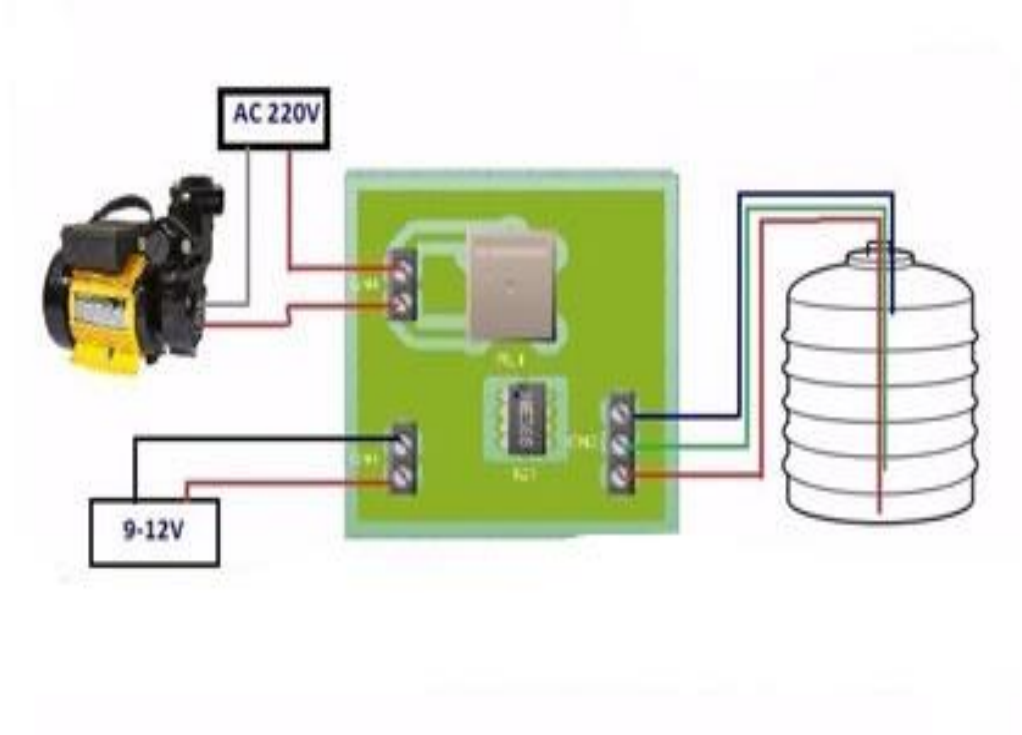

Automatic Water Pump Controller

SEMESTER PROJECT PROPOSAL

S.M.Shahir.Ul.Haq & Yousuf Shah |Digital Logic Design| 11th May 2022

Department of Computer Engineering

LAB Instructor ;Sir Abbas Ali Shah

To be filled by Student		
Course	Digital Logic Design (CPE241)	
Instructor	Dr. Zohaib and Sir Abbas Ali Shah	
Project Title	Water pump controller and indicator	
Project Proposal Summary	In this project, we will design and implement such a circuit that will function as a water pump controller and also a two-level indicator (full and low) of water in a tank, the brain of this project will be 555 IC the water pump controller circuit will be built around this IC to monitor water levels in the tank and on/off status of the motor through the inverter and driver circuit. for level detection, we will use the combination of some transistor and a conductive wire. The relay will be used to manage a high voltage circuit for the motor on the basis low voltage digital signal.	
Recommendations by Instructor		
Range of Complex Problem Solving	Range of Conflicting Requirements	• Water level detection wire placement to get data for the full and low levels of water in a tank. • Relay to control high voltage circuits with the help of low voltage signals. • Circuitry design and assembling • Work as a team, and efficiently communicate the concept, design, and results both orally and as a report.
	Depth of Analysis Required	• How accurately water levels are detected • Is the motor turning ON at a low level and vice versa. • Check for damages due to water • Connectivity of components
	Depth of Knowledge Required	• Basic knowledge of circuit making and how its connectivity works • How 555 IC works • Working of Relay • Function of transistor • Placing resistors capacitors where required • Correct electrical wiring of the circuit
	Components	• NE555 Timer IC • 12V Relay • BC 547 Transistor • 1N4007 Diode • Resistors 1M,2.2K,10K • 0.1 micro farad capacitor • LED lights two different color • Connecting wires • Bulb for testing
	Range of Resources	• Container or Tank from which the level of water to be tested

Range of Complex Problem Activities		• Hardware Component; Transistors, Relays, Resistors, Integrated circuit, conducting wires) • Circuit diagram and other useful data for useful and wel functioning system taken from online sources
	Level of Interactions and Innovations	• The project uses the innovative idea of electrical engineering with high social impact.
	Consequences of Society	• This can be a very useful product in our daily lives it will prevent wastage of water also there will be no worry about when we have to turn ON and off the water pump.no worries about spilling of water from overhead tankers.
	Familiarity	• The project deals with a common, familiar area for electrical engineers. How can a simple electrical product can have a huge positive impact socially, economically, and in every other aspect like saving water , saving electrical energy ,saving time etc