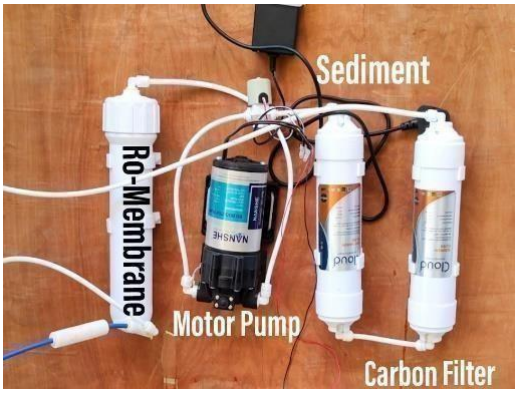
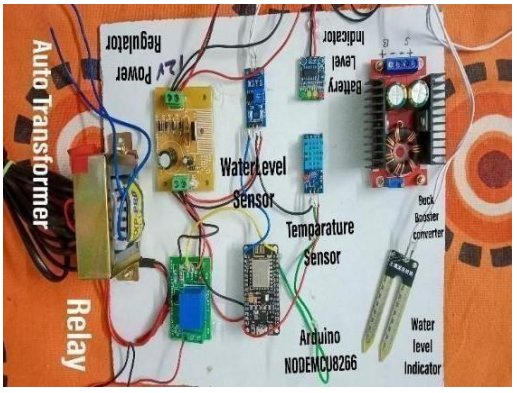
HARDWARE IMPLIMENTATION

The battery level indicator project utilizes both LED and LCD displays to provide real- time status updates on battery levels, allowing users to monitor remaining battery capacity. Similarly, the water level indicator alerts users when the tank reaches maximum capacity. Additionally, a temperature sensor is employed to monitor the solar panel's temperature. In the system, a buck-boost converter is employed as a DC-DC converter capable of adjusting output voltage levels either higher or lower than the input voltage. Meanwhile, a power regulator is utilized to establish and sustain a consistent output voltage, regardless of input voltage fluctuations or load changes. The Arduino unit receives input data from various sensors, facilitating seamless integration and data processing. Operating within a frequency range of 8 to 160MHz and voltage range of 3 to 3.6V, the NODEMCU ensures reliable performance. Furthermore, the Wi-Fi module boasts an operational range spanning from 46 to 96 meters, enhancing connectivity options for the system.





Total Project Setup

The solar panel takes the sunlight and converts into electrical energy, that electrical energy stored in the battery to purify the water. The battery level indicator indicates the amount of energy stored in the battery which means the green led shows the 100 percent of energy stored in the battery and yellow indicates the 75 percent of energy, orange led indicates the 50 percent of energy, and red led indicates the 25 percent of energy stored in the battery. After that the supply connected to buck booster to convert or maintain constant voltage and connected to motor to run. The sedimentation filter acts as a barrier against different types of sediments or suspended soils, after that Ro filter removes chlorine from water with a semipermeable membrane to remove dissolved salts after that, Carbon filter removes certain chemicals, from water and finally we get a purifier water. And also, when the water level indicator reaches the maximum point, it gives a notification through the Arduino NODEMCU8266 it indicates the level of water temperature of the water

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TDS LEVLS ABOUT FILTRATION AND MOBILE NOTIFICATIONS

Showing TDS levels of water before and after filtration.

Showing mobile notification about water overflow and there is an indicator which shows battery level.