Ex. No: 1 SQL BASIC COMMANDS

**Date:**

**AIM:**

To write SQL queries to execute basic SQL commands.

**QUERIES:**

**1. Create table**

**Query:**

CREATE TABLE empl

(

emplno NUMBER,

emplname VARCHAR2(255),

DOB DATE,

salary NUMBER,

designation VARCHAR2(20)

);

**Output:**

*Table created.*

**2. Insert values**

**Query:**

INSERT INTO empl VALUES(100,'John','1994.4.21 ', 50000,'Manager');

INSERT INTO empl VALUES(101,'Greg','1994.6. 20',25000,'Clerk');

**Output:**

*2 rows inserted*

**3. Display values**

**Query:**

SELECT \* FROM emp;

**Output:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **EMPNO** | **EMPNAME** | **DOB** | **SALARY** | **DESIGNATION** |
| 100 | John | 04/21/1994 | 50000 | Manager |
| 101 | Greg | 06/20/1994 | 25000 | Clerk |

**Query:**

SELECT empname,salary FROM emp;

**Output:**

|  |  |
| --- | --- |
| **EMPNAME** | **SALARY** |
| John | 50000 |
| Greg | 25000 |

**4. Modify values**

**Query:**

UPDATE emp SET salary = salary + 1000;

**Output:**

*2 row(s) updated.*

**Query:**

SELECT \* FROM emp;

**Output:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **EMPNO** | **EMPNAME** | **DOB** | **SALARY** | **DESIGNATION** |
| 100 | John | 04/21/1994 | 51000 | Manager |
| 101 | Greg | 06/20/1994 | 26000 | Clerk |

**5. Delete values**

**Query:**

DELETE FROM emp WHERE empno = 100;

**Output:**

*1 row(s) deleted.*

**Query:**

SELECT \* FROM emp;

**Output:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **EMPNO** | **EMPNAME** | **DOB** | **SALARY** | **DESIGNATION** |
| 101 | Greg | 06/20/1994 | 26000 | Clerk |

**RESULT:**

Thus the basic SQL queries were successfully executed and verified.

**Ex. No: 2 DATA DEFINITION LANGUAGE (DDL)**

**Date :**

**AIM:**

To write the SQL queries using DDL Commands with and without constraints.

**DDL STATEMENTS**

* CREATE TABLE
* ALTER TABLE
* DROP TABLE

**SYNTAX:**

**1. Create Table**

The CREATE TABLE statement is used to create a relational table

CREATE TABLE table\_name

(

column\_name1 data\_type [constraints],

column\_name1 data\_type [constraints],

column\_n

ame1 data\_type [constraints],

……..

);

**2. Alter Table**

The ALTER TABLE statement is used to add, delete, or modify columns in an existing table

a. To Add a column

ALTER TABLE table\_name ADD column\_name datatype

b. To delete a column in a table

ALTER TABLE table\_name DROP (column\_name)

c. To change the data type of a column in a table

ALTER TABLE table\_name MODIFY(column\_name datatype )

**3. Drop Table**

Used to delete the table permanently from the storage

DROP TABLE table\_name

**QUERIES:**

**1. CREATE THE TABLE (with no constraint)**

**Query:**

CREATE TABLE employ

(

empno NUMBER,

empname VARCHAR2(25),

dob DATE,

salary NUMBER,

designation VARCHAR2(20)

);

**Output:**

*Table Created*

**Query:**

DESC employ;

**Output:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [EMP](javascript:ret_Column('ART.EMP');) | [EMPNO](javascript:ret_Column('EMPNO');) | NUMBER | 22 | - | - | - |  | - | - |
|  | [EMPNAME](javascript:ret_Column('EMPNAME');) | VARCHAR2 | 255 | - | - | - |  | - | - |
|  | [DOB](javascript:ret_Column('DOB');) | DATE | 7 | - | - | - |  | - | - |
|  | [SALARY](javascript:ret_Column('SALARY');) | NUMBER | 22 | - | - | - |  | - | - |
|  | [DESIGNATION](javascript:ret_Column('DESIGNATION');) | VARCHAR2 | 20 | - | - | - |  | - | - |

**2. ALTER THE TABLE**

**a. ADD**

*// To alter the table emp by adding new attribute department*

**Query:**

ALTER TABLE emp ADD department VARCHAR2(50);

**Output:**

*Table Altered*

**Query:**

DESC employ;

**Output:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [EMP](javascript:ret_Column('ART.EMP');) | [EMPNO](javascript:ret_Column('EMPNO');) | NUMBER | 22 | - | - | - |  | - | - |
|  | [EMPNAME](javascript:ret_Column('EMPNAME');) | VARCHAR2 | 255 | - | - | - |  | - | - |
|  | [DOB](javascript:ret_Column('DOB');) | DATE | 7 | - | - | - |  | - | - |
|  | [SALARY](javascript:ret_Column('SALARY');) | NUMBER | 22 | - | - | - |  | - | - |
|  | [DESIGNATION](javascript:ret_Column('DESIGNATION');) | VARCHAR2 | 20 | - | - | - |  | - | - |
|  | [DEPARTMENT](javascript:ret_Column('DEPARTMENT');) | VARCHAR2 | 50 | - | - | - |  | - | - |

**b. MODIFY**

//To alter the table emp by modifying the size of the attribute department

**Query:**

ALTER TABLE emp MODIFY (department VARCHAR2(100));

**Output:**

*Table Altered*

**Query:**

DESC employ;

**Output:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [EMP](javascript:ret_Column('ART.EMP');) | [EMPNO](javascript:ret_Column('EMPNO');) | NUMBER | 22 | - | - | - |  | - | - |
|  | [EMPNAME](javascript:ret_Column('EMPNAME');) | VARCHAR2 | 255 | - | - | - |  | - | - |
|  | [DOB](javascript:ret_Column('DOB');) | DATE | 7 | - | - | - |  | - | - |
|  | [SALARY](javascript:ret_Column('SALARY');) | NUMBER | 22 | - | - | - |  | - | - |
|  | [DESIGNATION](javascript:ret_Column('DESIGNATION');) | VARCHAR2 | 20 | - | - | - |  | - | - |
|  | [DEPARTMENT](javascript:ret_Column('DEPARTMENT');) | VARCHAR2 | 100 | - | - | - |  | - | - |

**c. DROP**

// To alter the table emp by deleting the attribute department

**Query:**

ALTER TABLE emp DROP(department);

**Output:**

*Table Altered*

**Query:**

DESC employ;

**Output:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [EMP](javascript:ret_Column('ART.EMP');) | [EMPNO](javascript:ret_Column('EMPNO');) | NUMBER | 22 | - | - | - |  | - | - |
|  | [EMPNAME](javascript:ret_Column('EMPNAME');) | VARCHAR2 | 255 | - | - | - |  | - | - |
|  | [DOB](javascript:ret_Column('DOB');) | DATE | 7 | - | - | - |  | - | - |
|  | [SALARY](javascript:ret_Column('SALARY');) | NUMBER | 22 | - | - | - |  | - | - |
|  | [DESIGNATION](javascript:ret_Column('DESIGNATION');) | VARCHAR2 | 20 | - | - | - |  | - | - |

**d. RENAME**

// To alter the table name by using rename keyword

**Query:**

ALTER TABLE emp RENAME TO emp1 ;

**Output:**

*Table Altered*

**Query:**

DESC employ;

**Output:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [EMP1](javascript:ret_Column('ART.EMP1');) | [EMPNO](javascript:ret_Column('EMPNO');) | NUMBER | 22 | - | - | - |  | - | - |
|  | [EMPNAME](javascript:ret_Column('EMPNAME');) | VARCHAR2 | 255 | - | - | - |  | - | - |
|  | [DOB](javascript:ret_Column('DOB');) | DATE | 7 | - | - | - |  | - | - |
|  | [SALARY](javascript:ret_Column('SALARY');) | NUMBER | 22 | - | - | - |  | - | - |
|  | [DESIGNATION](javascript:ret_Column('DESIGNATION');) | VARCHAR2 | 20 | - | - | - |  | - | - |
|  | [DEPARTMENT](javascript:ret_Column('DEPARTMENT');) | VARCHAR2 | 100 | - | - | - |  | - | - |

**3. DROP**

//To delete the table from the database

**Query:**

DROP TABLE employ;

**Output:**

*Table Dropped*

**Query:**

DESC emp1;

**Output:**

*Ouubject to be described could not be found.*

**CONSTRAINT TYPES:**

* NOT NULL
* UNIQUE
* PRIMARY KEY
* FOREIGN KEY
* CHECK
* DEFAULT

**QUERIES:**

**1. CREATE THE TABLE**

**Query:**

CREATE TABLE student

(

studentID NUMBER PRIMARY KEY,

sname VARCHAR2(30) NOT NULL,

department CHAR(5),

sem NUMBER,

dob DATE,

email\_id VARCHAR2(20) UNIQUE,

college VARCHAR2(20) DEFAULT 'MEC'

);

**Output:**

*Table created.*

**Query:**

DESC student;

**Output:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [STUDENT](javascript:ret_Column('ART.STUDENT');) | [STUDENTID](javascript:ret_Column('STUDENTID');) | NUMBER | 22 | - | - | 1 | - | - | - |
|  | [SNAME](javascript:ret_Column('SNAME');) | VARCHAR2 | 30 | - | - | - | - | - | - |
|  | [DEPARTMENT](javascript:ret_Column('DEPARTMENT');) | CHAR | 5 | - | - | - |  | - | - |
|  | [SEM](javascript:ret_Column('SEM');) | NUMBER | 22 | - | - | - |  | - | - |
|  | [DOB](javascript:ret_Column('DOB');) | DATE | 7 | - | - | - |  | - | - |
|  | [EMAIL\_ID](javascript:ret_Column('EMAIL_ID');) | VARCHAR2 | 20 | - | - | - |  | - | - |
|  | [COLLEGE](javascript:ret_Column('COLLEGE');) | VARCHAR2 | 20 | - | - | - |  | 'MEC' | - |

**Query:**

CREATE TABLE exam

(

examID NUMBER ,

studentID NUMBER REFERENCES student(studentID),

department CHAR(5) NOT NULL,

mark1 NUMBER CHECK (mark1<=100 and mark1>=0),

mark2 NUMBER CHECK (mark2<=100 and mark2>=0),

mark3 NUMBER CHECK (mark3<=100 and mark3>=0),

mark4 NUMBER CHECK (mark4<=100 and mark4>=0),

mark5 NUMBER CHECK (mark5<=100 and mark5>=0),

total NUMBER,

average NUMBER,

grade CHAR(1)

);

**Output:**

*Table created.*

**//To alter the table student by adding new constraint to the examID attribute**

**Query:**

ALTER TABLE student ADD CONSTRAINT pr

PRIMARY KEY (examid);

**Output:**

*Table altered.*

**2. CREATE THE TABLE USING COMPOSITE PRIMARY KEY**

**Create the following table with the attributes reg\_no and stu\_name as primary key.**

**stu\_details (reg\_no, stu\_name, DOB, address, city)**

**Query:**

CREATE TABLE stu\_details

(

reg\_no number,

stu\_name varchar2(30),

DOB date,

address varchar2(30),

city char(30),

primary key(reg\_no, stu\_name)

);

**Output:**

*Table created.*

**Query:**

DESC stu\_details

**Output:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table** | **Column** | **Data Type** | **Length** | **Precision** | **Scale** | **Primary Key** | **Nullable** | **Default** | **Comment** |
| [STU\_DETAILS](javascript:ret_Column('ART.STU_DETAILS');) | [REG\_NO](javascript:ret_Column('REG_NO');) | NUMBER | 22 | - | - | 1 | - | - | - |
|  | [STU\_NAME](javascript:ret_Column('STU_NAME');) | VARCHAR2 | 30 | - | - | 2 | - | - | - |
|  | [DOB](javascript:ret_Column('DOB');) | DATE | 7 | - | - | - |  | - | - |
|  | [ADDRESS](javascript:ret_Column('ADDRESS');) | VARCHAR2 | 30 | - | - | - |  | - | - |
|  | [CITY](javascript:ret_Column('CITY');) | CHAR | 30 | - | - | - |  | - | - |

**RESULT:**

Thus the SQL queries using DDL Commands with and without constraints were successfully executed and verified.