

CPSC 332 File Structures and Database Systems

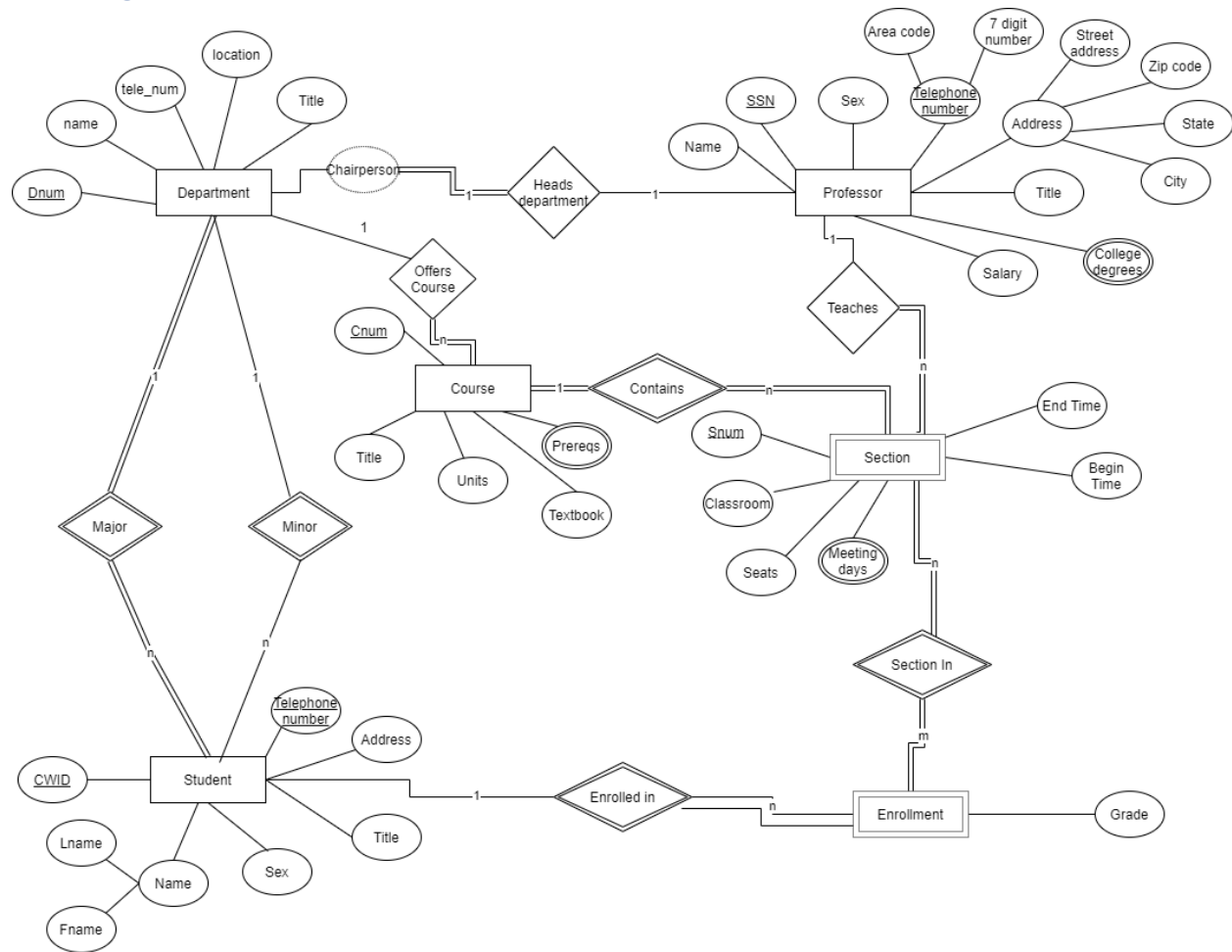
Nate Ruppert (4162)
Joshua Gonzales (3263)
Andy Cao (0782)

Location of Database: Account cs332a32 (<http://ecs.fullerton.edu/~cs332a32/>)

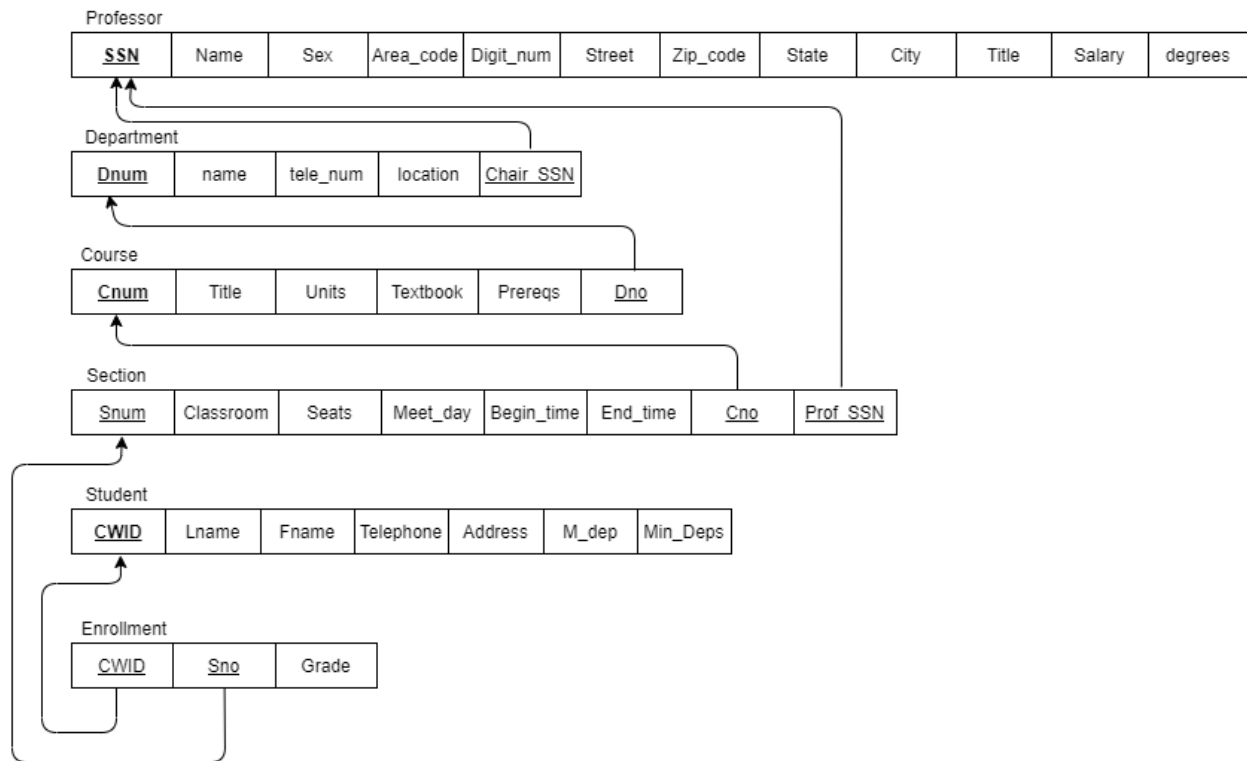
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ER Diagram



Relational Model



Project Source Code

DDL.sql (Database creation and input of data)

```
--Professors
CREATE TABLE Professors(
  SSN INT PRIMARY KEY,
  Name VARCHAR(50),
  Sex VARCHAR(10),
  Area_code INT,
  Digit_num INT,
  Street VARCHAR(30),
  Zip_code INT,
  S_State VARCHAR(10),
  City VARCHAR(10),
  Title VARCHAR(20),
  Salary INT,
  P_Degrees VARCHAR(50));

Insert Into Professors Values(145076810, 'Kertzmann Pearl', 'F', 323, 8150066, '5757 Beer', 92001,
'CA', 'San Jose', 'Professor', 60000, 'Math');
Insert Into Professors Values(307184895, 'Kreiger Brown', 'M', 701, 6398888, '639 Buckridge Trail
Apt', 78145, 'CA', 'San Diego', 'Professor', 70000, 'Computer Science');
Insert Into Professors Values(579726142, 'Rohan Demetrius', 'M', 626, 2474816, '630 Goyette
Underpass', 91805, 'CA', 'Fresno', 'Associate Professor', 42000, 'Computer Science');
--LOAD DATA INFILE 'professors.txt' INTO TABLE Professors;

--Departments
Create Table Departments(
  Dept_num INT PRIMARY KEY,
  Name varchar(50),
  telephone_num int,
  office_loc varchar(50),
  chair_person INT,

  Foreign Key (chair_person)
    REFERENCES Professors(SSN));

Insert Into Departments Values(2461, 'MH-Dept', 13235994567, 'MH-154', 145076810);
Insert Into Departments Values(5624, 'CS-Dept', 13236992475, 'CS-522', 307184895);

--LOAD DATA INFILE 'departments.txt' INTO TABLE Departments;

--Courses
Create Table Courses(
  Course_num INT PRIMARY KEY,
  Title VARCHAR(20),
  Textbook VARCHAR(50),
  Units VARCHAR(20),
```

```
Prerequisite VARCHAR(20),
Department_no INT,
```

```
Foreign Key (Department_no)
REFERENCES Departments(Dept_num));
```

```
Insert Into Courses Values(13514, 'CPSC323', 'Compiler and languages', '3', 'CPSC131', 5624);
Insert Into Courses Values(13773, 'CPSC362', 'Foundations ofSoftware Engineering', '3', 'CPSC301 or
EPP', 5624);
Insert Into Courses Values(18400, 'MATH338', 'Stat Applied to Natural Sciences', '4', 'MATH130 or
MATH150B', 2461);
Insert Into Courses Values(17754, 'MATH270B', 'Mathematical Structure II', '3', 'MATH270A', 2461);
--LOAD DATA INFILE 'courses.txt' INTO TABLE Courses;
```

```
--Sections
```

```
CREATE TABLE Sections(
```

```
  Snum INT KEY,
  Classroom VARCHAR(50),
  Seats VARCHAR(50),
  Meet_Day VARCHAR(50),
  Begin_Time VARCHAR(10),
  End_Time VARCHAR(10),
  C_no INT,
  Prof_SSN INT,
```

```
Foreign Key (Prof_SSN)
REFERENCES Professors(SSN),
Foreign Key (C_no)
REFERENCES Courses(Course_num));
```

```
Insert Into Sections Values(17, 'CS-102', '35', 'T&Th', '1:00', '2:15', 13773, 307184895);
Insert Into Sections Values(15, 'CS-502', '90', 'M', '3:00', '4:15', 18400, 145076810);
Insert Into Sections Values(16, 'CS-502', '90', 'W', '3:00', '4:15', 18400, 145076810);
Insert Into Sections Values(20, 'MH-304', '30', 'M&W', '10:00', '12:00', 17754, 145076810);
Insert Into Sections Values(21, 'MH-404', '30', 'M&W', '2:00', '4:00', 17754, 145076810);
Insert Into Sections Values(5, 'CS-408', '35', 'M&W', '5:30', '6:45', 13514, 579726142);
Insert Into Sections Values(9, 'CS-202', '40', 'T&Th', '11:30', '12:50', 13773, 307184895);
--LOAD DATA INFILE 'sections.txt' INTO TABLE Sections;
```

```
--Students - needs work
```

```
CREATE TABLE Students(
  CWID INT PRIMARY KEY,
  Fname VARCHAR(50),
  Lname VARCHAR(50),
  Address VARCHAR(50),
  Telephone_num INT,
  Major_dep INT,
  Minor_dep INT,
```

```

Foreign Key(Major_dep)
REFERENCES Departments(Dept_num));

```

```

Insert Into Students Values(888867451, 'Jerry', 'Romero', '12974 Picato Circle S.', 8584553225, 5624,
2461);
Insert Into Students Values(782311232, 'James', 'Tighe', '12315 Chino Ave', 6123241222, 5624, 0);
Insert Into Students Values(998723112, 'Mary', 'Still', '7512 Riverside Dr.', 8682917281, 5624, 0);
Insert Into Students Values(887362812, 'Alex', 'Jones', '1253 McDonald St.', 0511729372, 2461, 5624);
Insert Into Students Values(826123901, 'Marques', 'Donald', '16643 Ferry Dr.', 9182747272, 5624,
2461);
Insert Into Students Values(129318231, 'Max', 'Romero', '11 Skyrim Way', 9092823773, 2461, 0);
Insert Into Students Values(294938432, 'Tyler', 'Groom', '156 Fallout Ave', 9291110002, 2461, 0);
Insert Into Students Values(629323712, 'Olivia', 'Mary', '222 Toldeo Road', 8842721662, 5624, 2461);
--LOAD DATA INFILE 'students.txt' INTO TABLE Students;

```

```

--Enrollments
CREATE TABLE Enrollments(
  CWID INT NOT NULL,
  Sno INT NOT NULL,
  Grade VARCHAR(3),

  Foreign Key(CWID)
    REFERENCES Students(CWID),
  Foreign Key(Sno)
    REFERENCES Sections(Snum));

--LOAD DATA INFILE 'enrollments.txt' INTO TABLE Enrollments;

```

```

-- Jerry's enrollments (CS) (MH)
Insert Into Enrollments Values(888867451, 15, 'A+');
Insert Into Enrollments Values(888867451, 5, 'B');
Insert Into Enrollments Values(888867451, 20, 'A-');

```

```

-- James' enrollments (CS)
Insert Into Enrollments Values(782311232, 15, 'A');
Insert Into Enrollments Values(782311232, 5, 'B+');
Insert Into Enrollments Values(782311232, 9, 'C');

```

```

-- Mary's enrollments (CS)
Insert Into Enrollments Values(998723112, 15, 'B');
Insert Into Enrollments Values(998723112, 9, 'B');

```

```

-- Alex's enrollments (MH) (CS)
Insert Into Enrollments Values(887362812, 16, 'C');
Insert Into Enrollments Values(887362812, 17, 'B-');

```

```
Insert Into Enrollments Values(887362812, 20, 'D+');
```

```
-- Marques' enrollments (CS) (MH)
```

```
Insert Into Enrollments Values(826123901, 16, 'A-');
```

```
Insert Into Enrollments Values(826123901, 17, 'A+');
```

```
Insert Into Enrollments Values(826123901, 5, 'A+');
```

```
-- Max's enrollments (MH)
```

```
Insert Into Enrollments Values(129318231, 20, 'A');
```

```
Insert Into Enrollments Values(129318231, 15, 'B-');
```

```
Insert Into Enrollments Values(129318231, 9, 'B+');
```

```
-- Tyler's enrollments (MH)
```

```
Insert Into Enrollments Values(294938432, 15, 'C-');
```

```
Insert Into Enrollments Values(294938432, 17, 'D-');
```

```
Insert Into Enrollments Values(294938432, 5, 'F');
```

```
-- Olivia's enrollments (CS) (MH)
```

```
Insert Into Enrollments Values(629323712, 15, 'B');
```

```
Insert Into Enrollments Values(629323712, 17, 'B');
```

```
Insert Into Enrollments Values(629323712, 21, 'B');
```


Index.html (Database start site)

```
<html>
  <body>
    <h1>CS332 Project</h1>
    <h4>Group Members:
      <br>Nate Ruppert (4162)
      <br>Joshua Gonzales (3263)
      <br>Andy Cao (0782)
    </h4>
    <hr>
    <h2>Professor Database Queries </h2>
    <h3>Professor Class Teaching Look-up</h3>
      <form action="prof_query_a.php" method="POST">
        Professsor SSN: <input type="text" name="sno" />
        <input type="submit" />
      </form>

    <h3>Professor Class Grade Look-up</h3>
      <form action="prof_query_b.php" method="POST">
        <label for="cno">Course Number:</label>
        <input type="text" name="cno"><br><br>
        <label for="sno">Section Number:</label>
        <input type="text" name="sno"><br><br>
        <input type="submit">
      </form>

    <hr>
    <h2>Student Database Queries </h2>
    <h3>Section Look-up of Course</h3>
      <form action="stud_query_a.php" method="POST">
        Course ID: <input type="text" name="cno" />
        <input type="submit" />
      </form>

    <h3>Student Enrollment Look-up</h3>
      <form action="stud_query_b.php" method="POST">
        <label for="cwid">CWID:</label>
        <input type="text" name="cwid">
        <input type="submit">
      </form>
    <hr>
  </body>
</html>
```

Stud_query_a.php (Student Query for Listing sections available of a Course)

```
<html>
  <head>
    <title>Class Look-up</title>
    <style>
      table, td {
        border: 1px solid black;}
    </style>
  </head>
  <body>
    <?php

      $username = 'cs332a32';
      $password = 'ahg1Thee';
      $servername = "localhost";
      $dbname = 'cs332a32';
      // Create connection
      $conn = new mysqli($servername, $username, $password, $dbname);

      // Check connection
      if ($conn->connect_error) {
        die("Connection failed: " . $conn->connect_error);
        exit();
      }

      echo '<h3>Student Database Query for Classs ID #' . $_POST["cno"] . '<br>';
      $query0 = "Select Title, Snum, Classroom, Meet_day, Begin_Time, End_Time,
COUNT(CWID) as Students_Enrolled
                                from Enrollments INNER JOIN (Sections INNER JOIN Courses
ON C_no = Course_num)
                                ON (Snum = Sno)
                                where C_no = " . $_POST['cno'] . " Group by Snum";
      //echo $query0;
      //echo "Debug:" . $query0 . "<br>";
      $result = $conn -> query($query0);
      echo "<table>";

      echo "<tr>";
      echo "<td> Title <td> Section Number <td> Classroom
                                <td> Meeting Day <td> Start Time <td> End Time
                                <td> Student Enrolled</td>";
      echo "</tr>";
      if ($result->num_rows > 0) {
        // output data of each row
        while($row = $result->fetch_assoc()) {

          echo "<tr>";
          echo "<td>" . $row["Title"] . "</td><td>" . $row["Snum"]
          . "</td><td>" . $row["Classroom"] . "</td><td>" . $row["Meet_day"]
```

```

                . "</td><td>".$row["Begin_Time"]
            . "</td><td>".$row["End_Time"] . "</td><td>".$row["Students_Enrolled"];
                echo "</tr>";

            }
        } else {
            echo "\n";
            echo "Improper ClassID provided. Please try Again.";
            echo '<br><button type="button" onclick="history.back();">Go
Back</button>';
            exit();
        }
        echo '</table>';
        $result -> free_result();
        $conn->close($conn);
        ?>

<br>
<button type="button" onclick="history.back();">Go Back</button>
</body>
</html>

```

Stud_query_b.php (Student Query for Getting Student's Grade)

```

<html>
    <head>
        <title>Student Enrollments Look-up</title>
        <style>
            table, td {
                border: 1px solid black;}
        </style>
    </head>
    <body>
        <?php

            $username = 'cs332a32';
            $password = 'ahg1Thee';
            $servername = "localhost";
            $dbname = 'cs332a32';
            // Create connection
            $conn = new mysqli($servername, $username, $password, $dbname);

            // Check connection
            if ($conn->connect_error) {
                die("Connection failed: " . $conn->connect_error);
                exit();
            }

```

```

        //Getting student name
$query0 = "select Fname, Lname from Students where CWID = " . $_POST["cwid"];
//echo $query0;
$result0 = $conn->query($query0);
if ($result0->num_rows > 0) {
    // output data of each row
    while($row0 = $result0->fetch_assoc()) {
        $first = $row0["Fname"];
        $last = $row0["Lname"];
    }
} else {
    echo "Improper CWID provided. Please try Again.";
    echo '<br><button type="button" onclick="history.back();">Go Back</button>';
    exit();
}
//Setting table name and borders
echo "<h1>" . $first . " " . $last . "'s Courses and Grades</h1>";
echo "<table border='1'>";
echo "<tr>";
echo "<th>Course</th>";
echo "<th>Grade</th>";
echo "</tr>";
$query = "select Fname, Lname, Title, Grade from Students INNER JOIN (Enrollments
INNER JOIN (Sections INNER JOIN Courses ON C_no = Course_num) ON (Snum = Sno)) ON
Enrollments.CWID = Students.CWID where Students.CWID = " . $_POST["cwid"];
//echo $query;
//Starting the data extraction
$result = $conn->query($query);
if ($result->num_rows > 0) {
    //Output data of each row
    while($row = $result->fetch_assoc()) {
        //Table formatting
        echo "<tr>";
        echo "<td>" . $row["Title"] . "</td><td>" . $row["Grade"] . "</td>";
        echo "</tr>";
    }
} else {
    echo "0 results";
}
$result0->free_result();
$result->free_result();
$conn->close();
echo '</table>';
?>

<br>
<button type="button" onclick="history.back();">Go Back</button>
</body>
</html>

```

Prof_query_a.php (Professor Query for Classes Taught)

```

<html>
    <head>
        <title>Professor Query</title>
    </head>
    <body>
        <?php

            $username = 'cs332a32';
            $password = 'ahg1Thee';
            $servername = "localhost";

            // Create connection
            $conn = new mysqli($servername, $username, $password, 'cs332a32');

            // Check connection
            if ($conn->connect_error) {
                die("Connection failed: " . $conn->connect_error);
            }
            //echo "Connected successfully";

            echo '<p>Professor Database Query for <br>';
            $query0 = "select Name, Title from Professors where SSN= " . $_POST["sno"];
            //echo $query0;
            $result0 = $conn->query($query0);
            if ($result0->num_rows > 0) {
                // output data of each row
                while($row0 = $result0->fetch_assoc()) {
                    $prof = $row0["Name"];
                    echo $row0["Name"]. ", " . $row0["Title"] . "<br>";
                }
            } else {
                echo "Improper Professor SSN provided. Please try Again.";
                echo '<br><button type="button" onclick="history.back();">Go
Back</button>';
                exit();
            }

            $query = "select Title, Classroom, Meet_Day, Begin_Time, End_Time, C_no from
Sections INNER JOIN Courses ON Sections.C_no = Courses.Course_num where Prof_SSN = " .
$_POST["sno"];
            //echo "<br>Professor Search for: " . $_POST["sno"] . "<br></p>";

            ///echo "Debug:" . $query . "<br>"; debug
            $result = $conn->query($query);

```

```

echo "<h1>Classes Taught by " . $prof . "</h1>";
echo "<table border='1'>";
// printing table rows
echo "<tr>";
echo "<td>Title<td>Classroom<td>Meeting Day<td>Start Time<td>End
Time<td>Course Number</td>";
echo "</tr>\n";
while($row = $result->fetch_assoc())
{
    echo "<tr>";

    // $row is array... foreach( .. ) puts every element
    // of $row to $cell variable
    foreach($row as $key => $cell){
        if($key == 'Subscribed'){
            $cell = date('F j, Y H:i:s', strtotime($cell)); // format date
            August 20, 2011 4:07:01
        } elseif($key == 'Duration'){
            $cell = $cell/60; // format time in minutes
        }
        echo "<td>$cell</td>";
    }

    echo "</tr>\n";
}
echo '</table>';

$result->free_result();
$result0->free_result();
$conn->close();
?>
<button type="button" onclick="history.back();">Go Back</button>
</body>
</html>

```

Prof_query_b.php (Professor Query for Course Section's Grades)

```

<html>
    <head>
        <title>Professor Query of Classes</title>
    </head>
    <body>
        <?php

            $username = 'cs332a32';
            $password = 'ahg1Thee';
            $servername = "localhost";

            // Create connection
            $conn = new mysqli($servername, $username, $password, 'cs332a32');

            // Check connection
            if ($conn->connect_error) {
                die("Connection failed: " . $conn->connect_error);
            }
            //echo "Connected successfully";

            echo '<h3>Professor Database Query for Section #' . $_POST["sno"] . '<br>';

            $query0 = "select Title from Courses where Course_num = " . $_POST["cno"];
            //echo $query0;
            $result0 = $conn->query($query0);
            if ($result0->num_rows > 0) {
                // output data of each row
                while($row0 = $result0->fetch_assoc()) {
                    $class = $row0["Title"];
                }
            } else {
                echo "Improper CourseID provided. Please try Again.";
                echo '<br><button type="button" onclick="history.back();">Go
Back</button>';
                exit();
            }

            $query = "select Title, C_no, Grade, COUNT(Grade) from (Enrollments INNER JOIN
(Courses INNER JOIN Sections ON Sections.C_no = Course_num) ON Enrollments.Sno =
Sections.Snum) where C_no = " . $_POST["cno"] . " and Sno = " . $_POST["sno"] . " GROUP BY
(Grade)";

            //echo "<br>Professor Search for: " . $_POST["sno"] . "<br></p>";
            //echo '<br>' . $query;

            ///echo "Debug:" . $query . "<br>"; debug
            $result0 = $conn->query($query0);

```

```

$result = $conn->query($query);

echo "<h1>Class Grades for Course " . $class . " (Section #" . $_POST["sno"] . ")</h1>";
echo "<table border='1'>";
// printing table rows
echo "<tr>";
echo "<td>Course Name<td>Course ID<td>Grade<td># Students</td>";
echo "</tr>\n";
if ($result->num_rows > 0) {
    while($row = $result->fetch_assoc())
    {
        echo "<tr>";

        // $row is array... foreach( .. ) puts every element
        // of $row to $cell variable
        foreach($row as $key => $cell){
            echo "<td>$cell</td>";
        }

        echo "</tr>\n";
    }
    echo '</table>';
}
else {
    echo "Improper SectionID provided. Please try Again.";
    echo '<br><button type="button" onclick="history.back();">Go
Back</button>';
    exit();
}

$result0->free_result();
$result->free_result();
$conn->close();
?>

<br>
<button type="button" onclick="history.back();">Go Back</button>
</body>
</html>

```


Interface Screenshots

Main Page

CS332 Project

Group Members:

Nate Ruppert (4162)

Joshua Gonzales (3263)

Andy Cao (0782)

Professor Database Queries

Professor Class Teaching Look-up

Professor SSN:

Professor Class Grade Look-up

Course Number:

Section Number:

Student Database Queries

Section Look-up of Course

Course ID:

Student Enrollment Look-up

CWID:

Professor Class Teaching Look-up

Professor Database Query for
Kertzmann Pearl, Professor

Classes Taught by Kertzmann Pearl

Title	Classroom	Meeting Day	Start Time	End Time	Course Number
MATH270B	MH-304	M&W	10:00	12:00	17754
MATH270B	MH-404	M&W	10:00	12:00	17754
MATH338	CS-502	M	3:00	4:15	18400
MATH338	CS-502	W	3:00	4:15	18400

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Professor Class Grade Look-up

Professor Database Query for Section #16

Class Grades for Course MATH338 (Section #16)

Course Name	Course ID	Grade	# Students
MATH338	18400	A-	1
MATH338	18400	C	1

[Go Back](#)

Student Sections Look-up of Course

Student Database Query for Class ID #17754

Title	Section Number	Classroom	Meeting Day	Start Time	End Time	Student Enrolled
MATH270B	20	MH-304	M&W	10:00	12:00	3
MATH270B	21	MH-404	M&W	10:00	12:00	1

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Student Enrollment Look-up

Jerry Romero's Courses and Grades

Course	Grade
CPSC323	B
MATH270B	A-
MATH338	A+

[Go Back](#)

Sample Runs

Location of Database: Account cs332a32 (<http://ecs.fullerton.edu/~cs332a32/>)

Professor Class Teaching Look-up

Input: 145076810 (Professor Kertzmann Pearl's Social Security Number)

CS332 Project

Group Members:

Nate Ruppert (4162)

Joshua Gonzales (3263)

Andy Cao (0782)

Professor Database Queries

Professor Class Teaching Look-up

Professor SSN:

Output: Classes Taught by Kertzmann Pearl

Professor Database Query for
Kertzmann Pearl, Professor

Classes Taught by Kertzmann Pearl

Title	Classroom	Meeting Day	Start Time	End Time	Course Number
MATH270B	MH-304	M&W	10:00	12:00	17754
MATH270B	MH-404	M&W	10:00	12:00	17754
MATH338	CS-502	M	3:00	4:15	18400
MATH338	CS-502	W	3:00	4:15	18400

Professor Class Grade Look-up

Input: Course Number 18400, Section Number 16

Professor Database Queries

Professor Class Teaching Look-up

Professor SSN:

Professor Class Grade Look-up

Course Number: Section Number:

Output: Distinct Section Grade data

Professor Database Query for Section #16

Class Grades for Course MATH338 (Section #16)

Course Name	Course ID	Grade	# Students
MATH338	18400	A-	1
MATH338	18400	C	1

Student Sections Look-up of Course

Input: Course ID 17754

Student Database Queries

Section Look-up of Course

Course ID:

Student Enrollment Look-up

CWID:

Output: Section Data for Course 17754

Student Database Query for Class ID #17754

Title	Section Number	Classroom	Meeting Day	Start Time	End Time	Student Enrolled
MATH270B	20	MH-304	M&W	10:00	12:00	3
MATH270B	21	MH-404	M&W	10:00	12:00	1

Student Enrollment Look-up

Input: CWID 888867451

Student Database Queries

Section Look-up of Course

Course ID:

Student Enrollment Look-up

CWID:

Output: Grades for Student with CWID 888867451

Jerry Romero's Courses and Grades

Course	Grade
CPSC323	B
MATH270B	A-
MATH338	A+