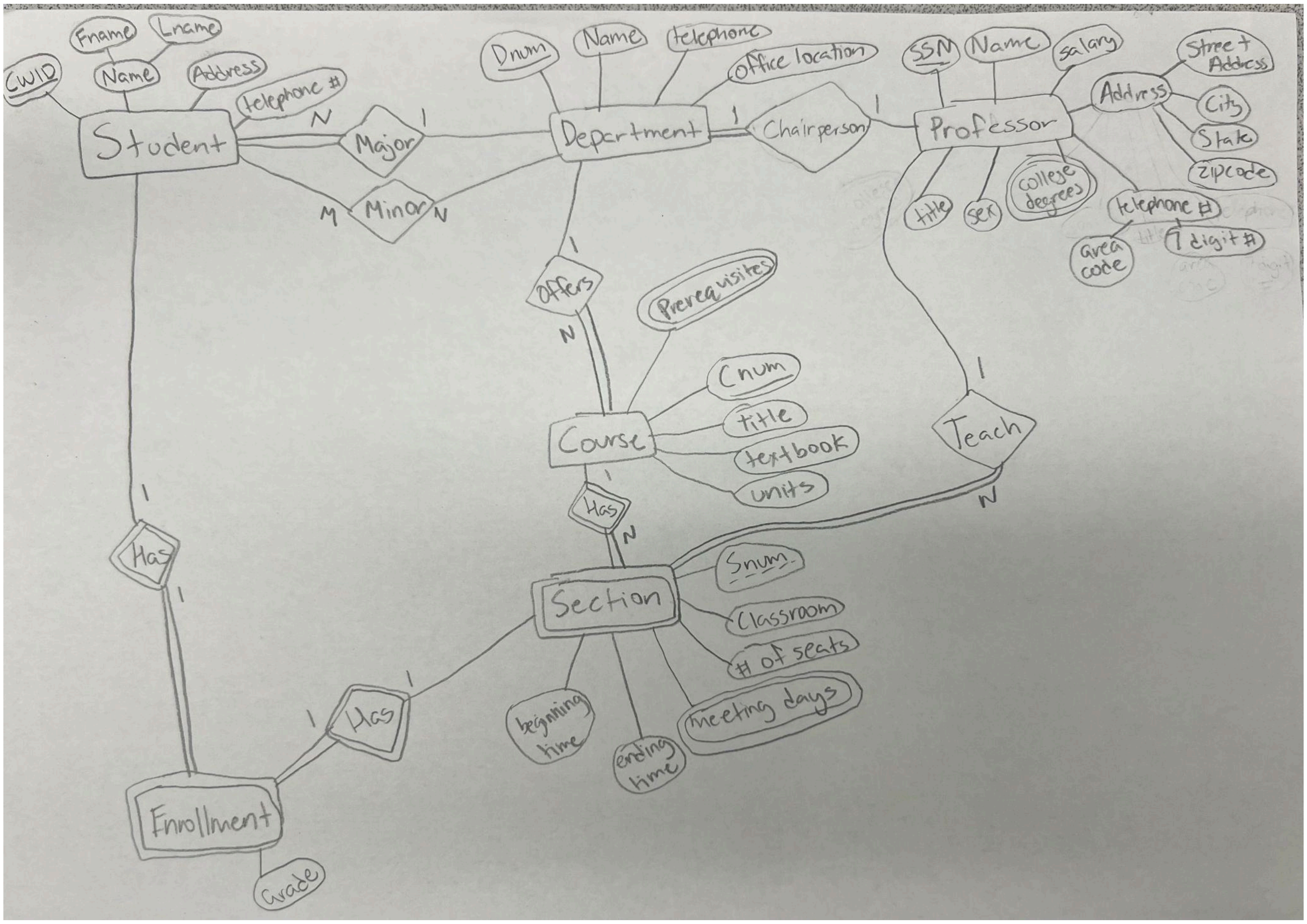
CPSC 332 - Project

Team members: Harleen Ahluwalia (CWID: 9255), Daniel Lim (CWID: 0882), and Sayf Alhafidh (CWID: 4604)

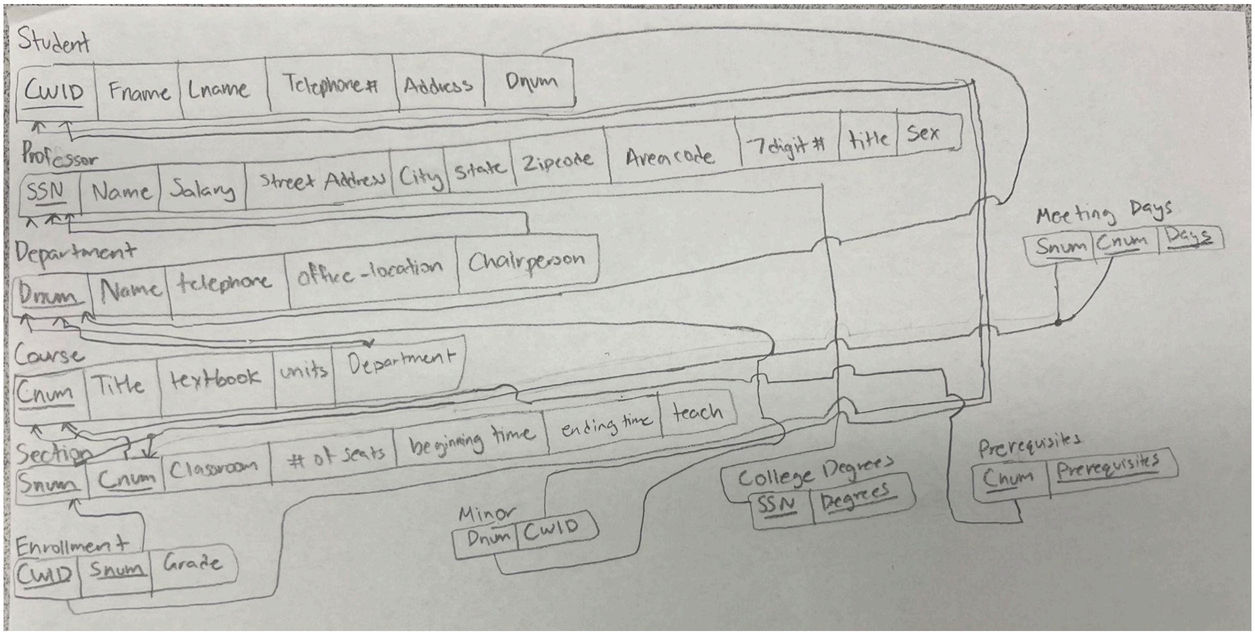
Account for project implementation: cs332g1

Link to project: https://ecs.fullerton.edu/~cs332g1/

ER Diagram


Fname
Lname
CWID
Name
Address
telephone #
Student
N
Major
1
M
Minor
N
Dnum
Name
telephone
office location
Department
1
Chairperson
1
SSN
Name
salary
Address
Street Address
City
State
zipcode
Professor
title
sex
college degrees
telephone #
area code
7 digit #
1
Offers
N
Prerequisites
Cnum
title
textbook
units
Course
1
Has
N
1
Teach
N
Snum
Classroom
# of seats
Section
beginning time
ending time
meeting days
1
Has
1
1
Has
1
Enrollment
Grade

Relational Model



Student

CWID	Fname	Lname	Telephone#	Address	Dnum

Professor

SSN	Name	Salary	Street Address	City	State	Zipcode	Areacode	7digit #	title	Sex

Department

Dnum	Name	telephone	office-location	Chairperson

Course

Cnum	Title	textbook	units	Department

Section

Snum	Cnum	Classroom	# of seats	beginning time	ending time	teach

Enrollment

CWID	Snum	Grade

Minor

Dnum	CWID

College Degrees

SSN	Degrees

Prerequisites

Cnum	Prerequisites

Meeting Days

Snum	Cnum	Days

Code:

index.php

```
<?php
header("Location: /~cs332g1/CS-332-Project/login.php");
exit();
?>
```

database.php

```
<?php
$servername = "mariadb";
$username = "cs332g1";
$password = "5hAECEpz";
$dbname = "cs332g1";

$conn = new mysqli($servername, $username, $password, $dbname);

if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
?>
```

login.php

```
<!DOCTYPE html>
<html>
<head>
   <title>CPSC 332 Project</title>
</head>
<body>
<h1>University Database System</h1>
<h2>Team members: Harleen Ahluwalia (CWID: 9255), Daniel Lim (CWID: 0882), and Sayf
Alhafidh (CWID: 4604) </h2>


<h2>Professor Interface</h2>
<a href="pf_info.php">Lookup Professor Schedule</a><br>
<a href="pf_class.php">Count Grades for Section</a><br><br>

<h2>Student Interface</h2>
<a href="s_class.php">List Course Sections</a><br>
<a href="s_grade.php">Student Transcript</a><br>

</body>
</html>
```

schema.sql

```
DROP TABLE IF EXISTS MeetingDays;
DROP TABLE IF EXISTS Prerequisites;
DROP TABLE IF EXISTS CollegeDegrees;
DROP TABLE IF EXISTS Minor;
DROP TABLE IF EXISTS Enrollment;
DROP TABLE IF EXISTS Section;
DROP TABLE IF EXISTS Course;
DROP TABLE IF EXISTS Student;
DROP TABLE IF EXISTS Department;
DROP TABLE IF EXISTS Professor;

CREATE TABLE Professor (
   SSN          CHAR(9)    PRIMARY KEY,
   Name          VARCHAR(60) NOT NULL,
   Salary       DECIMAL(10,2),
   StreetAddress VARCHAR(100),
   City         VARCHAR(40),
   State        CHAR(2),
   Zipcode       CHAR(5),
   AreaCode      CHAR(3),
   Phone7        CHAR(7),
   Title        VARCHAR(30),
   Sex          CHAR(1)
) ENGINE=InnoDB;

CREATE TABLE Department (
   Dnum          INT        PRIMARY KEY,
   Name          VARCHAR(60) NOT NULL,
   Telephone      VARCHAR(15),
   OfficeLocation VARCHAR(60),
   ChairSSN       CHAR(9),
   FOREIGN KEY (ChairSSN) REFERENCES Professor(SSN)
```

```
) ENGINE=InnoDB;

CREATE TABLE Student (
   CWID      CHAR(9)      PRIMARY KEY,
   Fname     VARCHAR(30)  NOT NULL,
   Lname     VARCHAR(30)  NOT NULL,
   Telephone VARCHAR(15),
   Address   VARCHAR(100),
   Dnum      INT          NOT NULL,
   FOREIGN KEY (Dnum) REFERENCES Department(Dnum)
) ENGINE=InnoDB;

CREATE TABLE Course (
   Cnum     INT         PRIMARY KEY,
   Title    VARCHAR(80) NOT NULL,
   Textbook VARCHAR(80),
   Units    INT,
   Dnum     INT NOT NULL,
   FOREIGN KEY (Dnum) REFERENCES Department(Dnum)
) ENGINE=InnoDB;

CREATE TABLE Section (
   Snum      INT,
   Cnum      INT,
   Classroom VARCHAR(20),
   NumSeats  INT,
   BeginTime TIME,
   EndTime   TIME,
   TeachSSN  CHAR(9),
   PRIMARY KEY (Snum, Cnum),
   FOREIGN KEY (Cnum)     REFERENCES Course(Cnum),
   FOREIGN KEY (TeachSSN) REFERENCES Professor(SSN)
) ENGINE=InnoDB;

CREATE TABLE Enrollment (
   CWID  CHAR(9),
   Snum  INT,
   Cnum  INT,
   Grade VARCHAR(2),
   PRIMARY KEY (CWID, Snum, Cnum),
   FOREIGN KEY (CWID)      REFERENCES Student(CWID),
   FOREIGN KEY (Snum, Cnum) REFERENCES Section(Snum, Cnum)
) ENGINE=InnoDB;

CREATE TABLE Minor (
   CWID CHAR(9),
   Dnum INT,
   PRIMARY KEY (CWID, Dnum),
   FOREIGN KEY (CWID) REFERENCES Student(CWID),
   FOREIGN KEY (Dnum) REFERENCES Department(Dnum)
) ENGINE=InnoDB;

CREATE TABLE CollegeDegrees (
   SSN    CHAR(9),
   Degree VARCHAR(60),
   PRIMARY KEY (SSN, Degree),
   FOREIGN KEY (SSN) REFERENCES Professor(SSN)
) ENGINE=InnoDB;

CREATE TABLE Prerequisites (
   Cnum       INT,
   PrereqCnum INT,
   PRIMARY KEY (Cnum, PrereqCnum),
   FOREIGN KEY (Cnum)       REFERENCES Course(Cnum),
   FOREIGN KEY (PrereqCnum) REFERENCES Course(Cnum)
) ENGINE=InnoDB;

CREATE TABLE MeetingDays (
   Snum INT,
   Cnum INT,
   Day  VARCHAR(3),  -- e.g. 'M', 'Tu', 'MWF'
   PRIMARY KEY (Snum, Cnum, Day),
   FOREIGN KEY (Snum, Cnum) REFERENCES Section(Snum, Cnum)
) ENGINE=InnoDB;
```

pf_info.php

```
<?php
require 'database.php';
?>
<!DOCTYPE html>
<html>
<head>
    <title>Professor Schedule</title>
</head>
<body>
<h1>Professor Schedule Lookup</h1>

<form method="post">
    Professor SSN:
    <input type="text" name="ssn" required>
    <input type="submit" value="Search">
</form>

<?php
if ($_SERVER['REQUEST_METHOD'] === 'POST') {
    $ssn = $_POST['ssn'];

    $sql = "
        SELECT c.Title,
               s.Snum,
               s.Classroom,
               GROUP_CONCAT(DISTINCT md.Day ORDER BY md.Day SEPARATOR "") AS
Days,
               s.BeginTime,
               s.EndTime
        FROM Professor p
        JOIN Section s
          ON p.SSN = s.TeachSSN
        JOIN Course c
          ON s.Cnum = c.Cnum
        LEFT JOIN MeetingDays md
          ON md.Snum = s.Snum AND md.Cnum = s.Cnum
        WHERE p.SSN = ?
        GROUP BY c.Title, s.Snum, s.Classroom, s.BeginTime, s.EndTime
        ORDER BY c.Cnum, s.Snum;
    ";

    $stmt = $conn->prepare($sql);
    $stmt->bind_param("s", $ssn);
    $stmt->execute();
    $result = $stmt->get_result();

    if ($result->num_rows === 0) {
        echo "<p>No sections found for that professor.</p>";
    } else {
        echo "<table border='1'>
            <tr>
              <th>Course Title</th>
              <th>Section #</th>
              <th>Classroom</th>
              <th>Meeting Days</th>
              <th>Begin Time</th>
              <th>End Time</th>
            </tr>";
        while ($row = $result->fetch_assoc()) {
          echo "<tr>
              <td>{$row['Title']}</td>
              <td>{$row['Snum']}</td>
              <td>{$row['Classroom']}</td>
              <td>{$row['Days']}</td>
              <td>{$row['BeginTime']}</td>
              <td>{$row['EndTime']}</td>
             </tr>";
        }
        echo "</table>";
    }
    $stmt->close();
}
?>

<p><a href="login.php">Back to main menu</a></p>
</body>
</html>
```

pf_class.php

```
<?php
require 'database.php';
?>
<!DOCTYPE html>
<html>
<head>
   <title>Section Grade Distribution</title>
</head>
<body>
<h1>Grade Distribution for a Section</h1>

<form method="post">
   Course Number (Cnum):
   <input type="number" name="cnum" required>
   Section Number (Snum):
   <input type="number" name="snum" required>
   <input type="submit" value="Count Grades">
</form>

<?php
if ($_SERVER['REQUEST_METHOD'] === 'POST') {
   $cnum = intval($_POST['cnum']);
   $snum = intval($_POST['snum']);

   $sql = "
      SELECT Grade, COUNT(*) AS NumStudents
      FROM Enrollment
      WHERE Cnum = ? AND Snum = ?
      GROUP BY Grade
      ORDER BY Grade;
   ";

   $stmt = $conn->prepare($sql);
   $stmt->bind_param("ii", $cnum, $snum);
   $stmt->execute();
   $result = $stmt->get_result();
```

```
    if ($result->num_rows === 0) {
        echo "<p>No enrollment records found for that section.</p>";
    } else {
        echo "<table border='1'>
                <tr>
                    <th>Grade</th>
                    <th>Number of Students</th>
                </tr>";
        while ($row = $result->fetch_assoc()) {
            echo "<tr>
                    <td>{$row['Grade']}</td>
                    <td>{$row['NumStudents']}</td>
                  </tr>";
        }
        echo "</table>";
    }
    $stmt->close();
}
?>

<p><a href="login.php">Back to main menu</a></p>
</body>
</html>
```

s_class.php

```
<?php
require 'database.php';
?>
<!DOCTYPE html>
<html>
<head>
    <title>Course Sections</title>
</head>
<body>
<h1>List Sections of a Course</h1>

<form method="post">
    Course Number (Cnum):
    <input type="number" name="cnum" required>
    <input type="submit" value="List Sections">
</form>

<?php
if ($_SERVER['REQUEST_METHOD'] === 'POST') {
    $cnum = intval($_POST['cnum']);

    $sql = "
        SELECT s.Snum,
               s.Classroom,
               GROUP_CONCAT(DISTINCT md.Day ORDER BY md.Day SEPARATOR '') AS Days,
               s.BeginTime,
               s.EndTime,
               COUNT(DISTINCT e.CWID) AS NumStudents
        FROM Section s
        LEFT JOIN MeetingDays md
               ON md.Snum = s.Snum AND md.Cnum = s.Cnum
        LEFT JOIN Enrollment e
               ON e.Snum = s.Snum AND e.Cnum = s.Cnum
        WHERE s.Cnum = ?
        GROUP BY s.Snum, s.Classroom, s.BeginTime, s.EndTime
        ORDER BY s.Snum;
    ";

    $stmt = $conn->prepare($sql);
    $stmt->bind_param("i", $cnum);
    $stmt->execute();
    $result = $stmt->get_result();

    if ($result->num_rows === 0) {
        echo "<p>No sections found for that course.</p>";
    } else {
        echo "<table border='1'>
                <tr>
                    <th>Section #</th>
                    <th>Classroom</th>
                    <th>Meeting Days</th>
                    <th>Begin Time</th>
                    <th>End Time</th>
                    <th>Students Enrolled</th>
                </tr>";
        while ($row = $result->fetch_assoc()) {
            echo "<tr>
                    <td>{$row['Snum']}</td>
                    <td>{$row['Classroom']}</td>
                    <td>{$row['Days']}</td>
                    <td>{$row['BeginTime']}</td>
                    <td>{$row['EndTime']}</td>
                    <td>{$row['NumStudents']}</td>
                  </tr>";
        }
        echo "</table>";
    }
    $stmt->close();
}
?>

<p><a href="login.php">Back to main menu</a></p>
</body>
</html>
```

s_grade.php

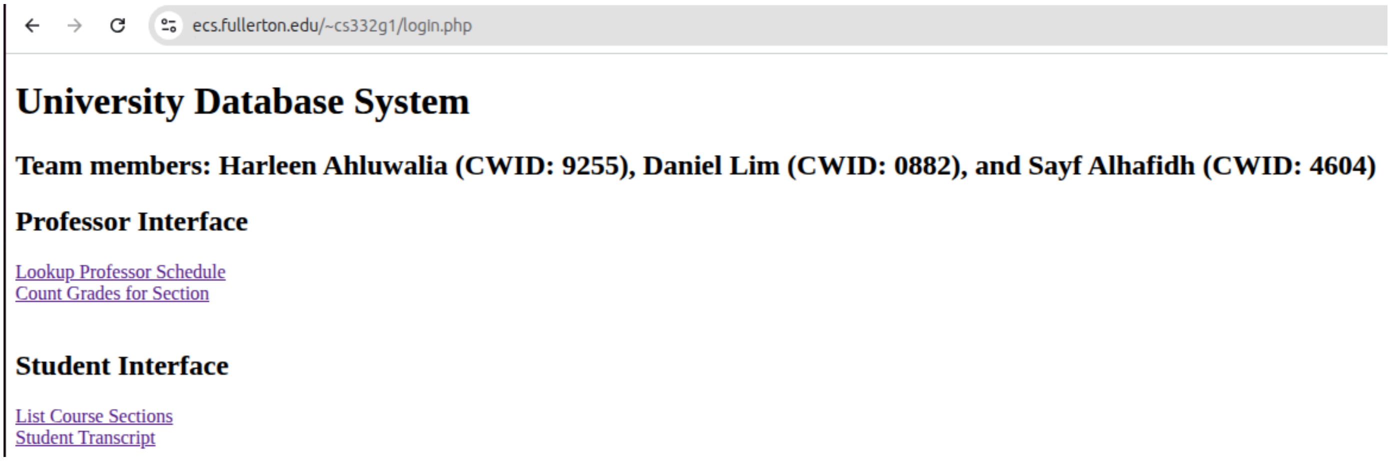
```
<?php
require 'database.php';
?>
<!DOCTYPE html>
<html>
<head>
    <title>Student Transcript</title>
</head>
<body>
<h1>Student Courses and Grades</h1>

<form method="post">
    Student CWID:
    <input type="text" name="cwid" required>
    <input type="submit" value="Show Transcript">
</form>

<?php
if ($_SERVER['REQUEST_METHOD'] === 'POST') {
    $cwid = $_POST['cwid'];

    $sql = "
        SELECT c.Cnum,
               c.Title,
               e.Snum,
               e.Grade
        FROM Enrollment e
        JOIN Section s
          ON e.Snum = s.Snum AND e.Cnum = s.Cnum
        JOIN Course c
          ON s.Cnum = c.Cnum
        WHERE e.CWID = ?
        ORDER BY c.Cnum, e.Snum;
    ";

    $stmt = $conn->prepare($sql);
    $stmt->bind_param("s", $cwid);
    $stmt->execute();
    $result = $stmt->get_result();

    if ($result->num_rows === 0) {
        echo "<p>No courses found for that student.</p>";
    } else {
        echo "<table border='1'>
                <tr>
                    <th>Course #</th>
                    <th>Title</th>
                    <th>Section #</th>
                    <th>Grade</th>
                </tr>";
        while ($row = $result->fetch_assoc()) {
            echo "<tr>
                    <td>{$row['Cnum']}</td>
                    <td>{$row['Title']}</td>
                    <td>{$row['Snum']}</td>
                    <td>{$row['Grade']}</td>
                  </tr>";
        }
        echo "</table>";
    }
    $stmt->close();
}
?>

<p><a href="login.php">Back to main menu</a></p>
</body>
</html>
```

data.sql

```
-- 1. Professors
INSERT INTO Professor VALUES
('123456789', 'Dr. John Smith', 130000.00, '123 Nutwood St', 'Fullerton', 'CA', '92831', '949',
'1234567', 'Professor', 'M'),
('112233445', 'Dr. Mary Smith', 145000.00, '321 College Blvd', 'Fullerton', 'CA', '92831', '949',
'7654321', 'Professor', 'F'),
('112233455', 'Dr. Lisa Smith', 155000.00, '321 Nutwood Blvd', 'Fullerton', 'CA', '92831', '949',
'7653321', 'Professor', 'F');

-- 2. Departments
INSERT INTO Department VALUES
(1, 'Computer Science', '0000001234', 'CS-101', '123456789'),
(2, 'Engineering',      '0000001122', 'E-101',  '112233445');

-- 3. Students
INSERT INTO Student VALUES
('800000001', 'John', 'Smith', '6570001111', '123 Orange St', 1),
('800000002', 'Mary', 'Lee',   '6570002222', '55 Lemon St',   2),
('800000003', 'Mary', 'Lee',   '6570003333', '55 Lemon St',   1),
('800000004', 'Mary', 'Lee',   '6570002224', '55 Lemon St',   1),
('800000005', 'Mary', 'Lee',   '6570002225', '55 Lemon St',   1),
('800000006', 'Mary', 'Lee',   '6570002226', '55 Lemon St',   1),
('800000007', 'Mary', 'Lee',   '6570002227', '55 Lemon St',   1),
('800000008', 'Mary', 'Lee',   '6570002228', '55 Lemon St',   1);

-- 4. Minors
INSERT INTO Minor VALUES
('800000001', 2),
('800000002', 1),
('800000003', 2),
('800000004', 2),
('800000005', 2),
('800000006', 2),
('800000007', 2),
('800000008', 2);

-- 5. Courses
```

```
INSERT INTO Course VALUES
(332, 'Database', 'Fundamentals of Database Systems', 3, 1),
(120, 'Intro to CS', 'CS Basics', 3, 1),
(240, 'Computer Assembly', 'Fundamentals of Assembly', 3, 1),
(150, 'CS Ethics', 'Fundamentals of CS Ethics', 4, 2);

-- 6. Prerequisites
INSERT INTO Prerequisites VALUES
(120, 332),
(240, 120);

-- 7. Sections - FIXED: Added comma after line 4
INSERT INTO Section VALUES
(1, 332, 'CS-101', 35, '08:30:00', '09:45:00', '123456789'),
(1, 120, 'CS-102', 30, '10:00:00', '11:15:00', '123456789'),
(1, 240, 'CS-201', 40, '11:30:00', '12:45:00', '123456789'),
(1, 150, 'E-101',  45, '13:30:00', '14:45:00', '112233445'),
(2, 332, 'CS-101', 35, '08:30:00', '09:45:00', '123456789'),
(3, 332, 'CS-101', 35, '08:30:00', '09:45:00', '123456789');

-- 8. Meeting Days
INSERT INTO MeetingDays VALUES
(1, 332, 'M'),
(1, 332, 'W'),
(1, 332, 'F'),
(1, 120, 'Tu'),
(1, 120, 'Th'),
(1, 240, 'M'),
(1, 240, 'W'),
(1, 240, 'F'),
(1, 150, 'Tu'),
(1, 150, 'Th');

-- 9. Enrollment
INSERT INTO Enrollment VALUES
('800000001', 1, 332, 'A'),
('800000001', 1, 120, 'B'),
('800000002', 1, 332, 'A'),
('800000002', 1, 240, 'C'),
('800000003', 1, 120, 'B'),
('800000003', 1, 332, 'A'),
('800000004', 1, 120, 'B'),
('800000004', 1, 332, 'A'),
('800000005', 1, 120, 'B'),
('800000005', 1, 332, 'A'),
('800000006', 1, 120, 'B'),
('800000006', 1, 332, 'A'),
('800000007', 1, 120, 'B'),
('800000007', 1, 332, 'A'),
('800000008', 1, 120, 'B'),
('800000006', 1, 240, 'B'),
('800000006', 1, 150, 'A'),
('800000007', 1, 240, 'B'),
('800000007', 1, 150, 'A'),
('800000008', 1, 240, 'B'),
('800000008', 1, 150, 'A');
```

Screenshots of the Interfaces



ecs.fullerton.edu/~cs332g1/login.php

University Database System

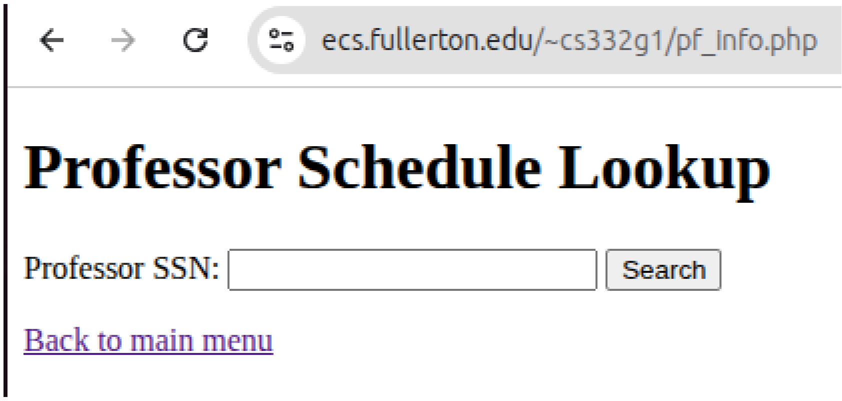
Team members: Harleen Ahluwalia (CWID: 9255), Daniel Lim (CWID: 0882), and Sayf Alhafidh (CWID: 4604)

Professor Interface

Lookup Professor Schedule
Count Grades for Section

Student Interface

List Course Sections
Student Transcript

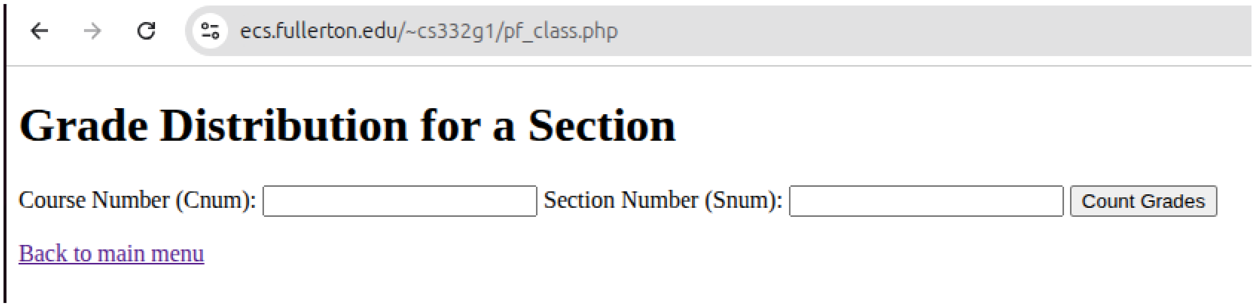


ecs.fullerton.edu/~cs332g1/pf_info.php

Professor Schedule Lookup

Professor SSN:

Back to main menu

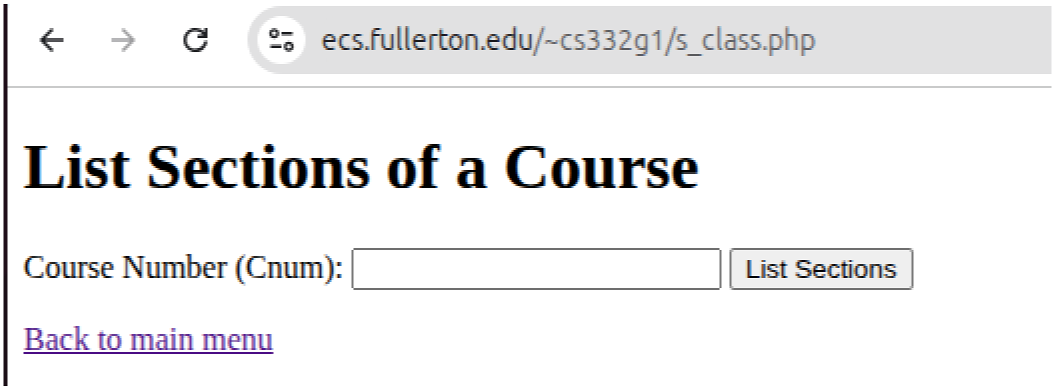


ecs.fullerton.edu/~cs332g1/pf_class.php

Grade Distribution for a Section

Course Number (Cnum): Section Number (Snum):

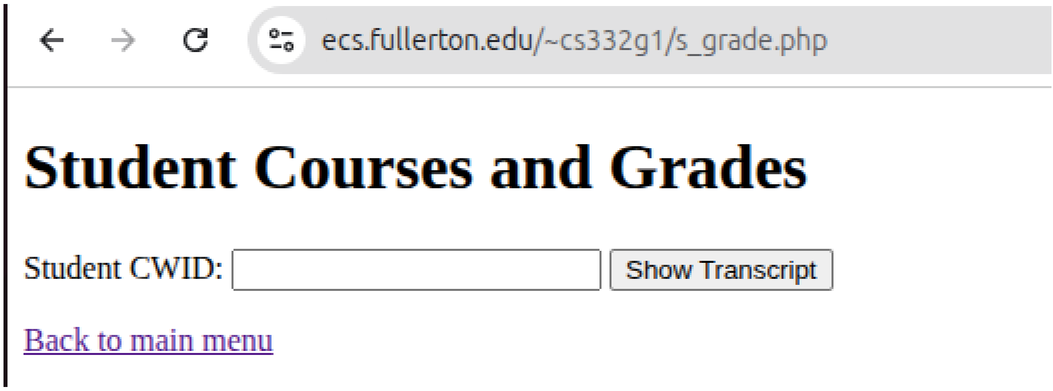
Back to main menu



List Sections of a Course

Course Number (Cnum):

Back to main menu

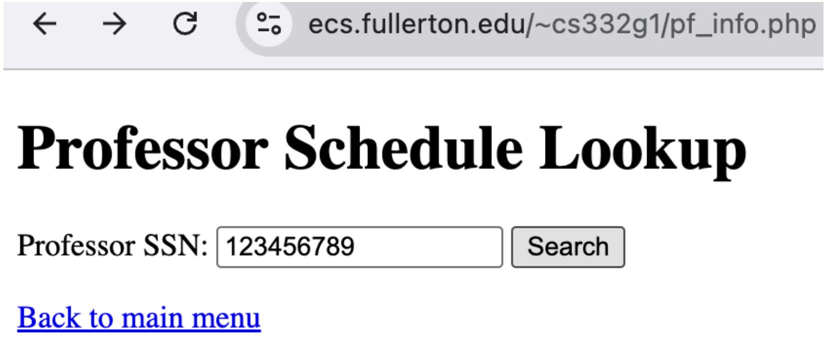


Student Courses and Grades

Student CWID:

Back to main menu

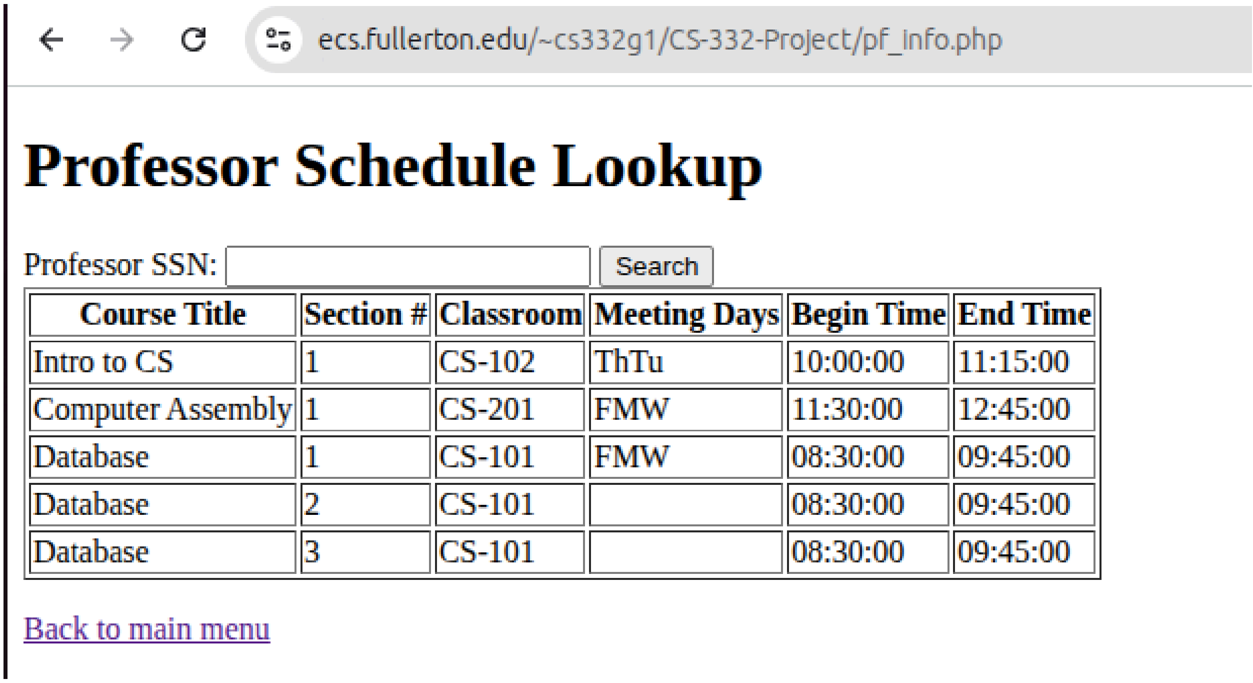
Screenshots Of The Sample Runs Of The System



Professor Schedule Lookup

Professor SSN: 123456789

Back to main menu

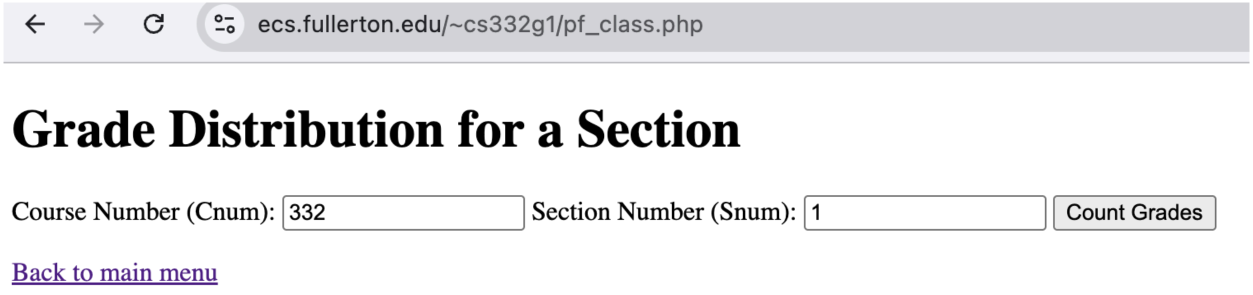


Professor Schedule Lookup

Professor SSN:

Course Title	Section #	Classroom	Meeting Days	Begin Time	End Time
Intro to CS	1	CS-102	ThTu	10:00:00	11:15:00
Computer Assembly	1	CS-201	FMW	11:30:00	12:45:00
Database	1	CS-101	FMW	08:30:00	09:45:00
Database	2	CS-101		08:30:00	09:45:00
Database	3	CS-101		08:30:00	09:45:00

Back to main menu

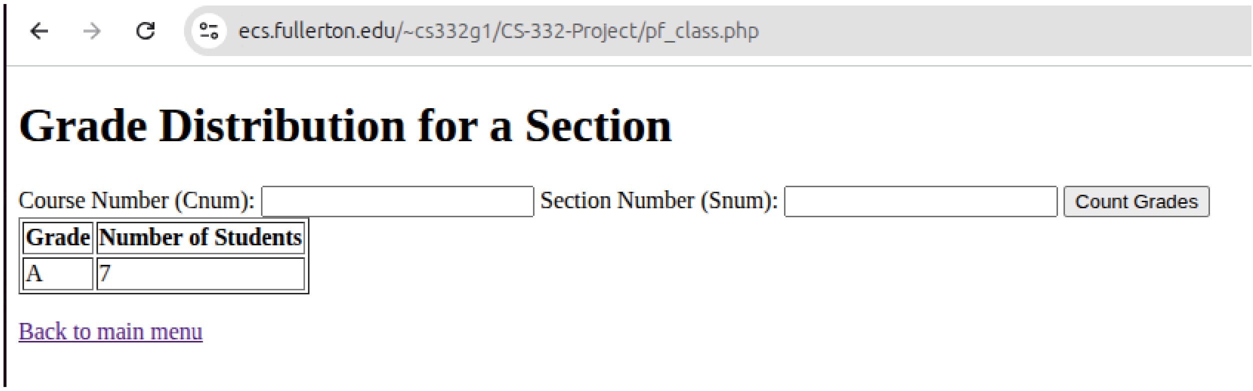


ecs.fullerton.edu/~cs332g1/pf_class.php

Grade Distribution for a Section

Course Number (Cnum): 332 Section Number (Snum): 1

Back to main menu



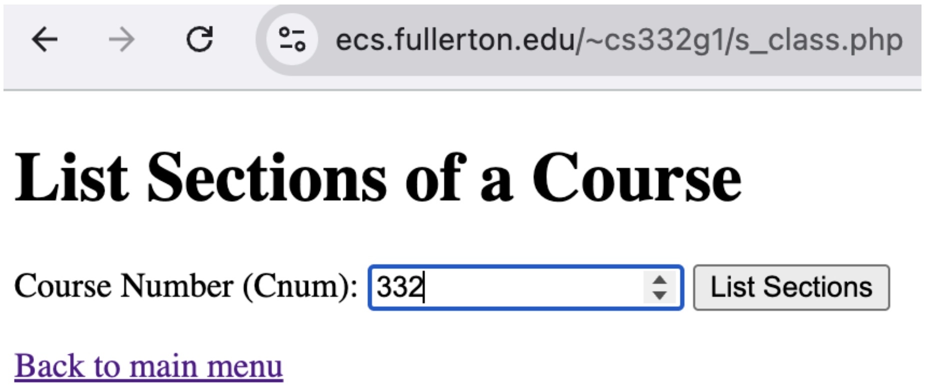
ecs.fullerton.edu/~cs332g1/CS-332-Project/pf_class.php

Grade Distribution for a Section

Course Number (Cnum): Section Number (Snum):

Grade	Number of Students
A	7

Back to main menu

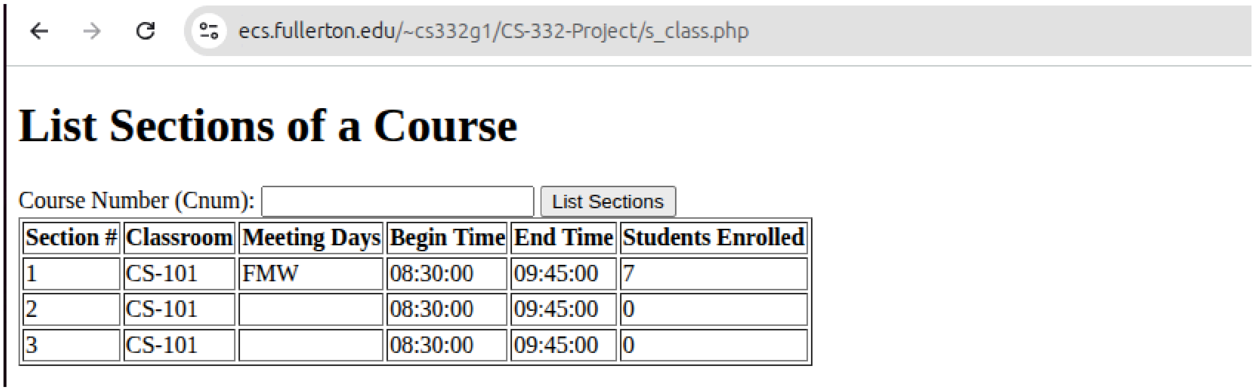


ecs.fullerton.edu/~cs332g1/s_class.php

List Sections of a Course

Course Number (Cnum): 332

Back to main menu

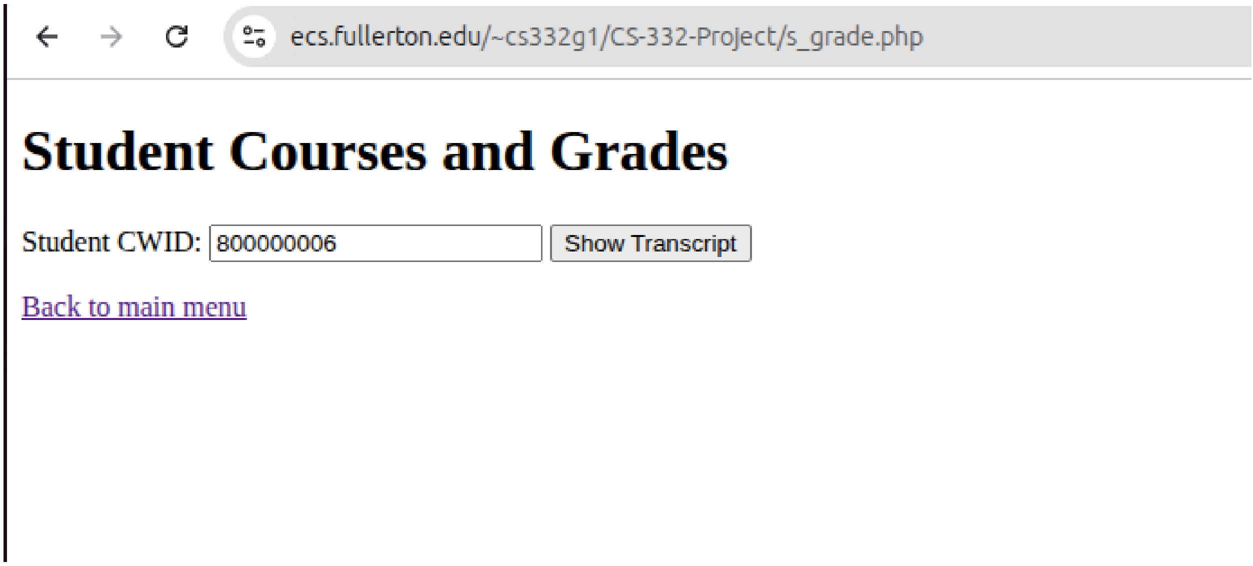


ecs.fullerton.edu/~cs332g1/CS-332-Project/s_class.php

List Sections of a Course

Course Number (Cnum):

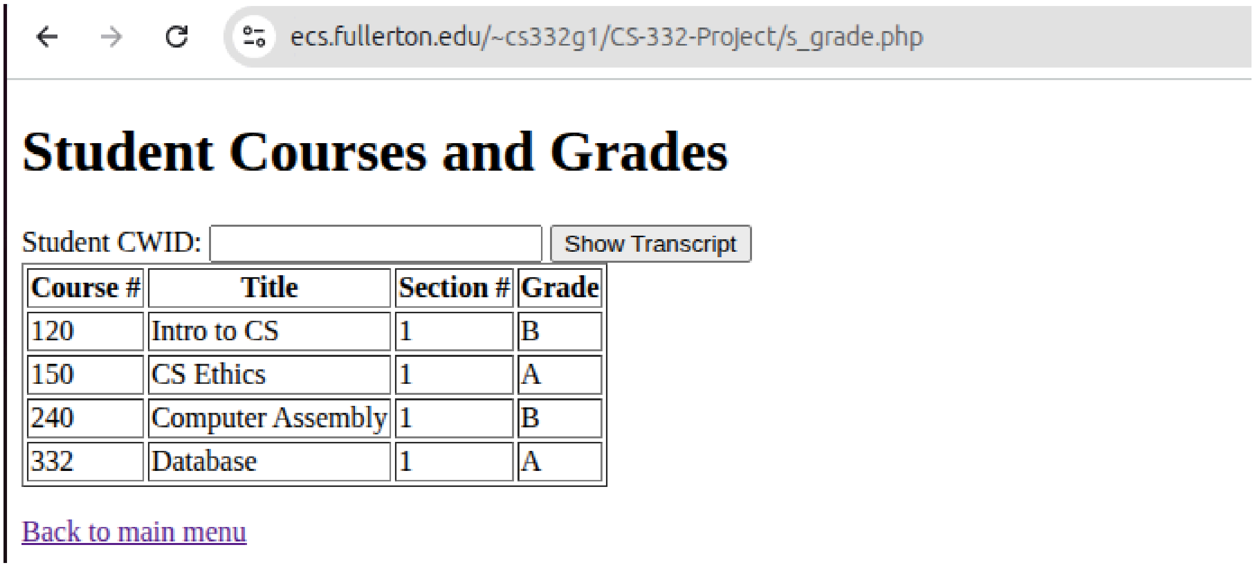
Section #	Classroom	Meeting Days	Begin Time	End Time	Students Enrolled
1	CS-101	FMW	08:30:00	09:45:00	7
2	CS-101		08:30:00	09:45:00	0
3	CS-101		08:30:00	09:45:00	0



ecs.fullerton.edu/~cs332g1/CS-332-Project/s_grade.php

Student Courses and Grades

Student CWID: 800000006



ecs.fullerton.edu/~cs332g1/CS-332-Project/s_grade.php

Student Courses and Grades

Student CWID:

Course #	Title	Section #	Grade
120	Intro to CS	1	B
150	CS Ethics	1	A
240	Computer Assembly	1	B
332	Database	1	A