

Basic SQL

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This contains the basic in SQL/Databases one should be familiar with for Software Developer/Data Analyst/Data Scientist role.

1. Need for Databases
2. DBMS/RDBMS
3. SQL
4. Types of Commands
 - (a) DDL
 - (b) DML
5. Databases
6. Tables
 - (a) Rows
 - (b) Columns
 - (c) System Generated Tables
 - (d) User Defined Tables
7. **Constraints**
 - (a) Primary Key
 - (b) Foreign Key
 - (c) Unique
 - (d) Check
 - (e) Not NULL
 - (f) Default
8. AUTO-INCREMENT/IDENTITY
9. **Queries**
 - (a) CREATE
 - (b) SELECT
 - (c) UPDATE
 - (d) DELETE
10. Joins and Types
 - (a) Inner Join
 - (b) Outer Join
 - i. Left Outer

- ii. Right Outer
 - iii. Full Outer
- (c) Self Join
- (d) Cross Join
- 11. Handling NULL values
 - (a) CASE Statement
 - (b) COALESCE
 - (c) ISNULL() or NVL()
- 12. UNION ALL (Contains Duplicates)
- 13. UNION (Slower)
- 14. Joins vs UNION
- 15. INTERSECT
- 16. MINUS
- 17. Normalization (Normal Forms)
 - (a) 1NF
 - (b) 2NF
 - (c) 3NF
 - (d) 4NF
 - (e) 5NF
 - (f) BCNF
- 18. Indexes and Types
 - (a) Clustered
 - (b) Non-Clustered
 - (c) Unique
- 19. Cursor
- 20. Views
- 21. Triggers and Types
- 22. Stored Procedure (SP)
 - (a) System Generated
 - (b) User Defined
- 23. Temporary Tables
 - (a) Local Temporary
 - (b) Global Temporary
- 24. Common Table Expression (CTE)
- 25. Sub-Queries
 - (a) Normal
 - (b) Correlated