Development of AMultifunctional Robot for Industrial and Residential Safety

Project Overview:

Accidents are on the rise in today's world. An accident may potentially cause the loss of many lives, valuable properties, or sometimes may lead to permanent disability to the victim. New and improved technologies are being used to prevent these accidents. In this paper, we have proposed a multipurpose rescue robot that will minimize the damage of the accidents like fire hazards, building collapse, deadly gas leakage, etc. This project aims to ensure the safety of our lives and valuable properties by minimizing the damages that occurred from any accident.

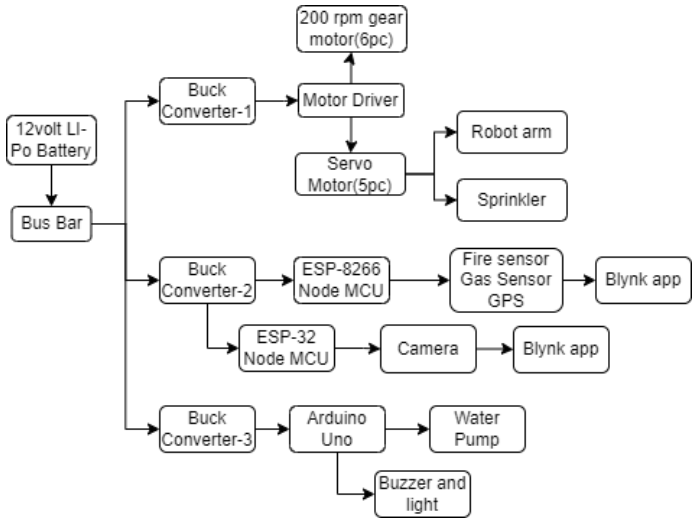
Hardware Requirements:

- Arduino Uno
- Fire Sensor
- Gas Sensor
- 300 RPM High Torque Gear Motor
- Hobywing Brushless DC Motor Driver
- SIM 800A GPS Module
- FPV Camera
- ESP-8266 Node MCU
- ESP-32 Node MCU
- 3 DOF Robotic Arm

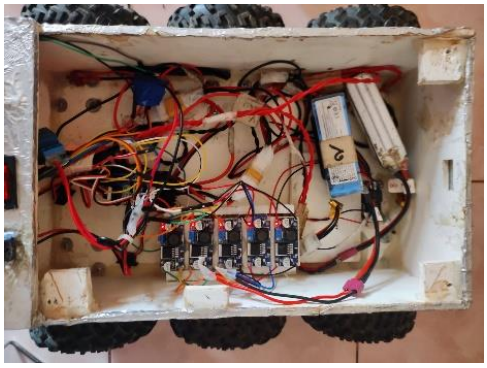
Software Requirements:

- Blynk App

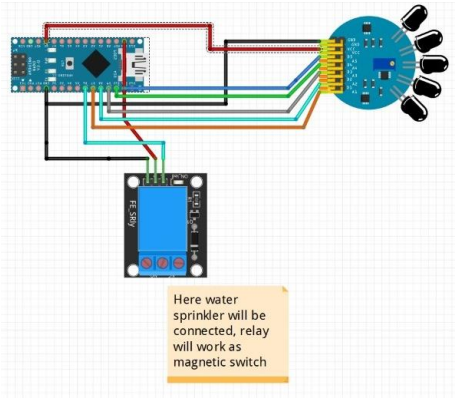
Block Diagram:



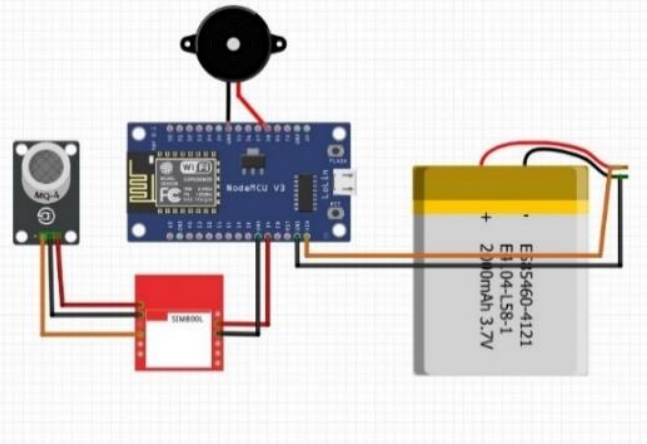
Robot Control System



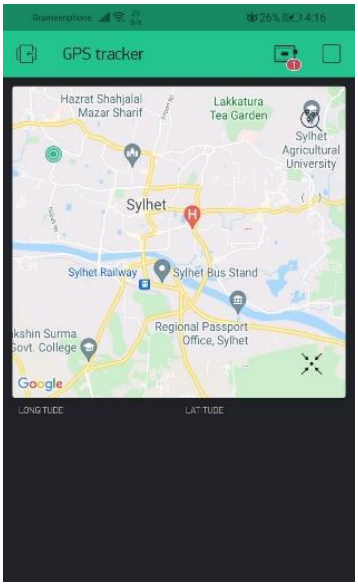
Fire Extinguishing System



Gas Leakage Detection System:



Monitoring Debris Areas



Conclusion:

This paper not only represents an effective implementation of a multipurpose surveillance robot, but also introduces improved features that makes it more precisely usable for surveillance purpose. It is easy to control and reliable to use. This robot will be very much useful in residential and industrial purpose as well as guarding the forest. This robot will work for the welfare of the mass and reduce the loss of lives and properties.