

Name : _____

Roll No: _____



JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA

PGDM / PGDM (M) / PGDM (SM)

FOURTH TRIMESTER (Batch 2024-26)

END TERM EXAMINATIONS, OCTOBER 2025

Course Name	Business Intelligence for Decision Making	Course Code	20823
Max. Time	2 hours	Max. Marks	40 MM

SET A (G8P-1)

General Instructions:

- Create a separate folder to save all files (Power BI, SQL scripts, .txt, Excel).
- DO NOT DELETE ANY ROW or COLUMN** from any of the datasets
- Save the Question Paper document as rollno_name.doc. You will UPLOAD only your Word document with all the answers. Answer each question by fetching insights using SQL or visualizations from Power BI, as mentioned in the paper.
- For Q1: Under each question, paste your SQL query and include a snapshot of the result set.
- For Q2: Include a snapshot of your Power BI visual under the question. Clearly state your inference below the visual (this will be graded).
- Ensure all snapshots are clear and placed under the corresponding question.

Q1:(A to G) Save SQL Script:

- Add comments in your SQL script to indicate the question number and question text.
- Place each SQL query directly beneath its corresponding comment.

Q2(I to viii) Save Power BI:

- Create separate sheets inside Power BI for each question, labeling them with the question number.

Q1. Two csv files, Passengers and Satisfaction, are provided; all the SQL queries will be run based on these two files.

The Indian Railways has collected data on various parameters like Distance from Origin Delay, Ease of Online Booking, etc., for all three classes of passengers (AC-I, AC-II, and AC-III) for two types of passengers, one who travels rarely and others who travel repeatedly for business or personal purposes. To improve the overall satisfaction of train passengers, Indian Railways would like to gather some information based on which they can make informed decisions to enhance passenger satisfaction. The data details are mentioned below:

7*3= 21 marks (CLO2)

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Field	Field Information	Description
ID	ID	Unique passenger identifier
Gender	Gender	Gender of the passenger (Female/Male)
Age	Age	Age of the passenger
CustomerType	Customer Type	Type of customer (First-time/Repeat)
ToT	Type of Travel	Purpose of the Travel (Business/Personal)
Class	Class	Travel class on the Train for the passenger seat
D_Booking	Device Used for Booking	Passengers book the train tickets with four devices: Mobile, Laptop, Desktop, and Tablet
D_f_O	Distance from Origin	Distance in miles from Origin station
Delay	Delay	Train arrival delay arrival or departure in minutes
Discount_Sc	Discount Scheme	The government launched a discount scheme based on different categories of passengers: Child, Student, Military, Senior Citizen, etc.
Dep_time	Departure and Arrival Time Convenience	Satisfaction level with the convenience of the train departure and arrival times from Low, Medium, and High. 1 (low), 2 (Medium) and 3(High)
E_online	Ease of Online Booking	Satisfaction with the Ease of Online Booking from Low, Medium, and High. 1 (low), 2 (Medium) and 3(High)
S_Att	staff behavior/attitude	Satisfaction with the staff behavior/attitude (politeness, helpfulness, responsiveness) from Low, Medium, and High. 1 (low), 2 (Medium) and 3(High)
Platform	Platform Announcement/Display	Satisfaction level with the Platform Announcement/Display from Low, Medium, and High. 1 (low), 2 (Medium) and 3(High)
Bedlinen	Cleanliness of Bedlinen	The satisfaction level with the cleanliness of the bedlinen is low, medium, and high. 1 (low), 2 (Medium) and 3(High)
SeatComfort	Seat Comfort	Satisfaction level with seat comfort ranges from low to medium and high. 1 (low), 2 (Medium) and 3(High)
Luggage	Luggage Space	The satisfaction level with the luggage space is low, medium, and high.
Washroom	Washroom Cleanliness	Satisfaction level with the Washroom Cleanliness from 1 (low), 2 (Medium) and 3(High)
Overall_Sat	Overall Satisfaction	Overall satisfaction level with the train (Satisfied, Neutral and Dissatisfied)

Each part carries 3 marks; some parts may require more than one query

- Derive the average age (decimal point 2) of passengers who used a mobile for booking.
Comment.
- Analyse which gender is more interested in or required to travel more.
- Are females travelling more for personal reasons and males more for business?
Comment

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- D. Determine the number of passengers in each travel class and whether people prefer AC-II or AC-III.
- E. Explain how the passengers travelling in different classes were overall satisfied? (*Hint*: May use `AVG(CAST(s.Overall_Sat AS FLOAT))` function to calculate the average satisfaction for each class. Which class should be the focus, and suggest some marketing strategies to improve?
- F. Explain how the rating of ease of online booking differs between first-time and repeat passengers. Which category should be more emphasized for the corrective measures related to the online booking interface?
- G. Comment on the passengers travelling through various classes and their dissatisfaction with washroom cleanliness. Which class should focus more on implementing some corrective measures?

Q2. As per the above-mentioned Indian Railways case, prepare a dashboard to improve the overall satisfaction of passengers travelling in different classes (AC-I, AC-II, AC-III) with different purposes of travel, like personal and business-related travel, etc. **19 marks (CLO3)**

- i. Explain which class is more popular? **2 marks**
- ii. Identify the hygiene parameter that has the lowest or nearly lowest average satisfaction rating in all three classes. Which factor to focus on that consistently shows poor ratings across all classes, even if it is not always the absolute lowest in every class? Also, mention which parameter people are most satisfied. **3+1 marks**
- iii. Analyse is our train more popular for all sorts of purposes. Analyse: people travel more for business or personal reasons; is this trend the same for both genders? Comment. **2 marks**
- iv. Compare the delay faced by both types of passengers who are travelling across all three classes. Which combinations of customer type and class experience the highest cumulative delay? **2 marks**
- v. Suggest improvements based on passenger satisfaction based on gender and class. **2 marks**
- vi. Analyze device usability based on age: Are older people more comfortable with bigger screen devices like laptops and desktops? (*Hint*: Since Age is a continuous numeric field, create age groups by using the 'New Group' feature in Power BI's data view. Choose 'Bins' as the group type and specify a suitable bin size (e.g., 10 years) to categorize passengers into age ranges like 20-30, 31-40, etc.) **3 marks**
- vii. Explain age categories and distance travelled. Do senior citizens not prefer to travel by train for longer distances? Comment. **2 marks**
- viii. Analyse discount schemes based on their popularity among passengers. Based on the number of bookings in each scheme, comment on which scheme needs to be discontinued. **2 marks**