NUR BANU ÖZKAN

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BACKUP DATABASE USIS TO   K = 'D:\backups\testDB.bak';

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```

```sql
CREATE TABLE TBL_STUDENTS
(
  ST_ID INT NOT NULL,
  ST_FIRSTNAME VARCHAR(50) NOT NULL,
  ST_LASTNAME VARCHAR(50) NOT NULL,
  ST_BIRTHDATE DATETIME NOT NULL,
  ST_EMAIL VARCHAR(50) UNIQUE,
  PRIMARY KEY (ST_ID),
  )
ALTER TABLE TBL_STUDENTS
ALTER COLUMN ST_BIRTHDATE DATE

CREATE TABLE TBL_DEPARTMENT
(
  DEPT_ID INT,
  PRIMARY KEY (DEPT_ID)
  )
ALTER TABLE TBL_DEPARTMENT
ADD DEPT_CAMPUS VARCHAR(15) NOT NULL, DEPT_NAME VARCHAR(15) NOT NULL;

CREATE TABLE TBL_COURSE
(  CO_ID INT ,
  CO_NAME VARCHAR(30) NOT NULL,
  CREDITS INT
  PRIMARY KEY (CO_ID),
  )
ALTER TABLE TBL_COURSE
ADD KONTENJAN INT
ALTER TABLE TBL_COURSE
ADD DEPT_ID INT,
FOREIGN KEY (DEPT_ID) REFERENCES TBL_DEPARTMENT(DEPT_ID);
CREATE TABLE TBL_COURSE_REGISTRATIONS
(  CO_ID INT NULL,
  ST_ID INT NOT NULL,
  FOREIGN KEY (ST_ID) REFERENCES TBL_STUDENTS(ST_ID),
  FOREIGN KEY (CO_ID) REFERENCES TBL_COURSE(CO_ID),
  )

CREATE TABLE TBL_TEACHER
(
  TE_ID INT ,
  TE_NAME VARCHAR(30) NOT NULL,
  TE_PHONE_NO INT NOT NULL,
  TE_EMAIL VARCHAR(30) UNIQUE,
  PRIMARY KEY (TE_ID)
  )
```

```sql
CREATE TABLE TBL_EXAM_TYPE
(
  EXAM_TYPE_ID INT PRIMARY KEY,
  EXAM_TYPE_NAME VARCHAR(30) NOT NULL
)
CREATE TABLE TBL_EXAM
(
  EXAM_ID INT ,
  EXAM_DATE DATE NOT NULL,
  EXAM_TYPE_ID INT NOT NULL,
  ST_ID INT NOT NULL,
  TE_ID INT NOT NULL,
  CO_ID INT NOT NULL,
  MARKS INT NOT NULL,
  PRIMARY KEY (EXAM_ID),
  FOREIGN KEY (ST_ID) REFERENCES TBL_STUDENTS(ST_ID),
  FOREIGN KEY (CO_ID) REFERENCES TBL_COURSE(CO_ID),
  FOREIGN KEY (TE_ID) REFERENCES TBL_TEACHER(TE_ID),
  FOREIGN KEY (EXAM_TYPE_ID) REFERENCES TBL_EXAM_TYPE(EXAM_TYPE_ID)
  )
ALTER TABLE TBL_EXAM
ALTER COLUMN EXAM_DATE DATE NULL;

CREATE TABLE TBL_STUDENT_GRADE
(
SG_ID INT NOT NULL,
CO_ID INT NOT NULL,
ST_ID INT NOT NULL,
GRADE DECIMAL(3, 2),
PRIMARY KEY (SG_ID),
FOREIGN KEY (ST_ID) REFERENCES TBL_STUDENTS(ST_ID),
FOREIGN KEY (CO_ID) REFERENCES TBL_COURSE(CO_ID)
)
ALTER TABLE TBL_STUDENT_GRADE
ADD HARF VARCHAR(2)

CREATE TABLE TBL_STUDENT_AVG_COURSE
(
SG_ID INT IDENTITY(1,1) NOT NULL,
CO_ID INT NOT NULL,
ST_ID INT NOT NULL,
EXAM_ID INT,
AVERAGE INT,
PRIMARY KEY (SG_ID),
FOREIGN KEY (ST_ID) REFERENCES TBL_STUDENTS(ST_ID),
FOREIGN KEY (CO_ID) REFERENCES TBL_COURSE(CO_ID),
FOREIGN KEY (EXAM_ID) REFERENCES TBL_EXAM(EXAM_ID)
)
```

3.DATA

DATA TBL_STUDENT

```sql
INSERT INTO dbo.TBL_STUDENTS (ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (1, 'Abercrombie', 'Kim', '1995-03-11', 'Abercrombie@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS (ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (2, 'Barzdukas', 'Gytis',' 1995-09-01', 'Barzdukas@gmail.com');
INSERT INTO dbo.TBL_STUDENTS (ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (3, 'Justice', 'Peggy', ' 1991-09-01','Justice@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS (ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (4, 'Fakhouri', 'Fadi', ' 1992-08-06','Fakhouri@gmail.com');
INSERT INTO dbo.TBL_STUDENTS (ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (5, 'Harui', 'Roger', '1998-07-01','Harui@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (6, 'Li', 'Yan', ' 1992-09-01','@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (7, 'Norman', 'Laura', ' 1993-09-01','Li@gmail.com');
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (8, 'Olivotto', 'Nino', ' 1995-09-01','Olivotto@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (9, 'Tang', 'Wayne',' 1995-09-01', 'Tang@gmail.com');
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (10, 'Alonso', 'Meredith', ' 1992-09-01','Alonso@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (11, 'Lopez', 'Sophia', ' 1994-09-01','Lopez@gmail.com');
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (12, 'Browning', 'Meredith', ' 1990-09-01','Browning@gmail.com');
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (13, 'Anand', 'Arturo', ' 1993-09-01','Anand@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (14, 'Walker', 'Alexandra', ' 1990-09-01', 'Walker@gmail.com');
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (15, 'Powell', 'Carson', ' 1994-09-01','Powell@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (16, 'Jai', 'Damien', ' 1991-09-01','Jai@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (17, 'Carlson', 'Robyn', ' 1995-09-01','Carlson@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (18, 'Zheng', 'Roger', ' 1994-02-12', 'Zheng@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (19, 'Bryant', 'Carson', ' 1991-09-01','Bryant@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (20, 'Suarez', 'Robyn', ' 1994-09-01', 'Suarez@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (21, 'Holt', 'Roger', ' 1994-09-01', 'Holt@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (22, 'Alexander', 'Carson', ' 1995-09-01', 'Alexander@gmail.com' );
```

```sql
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (23, 'Morgan', 'Isaiah', ' 1991-09-01','Morgan@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (24, 'Martin', 'Randall', ' 1995-09-01', 'Martin@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (25, 'Kapoor', 'Candace', ' 1991-01-15', 'Kapoor@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (26, 'Rogers', 'Cody', ' 1992-09-01', 'Rogers@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (27, 'Serrano', 'Stacy', '1999-06-01', 'Serrano@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (28, 'White', 'Anthony', ' 1991-09-01', 'White@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (29, 'Griffin', 'Rachel', ' 1994-09-01','Griffin@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (30, 'Shan', 'Alicia', ' 1993-09-01', 'Shan@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (31, 'Stewart', 'Jasmine', '1997-10-12', 'Stewart@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (32, 'Xu', 'Kristen', ' 1991-7-23', 'Xu@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (33, 'Gao', 'Erica', ' 1993-01-30', 'Gao@gmail.com' );
INSERT INTO dbo.TBL_STUDENTS(ST_ID, ST_LASTNAME, ST_FIRSTNAME, ST_BIRTHDATE,ST_EMAIL)
VALUES (34, 'Van Houten', 'Roger', ' 1990-12-07', 'Van@gmail.com' );
```

DATA TBL_DEPARTMENT

```sql
INSERT INTO dbo.TBL_DEPARTMENT(DEPT_ID, DEPT_NAME, DEPT_CAMPUS )
VALUES (1, 'Engineering', 'Davutpaşa');
INSERT INTO dbo.TBL_DEPARTMENT(DEPT_ID, DEPT_NAME, DEPT_CAMPUS )
VALUES (2, 'Architecture', 'Beşiktaş');
INSERT INTO dbo.TBL_DEPARTMENT(DEPT_ID, DEPT_NAME, DEPT_CAMPUS )
VALUES (4, 'Economics', 'Davutpaşa');
INSERT INTO dbo.TBL_DEPARTMENT(DEPT_ID, DEPT_NAME, DEPT_CAMPUS)
VALUES (7, 'Mathematics', 'Davutpaşa');
```

DATA TBL_COURSE

```sql
INSERT INTO dbo.TBL_COURSE (CO_ID, CO_NAME, CREDITS, DEPT_ID, KONTENJAN)
VALUES (1050, 'Chemistry', 4, 1,100);
INSERT INTO dbo.TBL_COURSE(CO_ID, CO_NAME, CREDITS, DEPT_ID, KONTENJAN)
VALUES (1061, 'Physics', 4, 1, 250);
INSERT INTO dbo.TBL_COURSE(CO_ID, CO_NAME, CREDITS, DEPT_ID, KONTENJAN)
VALUES (1045, 'Calculus', 4, 7, 120);
INSERT INTO dbo.TBL_COURSE(CO_ID, CO_NAME, CREDITS, DEPT_ID, KONTENJAN)
VALUES (2030, 'Design', 2, 2, 40);
INSERT INTO dbo.TBL_COURSE(CO_ID, CO_NAME, CREDITS, DEPT_ID, KONTENJAN)
VALUES (2021, 'Project', 3, 2 , 55);
INSERT INTO dbo.TBL_COURSE(CO_ID, CO_NAME, CREDITS, DEPT_ID, KONTENJAN)
VALUES (2042, 'Architecture Hsitory', 4, 2, 55);
```

```sql
INSERT INTO dbo.TBL_COURSE(CO_ID, CO_NAME, CREDITS, DEPT_ID, KONTENJAN)
VALUES (4022, 'Microeconomics', 3, 4, 100);
INSERT INTO dbo.TBL_COURSE(CO_ID, CO_NAME, CREDITS, DEPT_ID, KONTENJAN)
VALUES (4041, 'Macroeconomics', 3, 4, 100);
INSERT INTO dbo.TBL_COURSE(CO_ID, CO_NAME, CREDITS, DEPT_ID, KONTENJAN)
VALUES (4061, 'Quantitative', 2, 4, 70);
INSERT INTO dbo.TBL_COURSE(CO_ID, CO_NAME, CREDITS, DEPT_ID, KONTENJAN)
VALUES (3141, 'Trigonometry', 4, 7, 120);
```

DATA TBL_TEACHER

```sql
INSERT INTO dbo.TBL_TEACHER(TE_ID, TE_NAME, TE_PHONE_NO, TE_EMAIL)
VALUES (50,'A', 123423464, 'A@gmail.com');
INSERT INTO dbo.TBL_TEACHER(TE_ID, TE_NAME, TE_PHONE_NO, TE_EMAIL)
VALUES (61,'B', 315343234, 'B@gmail.com');
INSERT INTO dbo.TBL_TEACHER(TE_ID, TE_NAME, TE_PHONE_NO, TE_EMAIL)
VALUES (45,'C', 523423423, 'C@gmail.com');
INSERT INTO dbo.TBL_TEACHER(TE_ID, TE_NAME, TE_PHONE_NO, TE_EMAIL)
VALUES (30,'D', 423424245, 'D@gmail.com');
INSERT INTO dbo.TBL_TEACHER(TE_ID, TE_NAME, TE_PHONE_NO, TE_EMAIL)
VALUES (21,'E', 275462375, 'E@gmail.com');
INSERT INTO dbo.TBL_TEACHER(TE_ID, TE_NAME, TE_PHONE_NO, TE_EMAIL)
VALUES (42,'F', 255634287, 'F@gmail.com');
INSERT INTO dbo.TBL_TEACHER(TE_ID, TE_NAME, TE_PHONE_NO, TE_EMAIL)
VALUES (22,'G', 253453464, 'G@gmail.com');
INSERT INTO dbo.TBL_TEACHER(TE_ID, TE_NAME, TE_PHONE_NO, TE_EMAIL)
VALUES (41,'H', 356722322, 'H@gmail.com');
INSERT INTO dbo.TBL_TEACHER(TE_ID, TE_NAME, TE_PHONE_NO, TE_EMAIL)
VALUES (63,'I', 341345921, 'I@gmail.com');
```

DATA TBL_GRADE

```sql
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (1, 2021, 2, 4);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (2, 2030, 2, 3.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (3, 2021, 3, 3);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (4, 2030, 3, 4);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (5, 2021, 6, 2.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (6, 2042, 6, 3.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (7, 2021, 7, 3.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (8, 2042, 7, 4);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (9, 2021, 8, 3);
```

```sql
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (10, 2042, 8, 3);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (11, 4041, 9, 3.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (12,4041, 10, null);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (13, 4041, 11, 2.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (14, 4041, 12, null);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (15, 4061, 12, null);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (16, 4022, 14, 3);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (17, 4022, 13, 4);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (18, 4061, 13, 4);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (19, 4041, 14, 3);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (20, 4022, 15, 2.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (21 ,4022, 16, 2);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (22, 4022, 17, null);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (23, 4022, 19, 3.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (24, 4061, 20, 4);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (25, 4061, 21, 2);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (26, 4022, 22, 3);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (27, 4041, 22, 3.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (28, 4061, 22, 2.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (29, 4022, 23, 3);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (30, 1045, 23, 1.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (31, 1061, 24, 4);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (32, 1061, 25, 3);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (33, 1050, 26, 3.5);
```

```sql
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (34, 1061, 26, 3);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (35, 1061, 27, 3);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (36, 1045, 28, 2.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (37, 1050, 28, 3.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (38, 1061, 29, 4);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (39, 1050, 30, 3.5);
INSERT INTO dbo.TBL_STUDENT_GRADE (SG_ID, CO_ID, ST_ID, Grade)
VALUES (40, 1061, 30, 4);
```

DATA TBL_EXAM_TYPE

```sql
INSERT INTO dbo.TBL_EXAM_TYPE (EXAM_TYPE_ID, EXAM_TYPE_NAME)
VALUES (1, 'Midterm 1');
INSERT INTO dbo.TBL_EXAM_TYPE (EXAM_TYPE_ID, EXAM_TYPE_NAME)
VALUES (2, 'Midterm 2');
INSERT INTO dbo.TBL_EXAM_TYPE (EXAM_TYPE_ID, EXAM_TYPE_NAME)
VALUES (3, 'Final');
```

DATA TBL_EXAM

```sql
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 101, 2021, 2, 4, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 102, 2030, 2, 3.5,22);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 103, 2021, 3, 3, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 104, 2030, 3, 4,22);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 105, 2021, 6, 2.5, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 106, 2042, 6, 3.5, 30);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 107, 2021, 7, 3.5, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 108, 2042, 7, 4, 30);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 109, 2021, 8, 3, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1010, 2042, 8, 3, 30);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1011, 4041, 9, 3.5, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1012,4041, 10, 0, 45);
```

INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1013, 4041, 11, 2.5, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1014, 4041, 12, 0, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1015, 4061, 12, 0, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1016, 4022, 14, 3, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1017, 4022, 13, 4, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1018, 4061, 13, 4, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1019, 4041, 14, 3, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1020, 4022, 15, 2.5, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1021 ,4022, 16, 2, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1022, 4022, 17, 0, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1023, 4022, 19, 3.5, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1024, 4061, 20, 4, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1025, 4061, 21, 2, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1026, 4022, 22, 3, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1027, 4041, 22, 3.5, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1028, 4061, 22, 2.5, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1029, 4022, 23, 3, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1030, 1045, 23, 1.5, 63);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1031, 1061, 24, 4, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1032, 1061, 25, 3, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1033, 1050, 26, 3.5, 41);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1034, 1061, 26, 3, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1035, 1061, 27, 3, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1036, 1045, 28, 2.5, 63);

```sql
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1037, 1050, 28, 3.5, 41);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1038, 1061, 29, 4, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1039, 1050, 30, 3.5, 41);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (1, 1040, 1061, 30, 4, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 201, 2021, 2, 4, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 202, 2030, 2, 3.5,22);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 203, 2021, 3, 3, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 204, 2030, 3, 4,22);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 205, 2021, 6, 3.5, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 206, 2042, 6, 1, 30);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 207, 2021, 7, 3.5, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 208, 2042, 7, 1, 30);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 209, 2021, 8, 3, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2010, 2042, 8, 1, 30);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2011, 4041, 9, 2.5, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2012,4041, 10, 0, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2013, 4041, 11, 2.5, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2014, 4041, 12, 1, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2015, 4061, 12, 0, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2016, 4022, 14, 3, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2017, 4022, 13, 4, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2018, 4061, 13, 3, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2019, 4041, 14, 4, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2020, 4022, 15, 2.5, 61);
```

```sql
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2021 ,4022, 16, 2, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2022, 4022, 17, 0, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2023, 4022, 19, 3.5, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2024, 4061, 20, 2, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2025, 4061, 21, 1, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2026, 4022, 22, 1, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2027, 4041, 22, 3.5, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2028, 4061, 22, 4, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2029, 4022, 23, 2, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2030, 1045, 23, 1.5, 63);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2031, 1061, 24, 4, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2032, 1061, 25, 4, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2033, 1050, 26, 3.5, 41);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2034, 1061, 26, 4, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2035, 1061, 27, 4, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2036, 1045, 28, 3.5, 63);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2037, 1050, 28, 2.5, 41);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2038, 1061, 29, 2, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2039, 1050, 30, 1.5, 41);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (2, 2040, 1061, 30, 1, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 301, 2021, 2, 4, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 302, 2030, 2, 3.5,22);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 303, 2021, 3, 3, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 304, 2030, 3, 4,22);
```

```sql
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 305, 2021, 6, 3.5, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 306, 2042, 6, 1, 30);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 307, 2021, 7, 3.5, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 308, 2042, 7, 1, 30);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 309, 2021, 8, 3, 21);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3010, 2042, 8, 1, 30);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3011, 4041, 9, 2.5, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3012,4041, 10, 0, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3013, 4041, 11, 2.5, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3014, 4041, 12, 1, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3015, 4061, 12, 0, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3016, 4022, 14, 3, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3017, 4022, 13, 4, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3018, 4061, 13, 3, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3019, 4041, 14, 4, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3020, 4022, 15, 2.5, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3021 ,4022, 16, 2, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3022, 4022, 17, 0, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3023, 4022, 19, 3.5, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3024, 4061, 20, 2, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3025, 4061, 21, 1, 50);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3026, 4022, 22, 1, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3027, 4041, 22, 3.5, 45);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3028, 4061, 22, 4, 50);
```

```sql
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3029, 4022, 23, 2, 61);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3030, 1045, 23, 1.5, 63);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3031, 1061, 24, 4, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3032, 1061, 25, 4, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3033, 1050, 26, 3.5, 41);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3034, 1061, 26, 4, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3035, 1061, 27, 4, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3036, 1045, 28, 3.5, 63);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3037, 1050, 28, 2.5, 41);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3038, 1061, 29, 2, 42);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3039, 1050, 30, 1.5, 41);
INSERT INTO dbo.TBL_EXAM (EXAM_TYPE_ID, EXAM_ID, CO_ID, ST_ID, MARKS, TE_ID)
VALUES (3, 3040, 1061, 30, 1, 42);
```

DATA TBL_COURSE_REGISTRATIONS

```sql
INSERT INTO TBL_COURSE_REGISTRATIONS
SELECT  E.CO_ID, S.ST_ID
FROM TBL_EXAM AS E
RIGHT JOIN TBL_STUDENTS AS S ON E.ST_ID=S.ST_ID
```

4.PROCEDURES

--Adding new students to the database with procedure.

```sql
CREATE PROC SP_ADD_STUDENTS
(
@ST_ID INT ,
@ST_FIRSTNAME VARCHAR(50),
@ST_LASTNAME VARCHAR(50),
@ST_BIRTHDATE DATE,
@ST_EMAIL VARCHAR(50)
)
AS
IF EXISTS(SELECT * FROM dbo.TBL_STUDENTS WHERE  ST_ID=@ST_ID)
BEGIN
PRINT 'Sistemde id numarası mevcuttur!'
END
ELSE
```

```sql
BEGIN
INSERT INTO dbo.TBL_STUDENTS VALUES (@ST_ID,@ST_FIRSTNAME,
@ST_LASTNAME,@ST_BIRTHDATE,@ST_EMAIL)
END;


EXEC SP_ADD_STUDENTS 35, NUR, ÖZKAN, ' 1994-09-01','nur@gmail.com'
EXEC SP_ADD_STUDENTS 36, KEREM, ÖZKAN, ' 1994-09-01','kerem@gmail.com'


SELECT TOP 5 * FROM TBL_STUDENTS ORDER BY ST_ID DESC
```

Results   Messages

	ST_ID	ST_FIRSTNAME	ST_LASTNAME	ST_BIRTHDATE	ST_EMAIL
1	36	KEREM	ÖZKAN	1994-09-01	kerem@gmail.com
2	35	NUR	ÖZKAN	1994-09-01	nur@gmail.com
3	34	Roger	Van Houten	1990-12-07	Van@gmail.com
4	33	Erica	Gao	1993-01-30	Gao@gmail.com
5	32	Kristen	Xu	1991-07-23	Xu@gmail.com

--Adding new course to the database with procedure.

```sql
CREATE PROC SP_ADD_COURSES
(@CO_ID INT ,
@CO_NAME VARCHAR(30),
@CREDITS INT,
@KONTENJAN INT,
@DEPT_ID INT
)
AS
IF EXISTS(SELECT * FROM dbo.TBL_COURSE WHERE  CO_ID=@CO_ID)
BEGIN
PRINT 'Sistemde id numarası mevcuttur!'
END
ELSE
BEGIN
INSERT INTO dbo.TBL_COURSE VALUES (@CO_ID,@CO_NAME,
@CREDITS,@KONTENJAN,@DEPT_ID)
END;


SELECT * FROM TBL_COURSE
```

Results   Messages

	CO_ID	CO_NAME	CREDITS	KONTENJAN	DEPT_ID
1	1045	Calculus	4	120	7
2	1050	Chemistry	4	100	1
3	1061	Physics	4	250	1
4	2021	Project	3	47	2
5	2030	Design	2	40	2
6	2042	Architecture Hsitory	4	47	2
7	3141	Trigonometry	4	120	7
8	4022	Microeconomics	3	100	4
9	4041	Macroeconomics	3	89	4
10	4061	Quantitative	2	70	4

```
EXEC SP_ADD_COURSES 1 , 'APPLIED SQL' , 4 , 100 , 1
EXEC SP_ADD_COURSES 2 , 'CALCULUS 2' , 7 , 100 , 7
SELECT * FROM TBL_COURSE
```

Results   Messages

	CO_ID	CO_NAME	CREDITS	KONTENJAN	DEPT_ID
1	1	APPLIED SQL	4	100	1
2	2	CALCULUS 2	7	100	7
3	1045	Calculus	4	120	7
4	1050	Chemistry	4	100	1
5	1061	Physics	4	250	1
6	2021	Project	3	47	2
7	2030	Design	2	40	2
8	2042	Architecture Hsitory	4	47	2
9	3141	Trigonometry	4	120	7
10	4022	Microeconomics	3	100	4
11	4041	Macroeconomics	3	89	4
12	4061	Quantitative	2	70	4

-- Select the students which take the course when the course id entered with procedure.

```
CREATE PROC SP_STUDENTS_TAKING_THE_COURSES
(@CO_ID INT)
AS
BEGIN
SELECT S.ST_ID, S.ST_FIRSTNAME, S.ST_LASTNAME, CT.CO_ID
FROM DBO.TBL_COURSE_REGISTRATIONS AS CT
INNER JOIN TBL_STUDENTS AS S ON CT.ST_ID=S.ST_ID
WHERE CT.CO_ID=@CO_ID
END;
```

```
EXEC SP_STUDENTS_TAKING_THE_COURSES 2030
```

Results   Messages

	CO_ID	ST_ID
25	4022	17
26	NULL	18
27	4022	19
28	4061	20
29	4061	21
30	4022	22
31	4041	22
32	4061	22
33	4022	23
34	1045	23
35	1061	24
36	1061	25
37	1050	26
38	1061	26
39	1061	27
40	1045	28
41	1050	28
42	1061	29
43	1050	30
44	1061	30
45	NULL	31
46	NULL	32
47	NULL	33
48	NULL	34

Results   Messages

	ST_ID	ST_FIRSTNAME	ST_LASTNAME	CO_ID
1	2	Gytis	Barzdukas	2030
2	3	Peggy	Justice	2030

--Calculating the average of the student when student id and course id are entered with procedure.

```
CREATE PROC SP_STUDENT_AVERAGE_IN_THE_COURSE
( @ST_ID INT, @CO_ID INT )
AS
BEGIN
SELECT AVG(MARKS) AS AVG_MARKS FROM dbo.TBL_EXAM WHERE ST_ID=@ST_ID AND CO_ID=@CO_ID
END;
```

```
SELECT * FROM TBL_EXAM WHERE ST_ID=7 AND CO_ID=2042
```

Results   Messages

	EXAM_ID	EXAM_DATE	EXAM_TYPE_ID	ST_ID	TE_ID	CO_ID	MARKS
1	108	NULL	1	7	30	2042	4
2	208	NULL	2	7	30	2042	1
3	308	NULL	3	7	30	2042	1

```
EXEC SP_STUDENT_AVERAGE_IN_THE_COURSE 7, 2042
```

Results   Messages

	AVG_MARKS
1	2

--Calculating the average of the student when from exam table and update student grade table with the calculated average grade with procedure.

```
CREATE PROCEDURE PS_CALCULATE_EXAMS_AVERAGE_OF_THE_STUDENT
(@ST_ID INT,
@CO_ID INT)
AS
BEGIN
UPDATE TBL_STUDENT_GRADE SET GRADE= (SELECT AVG(MARKS) AS AVG_MARKS
FROM dbo.TBL_EXAM
WHERE ST_ID=@ST_ID AND CO_ID=@CO_ID)
WHERE ST_ID=@ST_ID AND CO_ID=@CO_ID
END
```

```
UPDATE TBL_STUDENT_GRADE SET GRADE= NULL
SELECT * FROM TBL_STUDENT_GRADE
EXEC PS_CALCULATE_EXAMS_AVERAGE_OF_THE_STUDENT 7, 2042
SELECT * FROM TBL_STUDENT_GRADE
```

Results Messages

	SG_ID	CO_ID	ST_ID	GRADE	HARF
1	1	2021	2	NULL	NULL
2	2	2030	2	NULL	NULL
3	3	2021	3	NULL	NULL
4	4	2030	3	NULL	NULL
5	5	2021	6	NULL	NULL
6	6	2042	6	NULL	NULL
7	7	2021	7	NULL	NULL
8	8	2042	7	NULL	NULL
9	9	2021	8	NULL	NULL
10	10	2042	8	NULL	NULL
11	11	4041	9	NULL	NULL
12	12	4041	10	NULL	NULL
13	13	4041	11	NULL	NULL
14	14	4041	12	NULL	NULL
15	15	4061	12	NULL	NULL
16	16	4022	14	NULL	NULL
17	17	4022	13	NULL	NULL
18	18	4061	13	NULL	NULL
19	19	4041	14	NULL	NULL
20	20	4022	15	NULL	NULL
21	21	4022	16	NULL	NULL
22	22	4022	17	NULL	NULL
23	23	4022	19	NULL	NULL
24	24	4061	20	NULL	NULL
25	25	4061	21	NULL	NULL
26	26	4022	22	NULL	NULL
27	27	4041	22	NULL	NULL
28	28	4061	22	NULL	NULL
29	29	4022	23	NULL	NULL
30	30	1045	23	NULL	NULL
31	31	1061	24	NULL	NULL
32	32	1061	25	NULL	NULL
33	33	1050	26	NULL	NULL
34	34	1061	26	NULL	NULL
35	35	1061	27	NULL	NULL
36	36	1045	28	NULL	NULL
37	37	1050	28	NULL	NULL
38	38	1061	29	NULL	NULL
39	39	1050	30	NULL	NULL
40	40	1061	30	NULL	NULL
41	49	1061	35	NULL	NULL
42	50	1061	35	NULL	NULL

Results Messages

	SG_ID	CO_ID	ST_ID	GRADE	HARF
1	1	2021	2	NULL	NULL
2	2	2030	2	NULL	NULL
3	3	2021	3	NULL	NULL
4	4	2030	3	NULL	NULL
5	5	2021	6	NULL	NULL
6	6	2042	6	NULL	NULL
7	7	2021	7	NULL	NULL
8	8	2042	7	2.00	NULL
9	9	2021	8	NULL	NULL
10	10	2042	8	NULL	NULL
11	11	4041	9	NULL	NULL
12	12	4041	10	NULL	NULL
13	13	4041	11	NULL	NULL
14	14	4041	12	NULL	NULL
15	15	4061	12	NULL	NULL
16	16	4022	14	NULL	NULL
17	17	4022	13	NULL	NULL
18	18	4061	13	NULL	NULL
19	19	4041	14	NULL	NULL
20	20	4022	15	NULL	NULL
21	21	4022	16	NULL	NULL
22	22	4022	17	NULL	NULL
23	23	4022	19	NULL	NULL
24	24	4061	20	NULL	NULL
25	25	4061	21	NULL	NULL
26	26	4022	22	NULL	NULL
27	27	4041	22	NULL	NULL
28	28	4061	22	NULL	NULL
29	29	4022	23	NULL	NULL
30	30	1045	23	NULL	NULL
31	31	1061	24	NULL	NULL
32	32	1061	25	NULL	NULL
33	33	1050	26	NULL	NULL
34	34	1061	26	NULL	NULL
35	35	1061	27	NULL	NULL
36	36	1045	28	NULL	NULL
37	37	1050	28	NULL	NULL
38	38	1061	29	NULL	NULL
39	39	1050	30	NULL	NULL
40	40	1061	30	NULL	NULL
41	49	1061	35	NULL	NULL
42	50	1061	35	NULL	NULL

Results Messages

	SG_ID	CO_ID	ST_ID	GRADE	HARF
1	8	2042	7	2.00	NULL

--Calculating letter grade based on average when student id and course id entered with procedure.

```
CREATE PROCEDURE PS_LETTER_GRADES
(
  @CO_ID INT,
  @ST_ID INT
)
AS
BEGIN
UPDATE TBL_STUDENT_GRADE SET HARF= 'A'
WHERE GRADE = 4 AND CO_ID=@CO_ID AND ST_ID=@ST_ID
UPDATE TBL_STUDENT_GRADE SET HARF= 'B'
WHERE GRADE < 4 AND GRADE >=3 AND CO_ID=@CO_ID AND ST_ID=@ST_ID
UPDATE TBL_STUDENT_GRADE SET HARF= 'C'
WHERE GRADE < 3 AND GRADE >=2 AND CO_ID=@CO_ID AND ST_ID=@ST_ID
UPDATE TBL_STUDENT_GRADE SET HARF= 'D'
WHERE GRADE < 2 AND GRADE >=1 AND CO_ID=@CO_ID AND ST_ID=@ST_ID
UPDATE TBL_STUDENT_GRADE SET HARF= 'F'
WHERE GRADE <1 AND CO_ID=@CO_ID AND ST_ID=@ST_ID
END

EXEC PS_LETTER_GRADES 2042 , 7
```

SELECT * FROM TBL_STUDENT_GRADE WHERE CO_ID=2042 AND ST_ID=7

Results Messages

	SG_ID	CO_ID	ST_ID	GRADE	HARF
1	8	2042	7	2.00	C

4.TRIGGERS

--Checking that the student does not receive more than 35 credits while enrolling in the course.

```
DISABLE TRIGGER CHECKCREDIT ON TBL_COURSE_REGISTRATIONS
DISABLE TRIGGER CREDITSCHECK ON TBL_COURSE_REGISTRATIONS

ALTER TRIGGER CHECK_CREDITS
ON TBL_COURSE_REGISTRATIONS
FOR INSERT
AS
DECLARE @CHECK INT
DECLARE @ST_ID INT
select @ST_ID = ST_ID from INSERTED
DECLARE @CO_ID INT
select @CO_ID = CO_ID from INSERTED
SELECT @CHECK=SUM(C.CREDITS)
FROM TBL_COURSE_REGISTRATIONS AS CR
LEFT JOIN TBL_COURSE AS C ON CR.CO_ID=C.CO_ID
WHERE ST_ID=@ST_ID
GROUP BY CR.ST_ID
if (@CHECK) > 15
  raiserror('Credit limits.', 16, 1)
ELSE
  raiserror('Ders Alındı', 16, 1)

INSERT INTO dbo.TBL_COURSE_REGISTRATIONS (CO_ID, ST_ID)
VALUES (1061, 35);
INSERT INTO dbo.TBL_COURSE_REGISTRATIONS (CO_ID, ST_ID)
VALUES (1045, 35);
INSERT INTO dbo.TBL_COURSE_REGISTRATIONS (CO_ID, ST_ID)
VALUES (2, 35);
```

```
Started executing query at Line 730
Msg 50000, Level 16, State 1, Procedure CHECK_CREDITS, Line 18
Ders Alındı
(1 row affected)
Msg 50000, Level 16, State 1, Procedure CHECK_CREDITS, Line 18
Ders Alındı
(1 row affected)
Msg 50000, Level 16, State 1, Procedure CHECK_CREDITS, Line 18
Ders Alındı
(1 row affected)
Total execution time: 00:00:00.011
```

```sql
INSERT INTO dbo.TBL_COURSE_REGISTRATIONS (CO_ID, ST_ID)
VALUES (3141, 35);
```

-- The courses which specified student took.

```sql
SELECT * FROM TBL_COURSE_REGISTRATIONS
INNER JOIN TBL_COURSE ON TBL_COURSE_REGISTRATIONS.CO_ID=TBL_COURSE.CO_ID
WHERE ST_ID=35
```

Results   Messages

	CO_ID	ST_ID	CO_ID	CO_NAME	CREDITS	KONTENJAN	DEPT_ID
1	1061	35	1061	Physics	4	249	1
2	1045	35	1045	Calculus	4	119	7
3	2	35	2	CALCULUS 2	7	99	7

-- Total credits of the courses which each student took.

```sql
SELECT CR.ST_ID , SUM(C.CREDITS) AS STUDENT_TOTAL_CREDITS
FROM TBL_COURSE_REGISTRATIONS AS CR
LEFT JOIN TBL_COURSE AS C ON CR.CO_ID=C.CO_ID
GROUP BY CR.ST_ID
```

Results   Messages

	ST_ID	STUDENT_TOTAL_CREDITS
1	1	NULL
2	2	5
3	3	5
4	4	NULL
5	5	NULL
6	6	7
7	7	7
8	8	7
9	9	3
10	10	3
11	11	3
12	12	5
13	13	5
14	14	6
15	15	3
16	16	3
17	17	3
18	18	NULL
19	19	3
20	20	2
21	21	2
22	22	8
23	23	7
24	24	4
25	25	4
26	26	8
27	27	4
28	28	8
29	29	4
30	30	8
31	31	NULL
32	32	NULL
33	33	NULL
34	34	NULL
35	35	15

-- The students who took the credits more than 7

```sql
SELECT CR.ST_ID , SUM(C.CREDITS) AS STUDENT_TOTAL_CREDITS
FROM TBL_COURSE_REGISTRATIONS AS CR
LEFT JOIN TBL_COURSE AS C ON CR.CO_ID=C.CO_ID
GROUP BY CR.ST_ID
HAVING SUM(C.CREDITS)>7
```

	ST_ID	STUDENT_TOTAL_CREDITS
1	22	8
2	26	8
3	28	8
4	30	8
5	35	15

-- Calculating the quota when students register the course.

```sql
ALTER TRIGGER UPDATE_KONTENJAN
ON TBL_COURSE_REGISTRATIONS
FOR INSERT
AS
BEGIN
DECLARE @CO_ID INT

DECLARE @KONT INT SELECT KONTENJAN = 0 FROM TBL_COURSE WHERE CO_ID=@CO_ID
  IF @KONT=0
  PRINT 'Kontenjan kalmamıştır. Ders seçilemedi.'
ELSE
BEGIN
  SELECT @CO_ID=CO_ID FROM inserted
  UPDATE TBL_COURSE
  SET KONTENJAN=KONTENJAN-1
  WHERE CO_ID=@CO_ID
END
END

ENABLE TRIGGER UPDATE_KONTENJAN ON TBL_COURSE_REGISTRATIONS

SELECT * FROM TBL_COURSE WHERE CO_ID=2021
```

	CO_ID	CO_NAME	CREDITS	KONTENJAN	DEPT_ID
1	2021	Project	3	55	2

```sql
INSERT INTO dbo.TBL_COURSE_REGISTRATIONS (CO_ID, ST_ID)
```

```sql
VALUES (2021, 36);
SELECT * FROM TBL_COURSE WHERE CO_ID=2021
```

	CO_ID	CO_NAME	CREDITS	KONTENJAN	DEPT_ID
1	2021	Project	3	54	2

-- Calculating the quota when students delete the course registration.

```sql
CREATE TRIGGER UPDATE_KONTENJAN2
ON TBL_COURSE_REGISTRATIONS
FOR DELETE
AS
BEGIN
  DECLARE @CO_ID INT
  SELECT @CO_ID=CO_ID FROM deleted

  UPDATE TBL_COURSE
  SET KONTENJAN=KONTENJAN+1
  WHERE CO_ID=@CO_ID

END

ENABLE TRIGGER UPDATE_KONTENJAN ON TBL_COURSE_REGISTRATIONS

DELETE FROM TBL_COURSE_REGISTRATIONS WHERE CO_ID= 2021 AND ST_ID=36
SELECT * FROM TBL_COURSE WHERE CO_ID=2021
```

	CO_ID	CO_NAME	CREDITS	KONTENJAN	DEPT_ID
1	2021	Project	3	55	2

--Calculating average of exam grades and update grade column on the student grade table when new data inserted to exam table.

```sql
ALTER TRIGGER ORT_GUNCELLE1 ON TBL_EXAM
FOR INSERT
AS
DECLARE @MARKS INT
SELECT @MARKS=MARKS FROM inserted
DECLARE @ST_ID INT
SELECT @ST_ID=ST_ID FROM inserted
DECLARE @CO_ID INT
SELECT @CO_ID=CO_ID FROM inserted
IF EXISTS(SELECT * FROM dbo.TBL_STUDENT_GRADE WHERE  ST_ID=@ST_ID AND CO_ID=@CO_ID)
BEGIN
PRINT 'Sistemde id numarası mevcuttur!'
END
```

```sql
ELSE
BEGIN
INSERT INTO TBL_STUDENT_GRADE (CO_ID, ST_ID, GRADE, HARF) VALUES (@CO_ID, @ST_ID, (SELECT AVG(MARKS)
FROM TBL_EXAM  WHERE CO_ID=@CO_ID AND ST_ID=@ST_ID), NULL )
PRINT 'ortalama hesaplandı'
END
GO

SET IDENTITY_INSERT dbo.TBL_STUDENT_GRADE OFF
GO

DELETE FROM TBL_STUDENT_GRADE WHERE ST_ID=35 AND CO_ID=1061
DELETE FROM TBL_EXAM WHERE EXAM_ID=3 OR EXAM_ID=2 OR EXAM_ID=1

INSERT INTO dbo.TBL_EXAM
VALUES (1, NULL ,1, 35, 21, 1061, 1 );
INSERT INTO dbo.TBL_EXAM
VALUES (2, NULL ,2, 35, 21, 1061, 3 );
INSERT INTO dbo.TBL_EXAM
VALUES (3, NULL ,3, 35, 21, 1061, 5 );

SELECT * FROM TBL_EXAM WHERE ST_ID=35
SELECT * FROM TBL_STUDENT_GRADE WHERE ST_ID=35
```

Results   Messages

	EXAM_ID	EXAM_DATE	EXAM_TYPE_ID	ST_ID	TE_ID	CO_ID	MARKS
1	1	NULL	1	35	21	1061	1
2	2	NULL	2	35	21	1061	3
3	3	NULL	3	35	21	1061	5

	SG_ID	CO_ID	ST_ID	GRADE	HARF
1	55	1061	35	3.00	NULL

5.CURSORS

--Calculating the avarage of exam grades from exam table and update grade column on student grade table for all data from exam table with cursor.

```sql
ALTER PROCEDURE SP_AVERAGE_CRS
AS
BEGIN
    DECLARE CRS_AVERAGE CURSOR FOR SELECT EXAM_ID,ST_ID,CO_ID,MARKS
    FROM TBL_EXAM
    DECLARE @EXAM_ID int
    DECLARE @ST_ID int
    DECLARE @CO_ID int
    DECLARE @MARKS int
    OPEN CRS_AVERAGE
```

```sql
        FETCH NEXT FROM CRS_AVERAGE INTO @EXAM_ID, @ST_ID, @CO_ID, @MARKS

    WHILE @@FETCH_STATUS = 0
        BEGIN
            DECLARE @AVG INT =0
            SELECT @AVG= AVG(MARKS) FROM TBL_EXAM WHERE ST_ID=@ST_ID AND CO_ID=@CO_ID

            UPDATE TBL_STUDENT_GRADE SET GRADE =@AVG WHERE ST_ID=@ST_ID AND CO_ID=@CO_ID

            FETCH NEXT FROM CRS_AVERAGE INTO @EXAM_ID, @ST_ID, @CO_ID, @MARKS
        END

        CLOSE CRS_AVERAGE
        DEALLOCATE CRS_AVERAGE
END
```
--Calculating the letter grade from grade column and update letter column on student grade table for all data with cursor.
```sql
ALTER PROCEDURE SP_LETTER_GRADE_CRS
AS
BEGIN
    DECLARE CRS_LETTER CURSOR FOR SELECT ST_ID,CO_ID,GRADE
    FROM TBL_STUDENT_GRADE
    DECLARE @ST_ID int
    DECLARE @CO_ID int
    DECLARE @GRADE int

    OPEN CRS_LETTER
    FETCH NEXT FROM CRS_LETTER INTO @ST_ID, @CO_ID, @GRADE

    WHILE @@FETCH_STATUS = 0
        BEGIN
            SELECT @GRADE=GRADE FROM TBL_STUDENT_GRADE WHERE ST_ID=@ST_ID AND CO_ID=@CO_ID

            UPDATE TBL_STUDENT_GRADE SET HARF='A' WHERE ST_ID=@ST_ID AND CO_ID=@CO_ID AND
@GRADE=4
            UPDATE TBL_STUDENT_GRADE SET HARF='B' WHERE ST_ID=@ST_ID AND CO_ID=@CO_ID AND
@GRADE<4 AND @GRADE>=3
            UPDATE TBL_STUDENT_GRADE SET HARF='C' WHERE ST_ID=@ST_ID AND CO_ID=@CO_ID AND
@GRADE<3 AND @GRADE>=2
            UPDATE TBL_STUDENT_GRADE SET HARF='D' WHERE ST_ID=@ST_ID AND CO_ID=@CO_ID AND
@GRADE<2 AND @GRADE>=1
```

```sql
        FETCH NEXT FROM CRS_LETTER INTO @ST_ID, @CO_ID, @GRADE
    END

    CLOSE CRS_LETTER
    DEALLOCATE CRS_LETTER
END

SELECT * FROM TBL_STUDENT_GRADE
EXEC SP_AVERAGE_CRS
SELECT * FROM TBL_STUDENT_GRADE
EXEC SP_LETTER_GRADE_CRS
SELECT * FROM TBL_STUDENT_GRADE
```

Results Messages

	SG_ID	CO_ID	ST_ID	GRADE	HARF
1	1	2021	2	NULL	NULL
2	2	2030	2	NULL	NULL
3	3	2021	3	NULL	NULL
4	4	2030	3	NULL	NULL
5	5	2021	6	NULL	NULL
6	6	2042	6	NULL	NULL
7	7	2021	7	NULL	NULL
8	8	2042	7	2.00	C
9	9	2021	8	NULL	NULL
10	10	2042	8	NULL	NULL
11	11	4041	9	NULL	NULL
12	12	4041	10	NULL	NULL
13	13	4041	11	NULL	NULL
14	14	4041	12	NULL	NULL
15	15	4061	12	NULL	NULL
16	16	4022	14	NULL	NULL
17	17	4022	13	NULL	NULL
18	18	4061	13	NULL	NULL
19	19	4041	14	NULL	NULL
20	20	4022	15	NULL	NULL
21	21	4022	16	NULL	NULL
22	22	4022	17	NULL	NULL
23	23	4022	19	NULL	NULL
24	24	4061	20	NULL	NULL
25	25	4061	21	NULL	NULL
26	26	4022	22	NULL	NULL
27	27	4041	22	NULL	NULL
28	28	4061	22	NULL	NULL
29	29	4022	23	NULL	NULL
30	30	1045	23	NULL	NULL
31	31	1061	24	NULL	NULL
32	32	1061	25	NULL	NULL
33	33	1050	26	NULL	NULL
34	34	1061	26	NULL	NULL
35	35	1061	27	NULL	NULL
36	36	1045	28	NULL	NULL
37	37	1050	28	NULL	NULL
38	38	1061	29	NULL	NULL
39	39	1050	30	NULL	NULL
40	40	1061	30	NULL	NULL
41	56	1061	35	3.00	NULL

Results Messages

	SG_ID	CO_ID	ST_ID	GRADE	HARF
1	1	2021	2	4.00	NULL
2	2	2030	2	3.00	NULL
3	3	2021	3	3.00	NULL
4	4	2030	3	4.00	NULL
5	5	2021	6	2.00	NULL
6	6	2042	6	1.00	NULL
7	7	2021	7	3.00	NULL
8	8	2042	7	2.00	C
9	9	2021	8	3.00	NULL
10	10	2042	8	1.00	NULL
11	11	4041	9	2.00	NULL
12	12	4041	10	0.00	NULL
13	13	4041	11	2.00	NULL
14	14	4041	12	0.00	NULL
15	15	4061	12	0.00	NULL
16	16	4022	14	3.00	NULL
17	17	4022	13	4.00	NULL
18	18	4061	13	3.00	NULL
19	19	4041	14	3.00	NULL
20	20	4022	15	2.00	NULL
21	21	4022	16	2.00	NULL
22	22	4022	17	0.00	NULL
23	23	4022	19	3.00	NULL
24	24	4061	20	2.00	NULL
25	25	4061	21	1.00	NULL
26	26	4022	22	1.00	NULL
27	27	4041	22	3.00	NULL
28	28	4061	22	3.00	NULL
29	29	4022	23	2.00	NULL
30	30	1045	23	1.00	NULL
31	31	1061	24	4.00	NULL
32	32	1061	25	3.00	NULL
33	33	1050	26	3.00	NULL
34	34	1061	26	3.00	NULL
35	35	1061	27	3.00	NULL
36	36	1045	28	2.00	NULL
37	37	1050	28	2.00	NULL
38	38	1061	29	2.00	NULL
39	39	1050	30	1.00	NULL
40	40	1061	30	2.00	NULL
41	56	1061	35	3.00	NULL

Results Messages

	SG_ID	CO_ID	ST_ID	GRADE	HARF
1	1	2021	2	4.00	A
2	2	2030	2	3.00	B
3	3	2021	3	3.00	B
4	4	2030	3	4.00	A
5	5	2021	6	2.00	C
6	6	2042	6	1.00	D
7	7	2021	7	3.00	B
8	8	2042	7	2.00	C
9	9	2021	8	3.00	B
10	10	2042	8	1.00	D
11	11	4041	9	2.00	C
12	12	4041	10	0.00	NULL
13	13	4041	11	2.00	C
14	14	4041	12	0.00	NULL
15	15	4061	12	0.00	NULL
16	16	4022	14	3.00	B
17	17	4022	13	4.00	A
18	18	4061	13	3.00	B
19	19	4041	14	3.00	B
20	20	4022	15	2.00	C
21	21	4022	16	2.00	C
22	22	4022	17	0.00	NULL
23	23	4022	19	3.00	B
24	24	4061	20	2.00	C
25	25	4061	21	1.00	D
26	26	4022	22	1.00	D
27	27	4041	22	3.00	B
28	28	4061	22	3.00	B
29	29	4022	23	2.00	C
30	30	1045	23	1.00	D
31	31	1061	24	4.00	A
32	32	1061	25	3.00	B
33	33	1050	26	3.00	B
34	34	1061	26	3.00	B
35	35	1061	27	3.00	B
36	36	1045	28	2.00	C
37	37	1050	28	2.00	C
38	38	1061	29	2.00	C
39	39	1050	30	1.00	D
40	40	1061	30	2.00	C
41	56	1061	35	3.00	B

--Selecting the the student who get 'A'letter when course id are entered with procedure.

```sql
ALTER PROCEDURE SP_STUDENTS_SUCCESFULL_IN_THE_COURSE
(@CO_ID INT)
AS
BEGIN
SELECT S.ST_ID, S.ST_FIRSTNAME, S.ST_LASTNAME, SG.CO_ID, C.CO_NAME, SG.HARF
FROM DBO.TBL_STUDENT_GRADE AS SG
INNER JOIN TBL_STUDENTS AS S ON SG.ST_ID=S.ST_ID
INNER JOIN TBL_COURSE AS C ON C.CO_ID=SG.CO_ID
WHERE SG.CO_ID=@CO_ID AND SG.HARF='A'
END;


EXEC SP_STUDENTS_SUCCESFULL_IN_THE_COURSE 2030
```

Results   Messages

	ST_ID	ST_FIRSTNAME	ST_LASTNAME	CO_ID	CO_NAME	HARF
1	3	Peggy	Justice	2030	Design	A

6.VIEW

-- Create view to list the courses with which department and campus they belongs.

```sql
CREATE VIEW DEPT_COURSE_VIEW
AS
SELECT  D.DEPT_CAMPUS, D.DEPT_NAME, C.CO_NAME, C.CREDITS, C.KONTENJAN
FROM TBL_DEPARTMENT AS D
INNER JOIN TBL_COURSE AS C ON D.DEPT_ID = C.DEPT_ID


SELECT * FROM DEPT_COURSE_VIEW
ORDER BY DEPT_NAME ASC ;
```

Results   Messages

	DEPT_CAMPUS	DEPT_NAME	CO_NAME	CREDITS	KONTENJAN
1	Besiktas	Architecture	Project	3	47
2	Besiktas	Architecture	Design	2	40
3	Besiktas	Architecture	Architecture Hsitory	4	47
4	Davutpasa	Economics	Microeconomics	3	100
5	Davutpasa	Economics	Macroeconomics	3	89
6	Davutpasa	Economics	Quantitative	2	70
7	Davutpasa	Engineering	APPLIED SQL	4	100
8	Davutpasa	Engineering	Chemistry	4	100
9	Davutpasa	Engineering	Physics	4	249
10	Davutpasa	Mathematics	CALCULUS 2	7	99
11	Davutpasa	Mathematics	Calculus	4	119
12	Davutpasa	Mathematics	Trigonometry	4	120

-- Creating view that list the exams informations of the courses.

CREATE VIEW EXAM_TYPE_VIEW

AS

SELECT DISTINCT E.EXAM_TYPE_ID, T.EXAM_TYPE_NAME, E.CO_ID, C.CO_NAME, E.TE_ID, TE.TE_NAME AS TEACHER_NAME

FROM TBL_EXAM AS E

INNER JOIN TBL_EXAM_TYPE AS T ON E.EXAM_TYPE_ID = T.EXAM_TYPE_ID

INNER JOIN TBL_COURSE AS C ON C.CO_ID = E.CO_ID

INNER JOIN TBL_TEACHER AS TE ON TE.TE_ID = E.TE_ID

SELECT * FROM EXAM_TYPE_VIEW

ORDER BY EXAM_TYPE_ID ASC, CO_NAME ASC ;

Results   Messages

	EXAM_TYPE_ID	EXAM_TYPE_NAME	CO_ID	CO_NAME	TE_ID	TEACHER_NAME
1	1	Midterm 1	2042	Architecture Hsitory	30	D
2	1	Midterm 1	1045	Calculus	63	I
3	1	Midterm 1	1050	Chemistry	41	H
4	1	Midterm 1	2030	Design	22	G
5	1	Midterm 1	4041	Macroeconomics	45	C
6	1	Midterm 1	4022	Microeconomics	61	B
7	1	Midterm 1	1061	Physics	21	E
8	1	Midterm 1	1061	Physics	42	F
9	1	Midterm 1	2021	Project	21	E
10	1	Midterm 1	4061	Quantitative	50	A
11	2	Midterm 2	2042	Architecture Hsitory	30	D
12	2	Midterm 2	1045	Calculus	63	I
13	2	Midterm 2	1050	Chemistry	41	H
14	2	Midterm 2	2030	Design	22	G
15	2	Midterm 2	4041	Macroeconomics	45	C
16	2	Midterm 2	4022	Microeconomics	61	B
17	2	Midterm 2	1061	Physics	21	E
18	2	Midterm 2	1061	Physics	42	F
19	2	Midterm 2	2021	Project	21	E
20	2	Midterm 2	4061	Quantitative	50	A
21	3	Final	2042	Architecture Hsitory	30	D
22	3	Final	1045	Calculus	63	I
23	3	Final	1050	Chemistry	41	H
24	3	Final	2030	Design	22	G
25	3	Final	4041	Macroeconomics	45	C
26	3	Final	4022	Microeconomics	61	B
27	3	Final	1061	Physics	21	E
28	3	Final	1061	Physics	42	F
29	3	Final	2021	Project	21	E
30	3	Final	4061	Quantitative	50	A

7.FUNCTIONS

--Function showing the grades in the courses taken by the student

CREATE FUNCTION FN_STUDENT_COURSE_GRADE (@ST_ID INT)

RETURNS table

AS

RETURN SELECT SG.ST_ID, ST.ST_FIRSTNAME, ST.ST_LASTNAME, SG.CO_ID, C.CO_NAME, SG.GRADE , SG.HARF, C.CREDITS

FROM TBL_STUDENT_GRADE AS SG

INNER JOIN TBL_STUDENTS AS ST ON SG.ST_ID=ST.ST_ID

INNER JOIN TBL_COURSE AS C ON C.CO_ID=SG.CO_ID

WHERE SG.ST_ID=@ST_ID

Go

Select * from dbo.FN_STUDENT_COURSE_GRADE(8)

	ST_ID	ST_FIRSTNAME	ST_LASTNAME	CO_ID	CO_NAME	GRADE	HARF	CREDITS
1	8	Nino	Olivotto	2021	Project	3.00	B	3
2	8	Nino	Olivotto	2042	Architecture Hsitory	1.00	D	4

--Function calculating the gpa of the student

CREATE FUNCTION FN_GPA (@ST_ID INT)

RETURNS FLOAT

AS

Begin

   Declare @gpa FLOAT

   SELECT @gpa = (SUM(SG.GRADE * C.CREDITS))/ SUM(C.CREDITS)

   FROM TBL_STUDENT_GRADE AS SG

   INNER JOIN TBL_COURSE AS C ON C.CO_ID=SG.CO_ID

   WHERE ST_ID=@ST_ID

   GROUP BY ST_ID

   RETURN @gpa

End

Go

Select dbo.FN_GPA(8) as GPA

	GPA
1	1.857142

8.QUERY

--Avarage success in each course

SELECT AVG(SG.GRADE) , CO_ID

FROM TBL_STUDENT_GRADE AS SG

GROUP BY SG.CO_ID

HAVING AVG(SG.GRADE)<2

	(No column name)	CO_ID
1	1.500000	1045
2	1.333333	2042
3	1.666666	4041
4	1.800000	4061

--Total number of students which taking the course for each course

SELECT COUNT(ST_ID) AS NUMBER_OF_STUDENT , CO_ID , EXAM_TYPE_ID

FROM TBL_EXAM

GROUP BY CO_ID , EXAM_TYPE_ID

ORDER BY CO_ID , EXAM_TYPE_ID

Results   Messages

	NUMBER_OF_STUDENT	CO_ID	EXAM_TYPE_ID
1	2	1045	1
2	2	1045	2
3	2	1045	3
4	3	1050	1
5	3	1050	2
6	3	1050	3
7	7	1061	1
8	7	1061	2
9	7	1061	3
10	5	2021	1
11	5	2021	2
12	5	2021	3
13	2	2030	1
14	2	2030	2
15	2	2030	3
16	3	2042	1
17	3	2042	2
18	3	2042	3
19	8	4022	1
20	8	4022	2
21	8	4022	3
22	6	4041	1
23	6	4041	2
24	6	4041	3
25	5	4061	1
26	5	4061	2
27	5	4061	3

10.REFERENCES

Dataset: https://docs.microsoft.com/en-us/ef/ef6/resources/school-database
(Some changes have been made on the dataset to fit my database)