EXPERIMENT 1 :- INTRODUCTION TO DATABASE AND DATA DEFINITION LANGUAGES

1. What is Data?

Data refers to raw facts and figures collected from various sources. It can be in the form of numbers, characters, images, or symbols, but it has no meaningful context until processed.

2. What is Information?

Information is processed, organized, and structured data that provides meaningful insights. It is derived from data after analysis and interpretation.

3. What is a Database?

A database is a structured collection of data that is stored, managed, and retrieved electronically. It allows for efficient data organization and access.

4. What is a Database Management System (DBMS)?

A **DBMS** is software that allows users to create, manage, and manipulate databases. It ensures data security, consistency, and easy retrieval. Examples: MySQL, Oracle, PostgreSQL.

5. What is SQL?

SQL (**Structured Query Language**) is a standard language used for managing and manipulating relational databases. It allows users to retrieve, insert, update, and delete data in a database.

6. What are the Different Types of Database Languages?

Database languages are classified into:

- **DDL (Data Definition Language):** Defines database structure (e.g., CREATE, ALTER, DROP).
- **DML (Data Manipulation Language):** Manages data within tables (e.g., SELECT, INSERT, UPDATE, DELETE).
- **DCL (Data Control Language):** Controls access permissions (e.g., GRANT, REVOKE).

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- **TCL (Transaction Control Language):** Manages transactions (e.g., COMMIT, ROLLBACK, SAVEPOINT).

7. What are Tables?

A table is a structured way to store data in a database, consisting of rows and columns. Each table represents a specific entity.

8. What are Records?

A record (or row) is a single entry in a database table. It represents a complete set of related data.

9. What are Attributes?

Attributes (or columns/fields) define the characteristics of data stored in a table. Each attribute has a specific data type.

10. What are Tuples?

A tuple is a single row in a database table. It contains values for each attribute in the table.

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AIM: To execute and verify the Data Definition Language commands.

THEORY :-

The commands used are:

- CREATE - It is used to create a table.
- ALTER-The structure of a table can be modified by using the ALTER TABLE command.This command is used to add a new column, modify the existing column definition and to include or drop integrity constraint.
- DROP-It will delete the table structure provided the table should be empty.
- TRUNCATE - If there is, no further use of records stored in a table and the structure has to be retained, and then the records alone can be deleted.
- DESC - This is used to view the structure of the table.

PROCEDURE

CREATION OF TABLE:

SYNTAX:

Create table table name> (column1 datatype, column2 datatype...);

EXAMPLE:

CREATE TABLE Employee (EpNo number (5), EName VarChar2(15), Job VarChar2(10), DeptNo number(3));

ALTER TABLE

(a) To Add column to existing Table

SYNTAX:

Alter table table-name add (column-name datatype);

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EXAMPLE:

ALTER table employee add (phone_no number (10));

(b)To Add Multiple columns to existing Table

Syntax:

Alter table table-name add (column-namel datatypel, column-name2 datatype2);

EXAMPLE:

ALTER table employee add (salary number (10), age number (5));

(c) Dropping a Column from a Table

Syntax:

ALTER TABLE <Table Name>DROP COLUMN <Column Name>;

EXAMPLE:

ALTER TABLE Employee DROP COLUMN phone_no;

(d) Modifying Existing Columns

Syntax:

ALTER TABLE <Table Name>MODIFY (<Column Name><New data type> (<size>));

EXAMPLE:

ALTER TABLE Employee MODIFY (EName VarChar2 (25));

(e) Rename of Column

Using alter command we can rename an existing column

Syntax:

ALTER TABLE Table-name RENAME <old column name> to <new column name>;

EXAMPLE: Alter table employee RENAME address to location;

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RENAMING TABLES

Syntax:

Rename <old table> to <new table>;

EXAMPLE:

Rename Employee to Employee 1;

TRUNCATE TABLE

Syntax:

TRUNCATE TABLE <TABLE NAME>;

Example:

Truncate table Employee;

DESTROYING TABLES

Syntax:

DROP TABLE <TABLE NAME>;

Example:

DROP TABLE Employee;

DESCRIBE TABLES

Syntax:

DESC <TABLE NAME>;

Example: desc employee;

RESULT:

The DDL commands have been executed successfully.

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1. Create a table employee having fields employee _number , employee _name,designation,salary, address

```
CREATE TABLE employee (
   employee_number NUMBER (20) PRIMARY KEY,
   employee_name VARCHAR2(50),
   designation VARCHAR2(50),
   salary NUMBER(10,2),
   address VARCHAR2(100)
);
```

2. Create a table Student having fields serial_no ,name ,rollno , ragistration no , branch,cgpa

```
CREATE TABLE student (
   serial_no NUMBER (10) PRIMARY KEY,
   name VARCHAR2(50),
   rollno NUMBER(20) UNIQUE,
   registration_no NUMBER(20) UNIQUE,
   branch VARCHAR2(50),
   cgpa NUMBER(3,2)
);
```

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3. Write a query to show the structure of student table

DESC student;

OUTPUTP

Name Null? Type

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SERIAL_NO NOT NULL NUMBER

NAME VARCHAR2(50)

ROLLNO NUMBER

REGISTRATION_NO NUMBER

BRANCH VARCHAR2(50)

CGPA NUMBER(3,2)

DATE_OF_BIRTH DATE

4. Write a query to add a column date_of_birth to the student table and write a query to add column bonus to employee table

ALTER TABLE student ADD date_of_birth DATE;

5. Write a query to destroy the student table

DROP TABLE student;