Group-11

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Instructions to Run the Code

1. Introduction

This document provides detailed instructions for setting up the necessary environment and running the `final.ipynb` Jupyter Notebook. Following these steps will ensure that the notebook executes correctly without dependency-related errors.

2. Prerequisites

2.1. Python

It is recommended to use **Python version 3.8 or newer**. You can check your Python version by running the following command in your terminal or command prompt:

```shell
python --version
```

2.2. Required Libraries

The notebook relies on several Python libraries for data manipulation, analysis, and visualization. The required libraries are:

- `pandas`
- `numpy`
- `matplotlib`
- `seaborn`

- `scikit-learn`
- `jupyter`

3. Environment Setup

To avoid conflicts with other projects, it is highly recommended to use a virtual environment.

3.1. Create a Project Directory

First, create a dedicated folder for this project and place the following files inside it:

```
project-folder/
├── final.ipynb
├── eMAR daily consumption.csv
└── eMARC household survey summary.xlsx
```

3.2. Set Up Virtual Environment and Install Dependencies

1. **Navigate to your project directory** in your terminal or command prompt:

```shell
cd path/to/project-folder
```

2. **Create a virtual environment:**

```shell
python -m venv venv
```

3. **Activate the virtual environment:**
    - On **Windows**:

```
Shell
.\venv\Scripts\activate
```

- On **macOS and Linux**:

```
Shell
source venv/bin/activate
```

4. After activation, you will see `(venv)` at the beginning of your command prompt line.
5. **Install the required libraries** using pip. You can install them all with a single command:

```
Shell
pip install pandas numpy matplotlib seaborn scikit-learn jupyter
```

4. Running the Notebook

With the environment set up and activated, you are now ready to run the notebook.

1. **Start the Jupyter Notebook server** from your terminal (ensure you are in the `project-folder` directory):

```
None
jupyter notebook
```

2. This will open a new tab in your default web browser showing the Jupyter file browser.
3. **Open the notebook file:** Click on `final.ipynb` from the file list in your browser.
4. **Execute the cells:** To run the entire notebook, click on the "Cell" menu at the top, and then select "Run All". Alternatively, you can execute each cell individually and in order by selecting a cell and pressing `Shift + Enter`.

5. Running in Visual Studio Code

If you prefer using Visual Studio Code, follow these steps after completing the environment setup in Section 3.

1. **Install VS Code Extensions:** Ensure you have the official **Python** and **Jupyter** extensions installed from the VS Code Marketplace.
2. **Open the Project Folder:** In VS Code, go to `File > Open Folder...` and select your `project-folder`.
3. **Select the Python Interpreter:**
    - Open the Command Palette (`Ctrl+Shift+P` on Windows/Linux or `Cmd+Shift+P` on macOS).
    - Search for and select `Python: Select Interpreter`.
    - Choose the Python interpreter associated with your virtual environment (it should be labeled as './venv/bin/python' or similar).
4. **Run the Notebook:**
    - Open the `final.ipynb` file in VS Code.
    - Use the "Run All" button at the top of the notebook editor or the play icon next to each cell to execute the code.