Fatima Jinnah Women University
Department of Software Engineering

LAB 10

Name: Raifa Khalid

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Section: A

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Course: Data Base (LAB)

EXAMPLES:

Primary Key Constraint:

```
SQL> create table employees(
  2  employee_id number(6)
  3  constraints emp_emp_id_pk primary key,
  4  first_name varchar2(20));

Table created.
```

Not Null Constraint:

```
SQL> create table employee(
  2  employee_id number(6),
  3  first_name varchar2(20),
  4  job_id varchar2(10) not null,
  5  constraints emp_emp_idd_pk
  6  primary key (employee_id));

Table created.
```

UNIQUE Constraint:

```
SQL> create table employe(
  2  emp_id number(6),
  3  name varchar2(25) not null,
  4  email varchar2(25),
  5  salary number(8,2),
  6  hiredate date not null,
  7  constraints emp_email_ik
  8  unique(email));

Table created.
```

Foreign Key Constraint:

```
SQL> create table deptt(
  2  deptno number(6)
  3  constraints dept_id_pk primary key,
  4  name varchar2(20));

Table created.

SQL> create table empp(
  2  emp_id number(6),
  3  name varchar2(25) not null,
  4  dept_id number(4),
  5  constraints emp_dept_fk foreign key(dept_id)
  6  references deptt(deptno));

Table created.
```

Check Constraint:

```
SQL> create table emmp(
  2  name varchar2(20),
  3  sal number(10),
  4  constraints emp_sal_min
  5  check(sal>0));

Table created.
```

Example Including All Constraints:

```
SQL> create table employee_details(
  2  employee_id number(6)
  3  constraints emp_employee_id primary key,
  4  first_name varchar2(20),
  5  last_name varchar2(25)
  6  constraints emp_last_name_nn not null,
  7  email varchar2(25)
  8  constraints emp_email_nn not null
  9  constraints emp_email_uk unique,
 10  phone_number varchar2(20),
 11  hire_date date
 12  constraints emp_hire_date_nn not null,
 13  job_id varchar2(10)
 14  constraints emp_job_nn not null,
 15  salary number(8,2)
 16  constraints emp_salary_ck check(salary>0),
 17  commision_pct number(2,2),
 18  manager_id number(6),
 19  department_id number(4)
 20  constraints emp_deptt_fk references dept(deptno));

Table created.
```

View Constraint:

```
SQL> select constraint_name, table_name from user_constraints;

CONSTRAINT_NAME                TABLE_NAME
------------------------------ ------------------------------
SYS_C0011808                   EMPLOYEE
SYS_C0011810                   EMPLOYE
SYS_C0011811                   EMPLOYE
SYS_C0011814                   EMPP
EMP_SAL_MIN                    EMMP
EMP_LAST_NAME_NN               EMPLOYEE_DETAILS
EMP_EMAIL_NN                   EMPLOYEE_DETAILS
EMP_HIRE_DATE_NN               EMPLOYEE_DETAILS
EMP_JOB_NN                     EMPLOYEE_DETAILS
EMP_SALARY_CK                  EMPLOYEE_DETAILS
EMP_DEPT_FK                    EMPP

CONSTRAINT_NAME                TABLE_NAME
------------------------------ ------------------------------
FK_DEPTNO                      EMP
EMP_DEPTT_FK                   EMPLOYEE_DETAILS
PK_DEPT                        DEPT
PK_EMP                         EMP
EMP_EMP_ID_PK                  EMPLOYEES
EMP_EMP_IDD_PK                 EMPLOYEE
EMP_EMAIL_IK                   EMPLOYE
DEPT_ID_PK                     DEPTT
EMP_EMPLOYEE_ID                EMPLOYEE_DETAILS
EMP_EMAIL_UK                   EMPLOYEE_DETAILS

21 rows selected.
```

```
SQL> select constraint_name, column_name
  2  from user_cons_columns
  3  where table_name = 'EMPLOYEE_DETAILS';

CONSTRAINT_NAME
------------------------------
COLUMN_NAME
--------------------------------------------------------------------------------
EMP_LAST_NAME_NN
LAST_NAME

EMP_EMAIL_NN
EMAIL

EMP_HIRE_DATE_NN
HIRE_DATE


CONSTRAINT_NAME
------------------------------
COLUMN_NAME
--------------------------------------------------------------------------------
EMP_JOB_NN
JOB_ID

EMP_SALARY_CK
SALARY

EMP_EMPLOYEE_ID
EMPLOYEE_ID


CONSTRAINT_NAME
------------------------------
COLUMN_NAME
--------------------------------------------------------------------------------
EMP_EMAIL_UK
EMAIL

EMP_DEPTT_FK
DEPARTMENT_ID


8 rows selected.
```

```
SQL> select constraint_name, constraint_type,search_condition
  2  from user_constraints
  3  where table_name = 'DEPT_DETAILS';

no rows selected
```

Dropping Constraint:

```
SQL> alter table emmp
  2  drop constraint emp_sal_min;

Table altered.

SQL> alter table deptt
  2  drop primary key cascade;

Table altered.
```

TASKS

1. Add a table level primary key constraint to the “Employee_Detail” table on the ID column. The constraint should be named at creation. Name the constraint my_emp_id_pk.

```
SQL> create table employe_Details(
  2  emp_id number(6)
  3  constraint my_empid_pk primary key);

Table created.
```

2. Create a PRIMARY KEY constraint to the “DEPT_DETAIL” table using the ID column. The constraint should be named at creation. Name the constraint my_deptid_pk.

```
SQL> create table dept_Details(
  2  dept_id number(6)
  3  constraint my_deptid_pk primary key);

Table created.

SQL> desc dept_details;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 DEPT_ID                                   NOT NULL NUMBER(6)
```

3. Add a column DEPT_ID to the “Employee_Detail” table. Add a foreign key reference on the “Employee_Detail” table that ensures that the employee is not assigned to a nonexistent department. Name the constraint my_emp_dept_id_fk.

```
SQL> alter table employe_details
  2  add (dept_id number(6),
  3  constraint emp_dept_fk foreign key(dept_id)
  4  references dept_details(dept_id));

Table altered.

SQL> desc employe_details;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMP_ID                                    NOT NULL NUMBER(6)
 DEPT_ID                                            NUMBER(6)
```

4. Conform that the constraints were added by querying the USER_CONSTRAINTS view. Note the types and names of the constraints.

```
SQL> select constraint_name,
  2  table_name from user_constraints
  3  where table_name in
  4  ('EMPLOYE_DETAILS','DEPT_DETAILS');

CONSTRAINT_NAME                TABLE_NAME
------------------------------ ------------------------------
MY_DEPTID_PK                   DEPT_DETAILS
MY_EMPID_PK                    EMPLOYE_DETAILS
EMP_DEPT_FK                    EMPLOYE_DETAILS
```

5. Display the object names and types from USER_OBJECTS data dictionary view for the "Employee_Detail" and "Dept_Detail" tables. Notice that the new tables and a new index were created.

```
SQL> select object_name,
  2  object_type from user_objects
  3  where object_name in
  4  ('EMPLOYE_DETAILS','DEPT_DETAILS');

OBJECT_NAME
--------------------------------------------------------------------------------
OBJECT_TYPE
-------------------
DEPT_DETAILS
TABLE

EMPLOYE_DETAILS
TABLE
```

6. Modify the "Employee_Detail" table. Add a COMMISION column of NUMBER data type, precision 2, scale 2. Add a constraint to the commission column that ensures that a commission value is greater than zero.

```
SQL> alter table employe_details
  2  add (commission number(2,2)
  3  check(commission>0));

Table altered.

SQL> desc employe_details;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMP_ID                                    NOT NULL NUMBER(6)
 DEPT_ID                                            NUMBER(6)
 COMMISSION                                         NUMBER(2,2)
```