

MOST ASKED INTERVIEW QUESTIONS

EXCEL

1	What is the difference between a workbook and a worksheet in Excel?
2	How do you use the VLOOKUP function? Give an example.
3	What are dynamic arrays in Excel? How do they work?
4	Explain the use of the IF function in Excel. Can you give an example?
5	What is the purpose of pivot tables in Excel? How do you create one?
6	How do you use conditional formatting to highlight specific values?
7	What is the difference between COUNT and COUNTA functions?
8	How do you protect a worksheet in Excel?
9	Can you explain how the INDEX and MATCH functions work together?
10	How would you remove duplicates from a dataset in Excel?
11	What is the purpose of the Data Validation feature in Excel?
12	How do you create a drop-down list in Excel?
13	What is the difference between relative, absolute, and mixed cell references?
14	How do you split text into separate columns using a delimiter in Excel?
15	Explain the purpose of the SUMIFS function. How is it different from SUMIF?

SQL

1	What is SQL, and why is it important for data management?
2	What is the difference between INNER JOIN and OUTER JOIN?
3	How do you retrieve unique values from a column in SQL?
4	Explain the difference between WHERE and HAVING clauses.
5	What is the purpose of the GROUP BY clause in SQL?
6	How do you create a table in SQL? Can you give an example?
7	What is the purpose of a primary key in a database table?
8	How can you delete duplicate rows in SQL?
9	What is a subquery, and how is it used in SQL?
10	What are the differences between UNION and UNION ALL?
11	How do you find the second highest salary in a table?
12	What is a stored procedure in SQL, and why would you use one?
13	Explain the purpose of the COUNT function in SQL.
14	What is normalization, and why is it important in databases?
15	How do you write an SQL query to join three tables?

POWER BI

1	What is Power BI, and how is it used for data visualization?
2	What is the difference between Power BI Desktop and Power BI Service?
3	How do you create a calculated column in Power BI?
4	What is a relationship in Power BI, and how do you create one?
5	Explain the difference between a measure and a calculated column.
6	How do you apply filters to a report in Power BI?
7	What is DAX, and why is it important in Power BI?
8	How do you handle many-to-many relationships in Power BI?
9	Explain the use of slicers in Power BI reports.
10	How do you publish a Power BI report to the Power BI Service?
11	What is the purpose of the Power Query editor?
12	How do you refresh data in a Power BI report?
13	Explain the concept of row-level security in Power BI.
14	What is the difference between a dashboard and a report in Power BI?
15	What are the major components of power BI?

EXCEL INTERVIEW QUESTIONS

(1) What is the difference between a workbook and a worksheet in Excel?

- A **workbook** is the entire Excel file that can contain multiple **worksheets** (also called sheets).
- A **worksheet** is a single page within the workbook that consists of cells organized in rows and columns for data storage and analysis.

(2) How do you use the VLOOKUP function? Give an example.

- VLOOKUP is used to search for a value in the first column of a table and return a value in the same row from a specified column.
- Example: `=VLOOKUP(101, A2:C10, 2, FALSE)` → looks for 101 in column A and returns the value from the 2nd column of the matching row.

(3) What are dynamic arrays in Excel? How do they work?

- Dynamic arrays automatically spill the result of a formula into adjacent cells.
- Functions like `FILTER()`, `SORT()`, and `UNIQUE()` use dynamic arrays.
- Example: `=UNIQUE(A2:A10)` will list all unique values from that range and spill them vertically.

(4) Explain the use of the IF function in Excel. Can you give an example?

- IF checks a condition and returns one value if true, another if false.
- Example: `=IF(A1>60, "Pass", "Fail")` returns "Pass" if A1 > 60, otherwise "Fail".

(5) What is the purpose of pivot tables in Excel? How do you create one?

- Pivot tables summarize and analyze large datasets.
- To create one: Select your data → Insert → PivotTable → Choose rows, columns, values, and filters.

(6) How do you use conditional formatting to highlight specific values?

- Conditional formatting applies colors or styles to cells based on rules.
- Go to Home → Conditional Formatting → Choose rule type (e.g., "Greater Than", "Text Contains", etc.).

(7) What is the difference between COUNT and COUNTA functions?

- `COUNT()` counts numeric values only.
- `COUNTA()` counts non-empty cells, including text and numbers.

(8) How do you protect a worksheet in Excel?

- Go to Review → Protect Sheet → Set a password and select allowed actions (e.g., select cells, format cells).

(9) Can you explain how the INDEX and MATCH functions work together?

- INDEX returns a value based on row and column position.
- MATCH returns the position of a value in a range.
- Combined: `=INDEX(B2:B10, MATCH("John", A2:A10, 0))` finds "John" in A2:A10 and returns the corresponding value from B2:B10.

(10) How would you remove duplicates from a dataset in Excel?

- Select the data → Data tab → Remove Duplicates → Choose columns to check → Click OK.

(11) What is the purpose of the Data Validation feature in Excel?

- It restricts the type of data that can be entered in a cell (e.g., dropdown lists, number limits).
- Go to Data → Data Validation.

(12) How do you create a drop-down list in Excel?

- Select the cell → Data → Data Validation → List → Enter items separated by commas or select a range.

(13) What is the difference between relative, absolute, and mixed cell references?

- **Relative:** Adjusts when copied (e.g., A1).
- **Absolute:** Does not change (e.g., \$A\$1).
- **Mixed:** One part fixed (e.g., A\$1 or \$A1).

(14) How do you split text into separate columns using a delimiter in Excel?

- Select column → Data tab → Text to Columns → Choose Delimited → Select delimiter (comma, tab, etc.) → Finish.

(15) Explain the purpose of the SUMIFS function. How is it different from SUMIF?

- SUMIF () adds values based on a single condition.
- SUMIFS () allows **multiple conditions**.
- Example: `=SUMIFS(C2:C10, A2:A10, "Apples", B2:B10, "East")`.

SQL INTERVIEW QUESTIONS

(1) What is SQL, and why is it important for data management?

- **SQL (Structured Query Language)** is used to interact with relational databases.
- It enables **inserting, updating, deleting, and retrieving** data efficiently.
- It's crucial for managing large datasets and supports **data integrity, relational structure, and automation**.

(2) What is the difference between INNER JOIN and OUTER JOIN?

- **INNER JOIN:** Returns records with matching values in both tables.
- **OUTER JOIN:** Returns matching and non-matching rows:
 - **LEFT JOIN:** All records from the left table + matching from the right.
 - **RIGHT JOIN:** All records from the right table + matching from the left.
 - **FULL OUTER JOIN:** All records from both tables, with NULLs where no match exists.

(3) How do you retrieve unique values from a column in SQL?

- Use the `DISTINCT` keyword.
- Example: `SELECT DISTINCT department FROM employees;`

(4) Explain the difference between WHERE and HAVING clauses.

- **WHERE** filters **rows before** grouping.
- **HAVING** filters **groups after** aggregation.
- Example:

```
SELECT department, COUNT(*)
FROM employees
GROUP BY department
HAVING COUNT(*) > 10;
```

(5) What is the purpose of the GROUP BY clause in SQL?

- **GROUP BY** groups rows that have the same values into summary rows.
- Often used with aggregate functions like `SUM()`, `COUNT()`, `AVG()`.
- Example:

```
SELECT department, AVG(salary)
FROM employees
GROUP BY department;
```

(6) How do you create a table in SQL? Can you give an example?

- Use `CREATE TABLE` statement.
- Example:

```
CREATE TABLE employees (
    emp_id INT PRIMARY KEY,
```

```
name VARCHAR(100),  
salary DECIMAL(10,2),  
department VARCHAR(50)  
);
```

(7) What is the purpose of a primary key in a database table?

- A **primary key** uniquely identifies each row.
- It enforces **uniqueness and non-null** constraints.
- Each table can have only **one primary key**, which may consist of one or more columns.

(8) How can you delete duplicate rows in SQL?

- Using ROW_NUMBER() in a subquery:

```
DELETE FROM employees  
WHERE emp_id NOT IN (  
    SELECT MIN(emp_id)  
    FROM employees  
    GROUP BY name, salary, department  
);
```

(9) What is a subquery, and how is it used in SQL?

- A **subquery** is a query nested inside another query.
- Used in SELECT, WHERE, or FROM clauses.
- Example:

```
SELECT name FROM employees  
WHERE salary > (SELECT AVG(salary) FROM employees);
```

(10) What are the differences between UNION and UNION ALL?

- UNION: Combines results from two queries, **removes duplicates**.
- UNION ALL: Combines results and **keeps duplicates**.
- Both queries must have the **same number and type** of columns.

(11) How do you find the second highest salary in a table?

- Use DISTINCT and LIMIT or OFFSET:

```
SELECT DISTINCT salary  
FROM employees  
ORDER BY salary DESC  
LIMIT 1 OFFSET 1;
```
- Or using subquery:

```
SELECT MAX(salary)  
FROM employees  
WHERE salary < (SELECT MAX(salary) FROM employees);
```

(12) What is a stored procedure in SQL, and why would you use one?

- A **stored procedure** is a precompiled collection of SQL statements.
- Benefits:
 - Reusability.
 - Improved performance.
 - Better security.
- Example:

```
CREATE PROCEDURE GetHighSalaryEmployees()  
BEGIN  
    SELECT * FROM employees WHERE salary > 100000;  
END;
```

(13) Explain the purpose of the COUNT function in SQL.

- COUNT() returns the **number of rows** that match a condition.
- Example:

```
SELECT COUNT(*) FROM employees WHERE department = 'HR';
```

(14) What is normalization, and why is it important in databases?

- **Normalization** organizes data to reduce redundancy and improve integrity.
- It involves splitting large tables into smaller ones and defining relationships.
- Common forms: 1NF (atomic data), 2NF (no partial dependency), 3NF (no transitive dependency).

(15) How do you write an SQL query to join three tables?

- Use multiple JOINS:

```
SELECT e.name, d.name, p.project_name  
FROM employees e  
JOIN departments d ON e.dept_id = d.id  
JOIN projects p ON e.project_id = p.id;
```


POWER BI INTERVIEW QUESTIONS

(1) What is Power BI, and how is it used for data visualization?

- **Power BI** is a Microsoft business analytics tool used for **visualizing data, creating dashboards, and sharing reports**.
- It transforms raw data into interactive visual insights using charts, graphs, maps, etc.
- It supports real-time analytics, data modeling, and report sharing across devices.

(2) What is the difference between Power BI Desktop and Power BI Service?

- **Power BI Desktop**: A free Windows application to design reports and dashboards.
- **Power BI Service**: A cloud-based platform (app.powerbi.com) for sharing, publishing, and collaborating on reports.
- Desktop is for development; Service is for sharing and real-time use.

(3) How do you create a calculated column in Power BI?

- Go to **Data view** → **Modeling tab** → **New Column**, then write a DAX expression.
- Example:

```
FullName = Customers[FirstName] & " " &  
Customers[LastName]
```

(4) What is a relationship in Power BI, and how do you create one?

- Relationships define how tables are connected using **keys (e.g., primary and foreign keys)**.
- To create: Go to **Model view** → **Drag field from one table to another**, or use "Manage Relationships".

(5) Explain the difference between a measure and a calculated column.

- **Calculated Column**: Evaluated row-by-row; result stored in a column.
- **Measure**: Evaluated during query time; used in aggregations (e.g., SUM, AVG).
- Measures are efficient; calculated columns consume memory.

(6) How do you apply filters to a report in Power BI?

- **Filters** can be applied at different levels:
 - Visual-level: Affects one visual only.
 - Page-level: Affects all visuals on a report page.
 - Report-level: Affects the entire report.
- Filters are found in the **Filters pane** on the right.

(7) What is DAX, and why is it important in Power BI?

- **DAX (Data Analysis Expressions)** is a formula language used for calculations in Power BI.
- It enables creation of custom measures, calculated columns, time intelligence, etc.
- Example:

$$\text{SalesGrowth} = (\text{SUM}(\text{Sales}[2024]) - \text{SUM}(\text{Sales}[2023])) / \text{SUM}(\text{Sales}[2023])$$

(8) How do you handle many-to-many relationships in Power BI?

- Use **bridge (intermediate) tables** to resolve ambiguity.
- Set relationship cardinality as **Many-to-Many** and ensure proper cross-filter direction.
- Example: Product→Sales→CustomerProduct table.

(9) Explain the use of slicers in Power BI reports.

- **Slicers** are visual filters that allow users to interactively select data (e.g., year, region).
- They affect one or multiple visuals, enabling dynamic report exploration.

(10) How do you publish a Power BI report to the Power BI Service?

- In Power BI Desktop: Go to **File → Publish → Select Workspace**.
- Sign in with your Microsoft account to upload it to Power BI Service.

(11) What is the purpose of the Power Query editor?

- Power Query is used for **data transformation** (cleaning, merging, filtering, reshaping).
- Accessed via "Transform Data". It uses **M language** behind the scenes.
- Example tasks: remove nulls, split columns, merge queries, change data types.

(12) How do you refresh data in a Power BI report?

- In Desktop: Click **Home → Refresh**.
- In Service: Use **Scheduled Refresh** in Dataset settings to auto-refresh data from sources like SQL, Excel, etc.

(13) Explain the concept of row-level security in Power BI.

- **Row-Level Security (RLS)** restricts data access at the row level based on user roles.
- Define roles using **DAX filters**, then assign users to roles in the Power BI Service.
- Example: `[Region] = USERNAME()` restricts users to their own region's data.

(14) What is the difference between a dashboard and a report in Power BI?

- **Report**: Multiple pages with visuals; created in Desktop.
- **Dashboard**: Single-page view created in the Service using visuals pinned from reports.
- Reports are interactive and detailed; dashboards are high-level summaries.

(15) What are the major components of Power BI?

- **Power BI Desktop** – Authoring and designing reports.
- **Power BI Service** – Online platform for sharing and collaboration.
- **Power BI Mobile** – View dashboards on mobile devices.
- **Power BI Gateway** – Connects on-premise data sources to Power BI Service.
- **Power Query** – ETL tool for data preparation.
- **Power Pivot** – Data modeling and DAX engine.