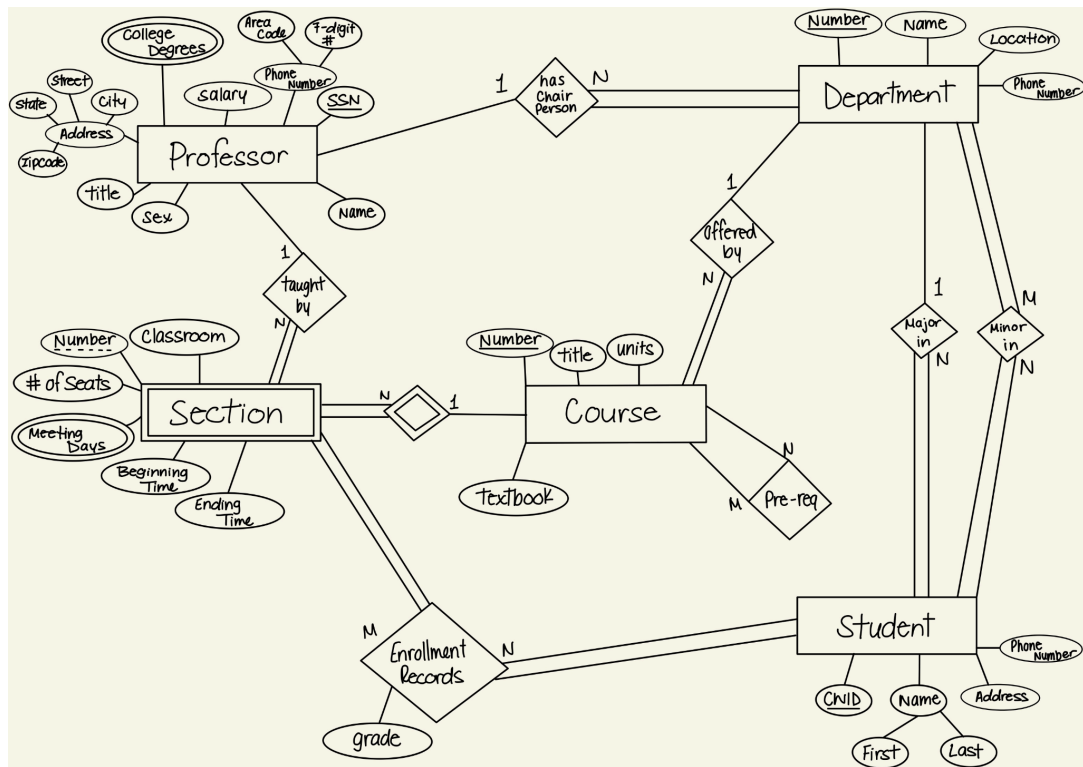
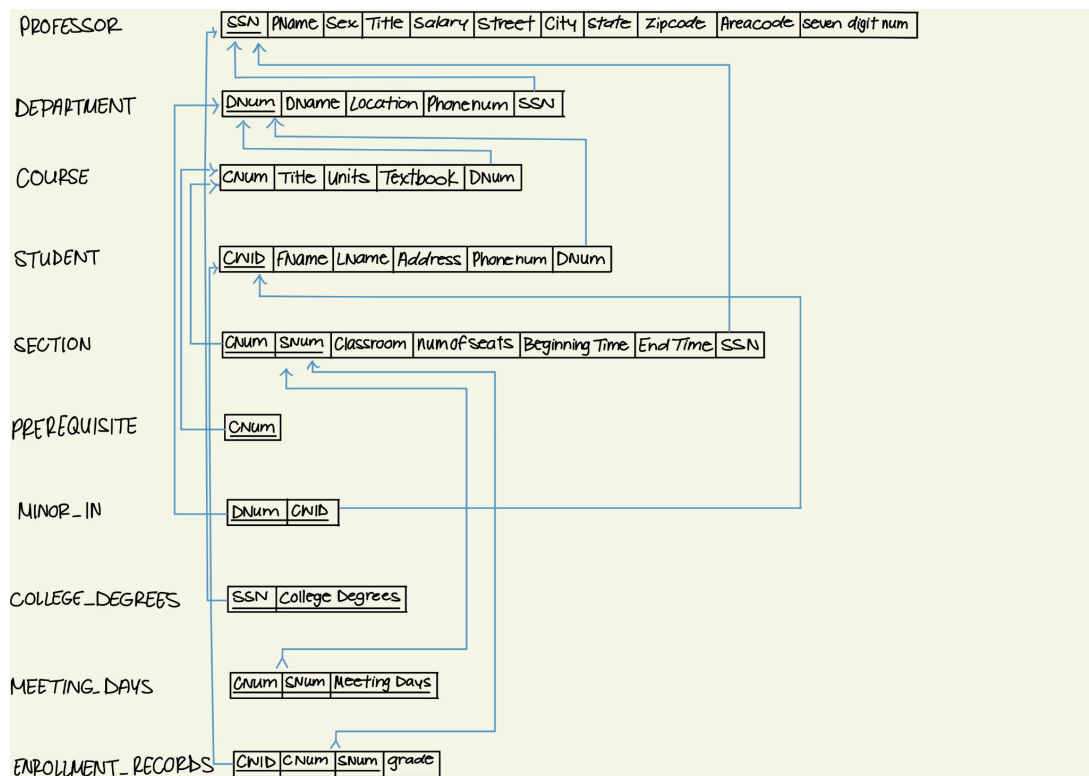


ER Diagram



Relational Model



DDL

```
CREATE TABLE PROFESSOR(
    SSN CHAR(9) NOT NULL,
    PNAME VARCHAR(30) NOT NULL,
    SEX ENUM('M', 'F'),
    TITLE ENUM('ASSOCIATE', 'ASSISTANT', 'INSTRUCTOR', 'PROFESSOR') NOT
    NULL,
    SALARY INT,
    STREET_ADDRESS VARCHAR(50),
    CITY VARCHAR(30),
    STATE CHAR(2),
    ZIP_CODE INT,
    AREA_CODE CHAR(3) NOT NULL,
    DIGIT_NUM CHAR(7) NOT NULL,
    PRIMARY KEY(SSN));
```

```
CREATE TABLE DEPARTMENT(
    DNUM CHAR(4) NOT NULL,
    DNAME VARCHAR(4) NOT NULL,
    OFFICE_LOCATION CHAR(6) NOT NULL,
    TELEPHONE_NUM CHAR(14) NOT NULL,
    PSSN CHAR(9) NOT NULL,
    PRIMARY KEY(DNUM),
    FOREIGN KEY (PSSN) references PROFESSOR(SSN));
```

```
CREATE TABLE COURSE(
    CNUM CHAR(3) NOT NULL,
    TITLE VARCHAR(60) NOT NULL,
    UNIT INT NOT NULL,
    TEXTBOOK VARCHAR(100),
    DNUM CHAR(4) NOT NULL,
    PRIMARY KEY(CNUM),
    FOREIGN KEY (DNUM) references DEPARTMENT(DNUM));
```

```
CREATE TABLE STUDENT(
    CWID CHAR(9) NOT NULL,
    FIRST_NAME VARCHAR(30) NOT NULL,
    LAST_NAME VARCHAR(30) NOT NULL,
    ADDRESS VARCHAR(100) NOT NULL,
    PHONE_NUM CHAR(10) NOT NULL,
    DNUM CHAR(4) NOT NULL,
    PRIMARY KEY(CWID),
```

FOREIGN KEY (DNUM) references DEPARTMENT(DNUM));

```
CREATE TABLE SECTION(
    CNUM CHAR(3) NOT NULL,
    SNUM CHAR(2) NOT NULL,
    CLASSROOM_NUM CHAR(3) NOT NULL,
    NUM_SEATS INT NOT NULL,
    STARTING_TIME CHAR(7) NOT NULL,
    ENDING_TIME CHAR(7) NOT NULL,
    PSSN CHAR(9) NOT NULL,
    PRIMARY KEY(CNUM, SNUM),
    FOREIGN KEY (CNUM) references COURSE(CNUM),
    FOREIGN KEY (PSSN) references PROFESSOR(SSN));
```

```
CREATE TABLE PREQUISITE(
    CNUM CHAR(3) NOT NULL,
    PRIMARY KEY(CNUM));
```

```
CREATE TABLE MEETING_DAY(
    MEETING_DAYS VARCHAR(10) NOT NULL,
    CNUM CHAR(3) NOT NULL,
    SNUM CHAR(2) NOT NULL,
    PRIMARY KEY(MEETING_DAYS, CNUM, SNUM),
    FOREIGN KEY (CNUM , SNUM ) references SECTION(CNUM , SNUM ));
```

```
CREATE TABLE COLLEGE_DEGREE(
    COLLEGE_DEGREE VARCHAR(10) NOT NULL,
    PSSN CHAR(9) NOT NULL,
    PRIMARY KEY(COLLEGE_DEGREE , PSSN ),
    FOREIGN KEY (PSSN ) references PROFESSOR(SSN));
```

```
CREATE TABLE ENROLLMENT_RECORD(
    SCWID CHAR(9) NOT NULL,
    CNUM CHAR(3) NOT NULL,
    SNUM CHAR(2) NOT NULL,
    GRADE ENUM( 'A+', 'A', 'A-', 'B+', 'B', 'B-', 'C+', 'C', 'C-', 'D+', 'D', 'D-', 'F') NOT NULL,
    PRIMARY KEY(SCWID, CNUM, SNUM),
    FOREIGN KEY (SCWID) references STUDENT(CWID),
    FOREIGN KEY (CNUM, SNUM) references SECTION(CNUM, SNUM));
```

```
CREATE TABLE MINOR_IN(
    SCWID CHAR(9) NOT NULL,
    DNUM CHAR(4) NOT NULL,
    PRIMARY KEY(SCWID, DNUM),
```

FOREIGN KEY (SCWID) references STUDENT(CWID),
FOREIGN KEY (DNUM) references DEPARTMENT(DNUM));

SQL

Data for **3 professors**

1. INSERT INTO PROFESSOR
VALUES ('786189758', 'William Smith', 'M', 'Professor', '562', '7879875') ;
2. INSERT INTO Professors
VALUES ('784823758', 'Jane Madison', 'F', 'Professor', '213', '5687653');
3. INSERT INTO PROFESSOR
VALUES ('783267523', 'Kim Jin', 'F', 'Professor', '562', '2938672');

Data for **2 departments**

1. INSERT INTO DEPARTMENT
VALUES ('8911', 'CPSC', 'CS-522', '6572783700', '784823758');
2. INSERT INTO DEPARTMENT
VALUES ('9072', 'BIOL', 'MH-205', '6572783614', '786189758');

Data for **8 students**

1. INSERT INTO STUDENT
VALUES ('887843109', 'Harry', 'Potter', '23876 Silver Dr, Pomona, CA',
'2942808347', '9072');
2. INSERT INTO STUDENT
VALUES ('886723107', 'Percy', 'Jackson', '14811 Ragan Dr, La Miranda, CA
89347', '2125671989', '9072');
3. INSERT INTO STUDENT
VALUES ('881345809', 'Charlie', 'Brown', '78956 Euclid Drive, Anaheim, CA
93789', '5628927326', '9072');
4. INSERT INTO STUDENT
VALUES ('881098643', 'Chris', 'Hemsworth', '56287 Wisteria, Los Angeles, CA
93789', '5781670294', '9072');
5. INSERT INTO STUDENT
VALUES ('887358014', 'Edward', 'Elric', '67910 Norwalk Blvd, Artesia, CA',
'7829372367', '8911');
6. INSERT INTO STUDENT
VALUES ('880987645', 'Katniss', 'Everdeen', '23891 Penn St, Long Beach, CA
12345', '2138477869', '8911');
7. INSERT INTO STUDENT
VALUES ('882761538', 'Kim', 'Possible', '90437 Gold Circle, La Miranda, CA
48573', '2134675834', '8911');
8. INSERT INTO STUDENT
VALUES ('889013789', 'Elle', 'Woods', '10568 South St, Cerritos, CA 78901',

'5624634782', '8911');

Data for **4 courses**

1. INSERT INTO COURSE
VALUES ('131', 'Data Structures', '3', '8911');
2. INSERT INTO COURSE
VALUES ('151', 'Elements of Biology', '3', '9072');
3. INSERT INTO COURSE
VALUES ('300', 'Human Heredity', '4', '9072');
4. INSERT INTO COURSE
VALUES ('323', 'Compilers and Languages', '3', '8911');

Data for **6 sections**

1. mysql> INSERT INTO SECTION
-> VALUES ('131', '01', '202', 30, '11:00AM', '12:15PM', '784823758');
2. mysql> INSERT INTO SECTION
-> VALUES ('323', '05', '101', 30, '3:00PM', '4:15PM', '784823758');
3. mysql> INSERT INTO SECTION
-> VALUES ('151', '09', '232', 30, '12:30PM', '1:45PM', '786189758');
4. mysql> INSERT INTO SECTION
-> VALUES ('151', '02', '107', 30, '9:30AM', '10:45AM', '786189758');
5. mysql> INSERT INTO SECTION
-> VALUES ('300', '03', '105', 40, '10:00AM', '11:15PM', '783267523');
6. mysql> INSERT INTO SECTION
-> VALUES ('300', '06', '100', 50, '8:30AM', '9:45AM', '783267523');

Data for **20 enrollment records**

1. INSERT INTO ENROLLMENT_RECORD
VALUES ('882761538', '131', '01', 'A');
2. INSERT INTO ENROLLMENT_RECORD
VALUES ('889013789', '131', '01', 'B');
3. INSERT INTO ENROLLMENT_RECORD
VALUES ('880987645', '131', '01', 'C');
4. INSERT INTO ENROLLMENT_RECORD
VALUES ('887358014', '131', '01', 'F');
5. INSERT INTO ENROLLMENT_RECORD
VALUES ('887358014', '323', '05', 'A+');
6. INSERT INTO ENROLLMENT_RECORD
VALUES ('889013789', '323', '05', 'D-');
7. INSERT INTO ENROLLMENT_RECORD
VALUES ('880987645', '323', '05', 'B+');
8. INSERT INTO ENROLLMENT_RECORD
VALUES ('882761538', '323', '05', 'C-');
9. INSERT INTO ENROLLMENT_RECORD

```

VALUES ('887843109', '151', '09', 'A-');
10. INSERT INTO ENROLLMENT_RECORD
VALUES ('889013789', '151', '09', 'A+');
11. INSERT INTO ENROLLMENT_RECORD
VALUES ('881345809', '151', '09', 'B+');
12. INSERT INTO ENROLLMENT_RECORD
VALUES ('881098643', '151', '02', 'F');
13. INSERT INTO ENROLLMENT_RECORD
VALUES ('887358014', '151', '02', 'F');
14. INSERT INTO ENROLLMENT_RECORD
VALUES ('886723107', '151', '02', 'A');
15. INSERT INTO ENROLLMENT_RECORD
VALUES ('881345809', '300', '03', 'A');
16. INSERT INTO ENROLLMENT_RECORD
VALUES ('881098643', '300', '03', 'C-');
17. INSERT INTO ENROLLMENT_RECORD
VALUES ('880987645', '300', '03', 'D+');
18. INSERT INTO ENROLLMENT_RECORD
VALUES ('882761538', '300', '06', 'D');
19. INSERT INTO ENROLLMENT_RECORD
VALUES ('887843109', '300', '06', 'A');
20. INSERT INTO ENROLLMENT_RECORD
VALUES ('886723107', '300', '06', 'B');

```

Data for **6 MEETING_DAY**

```

1. INSERT INTO MEETING_DAY
VALUES ('Mon Wed', '131', '01');
2. INSERT INTO MEETING_DAY
VALUES ('Tu Th', '323', '05');
3. INSERT INTO MEETING_DAY
VALUES ('Tu Th', '151', '02');
4. INSERT INTO MEETING_DAY
VALUES ('Mon Wed', '151', '09');
5. INSERT INTO MEETING_DAY
VALUES ('Tu Th', '300', '03');
6. INSERT INTO MEETING_DAY
VALUES ('Mon Wed', '300', '06');

```

For the professors:

a. Given the social security number of a professor, list the titles, classrooms, meeting days and time of his/her classes.

Enter SSN : 783267523

```

SELECT      C.TITLE, S.CLASSROOM_NUM, M.MEETING_DAYS, S.STARTING_TIME,
S.ENDING_TIME
FROM        PROFESSOR P, COURSE C, SECTION S, MEETING_DAYS M
WHERE       P.SSN = input AND S.PSSN = P.SSN AND S.CNUM = C.CNUM AND
S.CNUM = M.CNUM;

```

b. Given a course number and a section number, count how many students get each distinct grade, i.e. 'A', 'A-', 'B+', 'B', 'B-', etc.

Enter Course Number: 151

Enter Section Number: 02

```

SELECT      E.GRADE, COUNT(*)
FROM        COURSE C, SECTION S, ENROLLMENT_RECORD E
WHERE       C.CNUM = '151' AND S.SNUM = '02' AND
C.CNUM = S.CNUM AND S.CNUM = E.CNUM AND S.SNUM = E.SNUM
GROUP BY   GRADE;

```

For the students:

a. Given a course number list the sections of the course, including the classrooms, the meeting days and time, and the number of students enrolled in each section.

Enter Course Number: 131

```

SELECT      S.SNUM, S.CLASSROOM_NUM, M.MEETING_DAYS, S.STARTING_TIME,
S.ENDING_TIME, COUNT(*)
FROM        COURSE C, SECTION S, ENROLLMENT_RECORD E, MEETING_DAY M
WHERE       C.CNUM = 131 AND C.CNUM = S.CNUM AND S.CNUM = M.CNUM
AND S.SNUM = M.SNUM AND S.CNUM = E.CNUM AND S.SNUM = E.SNUM
GROUP BY   E.SNUM;

```

b. Given the campus wide ID of a student, list all courses the student took and the grades.

Enter CWID: 880987645

```

SELECT      E.CNUM, C.TITLE, E.GRADE
FROM        STUDENT S, ENROLLMENT_RECORD E, COURSE C
WHERE       S.CWID = '880987645' AND S.CWID = E.SCWID AND E.CNUM =
C.CNUM;

```

```

<html>
<body>
<?php
    $link = mysqli_connect('mariadb', 'cs332g22', '3N2JHQvp','cs332g22');
    if (!$link) {
        die('Could not connect: ' . mysql_error());
    }
    echo 'Connected successfully<p>';

    result = $link->query("SELECT C.CNUM, S.CLASSROOM_NUM, M.MEETING_DAYS,
S.STARTING_TIME, S.ENDING_TIME FROM PROFESSOR P, COURSE C, SECTION S,
MEETING_DAYS M WHERE P.SSN = " . $_POST["SSN"] "AND S.PSSN = P.SSN AND S.CNUM
= C.CNUM AND S.CNUM = M.CNUM");
    $nor=$result->num_rows;

    for($i=0; $i<$nor; $i++)
    {
        $row = $result->fetch_assoc();
        echo "COURSE TITLE: ", $row["C.TITLE"], "<br>";
        echo "CLASSROOM NUM: ", $row["S.CLASSROOM_NUM"], "<br>";
        echo "DAYS: ", $row["M.MEETING_DAYS"], "<br>";
        echo "CLASS STARTS: ", $row["S.STARTING_TIME"], "<br>";
        echo "CLASS ENDS: ", $row["S.ENDING_TIME"], "<br>";
    }

    $result->free_result();
    $link->close();
?>
</body>
</html>

```

profB.php

```

<html>
<body>
<?php
    $link = mysqli_connect('mariadb', 'cs332g22', '3N2JHQvp','cs332g22');
    if (!$link) {
        die('Could not connect: ' . mysql_error());
    }
    echo 'Connected successfully<p>';

    result = $link->query("SELECT E.GRADE, COUNT(*) FROM COURSE C, SECTION S,
ENROLLMENT_RECORD E WHERE C.CNUM=" . $_POST["CNUM"] "AND S.SNUM="

```



```
$_POST["SNUM"] "AND C.CNUM=S.CNUM AND S.CNUM=E.CNUM AND S.SNUM=E.SNUM  
GROUP BY E.GRADE");
```

```
$nor=$result->num_rows;
```

```
for($i=0; $i<$nor; $i++)
```

```
{
```

```
$row = $result->fetch_assoc();
```

```
echo "GRADE: ", $row["GRADE"], "<br>";
```

```
echo "STUDENTS WITH THIS GRADE: ", $row["COUNT(*)"], "<br>";
```

```
}
```

```
$result->free_result();
```

```
$link->close();
```

```
?>
```

```
</body>
```

```
</html>
```

studA.php

```
<html>
```

```
<body>
```

```
<?php
```

```
$link = mysqli_connect('mariadb', 'cs332g22', '3N2JHQvp','cs332g22');
```

```
if (!$link) {
```

```
    die('Could not connect: ' . mysql_error());
```

```
}
```

```
echo 'Connected successfully<p>';
```

```
    result = $link->query("SELECT S.SNUM, S.CLASSROOM_NUM, M.MEETING_DAYS,  
S.STARTING_TIME, S.ENDING_TIME, COUNT(*) FROM COURSE C, SECTION S,  
ENROLLMENT_RECORD E, MEETING_DAY M WHERE C.CNUM = " . $_POST[CNUM] "AND  
C.CNUM = S.CNUM AND S.CNUM = M.CNUM AND S.SNUM = M.SNUM AND S.CNUM =  
E.CNUM AND S.SNUM = E.SNUM GROUP BY E.SNUM");
```

```
$nor=$result->num_rows;
```

```
for($i=0; $i<$nor; $i++)
```

```
{
```

```
$row = $result->fetch_assoc();
```

```
echo "SECTION NUM: ", $row["S.SNUM"], "<br>";
```

```
echo "CLASSROOM NUM: ", $row["S.CLASSROOM_NUM"], "<br>";
```

```
echo "DAYS: ", $row["M.MEETING_DAYS"], "<br>";
```

```
echo "CLASS STARTS: ", $row["S.STARTING_TIME"], "<br>";
```

```
echo "CLASS ENDS: ", $row["S.ENDING_TIME"], "<br>";
```

```
echo "NUM OF STUDENTS ENROLLED: ", $row["COUNT(*)"], "<br>";
```

```

    }

    $result->free_result();
    $link->close();
?>
</body>
</html>

```

studB.php

```

html>
<body>
<?php
    $link = mysqli_connect('mariadb', 'cs332g22', '3N2JHQvp','cs332g22');
    if (!$link) {
        die('Could not connect: ' . mysql_error());
    }
    echo 'Connected successfully<p>';
    $result = $link->query("SELECT E.CNUM, C.TITLE, E.GRADE FROM STUDENT S,
ENROLLMENT_RECORD E, COURSE C WHERE S.CWID = " . $_POST["CWID"]> "AND
S.CWID = E.SCWID AND E.CNUM = C.CNUM");
    $nor=$result->num_rows;
    for($i=0; $i<$nor; $i++)
    {
        $row = $result->fetch_assoc();
        echo "COURSE NUM: ", $row["E.CNUM"], "<br>";
        echo "COURSE TITLE: ", $row["C.TITLE"], "<br>";
        echo "GRADE: ", $row["E.GRADE"], "<br>";
    }
    $result->free_result();
    $link->close();
?>
</body>
</html>

```

Screenshots of interface

```

<html>
<head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <link rel="stylesheet" type="text/css" href="css/bootstrap.css" />

```

```
<link href="./login.css" type="text/css" rel="stylesheet">
<title>Project 362</title>
</head>

<body>
  <div class="container-fluid text-center" id="img-center" style="background-color: white;">
    <div class="row">
      <div class="col-md-4 col-sm-4 col-xs-12"></div>
      <div class="col-md-4 col-sm-4 col-xs-12">
        <form class="form-container my-5" style="background-color: rgb(139, 196, 223);"
action="file:///Users/brandonnolan/Documents/College/winter2023/database%20332/project/mainmenu.html" method="get">
          <h1 class="font-weight-bold py-3">My CSUF Database</h1>

          <h4> FOR PROFESSORS:</h4>
          <form action="profA.php" method = "POST">
            Enter SSN: <input type="text" name="SSN" />
            <input type="submit" />
          </form>

          <form action="profB.php" method = "POST">
            Enter Course Number: <input type="text" name="CNUM" />
            Enter Section Number: <input type="text" name="SNUM" />
            <input type="submit" />
          </form>

          <h4> FOR STUDENTS:</h4>
          <form action="studB.php" method = "POST">
            Enter CWID: <input type="text" name="CWID" />
            <input type="submit" />
          </form>

          <form action="studA.php" method = "POST">
            Enter Course Number: <input type="text" name="CNUM" />
            <input type="submit" />
          </form>

        </div>
      </div>
    </div>
  </div>
</body>
</html>
```