PREDECTIVE MAINTENANCE IN SOLAR POWER SYSTEM

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WHAT IS PREDICTIVE MAINTENANCE:

➢ Predictive maintenance is proactive maintenance strategy that uses real-time data AI and ML to anticipate equipment failures before they occur .
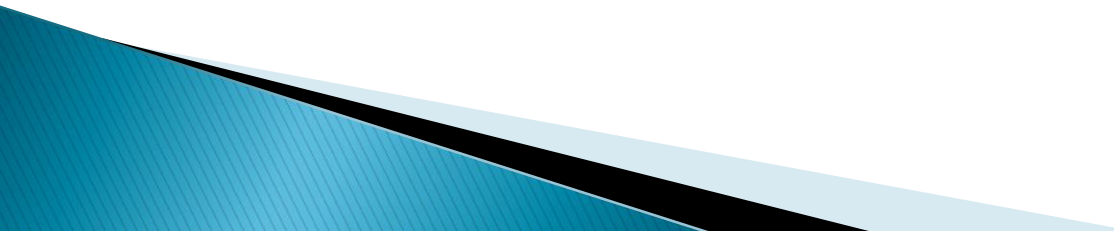
IMPORTANCE OF SOLAR POWER SYSTEMS:

➢ Ensure Continuous energy production.

➢ Reduce maintenance cost and down time.

➢ Increases the lifespan of solar panels and components.

WHY MAINTENANCE IS CRUCIAL IN SOLAR POWER SYSTEMS:

▶ Ensures optimal energy output.

▶ Reduce Downtime and operational cost.

TYPES OF MAINTENANCE IN SOLAR POWER SYSTEMS:

▶ Corrective maintenance : fixing issue after failures.

▶ Preventive maintenance : Scheduled inspections and servicing.

▶ Predictive maintenance : Using data and AI to anticipate failures.

WASTE SORTING USING COMPUTER VISION

WHAT IS WASTE SORTING:

- The process of separating waste materials into categories like plastic, metal, paper and organic waste for recycling or disposal

IMPORTANCEOF AUTOMATED WASTE MANAGEMENT:

- Traditional waste sorting is inefficient, labor-intensive and prone to errors.
- Automated waste sorting using AI and Computer vision improves efficiency accuracy and sustainability.

ROLE OF COMPUTER VISION IN WASTE SORTING:

- Uses cameras and AI-powered image recognition to identify and classify waste materials.
- Enables robotics sorting systems to process waste quickly and accurately.

KEY TECHNOLOGIES USED:

- Machine Learning Algorithms: Deep Learning models For Waste Classification.
- Convolutional neural networks(CNNS): Used for image recognition
- Edge Computing; Real-Time processing at the sorting site.
- Robotics: Automated sorting mechanisms.

FUTURE TRENDS IN AI-POWERED WASTE SORTING:

- IOT Enable waste monitoring systems.

ENERGY EFFICIENCY IN SMART BUILDINGS

WHAT IS ENERGY EFFICIENCY :

- Energy efficiency refers to using less energy to perform the same function, reducing waste and optimizing resource consumption.
- It helps lower cost, reduce environmental impact and enhance sustainability.
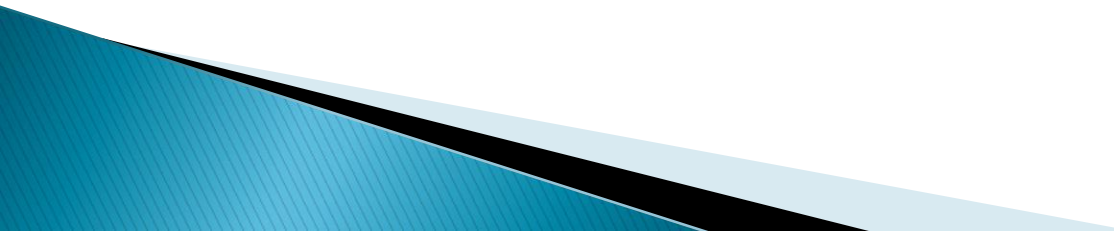
IMPORTANCE OF SMART BUILDINGS IN ENERGY CONSERVATIONS:

- Traditional buildings waste a significant amount of energy due to inefficient system.
- Smart buildings used advanced technologies IoT, AI and Automation to optimized energy used.

AIR QUALITY PREDICTION IN URBAN AREAS

WHAT IS AIR QUALITY:

▸ Air quality refers to the condition of the air in our environment measured by the presence of pollutants such as nitrogen dioxide, sulfur dioxide, carbon monoxide. Ozone.

▸ Good Air quality is essential for human health environmental sustainability and overall well-being.
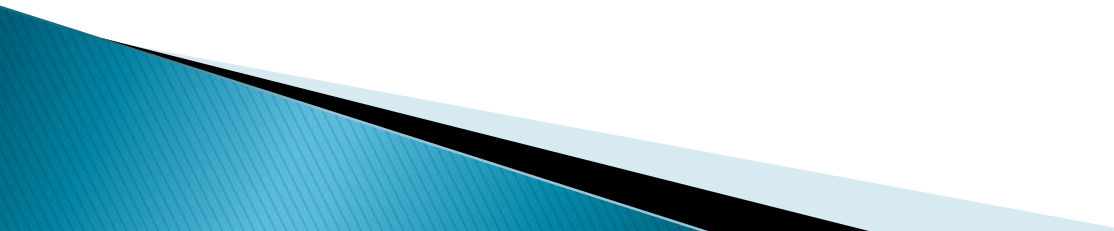
IMPORTANCE OF PREDITING AIR QUALITY IN URBAN AREAS:

▸ Urban Areas experience high pollution levels due to vehicles emission, industrial activities and waste burning.

SUSTAINABLE AGRICULTURE WITH AI FOR CROP YIELD PREDICTION

WHAT IS SUSTAINABLE AGRICULTURE:

- Sustainable agriculture is forming approach that focus on producing food efficiently while preserving natural resources and minimizing environmental impact.

- It emphasizes soil health, water conservations biodiversity and reducing chemical imports.

ROLE OF AI IN MODERN FARMING:

- AI is transforming agriculture by enabling data driven decision making, predicting analytics and automation.

- AI powered tools help in crop yield prediction diseases deduction smart irrigation and precision farming.

- This leads to higher productivity reduces waste and optimized resource used making farming more sustainable.

THANK YOU…

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