Data Analyst Training Programme

Basic SELECT Statements

Introduction to SQL Queries

What is SQL?

- Structured Query Language
- Standard language for database communication
- Declarative: describe what you want, not how to get it

The SELECT Statement

- Most fundamental SQL command
- Retrieves data from database tables
- Foundation for all data analysis tasks

Basic SELECT Syntax

Core SELECT Structure

```
SELECT column1, column2
FROM table_name;
```

Key Elements

- **SELECT**: specifies columns to retrieve
- **FROM**: identifies source table
- **Semicolon**: terminates the statement

Best Practices

- Use specific column names instead of *
- Write SQL keywords in **UPPERCASE**
- Use consistent indentation

Filtering Data with WHERE

WHERE Clause Purpose

- Filters rows based on conditions
- Returns only matching records
- Essential for focused analysis

Common Operators

- = (equals)
- <> or != (not equals)
- | ,<, >=, <= (comparison)
- LIKE (pattern matching)

Text vs Numbers

- Text values need single quotes
- Numbers don't need quotes

Sorting and Limiting Results

ORDER BY Clause

- Sorts results in ascending (**ASC**) or descending (**DESC**) order
- Can sort by multiple columns
- Default is ascending

LIMIT Clause

- Controls number of rows returned
- Essential for large datasets
- Often used with **ORDER BY** for "**top N**" queries

Practical Applications

- Top 10 customers by sales
- Most expensive products
- Recent orders first

Putting It All Together

Complete Query Structure

SELECT columns
FROM table
WHERE conditions
ORDER BY columns
LIMIT number;

Query Execution Order

- **FROM**: identify table
- **WHERE**: filter rows
- **SELECT**: choose columns
- **ORDER BY**: sort results
- **LIMIT**: restrict count

Next Week Preview

- Grouping data for summaries
- Counting and calculating totals
- Aggregate functions (**SUM**, **AVG**, **COUNT**)

Until Next Week Sunday...

See you next week on Sunday, **[student name]**.

The most efficient weapon in the arsenal of a Data Analyst is the question. What questions can you answer with data? You can write SQL statements if you can formulate the right questions.

Questions / Assignment

- What is the total sales revenue for each product category?
- How many customers made purchases in the last month?
- What are the top 5 products by sales volume?
- What is the average order value for each month?
- Which customers have not made a purchase in the last six months?
- What is the trend of sales over the past year?
- How many new customers were acquired each month?

Thank you, [student name].

Any Questions?