

**Format for the Weekly Progress Report**

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| <b>Name of the Student 1</b>                   | Dev Pandya   |
| <b>Roll Number of Student 1</b>                | 22BCP409   |
| <b>Name of the Student 2 (if any)</b>          | Kavya Patel  |
| <b>Roll Number of Student 2 (if any)</b>       | 22BCP406   |
| <b>Project Title</b>                           | <b>Smart Energy Consumption Monitoring and Prediction Using Big Data</b> |
| <b>Name of the Supervisor (Mentor) at PDEU</b> | Dr. Samir Patel  |
| <b>Week Number</b>                             | Week 4   |

**Progress made in Week 4:**

1. Environment Preparation
  - o Installed and configured WSL2 with Ubuntu for a Linux-based development environment on Windows.
  - o Verified compatibility of WSL2 with Docker and networking components.
2. Containerization Setup
  - o Installed Docker and Docker Compose to manage multi-container applications.
  - o Configured a docker-compose.yml file for running a complete data stack.
3. Big Data Stack Deployment
  - o Successfully deployed and ran the following services:
    - Kafka (message broker)
    - Zookeeper (service coordination for Kafka)
    - MongoDB (NoSQL database)
    - InfluxDB (time-series database)
    - Grafana (data visualization dashboard)
4. Kafka Verification
  - o Created a test Kafka producer and consumer to validate message flow.
  - o Verified that messages produced were successfully consumed, confirming Kafka setup.

Dev Pandya

Kavya Patel

Dr. Samir Patel

**Name & Signature of  
Student 1**

**Name & Signature of  
Student 2**

**Name & Signature of  
Supervisor (Mentor)**