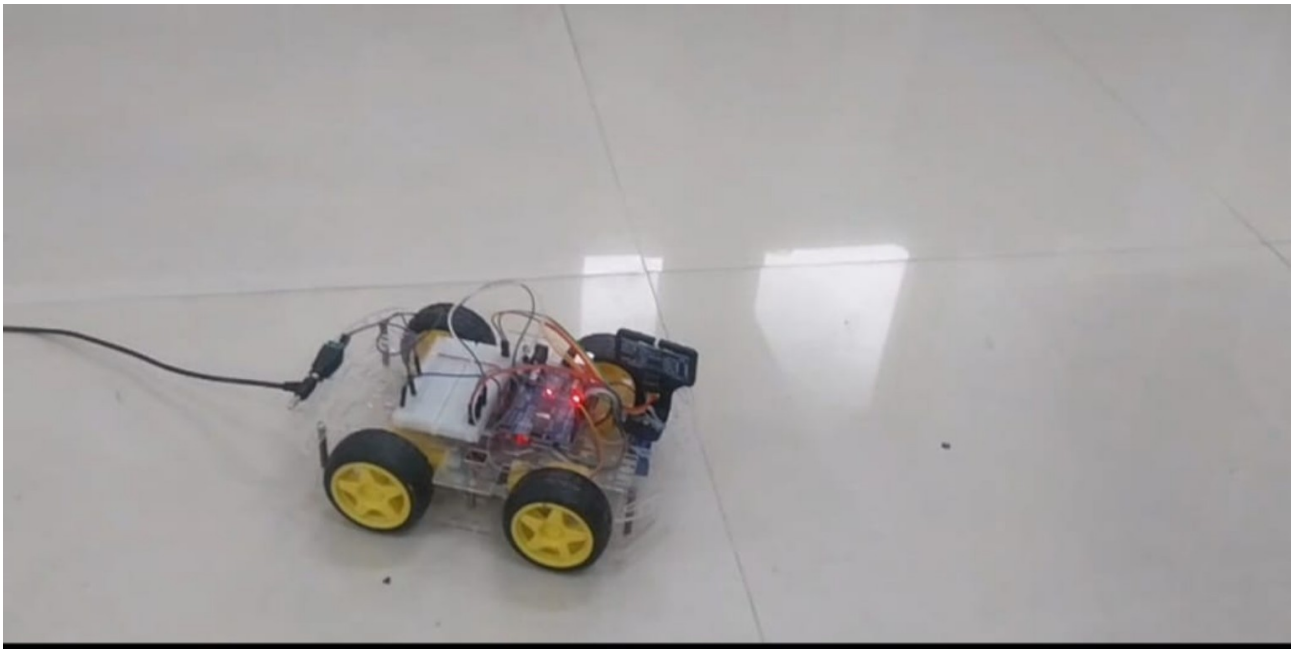
PM SHRI KENDRIYA VIDYALAYA RAMGARH CANTT.

AI INNOVATION PROJECT

SMART OBSTACLE DETECTOR CAR

Project Made in the Vocational Lab



Arduino-based Smart Obstacle Detector Car

Project Overview

The Smart Obstacle Detector Car is an Arduino-based innovative project developed by students in the Vocational Lab of PM SHRI Kendriya Vidyalaya Ramgarh Cantt. The project demonstrates the practical use of sensors, automation, robotics and AI-inspired decision-making in a real-world application.

How It Works

The car uses an ultrasonic/IR sensor to continuously detect obstacles in its path. When an obstacle is detected, the Arduino processes the sensor input and automatically controls the motors to stop or change the direction of the car. This enables the vehicle to respond to its surroundings without continuous human control.

Innovation in AI

The project introduces students to important AI and robotics concepts such as machine sensing, input processing, automated decision-making and autonomous navigation. It can be further enhanced with AI-based algorithms and additional sensors to identify obstacles, compare possible routes and select a safer direction.

Learning & Skill Development

Through this hands-on project, students develop skills in coding, electronics, robotics, problem-solving, computational thinking and innovation. The project connects classroom learning with practical applications and encourages students to design technology-based solutions for real-life challenges.

Future Scope

The model can be upgraded with camera-based object recognition, multiple sensors, smart route planning, voice control and AI/ML techniques for more intelligent autonomous navigation.