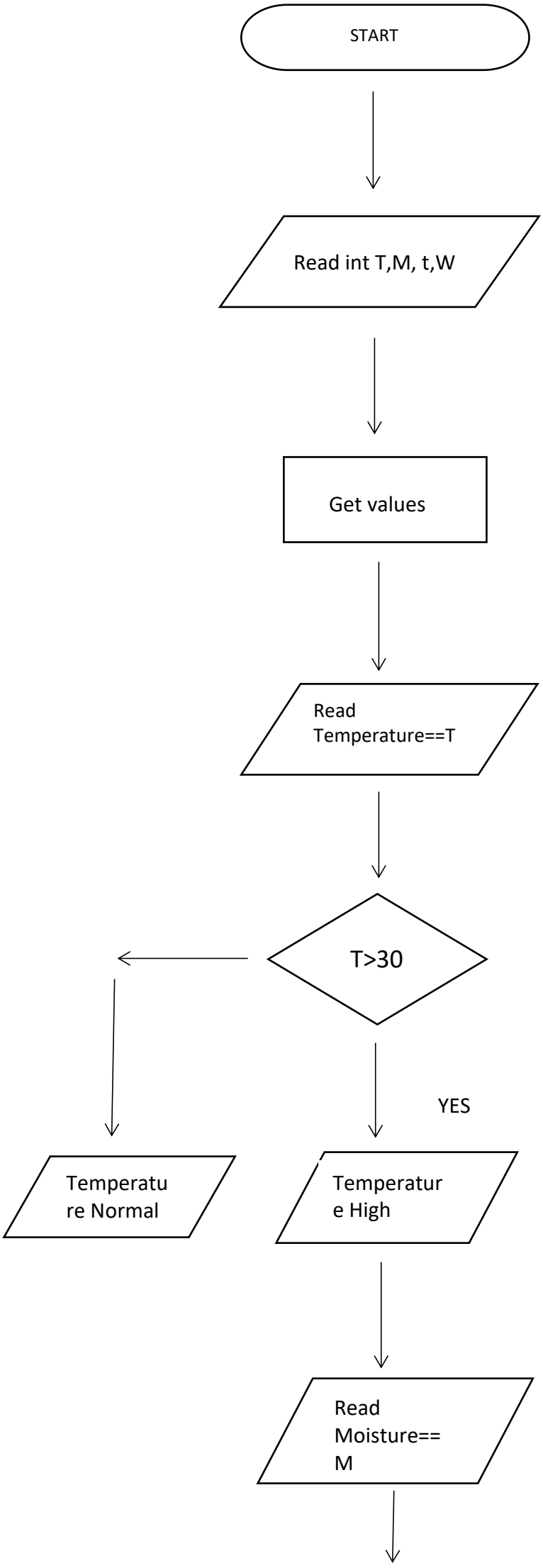
Step 8: if code ==MQSDE

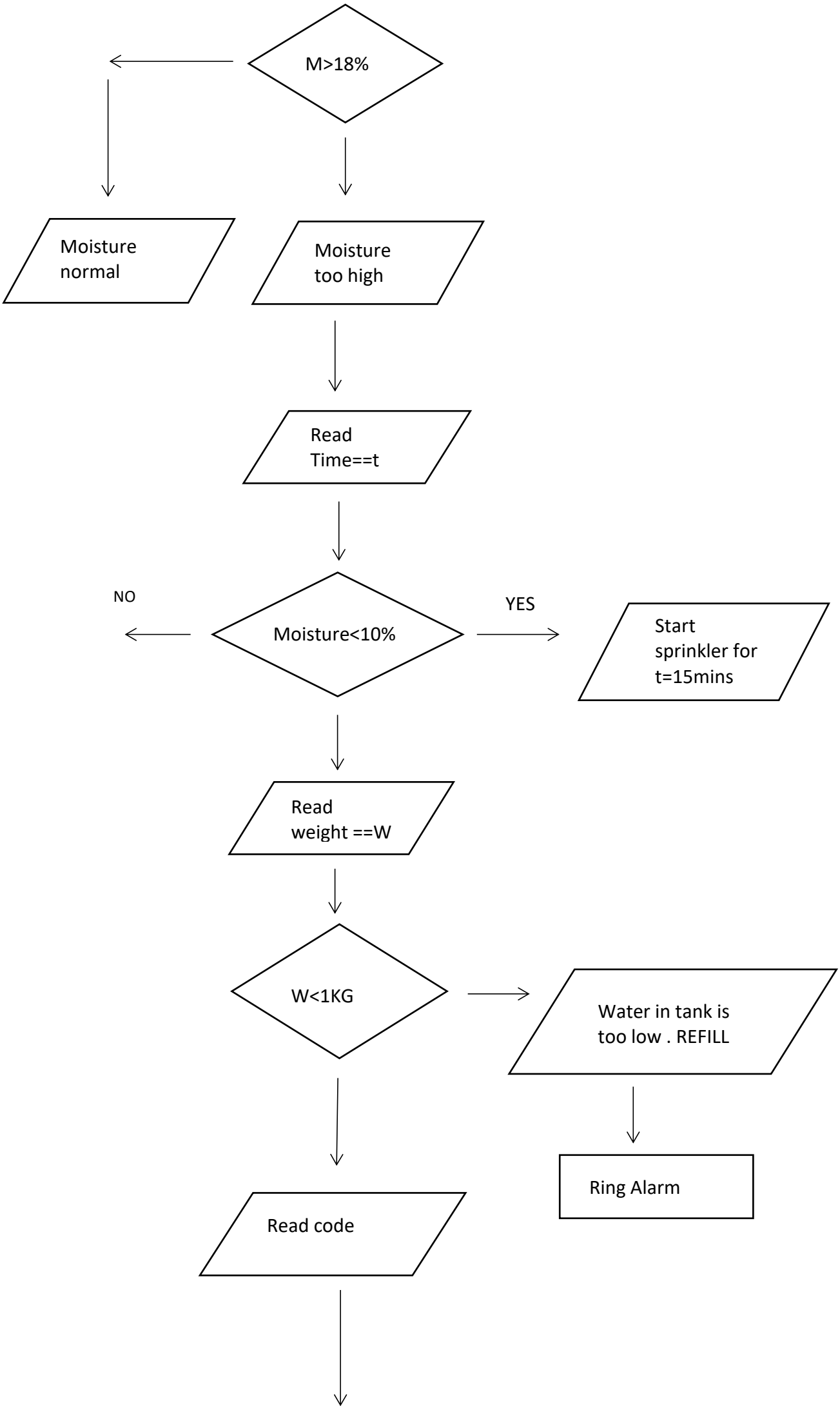
Print Password correct

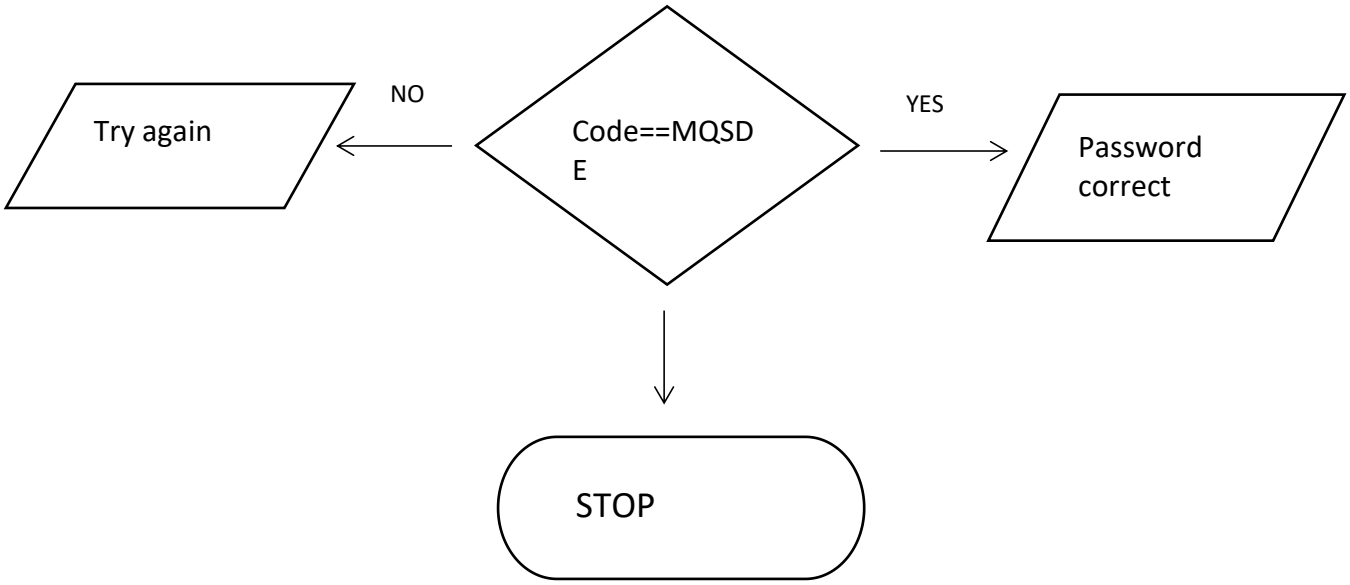
Else

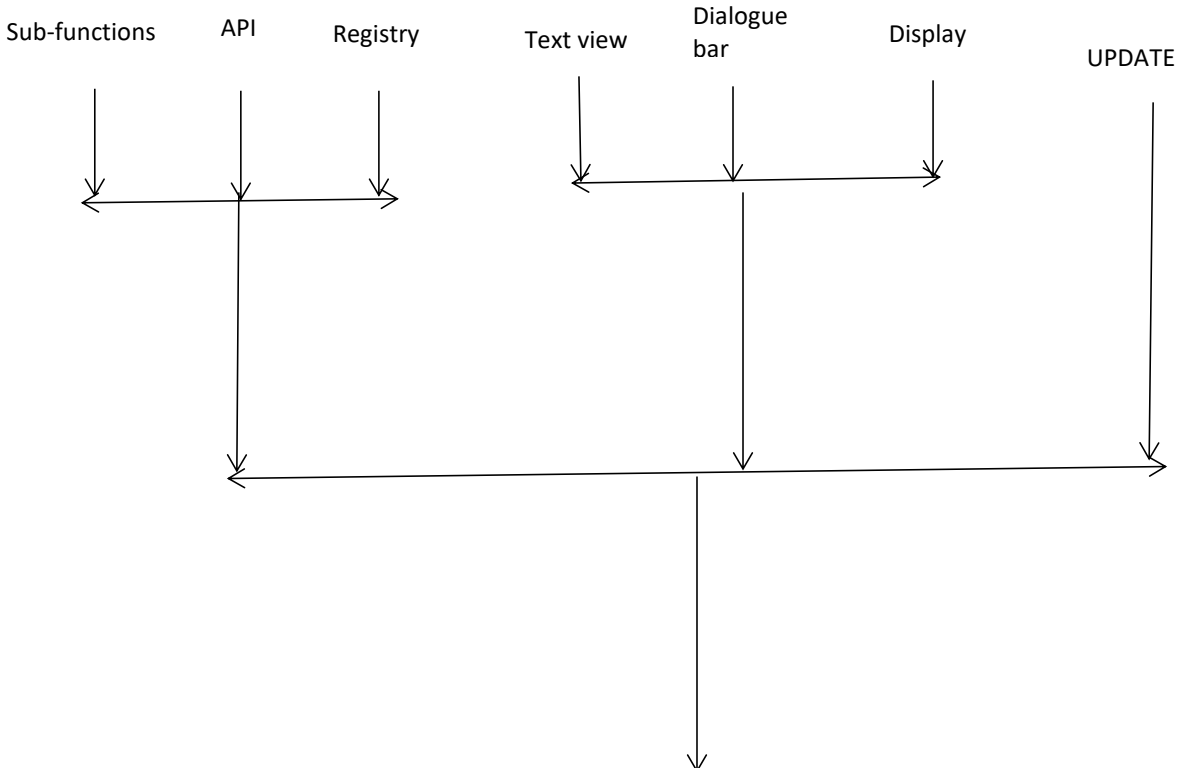
Print Try again

Step 9: Stop


START
Read int T,M, t,W
Get values
Read Temperature==T
T>30
YES
Temperatu re Normal
Temperatur e High
Read Moisture== M


M>18%
Moisture normal
Moisture too high
Read Time==t
NO
Moisture<10%
YES
Start sprinkler for t=15mins
Read weight ==W
W<1KG
Water in tank is too low . REFILL
Ring Alarm
Read code


Try again
NO
Code==MQSD
E
YES
Password
correct
STOP



BOTTOM UP APPROACH