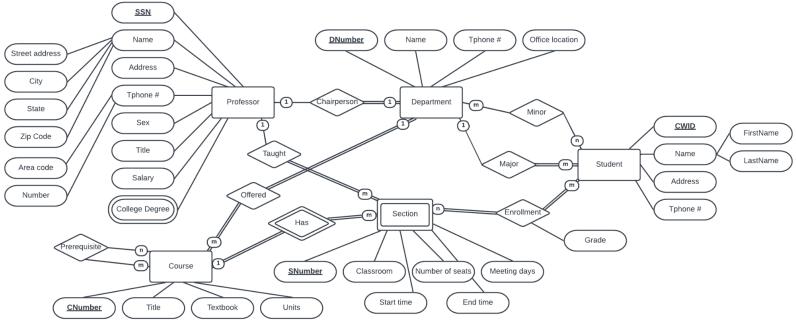
CPSC 332 Project Report

Team Members

Yamato Eguchi Akshat Javiya Alex Ly

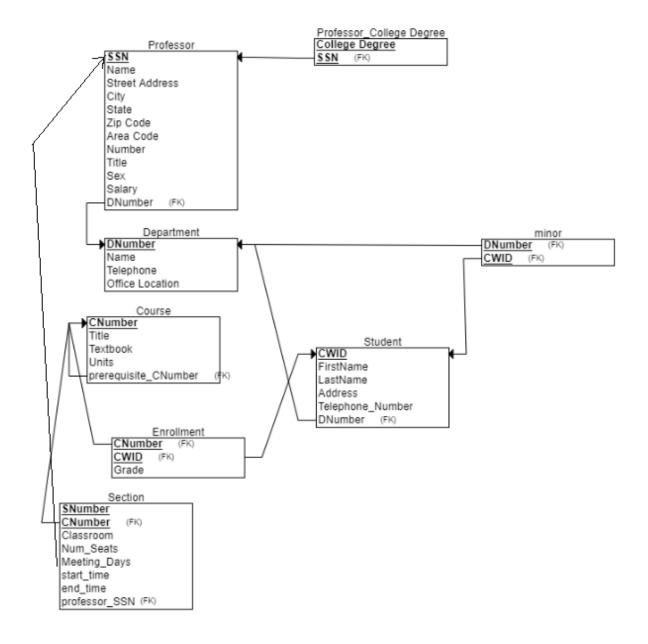
ER Diagram



assumptions:

- every department must offer at least one course
- every student must be enrolled in atleast one course
 every course has atleast one course available
- one professor can only be a chairperson for maximum one department

Relational Model



Project Source Code

Connection.php

```
<html>
  <body>
     <?php
        $hostname = "mariadb";
        $username = "cs332g10";
        $password = "OR0F24qg";
        $link = mysqli_connect($hostname, $username, $password, $username);
        if (!$link) {
          echo "Not connected";
          die('Could not connect: ' . mysql_error());
        }
     ?>
  </body>
</html>
     Professor.php
<?php
    include 'connection.php';
    $result = null;
    if($_POST['form-identifier'] == 0) {
        flag = 1;
        // professor ssn query
        $query = "SELECT p.name, p.title, s.classroom, s.meeting_days,
s.start_time, s.end_time FROM professor p, section s WHERE p.ssn =" .
$_POST["professor_ssn"] . " AND s.professor_teaching =" .
$_POST["professor_ssn"] . ";";
        $result = $link->query($query);
    } else if ($_POST['form-identifier'] == 1) {
        flag = 2;
        $sec = (int) $_POST["section_num"];
        $query = "SELECT e.grade, count(*) AS number FROM enrollment e
WHERE e.enroll_course_num ='{$_POST["course_num"]}' AND
```

e.enroll section num =" . \$sec . " GROUP BY e.grade;";

```
$result = $link->query($query);
      if (!$result)
      $link->close();
   } else {
      echo "error";
   }
?>
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta http-equiv="X-UA-Compatible" content="IE=edge">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Document</title>
   k
href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/css/bootstrap.min.c
ss" rel="stylesheet"
integrity="sha384-rbsA2VBKQhggwzxH7pPCaAqO46MgnOM80zW1RWuH61DGLwZJEdK2Kadq2
F9CUG65" crossorigin="anonymous">
</head>
<body>
   <div class = "container d-flex flex-column w-50 align-items-center</pre>
mt-5">
     <h2 class="mb-5">Query Result:</h2>
      <?php if ($result && $flag == 1): ?>
             Name
                 Title
                 Classroom
                 Meeting days
                 Starting time
                 End Time
             <?php while($row = $result->fetch_assoc()): ?>
                 <?php echo $row["name"] ?>
                    <?php echo $row["title"] ?>
```

```
<?php echo $row["classroom"] ?>
                  <?php echo $row["meeting_days"] ?>
                  <?php echo $row["start_time"] ?>
                  <?php echo $row["end time"] ?>
               <?php endwhile; ?>
         <?php elseif ($result && $flag == 2): ?>
            Grade
               <?php while($row = $result->fetch_assoc()): ?>
               <?php echo $row["grade"] ?>
                  <?php echo $row["number"] ?>
               <?php endwhile; ?>
         <?php endif; ?>
     <div>
</body>
</html>
</body>
</html>
```

Student.php:

```
e.student cwid = s.cwid;";
       $result = $link->query($query);
    } else if ($ POST['form-identifier'] == 0) {
       flag = 2;
       $query = "SELECT s.section_num, s.classroom, s.meeting_days,
s.start_time, s.end_time, COUNT(*) AS num_of_students
                 FROM section AS s, enrollment AS e
                 WHERE s.course section num ='{$ POST["course num"]}' AND
s.course_section_num = e.enroll_course_num AND s.section_num =
e.enroll section num
                 GROUP BY s.section num;";
       $result = $link->query($query);
    } else {
       echo "error";
   $link->close();
?>
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
   klink
href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/css/bootstrap.min.c
ss" rel="stylesheet"
integrity="sha384-rbsA2VBKQhggwzxH7pPCaAq046Mgn0M80zW1RWuH61DGLwZJEdK2Kadq2
F9CUG65" crossorigin="anonymous">
</head>
<body>
   <div class = "container d-flex flex-column w-50 align-items-center</pre>
mt-5">
     <h2 class="mb-5">Query Result:</h2>
       <?php if ($result && $flag == 1): ?>
               Course Name
                   First Name
```

```
Last Name
              CWID
              Grade
           <?php while($row = $result->fetch_assoc()): ?>
              <?php echo $row["enroll_course_num"] ?>
                 <?php echo $row["f name"] ?>
                 <?php echo $row["l name"] ?>
                 <?php echo $row["cwid"] ?>
                 <?php echo $row["grade"] ?>
              <?php endwhile; ?>
        <?php elseif ($result && $flag == 2): ?>
           Section Number
              Classroom
              Meeting Days
              Start Time
              End Time
              Number of Students
           <?php while($row = $result->fetch_assoc()): ?>
              <?php echo $row["section_num"] ?>
                 <?php echo $row["classroom"] ?>
                 <?php echo $row["meeting_days"] ?>
                 <?php echo $row["start_time"] ?>
                 <?php echo $row["end time"] ?>
                 <?php echo $row["num_of_students"] ?>
              <?php endwhile; ?>
        <?php endif; ?>
     <div>
</body>
</html>
```

Create_table.sql:

```
CREATE TABLE professor (
  ssn char(10) NOT NULL,
  name varchar(45) NOT NULL,
  street name varchar(20) NOT NULL,
  city varchar(20) NOT NULL,
  state char(2) NOT NULL,
  zipcode char(5) NOT NULL,
  area_code char(3) NOT NULL,
  tphone_num char(7) NOT NULL,
  salary int(10) NOT NULL,
  title varchar(20) NOT NULL,
  PRIMARY KEY (ssn)
);
CREATE TABLE department (
  dept num char(4) NOT NULL,
  dept_name varchar(100) NOT NULL,
  tphone num char(10) NOT NULL,
  office location varchar(6) NOT NULL,
  chair person ssn char(10) NOT NULL,
  PRIMARY KEY (dept num),
  KEY department_ibfk_1 (chair_person_ssn),
  CONSTRAINT department_ibfk_1 FOREIGN KEY (chair_person_ssn) REFERENCES
professor (ssn) ON DELETE CASCADE ON UPDATE CASCADE
);
CREATE TABLE course (
  course num char(9) NOT NULL,
  title varchar(100) NOT NULL,
  units tinyint(1) NOT NULL,
  textbook varchar(100) DEFAULT NULL,
  offered by char(4) NOT NULL,
  PRIMARY KEY (course num),
  KEY course_cbfk_1 (offered_by),
  CONSTRAINT course_cbfk_1 FOREIGN KEY (offered_by) REFERENCES department
(dept_num) ON DELETE CASCADE ON UPDATE CASCADE
);
CREATE TABLE student (
  cwid CHAR(9) NOT NULL,
  f name VARCHAR(20) NOT NULL,
  1 name VARCHAR(20) NOT NULL,
```

```
address VARCHAR(100) NOT NULL,
 tphone_num VARCHAR(10) NOT NULL,
 major CHAR(4) NOT NULL,
 PRIMARY KEY (cwid),
 KEY student ibfk 1 (major),
 CONSTRAINT student_ibfk_1 FOREIGN KEY (major) REFERENCES department
(dept num) ON DELETE CASCADE ON UPDATE CASCADE
);
CREATE TABLE section (
  course_section_num CHAR(9) NOT NULL,
  section num INT(2) NOT NULL,
  start time TIME,
 end time TIME,
 classroom VARCHAR(6) NOT NULL,
 seats_avail INT(3) NOT NULL,
  professor_teaching CHAR(9) NOT NULL,
 meeting days VARCHAR(45),
 PRIMARY KEY (course_section_num, section_num),
 KEY section cbfk 1 (course section num),
 CONSTRAINT section cbfk 1 FOREIGN KEY (course section num) REFERENCES
course (course num) ON DELETE CASCADE ON UPDATE CASCADE,
  KEY section_cbfk_2 (professor_teaching),
 CONSTRAINT section_cbfk_2 FOREIGN KEY (professor_teaching) REFERENCES
professor (ssn) ON DELETE CASCADE ON UPDATE CASCADE
);
CREATE TABLE enrollment (
  student cwid CHAR(9) NOT NULL,
  enroll_course_num CHAR(9) NOT NULL,
  enroll section num INT(2) NOT NULL,
 grade
ENUM('A+','A','A-','B+','B','B-','C+','C','C-','D+','D','D-','F','W'),
  PRIMARY KEY (student cwid, enroll course num, enroll section num),
 KEY enrollment sbfk 1 (student cwid),
 CONSTRAINT enrollment_sbfk_1 FOREIGN KEY (student_cwid) REFERENCES
student (cwid) ON DELETE CASCADE ON UPDATE CASCADE,
  KEY enrollment sbfk 2 (enroll course num, enroll section num),
 CONSTRAINT enrollment sbfk 2 FOREIGN KEY (enroll course num,
enroll_section_num) REFERENCES section (course_section_num, section_num) ON
DELETE CASCADE ON UPDATE CASCADE
);
CREATE TABLE college degree (
  professor_ssn VARCHAR(10) NOT NULL,
  degree VARCHAR(100) NOT NULL,
```

```
PRIMARY KEY (professor ssn),
 KEY college_degree_ibfk_1 (professor_ssn),
 CONSTRAINT college_degree_ibfk_1 FOREIGN KEY (professor_ssn) REFERENCES
professor (ssn) ON DELETE CASCADE ON UPDATE CASCADE
);
CREATE TABLE minor (
  student id CHAR(9) NOT NULL,
 minor department number CHAR(4) NOT NULL,
 PRIMARY KEY (student id, minor department number),
 KEY minor_mbfk_1 (student_id),
 CONSTRAINT minor mbfk 1 FOREIGN KEY (student id) REFERENCES student
(cwid) ON DELETE CASCADE ON UPDATE CASCADE,
  KEY minor_mbfk_2 (minor_department_number),
 CONSTRAINT minor mbfk 2 FOREIGN KEY (minor department number) REFERENCES
department (dept_num) ON DELETE CASCADE ON UPDATE CASCADE
);
CREATE TABLE prerequisite course (
  course_number CHAR(9) NOT NULL,
  pre course number CHAR(9) NOT NULL,
 KEY prerequisite course pbfk 1 (course number),
 CONSTRAINT prerequisite course pbfk 1 FOREIGN KEY (course number)
REFERENCES course (course_num) ON DELETE CASCADE ON UPDATE CASCADE,
 KEY prerequisite_course_pbfk_2 (pre_course_number),
 CONSTRAINT prerequisite course pbfk 2 FOREIGN KEY (pre course number)
REFERENCES course (course_num) ON DELETE CASCADE ON UPDATE CASCADE
);
```

Insert table.sql

```
('343434343', 'Floyd Holiday', '295 W. Chapman Ave.', 'Irvine', 'CA',
'92620', '949', '3434343', '250000', 'Chair Person');
INSERT INTO `department` (`dept num`, `dept name`, `tphone num`,
`office_location`, `chair_person_ssn`) VALUES ('CPSC', 'Department of
Engineering and Computer Science', '1111111111', 'CS450', '121212121');
INSERT INTO `department` (`dept num`, `dept name`, `tphone num`,
`office location`, `chair person ssn`) VALUES ('MATH', 'Department of
Mathematics', '2222222222', 'MH502', '343434343');
INSERT INTO `student` (`cwid`, `f_name`, `l_name`, `address`, `tphone_num`,
`major`) VALUES ('111111111', 'yamato', 'eguchi', '111 Fullerton Dr.,
Fullerton, CA, 92831', '1111111111', 'CPSC');
INSERT INTO `student` (`cwid`, `f_name`, `l_name`, `address`, `tphone_num`,
`major`) VALUES ('222222222', 'akshat', 'javiya', '222 Campus Ave., Pomona,
CA, 92312', '222222222', 'MATH');
INSERT INTO `student` (`cwid`, `f_name`, `l_name`, `address`, `tphone_num`,
`major`) VALUES ('333333333', 'alex', 'nguyen', '333 Olympia Dr., Aneheim,
CA, 92114', '333333333', 'CPSC');
INSERT INTO `student` (`cwid`, `f_name`, `l_name`, `address`, `tphone_num`,
`major`) VALUES ('444444444', 'Drako', 'Sniper', '444 Bastencherry Rd.,
Placentia, CA, 92664', '444444444', 'MATH');
INSERT INTO `student` (`cwid`, `f_name`, `l_name`, `address`, `tphone_num`,
`major`) VALUES ('555555555', 'Jasmine', 'Gonzalez', '555 Yorba Linda
Blvd., Aneheim, CA, 92334', '555555555', 'MATH');
INSERT INTO `student` (`cwid`, `f_name`, `l_name`, `address`, `tphone_num`,
`major`) VALUES ('666666666', 'Gordan', 'Jordan', '666 Azusa Ave., Diamond
Bar, CA, 93489', '6666666666', 'CPSC');
INSERT INTO `student` (`cwid`, `f_name`, `l_name`, `address`, `tphone_num`,
`major`) VALUES ('777777777', 'Kristine', 'Kim', '777 Beach Blvd.,
Huntington Beach, CA, 98765', '777777777', 'CPSC');
INSERT INTO `student` (`cwid`, `f_name`, `l_name`, `address`, `tphone_num`,
`major`) VALUES ('888888888', 'James', 'Harden', '888 Santiago Hills,
Torrance, CA, 97854', '8888888888', 'MATH');
```

```
INSERT INTO `course` (`course_num`, `title`, `units`, `offered_by`) VALUES
('CPSC120', 'Intro to Computer Science', '3', 'CPSC');
INSERT INTO `course` (`course num`, `title`, `units`, `offered by`) VALUES
('MATH150A', 'Calculus I', '5', 'MATH');
INSERT INTO `course` (`course_num`, `title`, `units`, `offered_by`) VALUES
('CPSC332', 'Database Management', '3', 'CPSC');
INSERT INTO `course` (`course_num`, `title`, `units`, `offered_by`) VALUES
('MATH338', 'Statistics Applied to Natural Data', '4', 'MATH');
INSERT INTO `section`
(`course_section_num`,`section_num`,`start_time`,`end_time`,`classroom`,`se
ats_avail`,`professor_teaching`,`meeting_days`) VALUES
('CPSC120',1,'08:00:00','09:45:00','CS115',32,'232323232','Tuesday,Thursday
');
INSERT INTO `section`
(`course_section_num`,`section_num`,`start_time`,`end_time`,`classroom`,`se
ats_avail`,`professor_teaching`,`meeting_days`) VALUES
('CPSC120',2,'10:00:00','11:45:00','CS115',32,'232323232','Monday,Wendesday
');
INSERT INTO `section`
(`course_section_num`,`section_num`,`start_time`,`end_time`,`classroom`,`se
ats_avail`,`professor_teaching`,`meeting_days`) VALUES
('CPSC332',1,'14:30:00','15:45:00','CS111',24,'121212121','Tuesday,Thursday
');
INSERT INTO `section`
(`course_section_num`,`section_num`,`start_time`,`end_time`,`classroom`,`se
ats_avail`,`professor_teaching`,`meeting_days`) VALUES
('MATH150A',1,'19:00:00','21:45:00','MH432',24,'343434343','Friday');
INSERT INTO `section`
(`course_section_num`,`section_num`,`start_time`,`end_time`,`classroom`,`se
ats_avail`,`professor_teaching`,`meeting_days`) VALUES
('MATH338',1,'08:30:00','09:45:00','MH321',12,'343434343','Monday,Wednesday
,Friday');
INSERT INTO `section`
(`course_section_num`,`section_num`,`start_time`,`end_time`,`classroom`,`se
```

```
ats_avail`,`professor_teaching`,`meeting_days`) VALUES
('MATH338',2,'19:00:00','21:45:00','MH321',12,'343434343','Monday');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll_section_num`, `grade`) VALUES ('111111111', 'CPSC120', '1', 'A+');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll_section_num`, `grade`) VALUES ('111111111', 'MATH338', '2', 'B-');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll_section_num`, `grade`) VALUES ('111111111', 'CPSC332', '1', 'C');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll_section_num`, `grade`) VALUES ('222222222', 'CPSC120', '2', 'A-');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll_section_num`, `grade`) VALUES ('222222222', 'MATH150A', '1', 'B+');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll_section_num`, `grade`) VALUES ('222222222', 'CPSC332', '1', 'C+');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll section num`, `grade`) VALUES ('333333333', 'MATH150A', '1', 'A');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll_section_num`, `grade`) VALUES ('333333333', 'CPSC332', '1', 'B');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll_section_num`, `grade`) VALUES ('444444444', 'CPSC120', '1', 'B+');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll_section_num`, `grade`) VALUES ('444444444', 'MATH150A', '1', 'C-');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll_section_num`, `grade`) VALUES ('555555555', 'MATH150A', '1', 'D+');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll_section_num`, `grade`) VALUES ('55555555', 'CPSC120', '2', 'B-');
```

```
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll_section_num`, `grade`) VALUES ('666666666', 'MATH150A', '1', 'C');
INSERT INTO `enrollment` (`student cwid`, `enroll course num`,
`enroll_section_num`, `grade`) VALUES ('666666666', 'CPSC120', '1', 'D-');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll_section_num`, `grade`) VALUES ('777777777', 'MATH338', '2', 'C+');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
 `enroll_section_num`, `grade`) VALUES ('777777777', 'CPSC332', '1', 'D');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
`enroll section num`, `grade`) VALUES ('77777777', 'CPSC120', '1', 'A-');
INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
 INSERT INTO `enrollment` (`student_cwid`, `enroll_course_num`,
 Index.html
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"</pre>
"http://www.w3.org/TR/html4/loose.dtd">
href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/css/bootstrap.min.c
ss" rel="stylesheet"
integrity="sha384-rbsA2VBKQhggwzxH7pPCaAq046MgnOM80zW1RWuH61DGLwZJEdK2Kadq2
F9CUG65" crossorigin="anonymous">
<html>
<body>
    <div class="container d-flex flex-column align-items-center mt-5">
        <head>
            <h2>CPSC 332 Term Project</h2>
        </head>
        <div class="d-flex flex-column align-items-start m-3" style="width:</pre>
500px">
           <h3>Teacher Query</h3>
           <form action="/~cs332g10/professor.php" method="POST"</pre>
style="width:100%">
```

```
<label for="professor ssn">SSN:</label><br>
                 <input type="text" id="professor_ssn" name="professor_ssn"</pre>
required style="width:100%">
                 <input type="text" name="form-identifier" value="0"</pre>
style="display: none">
                 <br><br><br>>
                 <div class="d-flex flex-column align-items-end">
                     <button type="submit" class="btn</pre>
btn-primary">Submit</button>
                 </div>
            </form>
             <br>
             <form action="/~cs332g10/professor.php" method="POST"</pre>
style="width:100%">
                 <label for="professor_course">Course #:</label><br>
                 <input type="text" id="professor_course" name="course_num"</pre>
required style="width:100%">
                 <br>
                 <label for="professor_section">Section #:</label><br>
                 <input type="text" id="professor_section"</pre>
name="section num" required style="width:100%">
                 <input type="text" name="form-identifier" value="1"</pre>
style="display: none">
                 <br><br><br>></pr>
                 <div class="d-flex flex-column align-items-end">
                     <button type="submit" class="btn</pre>
btn-primary">Submit</button>
                 </div>
             </form>
        </div>
        <br>
        <hr>>
        <br>
        <div class="d-flex flex-column align-items-start m-3" style="width:</pre>
500px">
             <h3>Student Query</h3>
             <form action="/~cs332g10/student.php" method="POST"</pre>
style="width:100%">
                  <label for="student_course">Course #:</label><br>
                  <input type="text" id="student course" name="course num"</pre>
required style="width:100%">
                  <input type="text" name="form-identifier" value="0"</pre>
style="display: none">
```

```
<br><br><br>>
                  <div class="d-flex flex-column align-items-end">
                     <button type="submit" class="btn</pre>
btn-primary">Submit</button>
                 </div>
            </form>
             <br>
             <form action="/~cs332g10/student.php" method="POST"</pre>
style="width:100%">
                 <label for="student_cwid">CWID:</label><br>
                 <input type="text" id="student_cwid" name="student_cwid"</pre>
required style="width:100%">
                 <input type="text" name="form-identifier" value="1"</pre>
style="display: none">
                 <br><br><br>>
                 <div class="d-flex flex-column align-items-end">
                     <button type="submit" class="btn</pre>
btn-primary">Submit</button>
                 </div>
             </form>
        </div>
    </div>
</body>
</html>
```

Interface Screenshot

CPSC 332 Term Project

Teacher Query SSN: Course #: Section #: Student Query Course #: Submit Submit

Submit

Sample Run Screenshot

The screenshots of sample runs of the system, including inputs and outputs.

Teacher query 1:		
Input:		

CPSC 332 Term Project

Teacher Query

SSN:	
121212121	
	Submit
Course #:	
Section #:	
	Submit

Query Result:

Name	Title	Classroom	Meeting days	Starting time	End Time
Shawn Wang	Chair Person	CS111	Tuesday,Thursday	14:30:00	15:45:00

Teacher	query	2:
---------	-------	----

Input	
-------	--

CPSC 332 Term Project

Teacher Query

SSN:	
	Submit
Course #:	
CPSC120	
Section #:	
1	
	Submit

Query Result:

Grade	Number of Students
A+	1
A-	1
B+	1
D-	1

Student query 1:

Input:

Student Query

Course #:	
Math338	
	Submit
CWID:	

Submit

Query Result:

Section Number	Classroom	Meeting Days	Start Time	End Time	Number of Students
1	MH321	Monday, Wednesday, Friday	08:30:00	09:45:00	1
2	MH321	Monday	19:00:00	21:45:00	2

Student query 2:

Input:

Student Query

Course #:	
	Submit
CWID:	
11111111	
	Submit

Query Result:

Course Name	First Name	Last Name	CWID	Grade
CPSC120	yamato	eguchi	111111111	A+
CPSC332	yamato	eguchi	111111111	С
MATH338	yamato	eguchi	111111111	B-