Python Analyzers

Set - D

Branch: _____ **Date:** 24-01-2026

Total Marks: 50 **Time:** 2.5 Hours

Sr. No.	GR ID	Name	Signature
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Rules & Guidelines

- Participants must bring their own laptop
- Use of the internet is strictly restricted during the competition (apart from the final submission)
- Any form of plagiarism or code sharing will lead to disqualification
- Participants must strictly follow the instructions given during the event
- Late submissions will not be accepted
- Maintain discipline during the competition
- The decision of the faculty/judges will be final

Submission Details

- **File format:** .ipynb file
- **File name format:** Name_GRID_PythonAnalyzers.ipynb
- **Submission method:** Submit the **.ipynb file** and the given **dataset (.csv/.xlsx)** and upload it to the GitHub repository. **Submit that repo link** in the Google form for submission.
- Submit here: LINK

🛠️ Mandatory Technologies

Students **must use only**:

- numpy
- pandas
- matplotlib
- seaborn

❌ Any other ML / AI libraries are **not allowed**

📂 Dataset Overview (Gigantic Real-World Dataset)

Dataset Name:
[Ecommerce_Logistics_and_Delivery_Gigantic_Dataset.csv]

Dataset Size:

- ~70,000+ Rows
- 10+ Attributes

Dataset Description

This dataset represents **e-commerce logistics and last-mile delivery operations across Indian regions**, suitable for **supply chain, delivery performance, and customer experience analytics**.

Columns Explanation

Column Name	Description
Shipment_ID	Unique shipment identifier
Order_Date	Order placement date
Region	Delivery region
City	Delivery city
Delivery_Partner	Logistics service provider
Shipping_Mode	Mode of delivery

Delivery_Time_Days	Time taken to deliver
Order_Value	Total order value
Delivery_Status	Final delivery outcome
Customer_Rating	Customer feedback rating

🎯 Project Objective

Analyze the provided **e-commerce logistics dataset** to:

- Clean and prepare real-world operational data
- Perform exploratory and logistics-focused analysis
- Identify delivery delays and efficiency gaps
- Visualize customer experience and performance trends
- Present actionable business insights

📝 Mandatory Tasks (Exam Tasks for Students)

🔹 Task 1: Notebook Structure & Data Loading

- Proper title & introduction
- Import all required libraries
- Load the dataset correctly
- Display:
  - Dataset shape
  - First & last 5 rows
- Proper Markdown usage

🔹 Task 2: Data Cleaning & EDA

Students must:

- Identify and handle missing values
- Validate data types
- Detect and handle duplicate records
- Generate:
    - Summary statistics
    - Partner-wise and region-wise distributions
- Comment on initial observations

🔹 Task 3: Business / Logistics Data Analysis

Perform **minimum 5 analytical tasks**, such as:

- Region-wise delivery performance
- Delivery partner vs average delivery time
- Shipping mode impact on delays
- Order value vs delivery status analysis
- Customer rating vs delivery time

🔹 Task 4: Data Visualization

Create **minimum 5 meaningful visualizations**, such as:

- Bar chart (Delivery Partner vs Avg Delivery Time)
- Line chart (Order volume trend over time)
- Histogram (Delivery time distribution)
- Scatter Plot
- Pie Plot
- Subplots (Combine multiple charts)

Each chart must include:

- Title
- Axis labels
- Insight explanation

🔹 Task 5: Final Insights & Task Completion

- Summarize key findings
- Mention logistics insights

- Provide delivery optimization recommendations

📊 Evaluation & Marking Scheme (50 Marks)

Criteria	Marks
Notebook Structure & Data Loading	10
Data Cleaning & EDA	10
Data Analysis	10
Data Visualization	10
% Task Completion & Overall Quality	10
TOTAL	**50**

⚠️ Mandatory Rules

- Only .ipynb file accepted
- No plagiarism or copied notebooks
- Code must be readable & logical
- Insights are more important than quantity
- The Internet is allowed only for the final submission

Remember to follow the instructions provided professionally, make suitable assumptions wherever necessary, and avoid copying code or content from unauthorized sources.

Good luck with your project work!

Python Analyzers
Data Science & AI/ML Department

BRING ON YOUR CODING ATTITUDE