**Phase 3: Development Part 1 - Loading and Preprocessing the Dataset**

1. **Data Collection:**

- Download the dataset from the provided Kaggle link: [hourly-energy-consumption](https://www.kaggle.com/datasets/robikscube/hourly-energy-consumption).

2. **Data Preprocessing**:

- Load the dataset into your preferred data analysis tool, like Python with libraries such as Pandas and NumPy.

- Inspect the data to understand its structure, check for any missing values, and perform data cleaning as needed.

3. **Feature Engineering (if necessary):**

- Create additional features if they can help in energy consumption analysis. For example, you may want to extract date and time components, calculate daily or monthly aggregates, or derive additional relevant information.

4. **Data Visualization:**

- Utilize data visualization libraries such as Matplotlib or Seaborn to create informative visualizations that can help in understanding energy consumption patterns. Common plots include time series plots, histograms, and correlation matrices.

5. **Exploratory Data Analysis (EDA):**

- Perform EDA to gain insights into the dataset. Explore trends, patterns, and anomalies in the data.

**6. Data Transformation:**

- If needed, scale or normalize the data to make it suitable for modeling. This step can depend on the specific algorithms you plan to use.

7**. Save Preprocessed Data:**

- Save the preprocessed dataset for future use. This will help you avoid repeating preprocessing steps when working on the modeling phase.

Here's a Python code template for loading and preprocessing the dataset:

```python

import pandas as pd

# Load the dataset

data = pd.read\_csv('path\_to\_dataset.csv')

# Data preprocessing and feature engineering

# ...

# Data visualization and EDA

# ...

# Data transformation (if needed)

# ...

# Save preprocessed data

data.to\_csv('preprocessed\_data.csv', index=False)

```

Remember that the specific steps in data preprocessing and analysis can vary depending on the characteristics of the dataset and the goals of your project. After completing this phase, you can move on to the next steps of your project, which may involve modeling and building the automated system for energy consumption measurement and analysis.