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MATRIC NO: 19/ENG02/079(DIRECT ENTRY)

DEPARTMENT: COMPUTER ENGINEERING

COURSE CODE: ENG 224

COURSE TITLE: STRUCTURED PROGRAMMING

1. CONCEPTUALIZATION: This web an Automatic system based app that would help irrigation easier on the ABUAD farm.

This system would help too:

- Read the temperature of the soil
- Determine the moisture content of the soil and crop status
- Configure time interval for the water system
- Trigger an alarm if there is no sufficient water supply in the tank.

2. SPECIFICATIONS:

SOFTWARES	HARDWARES
• Alarm	Real time system
• Clock	Sprinklers
• Clock sensor	Alarm lights
• Ultrasonic detector	Soil Moisture sensor
• Magnetic switches	Temperature sensor
• Control system(User control)	LAN connection
• Notification system	
• Microsoft Access	

SOFTWARES

- **Alarm:** This would be placed in the system; it would give a sound notification when it detects any errors in the field.

- **Clock & Clock sensor:** The clock would be set at particular times to notify the computer when the to carry out water supply is due, then the cock sensor transfers it to the system.
- **Ultrasonic Detectors:** This is a device that triggers the alarm of the system, it is a speed and timing system that detects error immediately it arises and transfer the bug to the alarm.
- **Magnetic switches:** This will be used for detecting errors and malfunctions in devices working for the irrigation plan.
- **Notification system:** This system would notify the farmer on the start of watering of plants, and on errors detected.
- **Control system (user control):** This is system will only be accessible by the farm controller, whereby he would use credentials to login the system and be directed to the panel where the main control of system happens.
- **Microsoft access:** This is an organized sheet that would be used to draft scheduling, link the time sensor and the sprinkler system together.

HARDWARES

- **Sprinklers:** This would be used to supply water round the plants; as the most modern means of irrigation.

- **Alarm lights:** When there is an error, this lights would shine so as to notify the owner of a problem.
- **Soil moisture sensor:** This would measure the capacity of water level in the soil.
- **Temperature sensor:** This would give the degree of the surroundings at all times.
- **Real time system:** This works with the time, clock, alarm, alarm light. They are all compiled on this system to check and make corrections.
- **LAN connections:** Helps to transfer data and debug details.

ALGORITHM:

STEP 1: Start

STEP 2: Follow the planned applications instructions

STEP 3: Implement the application

STEP 4: Debug the applications

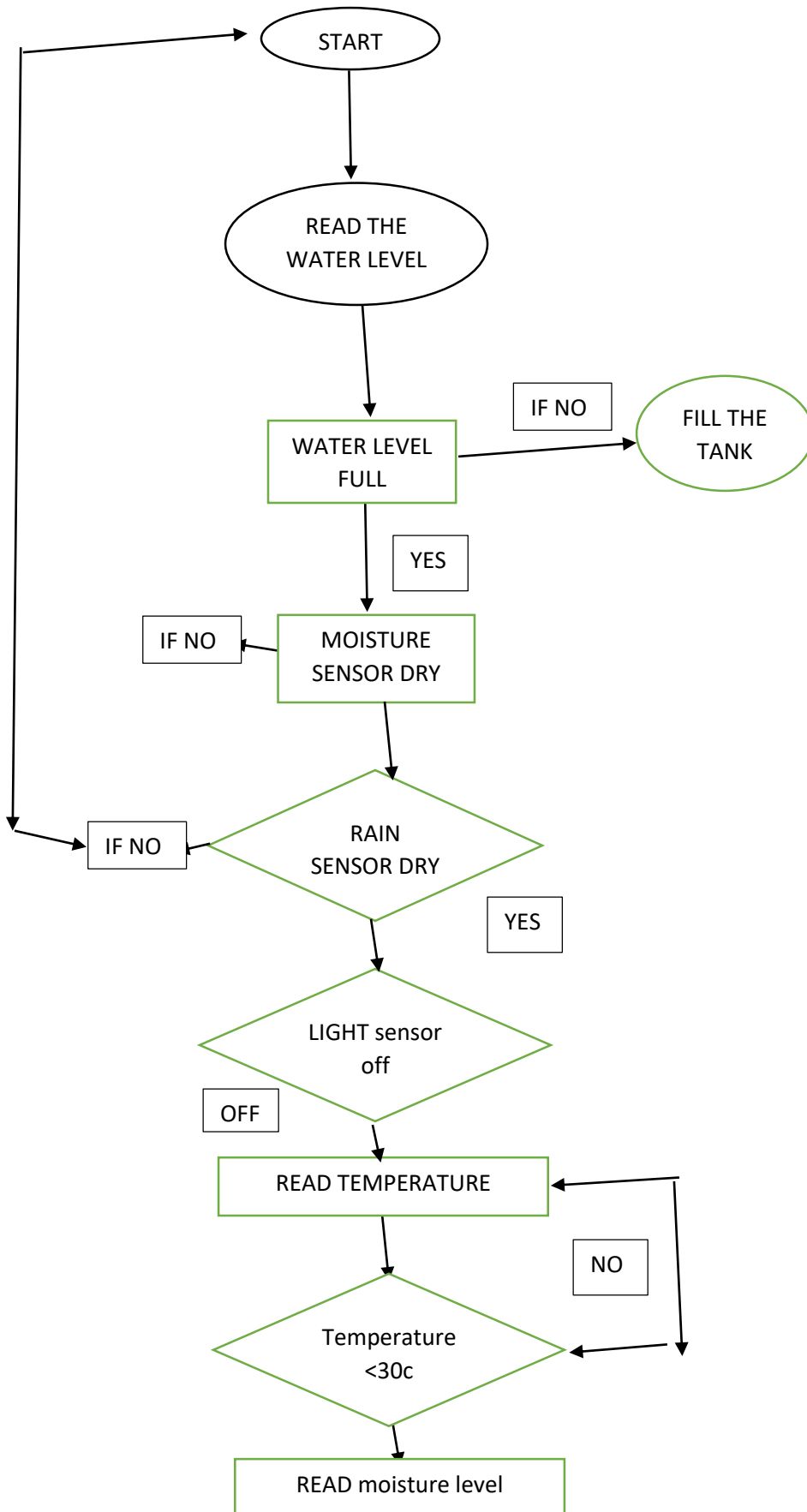
STEP 5: Give error signals and details

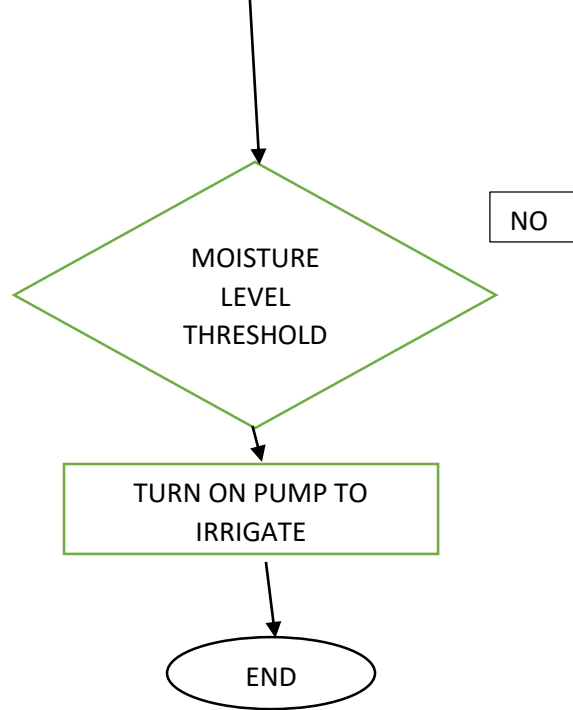
STEP 6: Release the application

STEP 7: Repeat same process at every stage

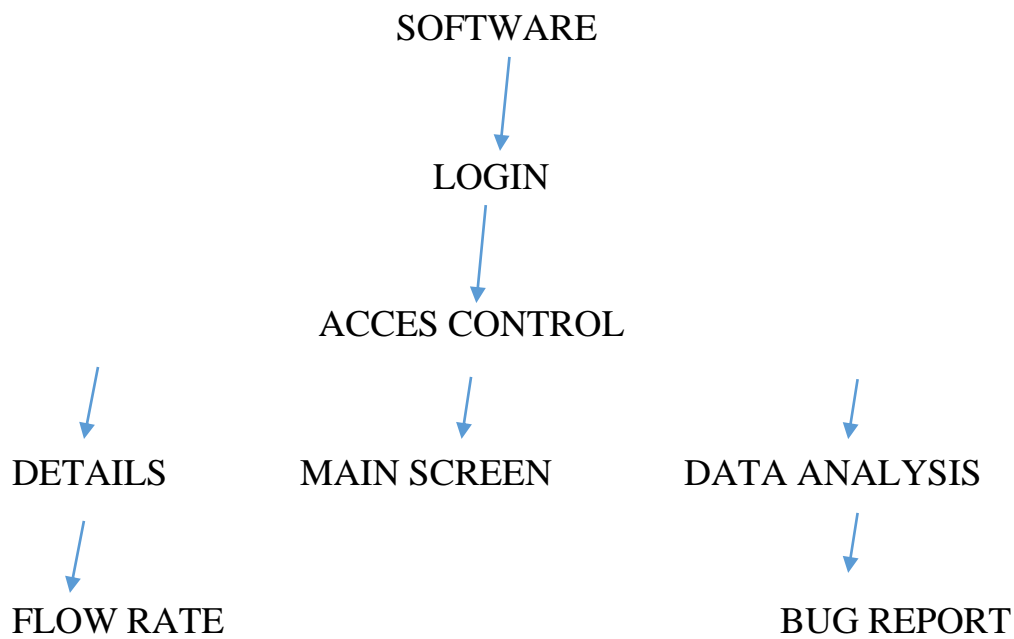
STEP 8: End

3. DESIGN:





FLOWCHART OF THE IRRIGATION SYSTEM



TOP-BOTTOM APPROACH

4. IMPLEMENTATION: Implementation would be done on the access control system, where all the devices and software's would be compiled and instructions would be given.

5. TESTING AND DEBUGGING: Run all the data page on www.w3validator.com to check and see if anything is wrong with the code, so corrections can be made.
Then self-test the system to see if it's a satisfaction

6.RELEASE AND UPDATE: Install this new Irrigation system on the Farm and make use of it.