

PURPOSE OF THE PROJECT

- The objective of this robot is to automatically respond to a fire incident and extinguish it, without requiring any manual intervention from the user.
- > The extinguishing process primarily utilizes water, although other gases could be employed if necessary.
- > The design of this system allows for easy modification of its purpose by altering either the sensors or the mode of transport, providing a high degree of flexibility.
- > All these functionalities are carried out seamlessly without any direct need of input from user.

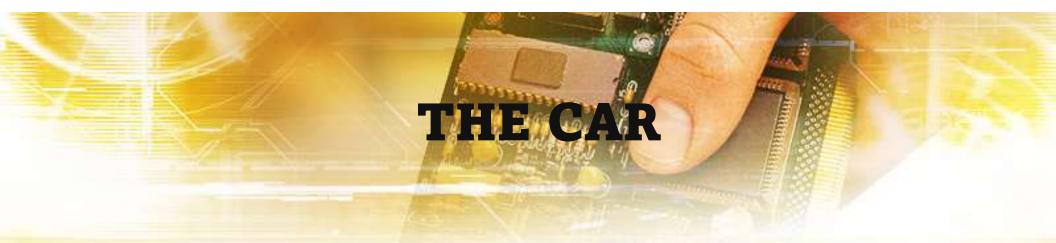
COMPONENTS REQUIRED

Name of Instruments	Number of Instrument
Motor Wheels	4
Bo Motors	4
Flame Sensors	4
Arduino Uno R3	1
Motor Driver L293D	1
Mini Breadboard	1
Chassis "22*15"	1
Mini Servo	1
Mini Water Pump 3.7V	1
Water Pipe	1
18650 Battery	2
Battery Holder	1



The working of the robot can be divided into two parts.

- Transportation of the extinguisher(Here the pump)
- > The Actual Fire Extinguisher



- The pump is carried by a basic battery-powered car with four wheels, providing the robot with omnidirectional movement capabilities. This autonomy eliminates the need for user intervention in its operation.
- Guidance for the robot's movement is provided by the flame sensor, which directs the robot's path without requiring further input from the user.
- The car's movement is controlled by an Arduino, which processes input from the flame sensors. It utilizes its four motors to move in a specified direction based on the instructions received.
- The Arduino acts as the intermediary, receiving input from the flame sensors, processing it through its code and subsequently sending signals to the car.

THE WATER PUMP

- The water pump basically takes input from the Arduino and sprays the water
- The Arduino is modified in such a way that it only gives input when the pump is in range of the actual fire. This condition is to be implemented in the code.
- The Water reservoir is a basic water tank so that water supply is limited in this design, but the water tank can be modified to take water from larger sources by just changing the pump.

