Logo, company name

Description automatically generated

Database

Lab Guide

**Short Answer**

1. what is Data? Is a set of organized information stored in a table

2. What is Information? Is metadata about the data (gives information about Data, Eg ColumnName is varchar(25) not null)

3. What is Database (DB)? Is a Centralized/non-Centralized storage for an organized collection of structured information, or data

4. What is the Relation Database Management System (RDBMS)? Is a program/ tools / Software that allows to create, update, and administer a relational database.

5. Define the importance of Relation Database Management System (RDBMS)? The ability to create meaningful information by joining the several tables

6. As we all know that there are Two types of Database. Relational Database(SQL) AND Non-Relational DB(NO sql). what is the difference between them.

- SQL databases are table based databases whereas NoSQL databases can be document based, key-value pairs, graph databases.

- SQL databases are vertically scalable while NoSQL databases are horizontally scalable.

- SQL databases have a predefined schema whereas NoSQL databases use dynamic schema for unstructured data.

- NoSQL vs SQL performance, SQL requires specialized DB hardware for better performance while NoSQL uses commodity hardware.

7. List examples of Relation Database Management System(RDBMS)? - IBM, Oracle, MySQL, Microsoft SQLServer and PostgreSQL

8. List examples of Non-Relational DB(Nosql)? MongoDB, Apache Cassandra, Redis, Couchbase and Apache HBase

9. Define and Describe is Structured Query Language (SQL)?

-  SQL is used to communicate with a database.

- SQL statements are used to perform tasks such as update data on a database, or retrieve data from a database.

10. List and Describe each of the different subsets of SQL(Mean DDL, DML, DCL, TCL)?

* DDL : data definition or data description language (DDL) is a syntax for creating and modifying database objects such as tables, indices, and users
* DML : Data Manipulation Language which deals with data manipulation, and includes most common SQL statements such SELECT, INSERT, UPDATE, DELETE etc, and it is used to store, modify, retrieve, delete and update data in database.
* DCL: A data control language (DCL) is a syntax used to control access to data, stored in a database (Authorization).
* TCL: Transaction Control Language (TCL) commands are used to manage transactions in database.

11. What is table in Database (DB)?

* Tables are the database objects that hold/stores structured data in the relational databases.
* Tables  is a collection of data elements organized in terms of rows and columns

12. What is column and Row (tuples) in table?

* A single entry in a table is called a Tuple or Record or Row. A tuple in a table represents a set of related data.
* A table consists of several records (row); each record can be broken down into several smaller parts of data known as Attributes.

**To Be Continued…**