**RPM Counter Using IR Sensor**

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The purpose of this project is to design and implement a system for counting the RPM (Revolutions Per Minute) of a rotating object using an Infrared (IR) sensor and an Arduino microcontroller. This system is particularly useful in applications where monitoring the speed of motors, fans, wheels, or other rotating machinery is essential for efficiency, performance analysis, and maintenance.

In the proposed system, an IR sensor is employed to detect the passing of a rotating object’s marker (such as a reflective tape or pattern) placed on the rotating part. Each time the sensor detects the marker, it sends a signal to the Arduino. The Arduino then calculates the time interval between successive markers and uses this information to calculate the RPM. The RPM is calculated using the formula:

RPM=Rotation in 60 seconds/per minute.

The system displays the calculated RPM value on a digital display (e.g., an LCD or 7-segment display) for easy reading. Additionally, the system can be extended with additional features such as automatic logging, real-time data transmission, or visual feedback.

This project is cost-effective, simple to implement, and highly accurate for applications that require RPM monitoring in a variety of mechanical and industrial systems. The use of an IR sensor makes it suitable for both high and low-speed measurements, while the Arduino platform allows for easy customization and scalability.

**Required Components:**

* Arduino UNO
* Connecting wires
* Jumper wires
* IR Sensor
* LCD With I2C Module
* Propeller with a DC motor
* Battery and Connector



