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| **C:\Users\ADMIN\Desktop\j.png** | **JAIPURIA INSTITUE OF MANAGEMENT, INDORE**  Post Graduate Diploma in Management |
| **Course Title: Business Intelligence for Decision Making, (Course Code: 40823)**  **End-Term Examination, Term - IV (October, 2024)** | |
| **Time Duration: 2 Hours Total Marks: 40** | |

***General Instructions*:**

1. *Answer the questions as directed. The break-up of the marks is given wherever necessary.*
2. *Marks against each question are indicated to its right.*
3. *For question 2(SQL Questions), please paste the query in the MS Word file and write the analysis accordingly. The analysis of PowerBI visualization will also be written in the same MS Word file in which SQL queries are pasted.*
4. *Please save the MS Word and PowerBI Dashboard with your Full Enrollment NO.*
5. *Two files need to be uploaded in total:*
6. *MS Word file with SQL query screenshots with analysis and PowerBI Visualization analysis*
7. *PowerBI Dashboard file.*
8. *Do not write on the question paper except your roll number.*

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

The Indian railways have 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 the train passengers, Indian Railways would like to know some information based on which they could make some decisions to improve the passengers' overall satisfaction. **5X3 marks**

The data details are mentioned below:

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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) |
| 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**

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

ii) Determine the number of passengers in each travel class and whether people prefer AC-II or AC-III.

1. Explain how are the passengers travelling in different classes overall satisfied? Which class should be the focus, and suggest some marketing strategies to improve.
2. 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?
3. Comment on the passengers traveling 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.

The initial cleaning and data preparation before going to work on visuals- **3 marks**

1. Explain which class is more popular? **2 marks**
2. Analyse which parameter is lacking in all the classes among all hygiene factors that must be focused on. Also, mention on which parameter people are most satisfied. **3 marks**
3. 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.

**3 marks**

1. Analyse the delay faced by both types of passengers who are travelling in all three classes. **2 marks**
2. Design a better online booking application based on passenger satisfaction based on gender and class. **2 marks**
3. Device usability based on age: are older people more comfortable with bigger screen devices like laptops and desktops? **2 marks**
4. Comment on the age and the sort of passengers traveling in which class. (*Young -Upto 15, Mature-Upto 30, Experienced-Upto 55, Above 55- Senior citizen)*. **3 marks**
5. Explain age categories and distance travelled. Do senior citizens not prefer to travel by train for longer distances? Comment. **3 marks**
6. 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**