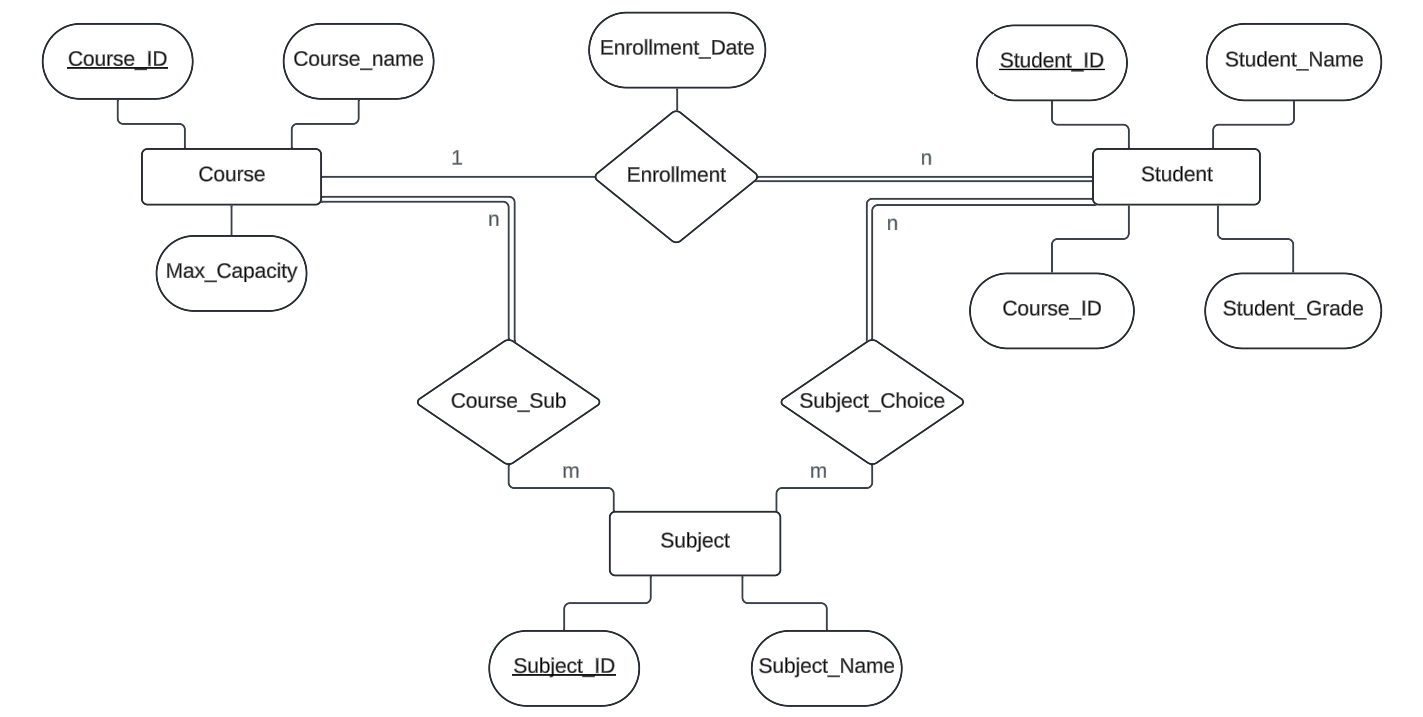
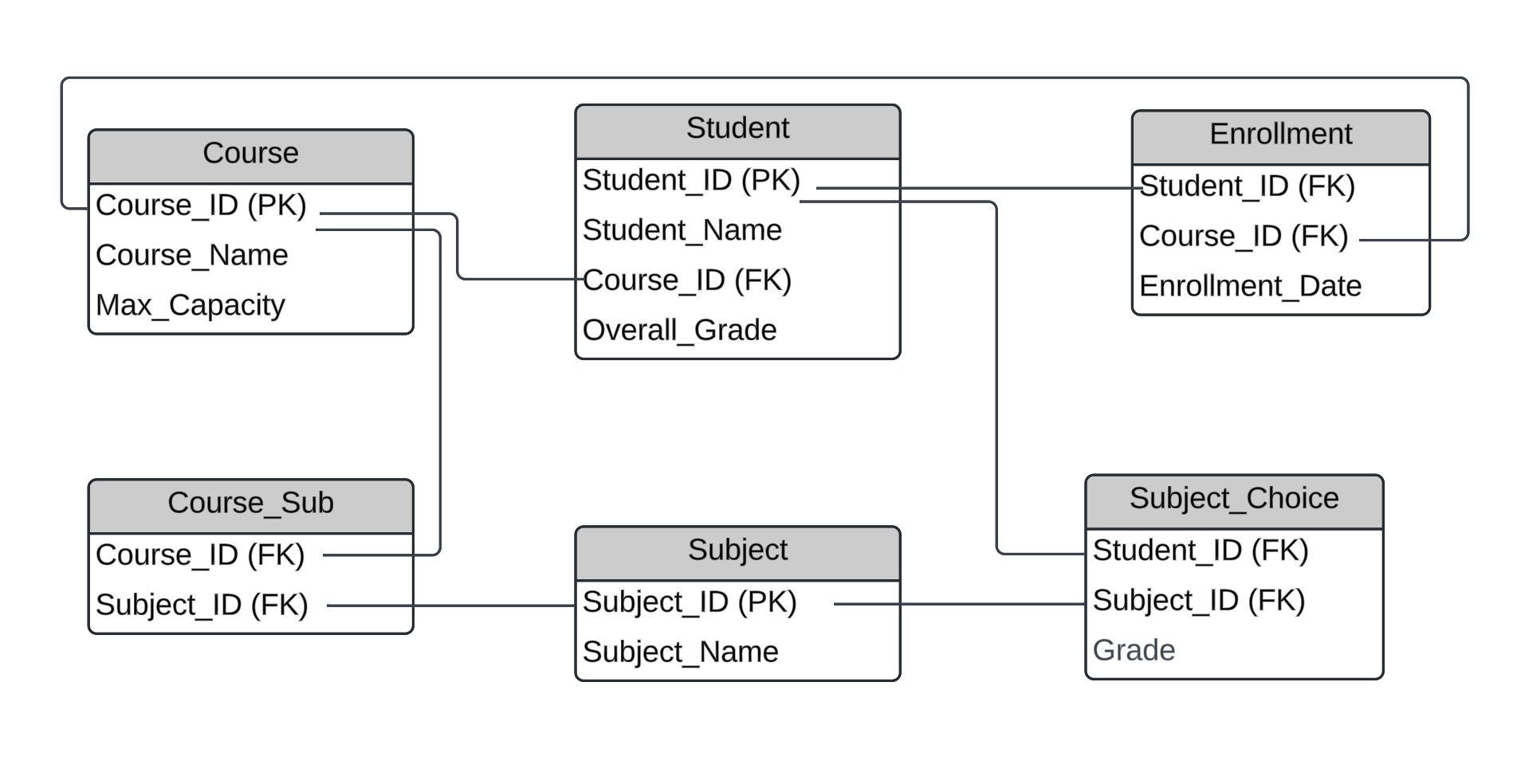
Question: In an educational institute, various numbers of courses are offered. In each course, 7 numbers of subjects are taught. One student can select minimum 5 and maximum 6 numbers of subjects for that course. Each course has maximum intake capacity. The same subject may be taught in various courses. The system must be able to handle course, subject, student, marks grade and enrollment information. Assumptions also can be made. Design an ER diagram and database schema for the system. Specify the primary key, foreign key and other constraints for all required tables. Draw the ER diagram in MS Word.

ER Diagram



Database Schema



1. **Insert at least five tuples in each table.**

-- COURSE Table

Create Table COURSE (COURSE\_ID number (2) PRIMARY KEY, COURSE\_NAME varchar2(10), MAX\_CAPACITY number (3));

Insert into COURSE values (10, 'CS', 100);

Insert into COURSE values (20, 'IT', 90);

Insert into COURSE values (30, 'ECE', 125);

Insert into COURSE values (40, 'EE', 85);

Insert into COURSE values (50, 'IEE', 90);

--SUBJECT Table

Create Table SUBJECT (

SUBJECT\_ID number (3) PRIMARY KEY, SUBJECT\_NAME varchar2(15));

Insert into SUBJECT values (101, 'DBMS');

Insert into SUBJECT values (102, 'OOP');

Insert into SUBJECT values (103, 'DSA');

Insert into SUBJECT values (104, 'MATHS');

Insert into SUBJECT values (105, 'ELECTRONICS');

Insert into SUBJECT values (106, 'COA');

Insert into SUBJECT values (107, 'PHYSICS');

Insert into SUBJECT values (108, 'CHEMISTRY');

--STUDENT Table

Create Table STUDENT (

STUDENT\_ID number (5) PRIMARY KEY, STUDENT\_NAME varchar2(25), COURSE\_ID number (2), OVERALL\_GRADE varchar2(1), FOREIGN KEY(COURSE\_ID) REFERENCES COURSE(COURSE\_ID));

Insert into STUDENT values (18050, 'DEBODIT', 10, 'B');

Insert into STUDENT values (18051, 'SOHAM', 20, 'A');

Insert into STUDENT values (18052, 'ANUSKA', 30, 'C');

Insert into STUDENT values (18053, 'PRAMA', 20, 'B');

Insert into STUDENT values (18054, 'RISHIKA', 10, 'A');

Insert into STUDENT values (18055, 'ANISH', 40, 'A');

Insert into STUDENT values (18056, 'DANIAL', 20, 'C');

Insert into STUDENT values (18057, 'PRAGYA', 30, 'B');

Insert into STUDENT values (18058, 'SARBO', 20, 'A');

Insert into STUDENT values (18069, 'AKSHAT', 20, 'A');

-- ENROLLMENT Table

Create Table ENROLLMENT (

STUDENT\_ID number (5) , COURSE\_ID number (2), FOREIGN KEY(STUDENT\_ID) REFERENCES STUDENT(STUDENT\_ID), FOREIGN KEY(COURSE\_ID) REFERENCES COURSE(COURSE\_ID));

Insert into ENROLLMENT values (18050, 10);

Insert into ENROLLMENT values (18051, 20);

Insert into ENROLLMENT values (18052, 30);

Insert into ENROLLMENT values (18053, 20);

Insert into ENROLLMENT values (18054, 10);

Insert into ENROLLMENT values (18055, 40);

Insert into ENROLLMENT values (18056, 20);

Insert into ENROLLMENT values (18057, 30);

Insert into ENROLLMENT values (18058, 20);

Insert into ENROLLMENT values (18069, 20);

-- COURSE\_SUB Table

Create Table COURSE\_SUB (COURSE\_ID number (2), SUBJECT\_ID number (3), FOREIGN KEY (COURSE\_ID) REFERENCES COURSE(COURSE\_ID), FOREIGN KEY (SUBJECT\_ID) REFERENCES SUBJECT(SUBJECT\_ID));

Insert into COURSE\_SUB values (20, 101);

Insert into COURSE\_SUB values (20, 102);

Insert into COURSE\_SUB values (20, 103);

Insert into COURSE\_SUB values (20, 104);

Insert into COURSE\_SUB values (20, 105);

Insert into COURSE\_SUB values (20, 106);

Insert into COURSE\_SUB values (20, 107);

Insert into COURSE\_SUB values (30, 102);

Insert into COURSE\_SUB values (30, 103);

Insert into COURSE\_SUB values (30, 104);

Insert into COURSE\_SUB values (30, 105);

Insert into COURSE\_SUB values (30, 106);

Insert into COURSE\_SUB values (30, 107);

Insert into COURSE\_SUB values (30, 108);

-- SUB\_CHOICE Table

Create Table SUB\_CHOICE (STUDENT\_ID number (5), SUBJECT\_ID number (3), GRADE varchar2(1),FOREIGN KEY (STUDENT\_ID) REFERENCES STUDENT(STUDENT\_ID),FOREIGN KEY (SUBJECT\_ID) REFERENCES SUBJECT(SUBJECT\_ID));

Insert into SUB\_CHOICE values (18053, 101, 'A');

Insert into SUB\_CHOICE values (18053, 102, 'B');

Insert into SUB\_CHOICE values (18053, 103, 'A');

Insert into SUB\_CHOICE values (18053, 104, 'A');

Insert into SUB\_CHOICE values (18053, 105, 'A');

Insert into SUB\_CHOICE values (18053, 106, 'A');

Insert into SUB\_CHOICE values (18055, 104, 'C');

Insert into SUB\_CHOICE values (18055, 105, 'B');

Insert into SUB\_CHOICE values (18055, 106, 'A');

Insert into SUB\_CHOICE values (18055, 105, 'B');

Insert into SUB\_CHOICE values (18055, 107, 'A');

1. **At the time of creation if we forget to create a field enrollment date (ENROLL\_DATE) in ENROLL table so add the field.**

Alter Table ENROLLMENT Add (ENROLL\_DATE date);

Update ENROLLMENT set ENROLL\_DATE='19-NOV-21' where STUDENT\_ID=18050;

Update ENROLLMENT set ENROLL\_DATE='17-JUL-20' where STUDENT\_ID=18051;

Update ENROLLMENT set ENROLL\_DATE='14-DEC-22' where STUDENT\_ID=18052;

Update ENROLLMENT set ENROLL\_DATE='21-JUL-21' where STUDENT\_ID=18053;

Update ENROLLMENT set ENROLL\_DATE='04-JUN-21' where STUDENT\_ID=18054;

Update ENROLLMENT set ENROLL\_DATE='08-AUG-20' where STUDENT\_ID=18055;

Update ENROLLMENT set ENROLL\_DATE='13-SEP-22' where STUDENT\_ID=18056;

Update ENROLLMENT set ENROLL\_DATE='02-NOV-21' where STUDENT\_ID=18057;

Update ENROLLMENT set ENROLL\_DATE='23-JUL-20' where STUDENT\_ID=18058;

Update ENROLLMENT set ENROLL\_DATE='18-OCT-22' where STUDENT\_ID=18069;