Database System Lab

MCA-4161 3 hr/ week 1 Credit

Rules & Regulations

- Seating Arrangements
- Login Book Entry
- Mobiles in Class & Lab – Switch off mode.
- Totally 8 Labs including Final Lab exam.
- Save your files and take backup regularly.
- 3 Regular Internal lab evaluation is done as per concepts covered and convenience of time

…Rules & Regulations

- Managing missing Lab.
  - Work extra time to finish missed lab and submit Lab Records.
  - HOD permission(genuine case) required to claim missing Lab evaluation Marks.
  - Inform faculty well before –Personally/ email regarding Absence.

Course Plan

Week	Topics to be covered
1-2	SQL Basics – CREATE, ALTER, DROP
3	Populate and manipulate the database using INSERT, UPDATE, DELETE
4	SQL Simple and Advanced Queries
5	PL/SQL and Cursors
6	Exception Handling,Triggers
7	Procedures, Functions, Packages
8	**End Term Practical Examination**

Lab Evaluation

Total Internal Evaluation – 60 Marks

3 Evaluations * Each 20 Marks = 60 Marks

Pattern : Observation Book- 5 Marks

Execution-5 Marks

Test – 10 Marks

20 Marks

Lab End Semester Exam – 40 Marks

Pattern : 2 or 3 questions Covering SQL , PL/SQL concepts.

3 Hours , Write-up & Execution

Working in Lab

Switch on Computer.

- Select Windows Booting (Default)
  - User Name : mca
  - Password: mca
- Create a Folder : D:\OraclePrg\210970**xxx**

  210970**xxx** **is your Registration Number.**

  Create sub-folders – Lab & Practice

  D:\OraclePrg\200970**xxx\Lab** **&** D:\OraclePrg\200970**xxx \Practice**

Starting Oracle SQL

Double Click - SQL icon present on the Desktop.

Enter user-name : mcaxxx@mcaorcl

Note: xxx – last three Digits of your registration number.

Enter password: mcaxxx.

Example:mca01

You will get following SQL Prompt

SQL>

Using Spool

- To take backup spool file to be created.

SQL> spool D:\OraclePrg\200970**xxx\lab1.txt;**

SQL> desc student;

SQL> spool off;

References

1. Ivan Bayross, “SQL, PL/SQL-The Programming Language of ORACLE”, 4th Edition, BPB Publications,.
2. Satish Asnani, “Oracle Database 11g”, PHI, 2010.
3. Scott Urman, “ORACLE – PL/SQL Programming”, Oracle Press.

CREATE TABLE

Create a Table ***Student*** to store information about *Student ID, Name, Department Name* (where he has joined for course), *Total Credits*. Assume data type and size as below-

```
create table student (
        ID              varchar(5),
        name            varchar(20),
        dept_name       varchar(20),
        tot_cred        numeric(3,0) );
```

Simple Syntax:

```
CREATE TABLE table_name (
  Column_name1 DataType(size),
  Column_name2 DataType(size),
  ..... ,
Column_nameN DataType(size), );
```

How to View Structure of a Table

To find out- column name, datatype, size and some constraints.

SQL> DESCRIBE Student;

Syntax:

DESCRIBE *table_name;*

How to insert Record into a Table

Add new rows to a table by using the `INSERT` statement:

SQL> INSERT INTO Student

VALUES(1001, ‘Rajesh’,’Comp.Sc’,30);

- With this syntax, only one row is inserted at a time.

```
Simple Syntax:
INSERT INTO   table VALUES(value1 , value2...]);
```

Save, Edit & Execute SQL commands

Save

- Open a **Notepad** From Windows.
- Type the command in the Notepad.

  Example: INSERT INTO Student VALUES (1002, ‘Raj’, ’Comp.Sc’, 30);
- Save the notepad file with name **stud_ins.sql** in the folder D:\OraclePrg\190970**xxx \Practice**

Save, Edit & Execute SQL commands

Edit

- Open a **Notepad** From Windows.
- Open the file **stud_ins.sql** from the folder D:\OraclePrg\190970**xxx \Practice**
- Modify the data in the SQL

  Example: INSERT INTO Student VALUES (1003, ‘Ajith’, ’Info.Sc’, 36);
- Save the notepad file with name **stud_ins.sql or different name** in the folder

  D:\OraclePrg\190970**xxx \Practice**

Save, Edit & Execute SQL commands

Execute

- Go to SQL Prompt and Type as below-
- **SQL>** @ D:\OraclePrg\190970**xxx \Practice\ stud_ins.sql**
- Press Enter. **OR**
- **SQL> START** D:\OraclePrg\190970**xxx \Practice\ stud_ins.sql**
- Press Enter.

Retrieving Data Stored

Display the Records stored in the table Student.

```
SQL> SELECT  *  FROM student;
```

Syntax: SELECT * FROM *table_name*;

```
SQL> SELECT ID,DEPT_NAME FROM Student;
```

Syntax: SELECT col_name1,col_name2
FROM *table_name*;

```
SQL> SELECT Id, Dept_name FROM Student
   WHERE tot_cred<30;
```

Syntax: SELECT col_name1,col_name2
FROM *table_name*
WHERE col_namex_condition;

Exercise

Create the table MCA_STUD and insert following records.

RegNo	Name	Course_ID	Phone	email
190970051	BHAGYA N M	970		
190970053	PAVITHRA B KOWSHIK	970		
190970055	ABIJITH RUBEN D SOUZA	970		
190970057	A MANOJ CHURYA	970		
190970059	TEJASHREE.PAI	970		
190970061	ADITYA CHETTRI	970		
190970063	M . VARUN GANAPATHY	970		

The FLASHBACK TABLE Statement

```
DROP TABLE emp2;
```

```
 SELECT original_name, operation,
droptime, FROM recyclebin;
```

```
FLASHBACK TABLE emp2 TO BEFORE DROP;
```

Exercise
Table -tblacct

Field Name	Field Type	Size	Constraints
FAccountNo	Short text	6	Primary key-(A12345)
FBranch	Short text	25	
FType	Short text	2	“SB” or “CB” Default “SB”
FAmount	Currency		

Table - tblcust

Field Name	Field Type	Size	Constraints
FCustNo	Short Text	4	Primary Key-(C001,C002,--)
FCustName	Short Text	20	
FState	Short Text	25	Default “Mumbai”
FPin	Number	6	576789
FPhone	Number	10	9888889889

Table-tbldeposit

Field Name	Field Type	Constraints	Constraints
FCustNo		Primary Key	Foreign Key
FAccNo			Foreign Key
FDate	Date		

DROP TABLE …PURGE

```
DROP TABLE dept80 PURGE;
```

Data Dictionary for Constraints

- SELECT **CONSTRAINT_NAME,CONSTRAINT_TYPE, TABLE_NAME**
  FROM **USER_CONSTRAINTS**;

- SELECT **CONSTRAINT_NAME,CONSTRAINT_TYPE**
  FROM **USER_CONSTRAINTS**
  WHERE **TABLE_NAME**=‘**EMP**’;

- SELECT **CONSTRAINT_NAME,COLUMN_NAME**
  FROM **USER_CONS_COLUMNS**
  WHERE **TABLE_NAME**=‘**EMP**’;