Assignment 5

(i) Add constraint : DeptCode of Student is foreign key with reference to DeptCode in Department.

alter table STUDENT2078 add constraint FK1 foreign key(DeptCode) references DEPARTMENT2078(DeptCode);

select table_name, constraint_name, constraint_type, search_condition from all_constraints where table_name = 'STUDENT2078';

```
SQL> select table_name, constraint_name, constraint_type, search_condition from all_constraints where table_name = 'STUDENT2078';

TABLE_NAME                CONSTRAINT_NAME           C SEARCH_CONDITION
------------------------- ------------------------- - -------------------------
STUDENT2078               FK1                       R
STUDENT2078               SYS_C004476               C "NAME" IS NOT NULL
STUDENT2078               SYS_C004477               C "ADDRESS" IS NOT NULL
STUDENT2078               SYS_C004478               C "YEAROFADM" IS NOT NULL
STUDENT2078               SYS_C004479               C "DEPTCODE" IS NOT NULL
STUDENT2078               SYS_C004480               C "SEMESTER" IS NOT NULL
STUDENT2078               SYS_C004481               C "BIRTHDATE" IS NOT NULL
STUDENT2078               SYS_C004482               P

8 rows selected.
```

(ii) Add an attribute *Block* to the department table (data type – Char).

alter table STUDENT2078 add constraint FK1 foreign key(DeptCode) references DEPARTMENT2078(DeptCode);

```
SQL> desc DEPARTMENT2078;
 Name                                                                          Null?    Type
 ----------------------------------------------------------------------------- -------- -------------------
 DEPTCODE                                                                      NOT NULL VARCHAR2(4)
 DEPTNAME                                                                      NOT NULL VARCHAR2(50)
 STUDENT_ALLOTED                                                              NOT NULL NUMBER(4)
 BLOCK                                                                                  CHAR(20)

SQL>
```

(iii) Insert data to this attribute.

UPDATE DEPARTMENT2078 SET BLOCK = 'C' WHERE DEPTCODE = 'CSE';
UPDATE DEPARTMENT2078 SET BLOCK = 'B' WHERE DEPTCODE = 'ECE';
UPDATE DEPARTMENT2078 SET BLOCK = 'C' WHERE DEPTCODE = 'IT';
UPDATE DEPARTMENT2078 SET BLOCK = 'B' WHERE DEPTCODE = 'EE';

```
SQL> select * from DEPARTMENT2078;

DEPT DEPTNAME                                     STUDENT_ALLOTED BLOCK
---- -------------------------------------------- --------------- ----------
CSE  Computer Science and Engineering                         135 C
ECE  Electronics and Communication Engineering                120 B
IT   Information Technology                                    75 C
EE   Electrical Engineering                                    60 B
```

(iv) Increase the width of the column subject code of SUBJECT table to 8.

 alter table SUBJECT2078 modify SubjectCode VARCHAR(8);

```
SQL> desc SUBJECT2078;
 Name                                                              Null?    Type
 ---------------------------------------------------------------- -------- -----------------
 ---------------------------
 SUBJECTCODE                                                      NOT NULL VARCHAR2(8)
 SUBJECTNAME                                                      NOT NULL VARCHAR2(30)
 DEPTCODE                                                                  VARCHAR2(4)
 SEMESTER                                                         NOT NULL VARCHAR2(4)
```

(v) Delete primary key of table of Subject.

Alter table SUBJECT2078 drop primary key;

 select table_name, constraint_name, constraint_type, search_condition from all_constraints where table_name = 'SUBJECT2078

```
SQL>  select table_name, constraint_name, constraint_type, search_condition from all_constraints where table_name = 'SUBJECT2078';

TABLE_NAME                  CONSTRAINT_NAME          C SEARCH_CONDITION
--------------------------- ------------------------ - ------------------------------------
SUBJECT2078                 SYS_C004518              C "SUBJECTNAME" IS NOT NULL
SUBJECT2078                 SYS_C004519              C "SEMESTER" IS NOT NULL
SUBJECT2078                 SYS_C004521              R
```

(vi) Add primary key to the table subject.

ALTER table SUBJECT2078 add primary key(SubjectCode);

```
SQL> select table_name, constraint_name, constraint_type, search_condition from all_constraints where table_name = 'SUBJECT2078';

TABLE_NAME                  CONSTRAINT_NAME          C SEARCH_CONDITION
--------------------------- ------------------------ - ------------------------------------
SUBJECT2078                 SYS_C004588              P
SUBJECT2078                 SYS_C004518              C "SUBJECTNAME" IS NOT NULL
SUBJECT2078                 SYS_C004519              C "SEMESTER" IS NOT NULL
SUBJECT2078                 SYS_C004521              R
```

(vii) Make Sub_code of Result table foreign key with respect to Subject code of SUBJECT table.

Alter table RESULT2078 add constraint fk_result_subject FOREIGN KEY(Sub_code) references SUBJECT2078(SubjectCode);

```
SQL>  select table_name, constraint_name, constraint_type, search_condition from all_constraints where table_name = 'RESULT2078';

TABLE_NAME                  CONSTRAINT_NAME          C SEARCH_CONDITION
--------------------------- ------------------------ - ------------------------------------
RESULT2078                  FK_RESULT_SUBJECT        R
RESULT2078                  SYS_C004527              C "ROLLNO" IS NOT NULL
RESULT2078                  SYS_C004528              C "SUB_CODE" IS NOT NULL
RESULT2078                  SYS_C004529              C Marks <= 100
RESULT2078                  SYS_C004530              P
RESULT2078                  SYS_C004531              R

6 rows selected.
```

(viii) Add constraint that marks cannot be negative.

Alter table RESULT2078 add constraint marks_check check (Marks>=0);

```
SQL> select table_name, constraint_name, constraint_type, search_condition from all_constraints where table_name = 'RESULT2078'

TABLE_NAME                      CONSTRAINT_NAME              C SEARCH_CONDITION
------------------------------- ---------------------------- - --------------------------------------------------
RESULT2078                      FK_RESULT_SUBJECT            R
RESULT2078                      MARKS_CHECK                  C Marks>=0
RESULT2078                      SYS_C004527                  C "ROLLNO" IS NOT NULL
RESULT2078                      SYS_C004528                  C "SUB_CODE" IS NOT NULL
RESULT2078                      SYS_C004529                  C Marks <= 100
RESULT2078                      SYS_C004530                  P
RESULT2078                      SYS_C004531                  R

7 rows selected.
```

(ix) Alter the table SUBJECT and add check constraint such DeptCode is either CSE,IT, MCA, EE, ECE

alter table SUBJECT2078 add constraint check_dept_code CHECK(DeptCode in('CSE', 'IT' , 'MCA' , 'EE' , 'ECE'));

```
SQL>  select table_name, constraint_name, constraint_type, search_condition from all_constraints where table_name = 'SUBJECT2078';

TABLE_NAME                      CONSTRAINT_NAME              C SEARCH_CONDITION
------------------------------- ---------------------------- - --------------------------------------------------
SUBJECT2078                     SYS_C004588                  P
SUBJECT2078                     SYS_C004518                  C "SUBJECTNAME" IS NOT NULL
SUBJECT2078                     SYS_C004519                  C "SEMESTER" IS NOT NULL
SUBJECT2078                     SYS_C004521                  R
SUBJECT2078                     CHECK_DEPT_CODE              C DeptCode in('CSE', 'IT', 'MCA', 'EE', 'ECE')
```

(x) Add column college phone number and add phone number 25739607 to each student.

Alter table STUDENT2078 add CollegePhoneNo NUMBER(10) default '25739607';

```
SQL> desc STUDENT2078;
 Name                                                         Null?    Type
 ----------------------------------------------------------- -------- ----------------------------
 ROLLNO                                                       NOT NULL NUMBER(6)
 NAME                                                         NOT NULL VARCHAR2(20)
 ADDRESS                                                      NOT NULL VARCHAR2(25)
 PHONENO                                                               NUMBER(10)
 YEAROFADM                                                    NOT NULL NUMBER(4)
 DEPTCODE                                                     NOT NULL VARCHAR2(4)
 SEMESTER                                                     NOT NULL VARCHAR2(4)
 BIRTHDATE                                                    NOT NULL DATE
 COLLEGEPHONENO                                                        NUMBER(10)
```

(xi) Create a table FACULTY (FID VARCHAR2(4), Name VARCHAR2(20)); Faculty id should start with 'F'.

CREATE TABLE FACULTY2078 (FID VARCHAR2(4) PRIMARY KEY, Name VARCHAR2(20), CONSTRAINT chk_fid CHECK (FID LIKE 'F%'));

```
SQL> desc FACULTY2078;
 Name                                                                    Null?    Type
 ----------------------------------------------------------------------- -------- ------------
 -----------------------------
 FID                                                                     NOT NULL VARCHAR2(4)
 NAME                                                                             VARCHAR2(20)
```

(xii) Insert values to the table Faculty.

Insert Into FACULTY2078 Values('F01','Aloke Kumar Dutta');
Insert Into FACULTY2078 Values('F02','Abhijit Roy');
Insert Into FACULTY2078 Values('F03','Probal Kumar');
Insert Into FACULTY2078 Values('F04','Mousumi Dey');
Insert Into FACULTY2078 Values('F05','Sharmistha Nag');
Insert Into FACULTY2078 Values('F06','Dipti Bhattacharyya');
Insert Into FACULTY2078 Values('F07','Sanjay Kumar Das');
Insert Into FACULTY2078 Values('F08','Partha Pratim Ba');
Insert Into FACULTY2078 Values('F09','Rakesh Chouhan');
Insert Into FACULTY2078 Values('F10','Srija Paul');

```
SQL> select * from FACULTY2078;

FID  NAME
---- --------------------
F01  Aloke Kumar Dutta
F02  Abhijit Roy
F03  Probal Kumar
F04  Mousumi Dey
F05  Sharmistha Nag
F07  Sanjay Kumar Das
F08  Partha Pratim Ba
F09  Rakesh Chouhan
F06  Dipti Bhattacharyya
F10  Srija Paul

10 rows selected.
```

(xiii) Insert column pass marks in subject table and add values to this column.

Alter table SUBJECT2078 add PassMarks NUMBER(2) DEFAULT 30;

UPDATE SUBJECT2078 SET PassMarks = 40 WHERE SubjectCode like 'CS%' or SubjectCode = 'EC501';

```
SQL> select * from SUBJECT2078;

SUBJECTC SUBJECTNAME                       DEPT SEME  PASSMARKS
-------- ------------------------------    ---- ----  ----------
CS301    Data Structure                    CSE  SEM3         40
CS302    Computer Organization             CSE  SEM3         40
CS501    Discrete Mathematics              CSE  SEM5         40
CS502    Data Communication                CSE  SEM5         40
ECS501   Data Base systems                 ECE  SEM5         30
EC501    Analog Signals                    ECE  SEM5         40
CS503    Operating Systems                 CSE  SEM5         40

7 rows selected.
```

(xiv) Delete the column pass marks from Result.

alter table RESULT2078 drop Column PassMarks;

```
SQL> desc RESULT2078;
 Name                                                          Null?    Type
 ------------------------------------------------------------- -------- --------------
 ---------------------------
 ROLLNO                                                        NOT NULL NUMBER(6)
 SUB_CODE                                                      NOT NULL VARCHAR2(8)
 MARKS                                                                  NUMBER(3)

SQL>
```