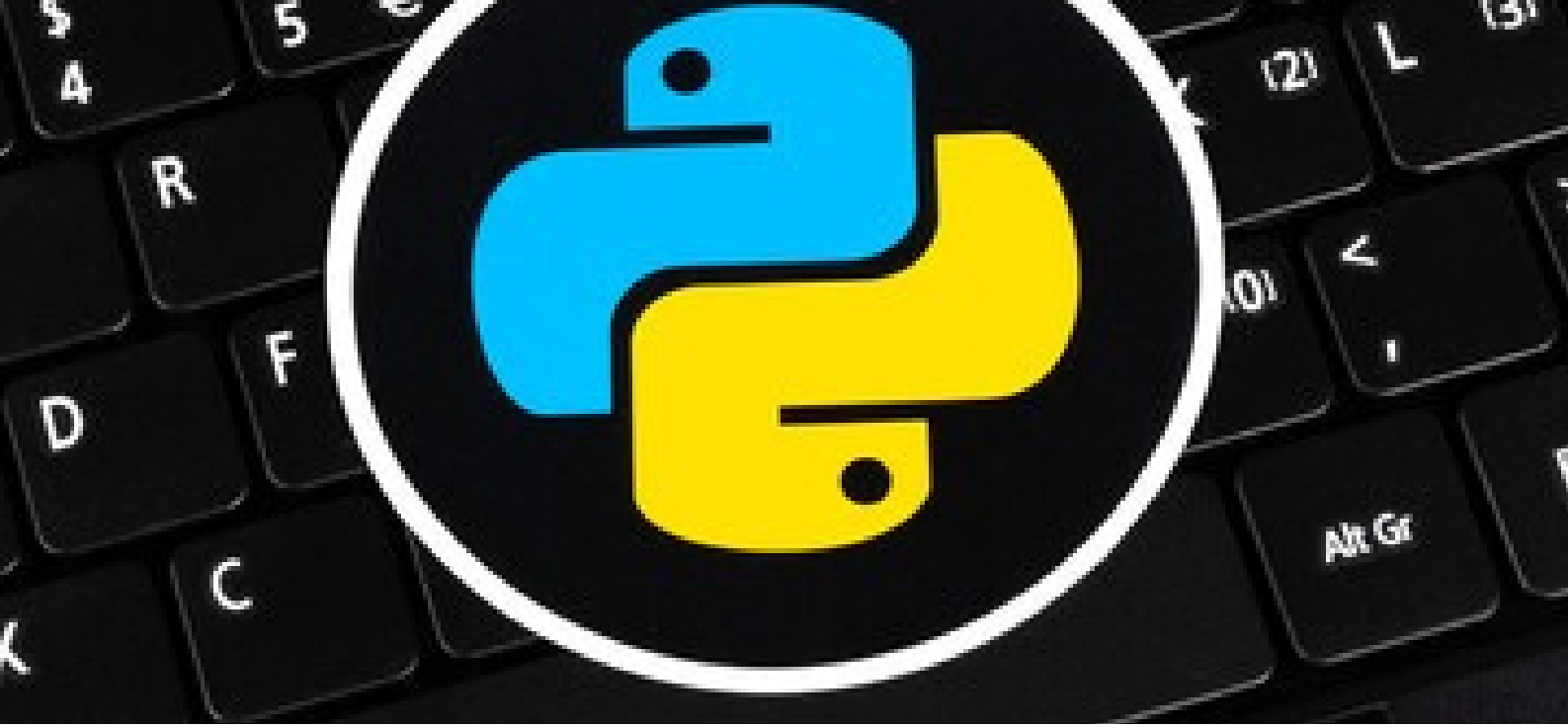
VIRAJE TECH

SQL

- Access to Interview Opportunities with Top Companies
- Industry-Relevant Curriculum Designed and Taught by Industry Experts
- Hands on Project and Industry Specific Tools
- Dedicated CareerSupport and Interview Preparation
- Post Graduate Certificatefrom Great Lakes Executive Learning



Python has become a cornerstone in the IT industry due to its versatility, readability, and extensive ecosystem of libraries and frameworks. Widely adopted for web development, data science, machine learning, and automation, Python offers a simple syntax that makes it accessible for beginners yet powerful enough for complex applications. Its popularity stems from its role as a general-purpose language, fostering rapid development and efficient code maintenance. Python's extensive community support and a rich set of libraries such as NumPy, Pandas, and TensorFlow contribute to its dominance in data-centric applications and emerging technologies. In the IT industry, mastering Python equips professionals with a valuable skill set applicable across a spectrum of domains, making it a go-to language for building scalable, innovative, and robust solutions.

The Program helps you do grow and bloom in Industry and developed by best-in-class industry experts.It offers a blend of online learning with live and recorded lectures along with access to dedicated career support and rewarding job opportunities.

LEARN ONLINE ANYTIME, ANYWHERE

Learn from live masterclasses by top industryleaders and online lab sessions every week, along with 100+ hours of learning content.

WEEKLY ONLINE MENTORSHIPFROM EXPERTS

Get assistance on projects and reinforce the concepts you learn through weekly mentorship sessions.

NETWORK WITH LIKE-MINDED PEERS

Interact with peers from diverse backgroundsand grow your professional network.

DEDICATED PROGRAM SUPPORT

Access dedicated support on your learning journey and resolve for all your queries withhelp from a dedicated Program Manager.

A fresh graduate or a working professional looking to up-skill andbuild a career.

LEARNING PLAN

SQL

Module1:Introduction to SQL

1.1. Overview of SQL

1.1.1. History and Evolution

1.1.2. Importance of SQL

1.2.Relational Databases

- 1.2.1. Understanding Relational Data

- 1.2.2. Key Concepts: Tables, Rows, Columns, and Relationships

1.3. SQL Syntax Basics

- 1.3.1. SQL Statements

- 1.3.2. SQL Keywords

- 1.3.3. SQL Comments

Module 2:SQL Data Manipulation

2.1. Querying Data

- 2.1.1. SELECT Statement

- 2.1.2. Filtering Data with WHERE Clause

- 2.1.3. Sorting Data with ORDER BY

- 2.1.4. Limiting Results with LIMIT

2.2. Filtering and Comparison Operators

- 2.2.1. Comparison Operators (=, <>, <, >, <=, >=)

- 2.2.2. Logical Operators (AND, OR, NOT)

- 2.2.3. BETWEEN and IN Operators

2.3. Working with Functions

- 2.3.1. Aggregate Functions (SUM, AVG, COUNT, MAX,MIN)

- 2.3.2. String Functions (CONCAT, LENGTH, SUBSTRING)

- 2.3.3. Date and Time Functions

Module 3:SQL Data Definition

3.1. Creating and Modifying Tables

- 3.1.1. CREATE TABLE Statement

- 3.1.2. ALTER TABLE Statement

- 3.1.3. Dropping Tables with DROP TABLE

3.2. Data Types and Constraints

- 3.2.1. Numeric Data Types

- 3.2.2. Character Data Types

- 3.2.3. Date and Time Data Types

- 3.2.4. Primary Key and Foreign Key Constraints

- 3.3.3. Option and Try for Error Handling

Module 4:SQL Data Manipulation and Transactions

4.1.Inserting Data

- 4.1.1. INSERT INTO Statement

- 4.1.2. Specifying Values and NULL

- 4.1.3. INSERT INTO SELECT Statement

4.2. Updating and Deleting Data

- 4.2.1. UPDATE Statement

- 4.2.2. DELETE Statement

4.3.Transactions and ACID Properties

- 4.3.1. Transaction Concepts

- 4.3.2. COMMIT and ROLLBACK

- 4.3.3. ACID Properties (Atomicity, Consistency,Isolation,Durability)

Module 5:SQL Joins and Subqueries

5.1. Understanding Joins

- 5.1.1. INNER JOIN

- 5.1.2. LEFT JOIN (OUTER JOIN)

- 5.1.3. RIGHT JOIN (OUTER JOIN)

- 5.1.4. FULL OUTER JOIN

5.2.Subqueries

- 5.2.1. Subquery Syntax

- 5.2.2. Correlated Subqueries

- 5.2.3. Scalar Subqueries

Module 6:SQL Views, Indexes, and Optimization

6.1.Creating and Managing Views

- 6.1.1. CREATE VIEW Statement- 6.1.2. Updating Views

- 6.1.3. Dropping Views

6.2.Indexes and Performance Optimization

- 6.2.1. Index Types (B-tree, Hash, Bitmap)

- 6.2.2. Indexing Best Practices

- 6.2.3. Query Optimization Techniques

Module 7:Advanced SQL Concepts

7.1.Stored Procedures and Functions

- 7.1.1. Creating and Executing Stored Procedures

- 7.1.2. User-Defined Functions

7.2. Triggers

- 7.2.1. Trigger Basics

- 7.2.2. Creating and Managing Triggers

Module 8:SQL Security and Permissions

8.1. User Authentication and Authorization

- 8.1.1. User Roles and Privileges

- 8.1.2. GRANT and REVOKE Statements

8.2.SQL Injection and Prevention

- 8.2.1. Understanding SQL Injection

- 8.2.2. Mitigating SQL Injection Attacks

Module 9:SQL Best Practices and Tips

9.1. SQL Coding Best Practices

- 9.1.1. Naming Conventions

- 9.1.2. Indentation and Formatting

9.2. Performance Tuning Strategies

- 9.2.1. Query Performance

- 9.2.2. Database Maintenance

Module 10:Real-World Applications and Case Studies

10.1. Database Design Case Study

- 10.1.1. Requirements Analysis

- 10.1.2. Entity-Relationship Diagram (ERD)

- 10.1.3. Database Implementation

10.2. Practical SQL Projects

- 10.2.1. Building a Web Application with SQL

Module 11:SQL in Big Data and NoSQL Environments

11.1. SQL in Big Data Ecosystems

- 11.1.1. SQL in Hadoop (Hive)

- 11.1.2. SQL in Spark (Spark SQL)

11.2. SQL in NoSQL Databases

- 11.2.1. SQL-like Querying in NoSQL (e.g., MongoDB)

- 11.2.2. SQL and NewSQL Databases

Module 12:SQL and Cloud Databases (Optional)

12.1. Database as a Service (DBaaS)

- 12.1.1. Cloud Database Providers

- 12.1.2. Setting Up and Managing Cloud Databases

12.2. Migrating to the Cloud

- 12.2.1. Data Migration Strategies

- 12.2.2. Challenges and Considerations

Module 13.Final Project and Course Review

13.1 Capstone Project: Students will work on a complex SQL project to apply their skills.

13.2 Course Review and Exam: A comprehensive review of key SQL concepts and an assessment to evaluate students' knowledge.

READY TO ADVANCE YOUR CAREER?

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