Format for the Weekly Progress Report

Name of the Student 1	Dev Pandya
Roll Number of Student 1	22BCP409
Name of the Student 2 (if any)	Kavya Patel
Roll Number of Student 2 (if any)	22BCP406
Project Title	**Smart Energy Consumption Monitoring and Prediction Using Big Data**
Name of the Supervisor (Mentor) at PDEU	Dr. Samir Patel
Week Number	Week 3

Progress made in Week 3:

- Dummy Model Development: Built a preliminary prototype model to act as a blueprint for the full pipeline. This allowed us to simulate data flow and test feasibility.
- Relationship Mapping: Used the dummy model to identify and visualize interdependencies between energy consumption variables, external factors (time, season, household type), and prediction accuracy.
- Pipeline Validation: Ensured that the data → preprocessing → model → output loop works in principle, even though this was a simplified setup.
- Insights from Experimentation: Observed how small changes in input features (like peak-hour load vs. off-peak load) influenced prediction trends, highlighting critical dependencies for future optimization.
- Challenges Identified: Recognized limitations of the dummy model such as low accuracy, lack of real-time streaming integration, and scalability constraints. These will be addressed in subsequent iterations.

Dev Pandya   Kavya Patel   Dr. Samir Patel

Name & Signature of Student 1   **Name & Signature of Student 2**   **Name & Signature of Supervisor (Mentor)**