

## B.Sc. Engg. 3<sup>rd</sup> Year 1<sup>st</sup> Semester -2023

### DBMS LAB DISCUSSION-1

Use the Pubs database and explore/perform the following topics/ tasks.

1. Knowing the names of all the tables in a database.

#### Discussion

The sysobjects system table holds data about all the tables and other database objects.

You can write and execute the following command to see what this system table holds:

```
SELECT * FROM SYSOBJECTS
```

But only to get the table names, the more specific command is

```
SELECT NAME FROM SYSOBJECTS WHERE XTYPE='U'
```

2. Show all/specific records with all/ specific fields from a table .

#### Discussion

i) To show all the records with all the fields, the command is

```
SELECT * FROM <TABLENAME>
```

Example: To show all the records from the authors table .

```
SELECT * FROM AUTHORS
```

ii) To show all the records with specific fields, the command is,

```
SELECT <COLUMNNAME1, COLUMNNAME2.> FROM AUTHORS
```

Example: To show author last name and state all for authors from the authors table .

```
SELECT AU_LNAME, STATE FROM AUTHORS
```

iii) To show all fields of specific records satisfying a condition, the command is

```
SELECT * FROM AUTHORS WHERE <COLUMNNAME> <CONDITION>
```

Example: To show all the fields of those authors who live in the state of CA

```
SELECT * FROM AUTHORS WHERE STATE = 'CA'
```

Example: To show all the fields of those authors who have a last name `White` and live in the state of CA

```
SELECT * FROM AUTHORS WHERE AU_LNAME='White' AND STATE = 'CA'
```

Use the Titles table for the following two tasks.

**Task1:** Show the name of the books which have yearly total sales of more than 8000.

**Task2:** Show the name of the books which have royalty of 12 to 24.

3. Showing ordered list

Discussion: Showing an ordered list. Titles tables sorted on the price field. Suppose we want to see price of the books in ascending order. The command is

```
SELECT * FROM TITLES ORDER BY PRICE ASC
```

Also try DESC.

4. Showing aggregate values

Discussion: Suppose we want to see the maximum price of the books. The command is

```
SELECT MAX(PRICE) from TITLES
```

Similarly FOR AVERAGE price

```
SELECT AVG(PRICE) from TITLES
```

MAX(), AVG(), MIN(), COUNT() are SQL functions.

5. Showing aggregate values within groups

Discussion: Suppose we want to show the book type and the average price of the each type. The command is

```
SELECT TYPE , MAX(PRICE) from TITLES GROUP BY TYPE
```

6. Showing aggregate values within groups having some condition

Discussion: Suppose we want to show the book type and the average price of each type if average price is higher than a given values, say, 15. The command is

```
SELECT TYPE, AVG(PRICE) from TITLES GROUP BY TYPE HAVING AVG(PRICE) > 15.
```

**Task3** : Show average price of the books of each type, the total yearly sales of that book type along with book type

7. Showing formatted string with customized header.

Discussion: We want to show the author name and ph no. where the name should be in the following manner,

J. White, i.e. First letter of first name dot last name

The command will be

```
SELECT "Name"=SUBSTRING(au_fname,1,1)) + '.'+ au_lname, phone FROM authors
```

"Name" is the column heading on the output