**Lab Practice 5 – Database Systems (Adding, Deleting Constraints)**

**Roll No: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Practice Question 1**

Create following **DEPT10** table with given constraints.

**See output below**

**Dept10**

|  |  |  |  |
| --- | --- | --- | --- |
| **Department\_id** | **Dept\_Name** | **Address** | **Phone** |
| Length (3)  Number | Length(25)  Varchar | Length(25)  Varchar | Length(9)  Number |
| **Constraints**  \* Make department\_id column primary key (*give constraint name as dept\_id\_pk10*)  \* Dept Name column must not be null and should be unique names (*give constraint name as dept\_name\_not\_null and dept\_name\_unique2)*  \* address must not be null (give constraint names as dept\_address\_not\_null2)  \* Make Phone number column unique and not null and it must not be less than 0  (*constraint names are const\_phone\_number, const\_phone\_number\_not\_null and const\_phone\_number\_check*) | | | |

Answer:

CREATE TABLE DEPT10(

Department\_id NUMBER(3)

CONSTRAINT dept\_id\_pk10 PRIMARY KEY,

Dept\_Name VARCHAR2(25) UNIQUE

CONSTRAINT dept\_name\_not\_null NOT NULL,

Address VARCHAR2(25)

CONSTRAINT dept\_address\_not\_null2 NOT NULL,

Phone NUMBER(9) UNIQUE

CONSTRAINT const\_phone\_number\_not\_null NOT NULL

CONSTRAINT const\_phone\_number\_check CHECK(Phone <> 0));

Select constraint\_name,constraint\_type,search\_condition From user\_constraints where table\_name = 'DEPT10';

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Practice Question 2**

Create following **Teachers** table with given constraints.

**See output below**

**Teachers**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **NAME** | **Salary** | **Department\_id** |
| Length (7)  Number | Length(25)  Varchar | Length(5)  Number | Length(3)  Number |
| **Constraints**  \* Make ID column primary key (*give constraint name as teacher\_id\_pk*)  \* Name column must not be null (*give constraint name as teacher\_name\_not\_null*)  \* Salary must not be **ZERO** and should not be null. (*give constraint names as teacher\_salary\_not\_null and teacher\_salary\_check*  \* Make department\_id as **foregin key** with DEPT10 table. | | | |

Answer:

CREATE TABLE Teachers

(ID NUMBER(7)

CONSTRAINT teacher\_id\_pk PRIMARY KEY,

NAME VARCHAR2(25)

CONSTRAINT teacher\_name\_not\_null NOT NULL,

Salary Number(5)

CONSTRAINT teacher\_salary\_not\_null NOT NULL

CONSTRAINT teacher\_salary\_check CHECK(Salary <> 0),

department\_id NUMBER(3)

CONSTRAINT department\_id\_fk REFERENCES DEPT10(department\_id));

Select constraint\_name,constraint\_type,search\_condition From user\_constraints where table\_name = 'Teachers';

**Practice Question 3**

Following table is already created, how you will add following constraints in it.

**See output below**

**Courses**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CourseNo** | **CourseName** | **TotalMarks** | **CreditHours** | **Pre\_Req** |
| 402 | Java Programming | 100 | 3 | C Programming |
| 412 | Database Systems | 100 | 3 | Data structures |
| 300 | English Communication | 100 | 3 | Basic Grammar |
| 604 | Distributed Systems | 100 | 4 | Computer Networks and Programming |

Constraints

\* Make courseNo as Primary key (*Give constraint a suitable name*)

\* Make CourseName as not null

\* Make a check to validate TotalsMarks (*Marks should not be less than ZERO and greater than One Hundred*)

\* Make default value of CreditHour Column as **“0”**

Answer: -

CREATE TABLE Courses(

CourseNo NUMBER(3)

CONSTRAINT course\_number\_pk PRIMARY KEY,

CourseName VARCHAR2(25)

CONSTRAINT course\_name\_not\_null NOT NULL,

CreditHours Number(2)

CONSTRAINT creditHours\_not\_null2 NOT NULL,

TotalMarks Number(3)

CONSTRAINT totalMarks CHECK(TotalMarks BETWEEN 0 AND 100),

Pre\_Req Varchar(25));

Select constraint\_name,constraint\_type,search\_condition From user\_constraints where table\_name = 'Courses';

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_