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| ***Instructions:***  **Please read the following instructions carefully before solving & submitting the assignment solution:**  **It should be clear that your assignment will not get any credit (zero marks) if:**   * **The assignment is submitted after the due date.** * **The submitted assignment solution does NOT open, or the file is corrupt.** * **The assignment is copied (from other students or copied from handouts or the internet).** * **Please ensure that your assignment submission is in .doc or .docx format. Other formats such as scanned images, PDFs, .zip, .rar, .bmp, etc., will not be accepted.**   ***Objectives:***  The objectives of this assignment are to:   * *Analyze real-life scenarios and learn SQL query writing skills.* * *Know and apply various features of SQL on given database tables.* * *Understand how Join query, its variants work.* * *Apply Join query on prescribed database tables.* | | | |
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| **Question No. 1 Marks 10**  Suppose you have joined a nationwide logistics company as Database Developer / Administrator. This company manages package deliveries across several cities. As a part of their web solution, SQL database is deployed at backend. They have a database table called **Packages** with the following columns / attributes:   * PackageID (INT, Primary Key): Unique identifier for each package. * SenderCity (VARCHAR): City where the package was sent from. * RecipientCity (VARCHAR): City where the package is being delivered to. * ShippingDate (DATE): Date when the package was shipped. * DeliveryDate (DATE): Date when the package was delivered. * Weight (DECIMAL): Weight of the package in kilograms. * Status (VARCHAR): Current status of the package (e.g., "In Transit", "Delivered", "Delayed"). * VehicleType (VARCHAR): Type of vehicle used for delivery (e.g., "Truck", "Van", "Plane").   **Task:** You are required to execute a single SQL command satisfying the following requirements i.e., A single SQL query should fulfill all the requirements.   1. Find all the unique sender cities from which packages have been shipped. 2. Find all packages that were not delivered by van. 3. Find all packages that were shipped between Mar 01st, 2024 and Mar 29th, 2024 (inclusive). Follow the order date as YYY-MM-DD. 4. Find all delivered packages, ordered by their delivery date, with the most recent deliveries appearing first.   ***SOLUTION:***  SELECT DISTINCT SenderCity, PackageID, RecipientCity, ShippingDate, DeliveryDate, Status, VehicleType  FROM Package  WHERE VehicleType != ‘Van’  AND ShippingDate BETWEEN ‘2024-03-01’ AND ‘2024-03-29’  AND Statue = ‘Delivered’  ORDER BY DeliveryDate DESC;  **Question No. 2 Marks 10**  Imagine we have two tables (Employees and Departments) in a organization. The structure of tables is as follows:  **Employees Table**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | EmployeeID | FirstName | LastName | DepartmentID | Salary | | 1 | John | Smith | 1 | 60000 | | 2 | Jane | Doe | 2 | 75000 | | 3 | David | Lee | 1 | 65000 | | 4 | Sarah | Jones | 3 | 80000 | | 5 | Michael | Brown | NULL | 55000 |   **Departments Table**   |  |  |  | | --- | --- | --- | | DepartmentID | DepartmentName | Location | | 1 | Sales | New York | | 2 | Marketing | London | | 3 | Engineering | Paris |   **Task:** You are required to write down the SQL query to Retrieve names and their respective departments of all the employees. You should also show the output table of the query.  ***SOLUTION:***  SELECT Employees.FirstName, Employees.LastName, Departments.DepartmentName  FROM Employee JOIN Departments  ON Employee.DepartmentID = Depatments.DepartmentID  WHERE Employee.DepartmentID IS NOT NULL;  **Output Table:**   |  |  |  | | --- | --- | --- | | **FirstName** | **LastName** | **DepartmentName** | | John | Smith | Sales | | Jane | Doe | Marketing | | David | Lee | Sales | | Sarah | Jones | Engineering | | | | |
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