Shri Ramdeobaba College of Engineering & Management Nagpur-13

Department of Computer Application

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Submission for

Course Name: Database Management Systems Lab

Course Code: MCP545

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List of Experiments

1. Implementation of DDL commands of SQL with suitable examples

   a) Create table   b) Alter table   c) Truncate table   d) Drop table

   Implementation of DML commands of SQL with suitable examples

   a) Select   b) Insert   c) Update   d) Delete

2. Study and implementation of different types of constraints.

3. Implementation of different types of operators in SQL

   a)Arithmetic Operators   b) Logical Operators

   c) Comparison Operators   d) Set Operators

4. Study and Implementation of
   a) Aggregate functions
   b) Group By & Having clause
   c) Order by clause

5. Study and Implementation of different types of joins like cross join, natural join, inner join, and outer joins.

6. Study and Implementation of Sub queries

7. Study and Implementation of views, and synonyms.

8. Study and Implementation of PL/SQL.

Practical 1

Aim: Implementation of DDL commands of SQL with suitable examples

        a) Create table   b) Alter table c) Truncate table   d) Drop table

      Implementation of DML commands of SQL with suitable examples

      b) Select b) Insert   c) Update   d) Delete

Solution:

CREATE, ALTER, DROP, TRUNCATE

(i) Create following tables according to the following definition.

        DEPOSIT: Actno, Cname, Bname, Amount, Adate
        BRANCH: Bname,City
        CUSTOMERS: Cname, City
        BORROW: Loanno, Cname, Bname, Amount

DEPOSIT	
Columnname	**Size**
Actno	5
Cname	20
Bname	20
Amount	8,2
Adate	

BORROW	
Columnname	**Size**
Loanno	5
CNAME	20
BNAME	20
AMOUNT	8,2

CUSTOMERS	
Columnname	**Size**
Cname	20
City	20

BRANCH	
Columnname	**Size**
Bname	20
City	20

Query: For DEPOSIT table - CREATE TABLE DEPOSIT (
                    Actno INT,
                    Cname VARCHAR(20),
                    Bname VARCHAR(20),
                    Amount DECIMAL(8,2),
                    Adate DATE
               );

      For BRANCH table - CREATE TABLE BRANCH (
                    Bname VARCHAR(20),
                    City VARCHAR(20)
               );

For CUSTOMERS table - CREATE TABLE CUSTOMERS (
                            Cname VARCHAR(20),
                            City VARCHAR(20)
                        );

For BORROW table - CREATE TABLE BORROW (
                            Loanno INT,
                            Cname VARCHAR(20),
                            Bname VARCHAR(20),
                            Amount DECIMAL(8,2)
                        );

1. Add new column DOB into the CUSTOMER table.
Query: ALTER TABLE customers ADD dob DATE;

2. Add LOCATION column in BRANCH table.
Query: ALTER TABLE branch ADD location VARCHAR(20);

3. Modify customer name space to 30 characters.
Query: ALTER TABLE customers MODIFY Cname VARCHAR (30);
        ALTER TABLE deposit MODIFY Cname VARCHAR (30);
        ALTER TABLE borrow MODIFY Cname VARCHAR (30);

4. Change datatype of Loan number column to numeric type.
Query: ALTER TABLE borrow MODIFY loanno NUMERIC;

5. Delete LOCATION column.
Query: ALTER TABLE branch DROP COLUMN location;

6. Create DEPOSIT_TMP table that contains all information of DEPOSIT table.
Query: CREATE TABLE deposit_tmp AS SELECT * FROM deposit;

7. Create BRANCH_TMP table that contains only structure same as BRANCH table.
Query: CREATE TABLE branch_tmp AS SELECT * FROM branch WHERE false;

8. Remove all rows from DEPOSIT_TMP table.
Query: TRUNCATE TABLE deposit_tmp;

9. Delete DEPOSIT_TMP.
Query: DROP TABLE deposit_tmp;

(ii) Insert the data as shown below.

DEPOSIT

ACTNO	CNAME	BNAME	AMOUNT	ADATE
1	Abhinav	STATE BANK OF INDIA	1000.00	1-MAR-95
2	Aditya	KOTAK MAHINDRA BANK	5000.00	4-JAN-96
3	Minal	ANDHRA BANK	3500.00	17-NOV-95
4	Shrushti	YES BANK	1200.00	17-DEC-95
5	Radha	DENA BANK	3000.00	27-MAR-96
6	Akash	UCO	2000.00	31-MAR-96
7	Aniket	CITY	1000.00	5-SEP-95
8	Chandan	UNION	5000.00	2-JUL-95
9	Dushant	NAGPUR	7000.00	10-AUG-95

Query: INSERT INTO deposit (Actno, Cname, Bname, Amount, Adate)

VALUES (1, 'Abhinav', 'STATE BANK OF INDIA', 1000.00, '03-01-1995')

Query: INSERT ALL

INTO deposit VALUES (2, 'Aditya', 'KOTAK MAHINDRA BANK', 5000.00, '01-04-1996')

INTO deposit VALUES (3, 'Minal', 'ANDHRA BANK', 3500.00, '11-17-1995')

INTO deposit VALUES (4, 'Shrushti', 'YES BANK', 1200.00, '12-17-1995')

INTO deposit VALUES (5, 'Radha', 'DENA BANK', 3000.00, '03-27-1996')

INTO deposit VALUES (6, 'Akash', 'UCO', 2000.00, '03-31-1996')

INTO deposit VALUES (7, 'Aniket', 'CITY', 1000.00, '09-05-1995')

INTO deposit VALUES (8, 'Chandan', 'UNION', 5000.00, '07-02-1995')

INTO deposit VALUES (9, 'Dushant', 'NAGPUR', 7000.00, '08-10-1995')

SELECT * FROM DUAL;

BRANCH

BNAME	CITY
STATE BANK OF INDIA	NAGPUR
KOTAK MAHINDRA BANK	NAGPUR
ANDHRA BANK	DELHI
YES BANK	DELHI
DENA BANK	NAGPUR
UCO	BANGLORE
CITY	BOMBAY
UNION	BOMBAY
STATE BANK OF INDIA	DELHI
KOTAK MAHINDRA BANK	BOMBAY

Query: INSERT ALL

     INTO branch VALUES ('STATE BANK OF INDIA','NAGPUR')

     INTO branch VALUES ('KOTAK MAHINDRA BANK', 'NAGPUR')

     INTO branch VALUES ('ANDHRA BANK', 'DELHI')

     INTO branch VALUES ('YES BANK', 'DELHI')

     INTO branch VALUES ('DENA BANK', 'NAGPUR')

     INTO branch VALUES ('UCO', 'BANGLORE')

     INTO branch VALUES ('CITY', 'BOMBAY')

     INTO branch VALUES ('UNION', 'BOMBAY')

     INTO branch VALUES ('STATE BANK OF INDIA', 'DELHI')

     INTO branch VALUES ('KOTAK MAHINDRA BANK', 'BOMBAY')

     SELECT * FROM DUAL;

CUSTOMERS

CNAME	CITY
Abhinav	CALCUTTA
Aditya	DELHI
Mrinal	
Shrushti	PATNA
Radha	NAGPUR
Akash	NAGPUR
Aniket	SURAT
Chandan	BOMBAY
Dushant	BOMBAY

Query: INSERT INTO customers (cname, city) VALUES ('Abhinav', 'CALCUTTA');

INSERT INTO customers (cname, city) VALUES ('Aditya', 'DELHI');

Query: INSERT INTO customers VALUES ('Mrinal', null);

Query: INSERT ALL

INTO customers VALUES ('Shrushti', 'PATNA')

INTO customers VALUES ('Radha', 'NAGPUR')

INTO customers VALUES ('Akash', 'NAGPUR')

INTO customers VALUES ('Aniket', 'SURAT')

INTO customers VALUES ('Chandan', 'BOMBAY')

INTO customers VALUES ('Dushant', 'BOMBAY')

SELECT * FROM DUAL;

BORROW

LOANNO	CNAME	BNAME	AMOUNT
10	Abhinav	STATE BANK OF INDIA	1000.00
20	Aditya	KOTAK MAHINDRA BANK	5000.00
30	Minal	ANDHRA BANK	3000.00
40	Shrushti	YES BANK	2000.00
50	Radha	DENA BANK	8000.00
60	Akash	UCO	3000.00
70	Aniket	CITY	4000.00

Query: INSERT ALL

  INTO borrow VALUES (10,'Abhinav','STATE BANK OF INDIA', 1000.00)

  INTO borrow VALUES (20,'Aditya','KOTAK MAHINDRA BANK', 5000.00)

  INTO borrow VALUES (30,'Minal','ANDHRA BANK', 3000.00)

  INTO borrow VALUES (40,'Shrushti','YES BANK', 2000.00)

  INTO borrow VALUES (50,'Radha','DENA BANK', 8000.00)

  INTO borrow VALUES (60,'Akash','UCO', 3000.00)

  INTO borrow VALUES (70,'Aniket','CITY', 4000.00)

  SELECT * FROM DUAL;

(iii) From the above given tables perform the following queries:

(1) Describe deposit, branch.
Query: DESC deposit;
       DESC branch;

(2) Describe borrow, customers.
Query: DESC borrow;
       DESC customers;

(3) List all data from table DEPOSIT.
Query: SELECT * FROM deposit;

(4) Give account no and amount of depositors.
Query: SELECT actno AS AccountNumber, amount FROM deposit;

(5) Give name of depositors having amount greater than 4000.
Query: SELECT cname FROM deposit WHERE amount > 4000;

(6) List all data from table BORROW.
Query: SELECT * FROM borrow;

(7) Give customer name and loan amount of borrowers.
Query: SELECT cname AS customername, amount FROM borrow;

(8) Give name of borrows from YES BANK branch and loan amount greater than 3000.
Query: SELECT cname WHERE bname='YES BANK' AND amount >3000;

(9) List all data from table CUSTOMERS.
Query: SELECT * FROM customers;

(10) List name of customers from BOMBAY.
  Query: SELECT cname FROM customers WHERE city='BOMBAY';

(11) List all data from table BRANCH.
  Query: SELECT * FROM branch;

(12) Give name of customers who opened account after date '1-12-96'.
  Query: SELECT cname FROM deposit WHERE adate > '12-01-96';

(iv) Change the name of borrow to loan (rename borrow to loan).
Query: ALTER TABLE borrow RENAME TO loan;

(v) Give the SQL solutions for following queries

(1) Select branch names from the loan relation
Query: SELECT bname FROM loan;

(2) List all the tuples & attributes from the loan relation
Query: SELECT * FROM loan;

(3) Select branch_name & loan no. From the loan relation.
Query: SELECT bname, loanno FROM loan;

(4) Select all the loan numbers & amount from the loan relation.
Query: SELECT loanno, amount FORM loan;

(5) Find all loan no. & amount of the DENA BANK branch where the amount is Greater than 1300
Query: SELECT loanno, amount FROM loan WHERE bname='DENA BANK' AND
         amount > 1300;

(6) Give 10% interest to all depositors.
Query: UPDATE deposit SET amount = amount * 1.10;

(7) Give 10% interest to all depositors having branch UCO
Query: UPDATE deposit SET amount = amount * 1.10 WHERE bname='UCO';

(8) Delete deposit of VIJAY
Query: DELETE FROM deposit WHERE cname='VIJAY';

(9) Delete customers from BOMBAY city
Query: DELETE FROM customers WHERE city='BOMBAY';

(10) Delete depositors if the branch is ANDHRA BANK and depositor name is Aditya Karansingh Kachhawah.
Query: DELETE FROM deposit WHERE bname='ANDHRA BANK' AND cname='Aditya
         Karansingh Kachhawah';

(11) Delete depositors having deposit less than 500
  Query: DELETE FROM deposit WHERE amount <500;

(12) Delete borrower having loan more than 10000
  Query: DELETE FROM loan WHERE amount >10000;

(13) Delete borrower having loan more than 1000 and branch KOTAK MAHINDRA BANK
  Query: DELETE FROM loan WHERE amount >1000 AND bname='KOTAK
        MAHINDRA BANK';

(14) Delete borrower having branch name UCO
  Query: DELETE FROM loan WHERE bname='UCO'