Semester Project -II

Abstract

1. **Title**: Energy Consumption Analysis Dashboard
2. **Domain**: Data Analytics, Energy Management
3. **Application**: Energy Monitoring and Optimization using Microsoft Power BI
4. **Expected Algorithm / Processing**:
   The project leverages Microsoft Power BI to process and visualize energy consumption data. The process involves importing real-time and historical energy usage data from various sources (e.g., smart meters, IoT devices) into Power BI. Data cleaning and transformation will be performed to ensure accuracy. Power BI's built-in features like time-series analysis, DAX calculations, and interactive visualizations will be used to analyze patterns, identify trends, and detect anomalies in energy usage. Forecasting techniques and machine learning models might also be incorporated for predictive insights.
5. **Expected Output from Project**:
   The output will be an interactive dashboard within Microsoft Power BI, offering a visual representation of energy consumption data. Users will be able to track key metrics such as total energy consumption, peak demand periods, and monthly or yearly comparisons. The dashboard will also provide insights into energy inefficiencies, potential savings, and usage trends, with actionable recommendations for optimization.
6. **Abstract**:

   The Energy Consumption Analysis Dashboard, built using Microsoft Power BI, aims to provide a comprehensive solution for monitoring and optimizing energy usage. By integrating data from various sources such as smart meters and IoT devices, the dashboard allows users to track real-time and historical energy consumption patterns. Power BI's powerful data processing capabilities, such as time-series analysis and advanced visualizations, help identify peak usage times, inefficiencies, and trends. The dashboard will offer users insights into potential areas for energy savings, enabling better decision-making for businesses or households seeking to reduce energy costs and improve efficiency. With its interactive interface and predictive features, the dashboard serves as an essential tool for managing energy consumption and promoting sustainable practices.

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