Assignment – 5

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

alter table STUDENT2076 add constraint FK1 FOREIGN KEY(DeptCode) REFERENCES DEPARTMENT2076(DeptCode);

```
SQL> select table_name, constraint_name, constraint_type, search_condition from all_constraints where table_name = 'STUDENT2076';

TABLE_NAME                      CONSTRAINT_NAME              C SEARCH_CONDITION
------------------------------- --------------------------- - -----------------------------------------
STUDENT2076                     SYS_C004617                 C "NAME" IS NOT NULL
STUDENT2076                     SYS_C004618                 C "ADDRESS" IS NOT NULL
STUDENT2076                     SYS_C004619                 C "YEAROFADM" IS NOT NULL
STUDENT2076                     SYS_C004620                 C "DEPTCODE" IS NOT NULL
STUDENT2076                     SYS_C004621                 C "SEMESTER" IS NOT NULL
STUDENT2076                     SYS_C004622                 C "BIRTHDATE" IS NOT NULL
STUDENT2076                     SYS_C004623                 P
STUDENT2076                     FK1                         R
```

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

Alter table DEPARTMENT2076 add Block Char(10);

```
SQL> desc DEPARTMENT2076
 Name                                                         Null?    Type
 ----------------------------------------------------------- -------- ----------------------

 -----------------------------
 DEPTCODE                                                     NOT NULL VARCHAR2(4)
 DEPTNAME                                                     NOT NULL VARCHAR2(50)
 STUDENT_ALLOTED                                              NOT NULL NUMBER(4)
 BLOCK                                                                 CHAR(10)
```

(iii) Insert data to this attribute.

UPDATE DEPARTMENT2076 SET BLOCK = 'C' WHERE DeptCode = 'CSE';
UPDATE DEPARTMENT2076 SET BLOCK = 'B' WHERE DeptCode = 'ECE';
UPDATE DEPARTMENT2076 SET BLOCK = 'C' WHERE DeptCode = 'IT';
UPDATE DEPARTMENT2076 SET BLOCK = 'B' WHERE DeptCode = 'EE';

```
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 SUBJECT2076 modify SubjectCode VARCHAR(8);

```
SQL> desc SUBJECT2076
 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 SUBJECT2076 drop PRIMARY KEY;

```
SQL> select table_name, constraint_name, constraint_type, search_condition from all_constraints where table_name = 'SUBJECT2076';

TABLE_NAME                     CONSTRAINT_NAME           C SEARCH_CONDITION
------------------------------ ------------------------- - ------------------------------
SUBJECT2076                    SYS_C004652               C "SUBJECTNAME" IS NOT NULL
SUBJECT2076                    SYS_C004653               C "SEMESTER" IS NOT NULL
SUBJECT2076                    SYS_C004655               R
```

(vi) Add primary key to the table subject.
Alter table SUBJECT2076 ADD Primary KEY(SubjectCode);

```
TABLE_NAME                     CONSTRAINT_NAME           C SEARCH_CONDITION
------------------------------ ------------------------- - ------------------------------
SUBJECT2076                    SYS_C004652               C "SUBJECTNAME" IS NOT NULL
SUBJECT2076                    SYS_C004653               C "SEMESTER" IS NOT NULL
SUBJECT2076                    SYS_C004697               P
SUBJECT2076                    SYS_C004655               R
```

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

Alter table RESULT2076 add constraint fk_result_subject FOREIGN KEY(Sub_code) references SUBJECT2076(SubjectCode);

```
SQL> select table_name, constraint_name, constraint_type, search_condition from all_constraints where table_name = 'RESULT2076';

TABLE_NAME                     CONSTRAINT_NAME           C SEARCH_CONDITION
------------------------------ ------------------------- - ------------------------------
RESULT2076                     SYS_C004656               C "ROLLNO" IS NOT NULL
RESULT2076                     SYS_C004657               C "SUB_CODE" IS NOT NULL
RESULT2076                     SYS_C004658               C Marks <= 100
RESULT2076                     SYS_C004659               P
RESULT2076                     SYS_C004660               R
RESULT2076                     FK_RESULT_SUBJECT         R
```

(viii) Add constraint that marks cannot be negative.

Alter table RESULT2076 add constraint marks_check check (Marks>=0);

```
SQL> select table_name, constraint_name, constraint_type, search_condition from all_constraints where table_name = 'RESULT2076';

TABLE_NAME                     CONSTRAINT_NAME           C SEARCH_CONDITION
------------------------------ ------------------------- - ------------------------------
RESULT2076                     SYS_C004656               C "ROLLNO" IS NOT NULL
RESULT2076                     SYS_C004657               C "SUB_CODE" IS NOT NULL
RESULT2076                     SYS_C004658               C Marks <= 100
RESULT2076                     SYS_C004659               P
RESULT2076                     SYS_C004660               R
RESULT2076                     FK_RESULT_SUBJECT         R
RESULT2076                     MARKS_CHECK               C Marks>=0

7 rows selected.
```

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

alter table SUBJECT2076 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 = 'SUBJECT2076';

TABLE_NAME                      CONSTRAINT_NAME           C SEARCH_CONDITION
------------------------------- ------------------------- - --------------------------------------------
SUBJECT2076                     SYS_C004652               C "SUBJECTNAME" IS NOT NULL
SUBJECT2076                     SYS_C004653               C "SEMESTER" IS NOT NULL
SUBJECT2076                     SYS_C004697               P
SUBJECT2076                     SYS_C004655               R
SUBJECT2076                     CHECK_DEPT_CODE           C DeptCode in('CSE' , 'IT' , 'MCA' , 'EE', 'ECE')

SQL>
```

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

Alter table STUDENT2076 add CollegePhoneNo NUMBER(10) default '25739607';

```
SQL> desc STUDENT2076;
 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 FACULTY2076 (FID VARCHAR2(4) PRIMARY KEY, Name VARCHAR2(20), CONSTRAINT chk_fid CHECK (FID LIKE 'F%'));

```
SQL> desc FACULTY2076
 Name                                                                          Null?    Type
 -------------------------------------------------------------------------------------- -------- ------------------
 -----------------------------
 FID                                                                          NOT NULL VARCHAR2(4)
 NAME                                                                                   VARCHAR2(20)

SQL>
```

(xii) Insert values to the table Faculty.

Insert Into FACULTY2076 Values('F01','Aloke Kumar Dutta');
Insert Into FACULTY2076 Values('F02','Abhijit Roy');
Insert Into FACULTY2076 Values('F03','Probal Kumar');
Insert Into FACULTY2076 Values('F04','Mousumi Dey');
Insert Into FACULTY2076 Values('F05','Sharmistha Nag');
Insert Into FACULTY2076 Values('F06','Dipti Bhattacharyya');
Insert Into FACULTY2076 Values('F07','Sanjay Kumar Das');
Insert Into FACULTY2076 Values('F08','Partha Pratim Ba');
Insert Into FACULTY2076 Values('F09','Rakesh Chouhan');
Insert Into FACULTY2076 Values('F10','Srija Paul');

```
SQL> select * from FACULTY2076;

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

(xiii) Insert column pass marks in subject table and add values to this column.
Alter table SUBJECT2076 add PassMarks NUMBER(2) DEFAULT 30;

UPDATE SUBJECT2076 SET PassMarks = 40 WHERE SubjectCode like 'CS%' or SubjectCode = 'EC501';

```
Commit complete.
SQL> select * from SUBJECT2076;

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
```

(xiv) Delete the column pass marks from Result.

ALTER table RESULT2076 DROP column PassMarks;

```
SQL> desc RESULT2076
 Name                                                          Null?    Type
 ------------------------------------------------------------- -------- ----------------------------
 ROLLNO                                                        NOT NULL NUMBER(6)
 SUB_CODE                                                      NOT NULL VARCHAR2(8)
 MARKS                                                                  NUMBER(3)
```