

```

CREATE TABLE STUDENTS(
    STU_ID CHAR(11) NOT NULL UNIQUE,
    F_NAME VARCHAR(20) NOT NULL,
    L_NAME VARCHAR(20) NOT NULL,
    STU_GENDER CHAR(1) NOT NULL,
    DOB DATE NOT NULL,
    PRIMARY KEY (STU_ID)
);

CREATE TABLE COURSES(
    COURSE_CODE VARCHAR(6) NOT NULL UNIQUE,
    COURSE_NAME VARCHAR(70) NOT NULL,
    COURSE_LEVEL CHAR(2) NOT NULL,
    COURSE_CREDITS INT NOT NULL,
    PRIMARY KEY (COURSE_CODE)
);

CREATE TABLE REGISTRATION(
    STU_ID CHAR(11) NOT NULL,
    COURSE_CODE VARCHAR(6) NOT NULL,
    GRADE DECIMAL(2, 1) NOT NULL,
    PRIMARY KEY (STU_ID, COURSE_CODE),
    FOREIGN KEY(STU_ID) REFERENCES STUDENTS(STU_ID) ON UPDATE CASCADE,
    FOREIGN KEY(COURSE_CODE) REFERENCES COURSES(COURSE_CODE) ON UPDATE CASCADE
);

```

```

INSERT INTO STUDENTS VALUES
('861103-2438', 'ADAM', 'JOHNSON', 'M', '1990-10-01'),
('911212-1746', 'EVA', 'SMITH', 'F', '1991-08-20'),
('950829-1848', 'ANNA', 'WASHINGTON', 'F', '1993-09-06'),
('123456-0980', 'ERIC', 'ALONZO', 'F', '1990-05-26'),
('908023-2456', 'BO', 'EK', 'M', '1992-03-15'),
('098735-3456', 'DANNY', 'GOSS', 'M', '1992-02-01'),
('124345-3430', 'MIKE', 'WHITE', 'M', '1995-06-10'),
('124568-1345', 'EMILY', 'YOUNG', 'F', '1995-04-28'),
('908409-0010', 'CATHY', 'LEE', 'F', '1993-10-06'),
('124587-9088', 'BEN', 'WOO', 'M', '1992-11-30'),
('120953-0909', 'ANNA', 'WASHINGTON', 'F', '1990-10-09'),
('120449-1008', 'JOHN', 'GOSS', 'M', '1995-10-06');

```

```

INSERT INTO COURSES VALUES
('CS056', 'DATABASE SYSTEMS', 'G1', 5),
('CS010', 'C++', 'U1', 5),
('ENG111', 'ENGLISH', 'U1', 3),
('FIN052', 'FINANCE', 'G1', 5),
('PHY210', 'PHYSICS', 'U2', 5),
('CHE350', 'CHEMISTRY', 'U3', 3),
('BI0001', 'BIOLOGY', 'U1', 3),
('CS052', 'OPERATING SYSTEMS', 'G1', 5);

```

```

INSERT INTO REGISTRATION VALUES
('861103-2438', 'CS056', 4),
('861103-2438', 'CS010', 4),
('861103-2438', 'PHY210', 3.5),
('911212-1746', 'ENG111', 2),
('950829-1848', 'CHE350', 3),
('950829-1848', 'BI0001', 2.5),
('123456-0980', 'CS052', 3.5),
('123456-0980', 'CS056', 4),

```

```
('908023-2456', 'PHY210', 3.0),
('908023-2456', 'CS056', 1.0),
('908023-2456', 'CS010', 2.0),
('124345-3430', 'FIN052', 2.5),
('124345-3430', 'CHE350', 4),
('908409-0010', 'CS052', 2),
('124587-9088', 'BI0001', 4),
('124587-9088', 'CS052', 3.5);
```

```
SELECT F_NAME, L_NAME
FROM STUDENTS
ORDER BY L_NAME, F_NAME;
```

```
SELECT STU_ID, F_NAME, L_NAME, DOB, STU_GENDER
FROM STUDENTS
WHERE STU_GENDER LIKE 'F' AND DOB < '1992-12-31';
```

```
SELECT COUNT(*) FROM REGISTRATION
WHERE COURSE_CODE = 'PHY210';
```

```
SELECT COURSE_CODE
FROM COURSES
WHERE COURSE_CODE LIKE 'CS%';
```

```
SELECT * FROM COURSES
WHERE COURSE_LEVEL = 'G1' AND COURSE_CREDITS = 5;
```

```
SELECT COURSE_LEVEL, COUNT(COURSE_LEVEL)
FROM COURSES
GROUP BY COURSE_LEVEL;
```

```
SELECT AVG(GRADE)
FROM REGISTRATION
WHERE STU_ID = '861103-2438';
```

```
SELECT STU_ID
FROM REGISTRATION
WHERE (SELECT GRADE = (SELECT MAX(GRADE) FROM REGISTRATION WHERE COURSE_CODE =
'CS052')
AND COURSE_CODE = 'CS052');
```

```
SELECT COURSE_CODE
FROM REGISTRATION
WHERE STU_ID = '861103-2438' AND COURSE_CODE IN (SELECT COURSE_CODE
FROM REGISTRATION WHERE STU_ID = '123456-0980');
```

```
SELECT * FROM STUDENTS WHERE STU_ID NOT IN
(SELECT STU_ID FROM REGISTRATION);
```

```
SELECT (STU_ID), SUM(GRADE), AVG(GRADE)
FROM REGISTRATION
GROUP BY STU_ID
HAVING (AVG(GRADE) < 3);
```

```
SELECT STUDENTS.*
FROM STUDENTS
JOIN REGISTRATION ON STUDENTS.STU_ID = REGISTRATION.STU_ID
GROUP BY STUDENTS.STU_ID
ORDER BY COUNT(REGISTRATION.COURSE_CODE) DESC
```

```
LIMIT 1;
```

```
SELECT STU_ID  
FROM REGISTRATION  
WHERE COURSE_CODE = 'PHY210' OR COURSE_CODE = 'BI0001';
```

```
SELECT F_NAME, L_NAME  
FROM STUDENTS  
WHERE DOB = (SELECT MAX(DOB) FROM STUDENTS);
```

```
SELECT COUNT(*) FROM REGISTRATION  
WHERE NOT (COURSE_CODE = 'CS056');
```

```
UPDATE COURSES  
SET COURSE_CREDITS = 6  
WHERE COURSE_CODE LIKE 'CS%';
```

```
DELETE FROM REGISTRATION  
WHERE STU_ID = '908409-0010';
```