VIRTUAL BUILDATHON

Team Name - Dude Perfect

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Components Used/Needed:

- Arduino Uno R3
- BreadBoard Small
- Potentiometer 250 kilo-ohm
- Resistor 220 ohm
- HC-SR04 Ultrasonic Distance sensor
- KS2E-M-DCS DPDT Relay (1A 125V)
- 220 V AC Motor (due to lack of availability on TinkerCAD, a DC motor has been used in the prototype design for demonstration)
- 220 V AC Power Supply (due to lack of availability on TinkerCAD, a DC battery of 9V is used in the prototype design for demonstration)
- LCD 16X2
- Wires for connections

Description of prototype

Our prototype aims at providing an innovative solution for preventing damages caused by floods and tries to store the floodwater into tanks which can further be used for providing water in regions of scanty rainfall, filling of reservoirs, and other such purposes.

Working

The prototype uses an ultrasonic sensor for finding the height of water that is lodged. If this water reaches above a threshold height, this will automatically start the pumping assembly connected to the motor. The pump will push the water into tanks that would store the water. Note that, a relay system is used in the circuit of the prototype as, in a real-world application, a 220V AC supply would be used with an AC motor to ensure the strength of the model is sufficient to pump floodwater.

Applications

- This model is extremely useful as it not only manages the disaster but also utilizes the water for supplying regions that need it.
- The same circuit can be used for creating a preventive system for high tides in coastal regions where the sensors detect the rise in

seawater level and alarm the people around to prevent loss of property.

- Such sensors must be installed in regions with a natural downward slope as well as in underground car parking where floodwater can potentially clog.
- Another modification to this circuit can be used to turn off the power supply to street lights in case of floods to prevent people from getting electrocuted.