**SQL**

1. SQL is a standard language for storing, manipulating and retrieving data in databases.
2. Structured Query Language
3. What can SQL do
   1. SQL can execute queries against a database
   2. SQL can retrieve data from a database
   3. SQL can insert records in a database
   4. SQL can update records in a database
   5. SQL can delete records from a database
   6. SQL can create new databases
   7. SQL can create new tables in a database
   8. SQL can create stored procedures in a database
   9. SQL can create views in a database
   10. SQL can set permissions on tables, procedures, and views
4. RDBMS - Relational Database Management System
   1. The data in RDBMS is stored in database objects called tables. A table is a collection of related data entries and it consists of columns and rows.
5. SQL Statements
   1. SELECT - extracts data from a database
      1. SELECT \* FROM Customers;
      2. SELECT \* FROM Customers WHERE Country='Mexico';
   2. UPDATE - updates data in a database
      1. UPDATE Customers SET ContactName = 'Alfred Schmidt', City= 'Frankfurt' WHERE CustomerID = 1;
   3. DELETE - deletes data from a database
      1. DELETE FROM Customers WHERE CustomerName='Alfreds Futterkiste';
   4. INSERT INTO - inserts new data into a database
      1. INSERT INTO table\_name VALUES (value1, value2, value3, ...);
   5. CREATE DATABASE - creates a new database
      1. CREATE DATABASE databasename;
   6. CREATE TABLE - creates a new table
      1. CREATE TABLE table\_name ( column1 datatype, column2 datatype, column3 datatype, .... );
   7. ALTER TABLE - modifies a table
      1. ALTER TABLE table\_name ADD column\_name datatype;
   8. DROP TABLE - deletes a table
      1. DROP TABLE table\_name;
   9. CREATE INDEX - creates an index (search key)
      1. CREATE INDEX idx\_lastname ON Persons (LastName);
   10. DROP INDEX - deletes an index
       1. DROP INDEX index\_name ON table\_name;
6. SQL Join
   1. A JOIN clause is used to combine rows from two or more tables, based on a related column between them.
      1. SELECT Orders.OrderID, Customers.CustomerName, Orders.OrderDate FROM Orders INNER JOIN Customers ON Orders.CustomerID=Customers.CustomerID;
      2. (INNER) JOIN: Returns records that have matching values in both tables
      3. LEFT (OUTER) JOIN: Return all records from the left table, and the matched records from the right table
      4. RIGHT (OUTER) JOIN: Return all records from the right table, and the matched records from the left table
      5. FULL (OUTER) JOIN: Return all records when there is a match in either left or right table

**Assignments**:

1. Assignment 1:
   1. Check SQL documentation - https://www.w3schools.com/sql/
   2. Install MySQL and run the basic queries - Database create, table create, table with foreign key, table with indexing, insert data, modify table, update data, delete data, delete table
   3. Install PostgreSQL and and run the basic queries
2. Assignment 2:
   1. Design required tables for creating post by a user in https://www.dbdesigner.net/. Criterias:
      1. User should be there to create a post
      2. Post should have option to save multiple images
      3. User can like a post
      4. User can comment on a post
   2. Create a database in mysql and create the designed table and populate some values to it.
   3. Output that need to push to git:
      1. Export the created database along with values as an sql file
      2. Image of the database design created in https://www.dbdesigner.net/