Obstacle Avoiding Robot

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Description:

We aim to build an autonomous robot which detects obstacles in path and turns accordingly.

Engineers want to design robots that are **autonomous**, meaning they can move around on their own without direct human control. One important part of autonomous operation is avoiding crashing into things. In robotics, this is called **obstacle avoidance**. Using a camera and a computer to let a robot "see" obstacles with computer vision can be complicated and expensive. An alternative approach is to use ultrasonic waves.

Demonstration: An autonomous bot which avoids obstacles

Implementation Theory: The sensors detect the distance from an obstacle. When an obstacle in the path is detected , the microcontroller get this signal from the sensor, which it then uses to control the motor and turn the wheels accordingly.

Timeline:

Week 1: studying the programming required for the micro-controller, going through available codes on net.

Week 2,3: acquiring the components, coding , checking the coordination of components with the microcontroller

Week 4: Assembling the robot

Week 5: Testing

Skills required: Coding for Arduino microcontroller, Assembling the parts

Components:

2 dc motors/chassis - Rs 600, Arduino UNO microcontroller -Rs 800, ultrasonic sensor-Rs 1800, mini breadboard-Rs 150, motor shield-Rs 180, battery holder, battery, other bot hardware (wires ,screws etc.)

Cost: below Rs 4000