Syllabus

SQL For Data Analytics

EVOLVNEXT
LEARNINGS

01 Introduction to BigQuery

- What is BigQuery ?
- BigQuery interface and UI walkthrough
- Datasets, tables, and projects

02 Data Extraction & Basic SQL Syntax

- Writing basic SELECT queries
- Specifying columns and using aliases
- Filtering data with WHERE
- Sorting results using ORDER BY
- Limiting rows with LIMIT

03 String & Data Cleaning Functions

- TRIM, UPPER, LOWER, REPLACE
- Regular expressions with REGEXP_EXTRACT, REGEXP_REPLACE
- Removing duplicates

04 Data Filtering & Conditional Logic

- Logical operators: AND, OR, NOT
- Comparison operators: =, !=, LIKE, IN, BETWEEN
- Handling NULLs: IS NULL, IS NOT NULL, IFNULL, COALESCE
- Conditional statements: CASE WHEN, IF

05 Joins & Set Operations

- Types of joins: INNER, LEFT, RIGHT, FULL OUTER, CROSS
- Join conditions and best practices
- Multi-table joins
- Set operations: UNION, INTERSECT, EXCEPT

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EVOLVNEXT LEARNINGS

06
Aggregation & Grouping
- Aggregate functions: SUM(), AVG(), MIN(), MAX(), COUNT()
- GROUP BY clause
- Using HAVING
- Nested aggregation

07
Subqueries & CTEs
- Using subqueries in SELECT, FROM, and WHERE clauses
- Common Table Expressions (CTE) with WITH

08
Window Functions
- Introduction to window functions vs. aggregates
- Key functions: ROW_NUMBER(), RANK(), DENSE_RANK(), LAG(), LEAD(), NTILE()
- Partitioning and ordering data with OVER()
- Running totals, moving averages

09
Date & Time Functions
- Working with DATE, DATETIME, TIMESTAMP types
- Functions: CURRENT_DATE, DATE_DIFF, DATE_TRUNC, FORMAT_DATE

10
Case Study
- Real-world dataset
- Tasks involving joins, window functions, aggregations, and date logic
- Students write and present analytical queries and insights