



Internship Project Title:

Industry Proactive Maintenance System Using Sensor Data Monitoring and Cloud Forecasting

Abstract:

This project aims to design and implement a proactive maintenance system tailored for industrial applications. The system focuses on continuously monitoring key operational parameters such as power consumption, temperature, and pressure (more parameters can be added) through appropriate sensors. The collected sensor data will be processed using a microcontroller and uploaded to a cloud platform for real-time visualization and historical analysis.

Students will be responsible for creating a user-friendly dashboard that displays live sensor data and trends, enabling timely detection of anomalies. In addition to hardware programming, the project will involve conducting a time study to understand equipment behavior over periods and applying basic forecasting techniques to predict potential faults or performance degradation.

The objective is to shift from reactive to proactive maintenance, thereby reducing unplanned downtime and optimizing resource utilization. The microcontroller will be provided, while students are required to procure sensors based on their specific implementation needs. This hands-on project will equip students with skills in embedded systems, IoT integration, cloud computing, and data-driven decision-making in industrial environments.

Other requirements and clarifications will be addressed during the first day of the demo session. Students are also expected to present their home automation work during the demo this is to reflect their interest and involvement in the domain, and to give us confidence in their ability to complete the project within the stipulated 4-week duration.

The date and venue for the in-person or group demo session will be communicated today or tomorrow through this channel. Students are advised to stay updated.