SE-Computer (Div – B)	Roll number : **8942**
Experiment no. : 5(Part-1)	Date of Implementation : **26/03/2021**
Aim : To implement data definition language (DDL) commands	
Tool Used : MySql / PostgreSQL	
Related Course outcome : At the end of the course, Students will be able to Use SQL : Standard language of relational database	

Rubrics for assessment of Experiment:

Indicator	Poor	Average	Good
Timeliness • Maintains assignment deadline (3)	Assignment not done (0)	One or More than One week late (1-2)	Maintains deadline (3)
Completeness and neatness • Complete all parts of assignment(3)	N/A	< 80% complete (1-2)	100% complete (3)
Originality • Extent of plagiarism(2)	Copied it from someone else(0)	At least few questions have been done without copying(1)	Assignment has been solved completely without copying (2)
Knowledge • In depth knowledge of the assignment(2)	Unable to answer 2 questions(0)	Unable to answer 1 question (1)	Able to answer 2 questions (2)

Assessment Marks :

Timeliness	
Completeness and neatness	
Originality	
Knowledge	
Total	

Total : (Out of 10)

Teacher's Sign :

EXPERIMENT 5	DDL Commands
Aim	To implement DDL – Data definition language command
Tools	MySql / PostgreSQL
Theory	**SQL:** It is structured query language, basically used to pass the query to retrieve and manipulate the information from database **DDL:** The Data Definition Language (DDL) is used to create the database (i.e. tables, keys, relationships etc), maintain the structure of the database and destroy databases and database objects. Eg. Create, Drop, Alter, Describe, Truncate 1. **CREATE statements: It is used to create the table.** CREATE TABLE table_name(columnName1 datatype(size), columnName2 datatype(size),……); 2. **DROP statements:** To destroy an existing database, table, index, or view. If a table is dropped all records held within it are lost and cannot be recovered. DROP TABLE table_name; 3. **ALTER statements:** To modify an existing database object. **Adding new columns:** Alter table table_name Add(New_columnName1 datatype(size), New_columnName2 datatype(size),……); **Dropping a columns from a table** : Alter table table_name DROP column columnName: **Modifying Existing columns:** Alter table table_name Modify (columnName1 Newdatatype(Newsize)); 4. **Describe statements:** To describe the structure (column and data types) of an existing database, table, index, or view. DESC table_name; 5. **Truncate statements:** To destroy the data in an existing database, table, index, or view. If a table is truncated all records held within it are lost and cannot be recovered but the table structure is maintained. TRUNCATE TABLE table_name;

Procedure	1. Write a query to create a table employee with empno, ename, designation, and salary. Emp (empno number (4), ename varchar2 (10), designation varchar2 (10), salary number (8,2)); 2. Write a Query to Alter the column empno number (4) to empno number (6). 3. Write a Query to Alter the table employee with multiple columns (empno, ename.) 4. Write a query to add a new column in to employee as qualification varchar(6) 5. Write a query to add multiple columns in to employee dob date , doj date 6. Write a query to drop a column 'doj' from an existing table employee 7. Write a query to drop multiple columns 'dob' and 'qualification' from employee 8. Insert some records in table 9. Truncate table EMP 10. Drop table EMP
Post Lab Questions:	1. What is Data Dictionary? 2. What is Schema? 3. What are different data types in SQL? 4. Write the effect of NULL

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Creating a database as exp_5a

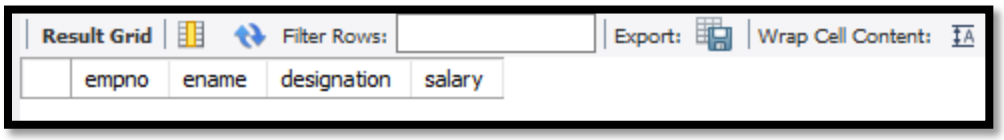
create database exp_5a;

1. Write a query to create a table employee with empno, ename, designation, and salary. Emp (empno number (4), ename varchar2 (10), designation varchar2 (10), salary number (8,2));

Query:

```
CREATE TABLE Emp (
empno numeric (4),
ename varchar (10),
designation varchar (10),
salary numeric (8,2));
```

Screenshot:



2. Write a Query to Alter the column empno number (4) to empno number (6).

Query:

```
alter table Emp modify empno numeric(6);
```

Screenshot:

3. Write a Query to Alter the table employee with multiple columns (empno, ename.)

Query:

```
alter table Emp
modify column empno numeric(4),
```

modify column ename varchar(20);

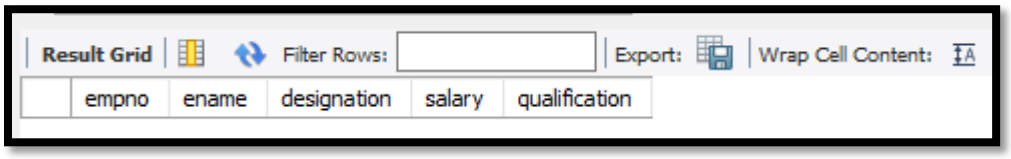
Screenshot:

4. Write a query to add a new column in to employee as qualification varchar(6)

Query:

alter table Emp
add column qualification varchar(6);

Screenshot:

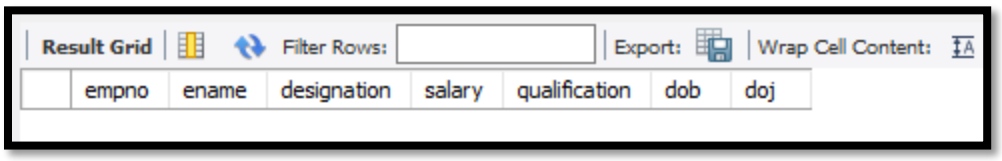


5. Write a query to add multiple columns in to employee dob date, doj date

Query:

alter table Emp
add column (
dob date,
doj date);

Screenshot:

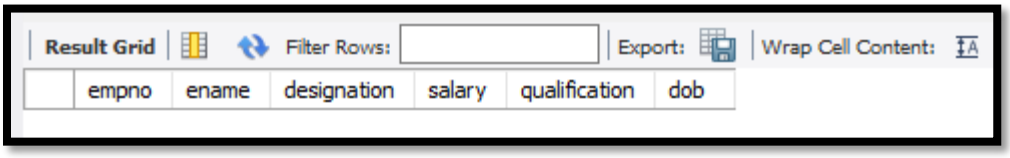


6. Write a query to drop a column ‘doj’ from an existing table employee

Query:

```
alter table Emp
drop column doj;
```

Screenshot:

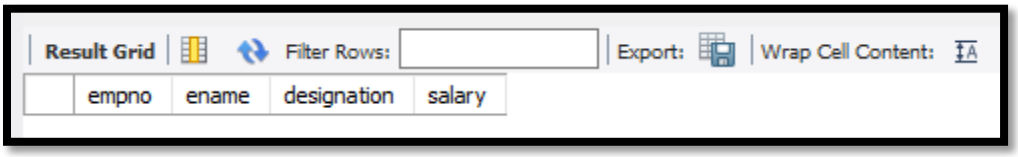


7. Write a query to drop multiple columns ‘dob’ and ‘qualification’ from employee

Query:

```
alter table Emp
drop column dob,
drop column qualification;
```

Screenshot:

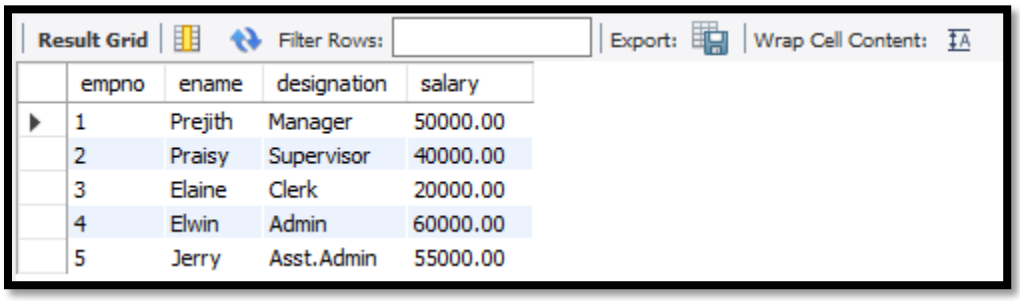


8. Insert some records in table

Query:

```
Insert into emp value('001','Prejith','Manager','50000');
Insert into emp value('002','Praisy','Supervisor','40000');
Insert into emp value('003','Elaine','Clerk','20000');
Insert into emp value('004','Elwin','Admin','60000');
Insert into emp value('005','Jerry','Asst.Admin','55000');
```

Screenshot:



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

empno	ename	designation	salary
1	Prejith	Manager	50000.00
2	Praisy	Supervisor	40000.00
3	Elaine	Clerk	20000.00
4	Elwin	Admin	60000.00
5	Jerry	Asst.Admin	55000.00

9. Truncate table EMP

Query:

truncate table emp;

Screenshot:

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

empno	ename	designation	salary

10. Drop table EMP

Query:

drop table emp;

Screenshot:

30 14:48:21 drop table emp 0 row(s) affected 0.625 sec

POSTLAB QUESTIONS:

1. What is Data Dictionary?

Ans: A data dictionary contains metadata i.e data about the database. The data dictionary is very important as it contains information such as what is in the database, who is allowed to access it, where is the database physically stored etc. The users of the database normally don't interact with the data dictionary, it is only handled by the database administrators.

- The data dictionary in general contains information about the following –

  - Names of all the database tables and their schemas.
  - Details about all the tables in the database, such as their owners, their security constraints, when they were created etc.
  - Physical information about the tables such as where they are stored and how.
  - Table constraints such as primary key attributes, foreign key information etc.
  - Information about the database views that are visible.

- Data Dictionaries are useful for a number of reasons.

  - Assist in avoiding data inconsistencies across a project
  - Help define conventions that are to be used across a project
  - Provide consistency in the collection and use of data across multiple members of a research team
  - Make data easier to analyze
  - Enforce the use of Data Standards

2. What is schema?

Ans:

1. A database schema is the skeleton structure that represents the logical view of the entire database.
2. It defines how the data is organized and how the relations among them are associated. It formulates all the constraints that are to be applied on the data.
3. A database schema defines its entities and the relationship among them. It contains a descriptive detail of the database, which can be depicted by means of schema diagrams.
4. It's the database designers who design the schema to help programmers understand the database and make it useful.
5. A schema diagram only shows us the database design. It does not show the actual data of the database.
6. Schema can be a single table or it can have more than one table which is related. The schema represents the relationship between these tables.
7. It can exist both as a visual representation and as a set of formulas known as integrity constraints that govern a database. These formulas are expressed in a data definition language, such as SQL.
8. A database schema indicates how the entities that make up the database relate to one another, including tables, views, stored procedures, and more.

3. What are different data types in SQL?

Ans: Data types are used to represent the nature of the data that can be stored in the database table. For example, in a particular column of a table, if we want to store a string type of data then we will have to declare a string data type of this column.

Data types mainly classified into three categories for every database.

1. Numeric data types such as int, tinyint, bigint, float, real, etc.
2. Date and Time data types such as Date, Time, Datetime, etc.
3. Character and String data types such as char, varchar, text, etc.
4. Unicode character string data types, for example nchar, nvarchar, ntext, etc.
5. Binary data types such as binary, varbinary, etc.
6. Miscellaneous data types – clob, blob, xml, cursir, table, etc.

4. Write the effect of NULL

Ans:

1. The SQL **NULL** is the term used to represent a missing value. A NULL value in a table is a value in a field that appears to be blank.
2. A field with a NULL value is a field with no value. It is very important to understand that a NULL value is different than a zero value or a field that contains spaces.
3. **NOT NULL** signifies that column should always accept an explicit value of the given data type. A field with a NULL value is the one that has been left blank during the record creation.
4. The NULL value can cause problems when selecting data.
   However, because when comparing an unknown value to any other value, the result is always unknown and not included in the results.
   You must use the **IS NULL** or **IS NOT NULL** operators to check for a NULL value.