* How do you find the total number of orders placed by each customer in the Orders table with columns customer\_id and order\_id?
* Write a query to find the average salary of employees in each department from the Employees table with columns department\_id and salary.
* From a table Sales with columns employee\_id, sale\_date, and amount, write a query to find the total sales amount made by each employee for the year 2024.
* Using Orders table with column order\_status, find the three most common order statuses with their counts.
* Write a query that finds departments in an Employees table where the average salary is greater than 50000.

Database: Products  
Columns: product\_id (INT), category (VARCHAR), price (DECIMAL)

Problem Statement: Find the maximum price of a product in each category from a Products table.

Sample Products Table:

|  |  |  |
| --- | --- | --- |
| product\_id | category | price |
| 1 | Electronics | 800.00 |
| 2 | Books | 25.50 |
| 3 | Electronics | 1200.00 |
| 4 | Books | 50.00 |
| 5 | Home | 150.75 |

Find the maximum price of a product in each category.

Database: Students  
Columns: student\_id (INT), class (VARCHAR), marks (INT)

**Problem 2: Total Marks Per Class**

**Problem Statement:** Find the total marks obtained by students in each class.

**Sample Students Table:**

|  |  |  |
| --- | --- | --- |
| **student\_id** | **class** | **marks** |
| 101 | 10A | 85 |
| 102 | 10A | 92 |
| 103 | 11B | 78 |
| 104 | 11B | 95 |
| 105 | 10A | 88 |

Find the total marks obtained by students in each class.

Database: Employees

Columns: employee\_id (INT), department (VARCHAR), salary (DECIMAL)

**Problem 3: Employee Count by Department (Salary > 60000)**

**Problem Statement:** Find the count of employees in each department earning more than 60000.

**Sample Employees Table:**

|  |  |  |
| --- | --- | --- |
| **employee\_id** | **department** | **salary** |
| 1 | Sales | 75000.00 |
| 2 | HR | 55000.00 |
| 3 | Sales | 65000.00 |
| 4 | Engineering | 90000.00 |
| 5 | HR | 62000.00 |
| 6 | Sales | 58000.00 |

Find the count of employees in each department earning more than 60000.

Database: Orders

Columns: order\_id (INT), customer\_id (INT), order\_date (DATE), total\_amount (DECIMAL)

**Problem 4: Customers with More Than 5 Orders in 2024**

**Problem Statement:** Find the customers who placed more than 5 orders in 2024.

**Sample Orders Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| **order\_id** | **customer\_id** | **order\_date** | **total\_amount** |
| 1 | 10 | 2024-01-15 | 150.00 |
| 2 | 10 | 2024-02-20 | 250.00 |
| 3 | 20 | 2024-01-10 | 100.00 |
| 4 | 10 | 2024-03-05 | 300.00 |
| 5 | 10 | 2024-04-10 | 50.00 |
| 6 | 30 | 2023-12-25 | 120.00 |
| 7 | 10 | 2024-05-15 | 450.00 |
| 8 | 20 | 2024-03-12 | 220.00 |
| 9 | 10 | 2024-06-01 | 180.00 |
| 10 | 20 | 2024-04-18 | 75.00 |
| 11 | 10 | 2024-07-07 | 600.00 |

Find the customers who placed more than 5 orders in 2024.

**Ques**

Given a table of candidates and their skills, you're tasked with finding the candidates best suited for an open Data Science job. You want to find candidates who are proficient in Python, Tableau, and PostgreSQL.

Write a query to list the candidates who possess all of the required skills for the job. Sort the output by candidate ID in ascending order.

**Assumption:**

* There are no duplicates in the **candidates** table.

**candidates Table:**

| **Column Name** | **Type** |
| --- | --- |
| candidate\_id | integer |
| skill | varchar |

**candidates Example Input:**

| **candidate\_id** | **skill** |
| --- | --- |
| 123 | Python |
| 123 | Tableau |
| 123 | PostgreSQL |
| 234 | R |
| 234 | PowerBI |
| 234 | SQL Server |
| 345 | Python |
| 345 | Tableau |

**Example Output:**

| **candidate\_id** |
| --- |
| 123 |

**Ques**

Assume you're given the tables containing completed trade orders and user details in a Robinhood trading system.

Write a query to retrieve the top three cities that have the highest number of completed trade orders listed in descending order. Output the city name and the corresponding number of completed trade orders.

**trades Table:**

| **Column Name** | **Type** |
| --- | --- |
| order\_id | integer |
| user\_id | integer |
| quantity | integer |
| status | string ('Completed', 'Cancelled') |
| date | timestamp |
| price | decimal (5, 2) |

**trades Example Input:**

| **order\_id** | **user\_id** | **quantity** | **status** | **date** | **price** |
| --- | --- | --- | --- | --- | --- |
| 100101 | 111 | 10 | Cancelled | 08/17/2022 12:00:00 | 9.80 |
| 100102 | 111 | 10 | Completed | 08/17/2022 12:00:00 | 10.00 |
| 100259 | 148 | 35 | Completed | 08/25/2022 12:00:00 | 5.10 |
| 100264 | 148 | 40 | Completed | 08/26/2022 12:00:00 | 4.80 |
| 100305 | 300 | 15 | Completed | 09/05/2022 12:00:00 | 10.00 |
| 100400 | 178 | 32 | Completed | 09/17/2022 12:00:00 | 12.00 |
| 100565 | 265 | 2 | Completed | 09/27/2022 12:00:00 | 8.70 |

**users Table:**

| **Column Name** | **Type** |
| --- | --- |
| user\_id | integer |
| city | string |
| email | string |
| signup\_date | datetime |

**users Example Input:**

| **user\_id** | **city** | **email** | **signup\_date** |
| --- | --- | --- | --- |
| 111 | San Francisco | [rrok10@gmail.com](mailto:rrok10@gmail.com) | 08/03/2021 12:00:00 |
| 148 | Boston | [sailor9820@gmail.com](mailto:sailor9820@gmail.com) | 08/20/2021 12:00:00 |
| 178 | San Francisco | [harrypotterfan182@gmail.com](mailto:harrypotterfan182@gmail.com) | 01/05/2022 12:00:00 |
| 265 | Denver | [shadower\_@hotmail.com](mailto:shadower_@hotmail.com) | 02/26/2022 12:00:00 |
| 300 | San Francisco | [houstoncowboy1122@hotmail.com](mailto:houstoncowboy1122@hotmail.com) | 06/30/2022 12:00:00 |

**Example Output:**

| **city** | **total\_orders** |
| --- | --- |
| San Francisco | 3 |
| Boston | 2 |
| Denver | 1 |