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Solar Based Robot Controlled Using Accelerometer

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Abstract: *The project Solar-Based Robot Controlled Using Accelerometer aims to design and develop an energy-efficient mobile robot powered by solar energy and controlled through an accelerometer sensor. The system utilizes renewable solar power to charge the robot's battery, reducing dependency on external electrical sources and promoting sustainable operation. The accelerometer module detects the tilt and motion of the controller, converting these gestures into directional commands such as forward, backward, left, and right movements. An Arduino microcontroller processes these signals and drives the DC motors through a motor driver circuit. This project demonstrates an innovative approach to controlling a robotic vehicle wirelessly without using traditional buttons or joysticks, making the system more intuitive and user-friendly. The integration of solar energy ensures continuous operation even in outdoor environments, emphasizing eco-friendly design and low maintenance. The developed system can be further applied in remote monitoring, solar-powered automation, and assistance for physically challenged individuals.*

Keywords*:* Accelerometer, Wireless control, Microcontroller remote monitoring

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