

# SQL Full Syllabus

A comprehensive overview

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# Structured Query Language Basics

1

## Data Types

Numbers, dates, strings

2

## CRUD Operations

Create, read, update, delete

3

## Joins and Unions

Combining data from different tables

# Normalization and Indexing

## 1 1NF to 3NF

Reducing data redundancy

## 3 Primary and Foreign Keys

Enforcing data integrity

## 2 Composite Indexes

Improving query performance

## 4 Index Optimization

Optimizing search speed





# Database Security and Permissions

## Access Control

Restricting user access

## Roles and Privileges

Granting specific permissions

## Auditing and Logging

Tracking database activity

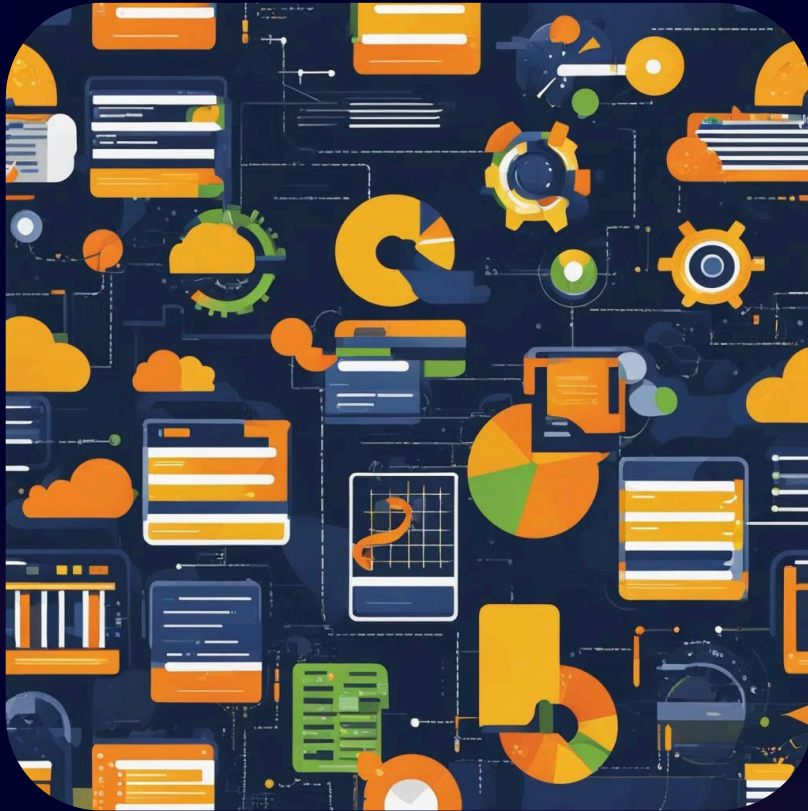
# Advanced Query Optimization

## Execution Plans

Analyzing query performance

## Subqueries and CTEs

Optimizing complex queries



# Stored Procedures and Functions

1

## Advantages

Reusable, modular code

2

## Custom Functions

Specialized logic for queries

3

## Procedure Security

Controlled data access



# Data Manipulation Language (DML)

## INSERT

Adding Data

Creating new records

## UPDATE

Modifying Data

Changing existing records

## DELETE

Removing Data

Deleting unwanted records

# Backup and Recovery Strategies

Backup Types	Full, incremental, differential
Recovery Options	Point-in-time recovery, restore from backups