PostgreSQL Syllabus
(Beginner to intermediate)

Beginner

PostgreSQL Fundamentals

- Introduction to PostgreSQL: Understand relational databases, PostgreSQL features, and its applications.
- Setting Up PostgreSQL: Learn to install and configure PostgreSQL on your system.
- SQL Basics: Grasp fundamental SQL syntax for data creation, manipulation, and retrieval.

Working with Data in PostgreSQL

- Data Types: Explore various data types in PostgreSQL to store different kinds of data.
- Creating and Managing Tables: Learn to create tables, specify data types for columns, and modify tables.
- Inserting, Updating, and Deleting Data: Master CRUD (Create, Read, Update, Delete) operations on PostgreSQL tables.trieval.

Building Queries with PostgreSQL

- Understand how to retrieve data from tables using SELECT statements.
- WHERE Clause: Apply WHERE clause to filter data based on specific conditions.
- ORDER BY Clause: Learn to sort the retrieved data using the ORDER BY clause.

Advanced SQL Concepts for PostgreSQ

- Joins: Explore various join types (inner, outer, cross) to query data from multiple tables.
- Filtering and Grouping Data: Use WHERE clause with logical operators and GROUP BY clause to filter and group data.
- Aggregation Functions: Learn to use functions like COUNT, SUM, AVG to summarize data.

Introduction to Data Management in PostgreSQL

- Working with Dates and Times: Explore functions to manipulate and extract information from date/time data.
- Transactions (ACID properties): Understand how transactions ensure data integrity.
- Importing and Exporting Data: Learn techniques to import data from CSV files and export data for further analysis.

Intermediate/ Advanced

Advanced SQL Techniques

- Joins (inner, outer, cross)
- Aggregation Functions (COUNT, SUM, AVG, GROUP BY)
- Subqueries

Data Manipulation and Management

- Transactions (ACID properties)
- Working with Dates and Times
- Importing and Exporting Data

Advanced Database Objects

- Views
- Stored Procedures
- User-Defined Functions (UDFs)

Indexing and Query Optimization

- Indexes
- Query Optimization Techniques

Text Search and Full-Text Search

- Text Functions (including regular expressions)
- Full-Text Search (using extensions like pg_search)