1. **what are the database object we having in sql?**

| * **Object** | * **Description / Purpose** | * **Example** |
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| * **Table** | * **Stores data in rows and columns** | * **CREATE TABLE Customers (ID INT, Name VARCHAR(100));** |

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| * **View** | * **Virtual table from a query** | * **CREATE VIEW ActiveCustomers AS SELECT \* FROM Customers WHERE Status = 'Active';** |

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| * **Index** | * **Speeds up data retrieval** | * **CREATE INDEX idx\_name ON Customers(Name);** |

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| * **Stored Procedure** | * **Precompiled SQL code, reusable** | * **CREATE PROCEDURE GetOrders @CustID INT AS ...** |

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| * **Function** | * **Returns a value or table** | * **CREATE FUNCTION GetTotal(@x INT, @y INT) RETURNS INT AS ...** |

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| * **Trigger** | * **Auto-executes on data changes** | * **CREATE TRIGGER trg\_UpdateLog AFTER UPDATE ON Orders ...** |

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| * **Schema** | * **Logical group/container for objects** | * **CREATE SCHEMA HR; CREATE TABLE HR.Employees(...);** |

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| * **Sequence** | * **Generates sequential numbers (auto-increment-like)** | * **CREATE SEQUENCE seq\_order START WITH 1 INCREMENT BY 1;** |

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| * **Synonym** | * **Alternate name for an object** | * **CREATE SYNONYM Cust FOR dbo.Customers;** |

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| * **Constraint** | * **Enforces data rules** | * **PRIMARY KEY, FOREIGN KEY, NOT NULL, CHECK, UNIQUE, DEFAULT** |

1. **what are the metadata tables we have in sql?**

| **Category** | **Purpose** | **Examples** |
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| **Tables** | **Info about user/system tables** | **INFORMATION\_SCHEMA.TABLES, sys.tables** |

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| **Columns** | **Info about columns in all tables** | **INFORMATION\_SCHEMA.COLUMNS, sys.columns** |

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| **Indexes** | **Index definitions, types, and mappings** | **INFORMATION\_SCHEMA.STATISTICS, sys.indexes** |

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| **Constraints** | **Keys and validation rules** | **INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS, sys.check\_constraints** |

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| **Triggers** | **Trigger metadata** | **INFORMATION\_SCHEMA.TRIGGERS, sys.triggers** |

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| **Views** | **Virtual tables metadata** | **INFORMATION\_SCHEMA.VIEWS, sys.views** |

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| **Stored Procedures** | **Info on stored procedures** | **INFORMATION\_SCHEMA.ROUTINES, sys.procedures** |

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| **Functions** | **User-defined and built-in functions** | **pg\_proc (PostgreSQL), sys.objects (SQL Server)** |

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| **Schemas** | **Logical object groupings** | **INFORMATION\_SCHEMA.SCHEMATA, sys.schemas** |

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| **Users & Roles** | **Security and access control** | **mysql.user, pg\_roles, sys.database\_principals** |

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| **Sequences** | **Auto-increment definitions** | **sys.sequences, pg\_sequences** |