

# PostgreSQL Learning Checklist (Basic to Advanced)

1. Introduction to PostgreSQL
2. Data Types
3. Creating Databases and Tables
4. Basic SQL Commands (SELECT, INSERT, UPDATE, DELETE)
5. Constraints (NOT NULL, UNIQUE, PRIMARY KEY, FOREIGN KEY, CHECK)
6. Functions and Expressions
7. Operators
8. Filtering and Sorting (WHERE, ORDER BY, LIMIT)
9. Aggregate Functions (SUM, AVG, COUNT, MAX, MIN)
10. GROUP BY and HAVING
11. Joins (INNER, LEFT, RIGHT, FULL)
12. Subqueries
13. Views
14. Indexes
15. Transactions (BEGIN, COMMIT, ROLLBACK)
16. Triggers
17. Stored Procedures and Functions (PL/pgSQL)
18. Cursors
19. Loops and Control Structures (IF, CASE, FOR, WHILE, LOOP)
20. Exception Handling
21. Common Table Expressions (CTE) and WITH Clause
22. Window Functions
23. JSON and JSONB Handling
24. Array Operations
25. Temporary Tables
26. Inheritance and Table Partitioning
27. User Roles and Permissions
28. Backup and Restore (pg\_dump, pg\_restore)
29. Performance Tuning (EXPLAIN ANALYZE, Index optimization)
30. Query Optimization Techniques

31. Vacuum and Analyze
32. Configuration and Parameters (postgresql.conf)
33. Logical and Physical Replication
34. High Availability and Failover
35. Security and Authentication (pg\_hba.conf, SSL, LDAP)
36. Extensions (PostGIS, pg\_trgm, etc.)
37. Monitoring and Logging
38. Using PostgreSQL with Applications (e.g., Python, Java, Node.js)
39. Database Design Best Practices
40. Migration from Other RDBMS (MySQL, Oracle, etc.)