**README: Instructions for using these programs**

1. **Dataset Requirements:**

Ensure that the CSV files (AllCarriers.csv, AmericanAirlines.csv, DeltaAirlines.csv, and UnitedAirlines.csv) and the .py files are available in the same folder.

1. **Modules to Install:**
2. **pandas**: For data handling and cleaning.
3. **os**: Standard library for file management (no installation needed).
4. **dash**: For creating the interactive GUI.
5. **plotly**: For generating interactive charts.
6. **dash-html-components (html)**: For GUI layout.
7. **dash-core-components (dcc)**: For interactive widgets.
8. **Development Environment:**
9. Developed and Tested using **Python 3.12** or later.
10. Execute the dataHandler.py, followed by guiManager.py, then, main.py, and finally, test\_data\_Handler.py
11. **guiManager.py**

Purpose: Provides an interactive GUI for visualizing and analyzing airline data.

***Features****:*

1. Select airlines, traffic types (domestic, international, total), and years for analysis.
2. View multi-line or bar charts showing trends over time.
3. Highlights months with the highest and lowest traffic.

***How to Run:***

1. Execute the “guiManager.py” program
2. Open the provided local URL in a web browser (e.g., <http://127.0.0.1:8050/>).

***Interactive Buttons:***

1. Airline Selector: Choose the airline dataset to analyze.
2. Traffic Type Dropdown: Toggle between Domestic, International, or Total traffic.
3. Chart Type Dropdown: Switch between Line Chart and Bar Chart.
4. Year Selector: Filter the displayed data by specific years or show all years.