**SQL Statements-** [**https://cgi.soic.indiana.edu/~spbooth/i308/Team29\_FinalProject.php**](https://cgi.soic.indiana.edu/~spbooth/i308/Team29_FinalProject.php)

**Required Queries (50 points total)**

**Teams will select 50 points worth of queries from the following list with the following restrictions:**

**(1) You must include at least one “b” and one “c” query.**

**(2) You may not select more than one query with the same number.**

**(3) You must choose at least two queries where the results are based on user selection of a value (using**

**dropdowns in PHP). These values are marked with asterisks in the query description.**

**Note: If any of the statements return a SQL error for bad coding, the group will receive a 0 (zero) for this part of the project. Please run your scripts before submitting to Canvas!**

**1a Produce a roster for a \*specified section\* sorted by student’s last name, first name (5 points)**

"SELECT CONCAT(s.Lastname, ', ', s.FirstName) as Student\_Name

FROM Student\_Takes\_Section as sts, Student as s

WHERE sts.StudentID = s.StudentID

AND sectionID = '" . $sectionid . "'

ORDER BY s.Lastname, s.FirstName";

**2a. Produce a list of rooms that are equipped with \*some feature\*—e.g., “wired instructor station”. (5 points)**

SELECT RoomID

FROM Room\_Features

WHERE Feature = '" . $feature . "'

ORDER BY RoomID

**3b. Produce a list of faculty who have never taught a \*specified course\*. (10 points)**

SELECT CONCAT(f.FirstName, ' ', f.LastName)

FROM Faculty as f

WHERE f.FacultyID NOT IN

(SELECT f.FacultyID

FROM Section as s, Faculty as f, Course as c

WHERE f.FacultyID = s.FacultyID

AND s.CourseNumber = c.CourseNumber

AND c.Title = '" . $course . "')

ORDER BY f.LastName";

**5b. Produce a chronological list of all courses taken by a \*specified student\*. Show grades earned. Include overall hours taken and GPA at the end. (10 points)**

$sql = "SELECT c.Title, sts.Letter

FROM Student\_Takes\_Section as sts, Section as sec, Student as s, Semester as sem, Course as c

Where sts.SectionID = sec.SectionID

AND s.StudentID = sts.StudentID

AND c.CourseNumber = sec.CourseNumber

AND sem.SemesterCode = sec.SemesterCode

AND sts.StudentID = '" . $studentid . "'

ORDER BY sem.Start\_Date, c.Title";

$hours = "SELECT SUM(c.Credit\_Hours) as creditHours, SUM(c.Credit\_Hours\*sts.GradePoints) as Hours\_Earned

FROM Student\_Takes\_Section as sts, Section as sec, Student as s, Semester as sem, Course as c

Where sts.SectionID = sec.SectionID

AND s.StudentID = sts.StudentID

AND c.CourseNumber = sec.CourseNumber

AND sem.SemesterCode = sec.SemesterCode

AND sts.StudentID = '" . $studentid . "'

ORDER BY sem.Start\_Date, c.Title";

**6c Produce a list of students and faculty who were in a \*particular building\* at a \*particular time\*, during a \*particular semester\*.Also include in the list faculty and advisors who have offices in that building. (15 points)**

$student = "SELECT CONCAT(s.LastName, ', ', s.FirstName)

FROM Student as s, Semester as sem, Building as b, Student\_Takes\_Section as sts, Section as sec, Room as r

WHERE s.StudentID = sts.StudentID

AND sts.SectionID = sec.SectionID

AND sec.SemesterCode = sem.SemesterCode

AND sec.RoomID = r.RoomID

AND r.BuildingID = b.BuildingID

AND b.BuildingID = '" . $buildingid . "'

AND sem.SemesterCode = '" . $semestercode . "'

AND sec.StartTime <= '" . $atime . "'

AND sec.EndTime >= '" . $atime . "'

ORDER BY s.LastName";

$faculty = "SELECT CONCAT(f.LastName, ', ', f.FirstName)

FROM Faculty as f, Semester as sem, Building as b, Section as sec, Room as r

WHERE f.FacultyID = sec.FacultyID

AND sec.SemesterCode = sem.SemesterCode

AND sec.RoomID = r.RoomID

AND r.BuildingID = b.BuildingID

AND b.BuildingID = '" . $buildingid . "'

AND sem.SemesterCode = '" . $semestercode . "'

AND sec.StartTime <= '" . $atime . "'

AND sec.EndTime >= '" . $atime . "'

ORDER BY f.LastName";

$facoffices = "SELECT CONCAT(f.LastName, ', ', f.FirstName)

FROM Faculty as f, Building as b, Room as r

WHERE f.RoomID = r.RoomID

AND b.BuildingID = r.BuildingID

AND r.Type = 'Office'

AND b.BuildingID = '" . $buildingid . "'

ORDER BY f.LastName";

$advoffices = "Select CONCAT(a.LastName, ', ', a.FirstName)

FROM Advisor as a, Building as b, Room as r

WHERE a.RoomID = r.RoomID

AND b.BuildingID = r.BuildingID

AND r.Type = 'Office'

AND b.BuildingID = '" . $buildingid . "'

ORDER BY a.LastName";

**7a. Produce an alphabetical list of students with their majors who are advised by a \*specified advisor\* (5 points)**

"SELECT distinct CONCAT(s.FirstName, ' ', s.LastName) as sName, m.Name

FROM Student as s, Studies as st, Major as m, Advises as a, Advisor as ad

WHERE s.StudentID = st.StudentID

AND a.StudentID = s.StudentID

AND st.MajorID = m.MajorID

AND a.AdvisorID = '" . $advisor . "'

AND a.AdvisorID = ad.AdvisorID

AND ad.Specialty = m.Name

ORDER BY s.LastName, s.FirstName";

**Additional Queries (10 points)**

**Along with these select statements, your group needs to provide two or more additional statements. If your database contains tables that have not been used in the above statements, provide select statements (for each table) demonstrating the function of these tables. These statements may not be the same as the provided questions; instead they should show something unique about your system that the other statements did not demonstrate**

**PHP (20 points)**

**In addition to the above requirements, the queries statements must be created in PHP and formatted appropriately to select (using dropdowns) and view the results. This is for the presentation of the system to the client (the AIs) during class.**

**1a Produce a roster for a \*specified section\* sorted by student’s last name, first name (5 points)**

<?php

$servername = "db.soic.indiana.edu";

$username = "i308f16\_team29";

$password = "my+sql=i308f16\_team29";

$dbname = "i308f16\_team29";

// Create connection

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

// Check connection

if (!$conn) {

die("Connection failed: " . mysqli\_connect\_error());

}

else

{echo "Established Database Connection <br>";}

function test\_input($data) {

$data = trim($data);

$data = stripslashes($data);

$data = htmlspecialchars($data);

return $data;

}

//escape variables for security sql injection

$sectionid= mysqli\_real\_escape\_string($conn, test\_input($\_POST['sectionid']));

$sql = "SELECT CONCAT(s.Lastname, ', ', s.FirstName) as Student\_Name

FROM Student\_Takes\_Section as sts, Student as s

WHERE sts.StudentID = s.StudentID

AND sectionID = '" . $sectionid . "'

ORDER BY s.Lastname, s.FirstName";

$result = mysqli\_query($conn, $sql);

if (mysqli\_num\_rows($result) > 0) {

// output data of each row

echo "<table border='1'><tr><th>Students in Section " . $sectionid . "</th></tr>";

while($row = mysqli\_fetch\_assoc($result)) {

echo "<tr><td align='center'>".$row["Student\_Name"]."</td></tr>";

}

echo "</table>";

} else {

echo "This section is empty";

}

mysqli\_close($conn);

?>

**2a Produce a list of rooms that are equipped with \*some feature\*—e.g., “wired instructor station”. (5 points)**

<?php

$servername = "db.soic.indiana.edu";

$username = "i308f16\_team29";

$password = "my+sql=i308f16\_team29";

$dbname = "i308f16\_team29";

// Create connection

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

// Check connection

if (!$conn) {

die("Connection failed: " . mysqli\_connect\_error());

}

else

{echo "Established Database Connection <br>";}

function test\_input($data) {

$data = trim($data);

$data = stripslashes($data);

$data = htmlspecialchars($data);

return $data;

}

//escape variables for security sql injection

$feature= mysqli\_real\_escape\_string($conn, test\_input($\_POST['feature']));

$sql = "SELECT RoomID

FROM Room\_Features

WHERE Feature = '" . $feature . "'

ORDER BY RoomID";

$result = mysqli\_query($conn, $sql);

if (mysqli\_num\_rows($result) > 0) {

// output data of each row

echo "<table border='1'><tr><th>Rooms that have a " . $feature . "</th></tr>";

while($row = mysqli\_fetch\_assoc($result)) {

echo "<tr><td align='center'>".$row["RoomID"]."</td></tr>";

}

echo "</table>";

} else {

echo "0 results";

}

mysqli\_close($conn);

?>

**3b Produce a list of faculty who have never taught a \*specified course\*. (10 points)**

<?php

$servername = "db.soic.indiana.edu";

$username = "i308f16\_team29";

$password = "my+sql=i308f16\_team29";

$dbname = "i308f16\_team29";

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

// Check connection

if (!$conn) {

die("Connection failed: " . mysqli\_connect\_error());

}

else

{echo "Established Database Connection <br>";}

function test\_input($data) {

$data = trim($data);

$data = stripslashes($data);

$data = htmlspecialchars($data);

return $data;

}

$course= mysqli\_real\_escape\_string($conn, test\_input($\_POST['course']));

$sql = "SELECT CONCAT(f.FirstName, ' ', f.LastName)

FROM Faculty as f

WHERE f.FacultyID NOT IN

(SELECT f.FacultyID

FROM Section as s, Faculty as f, Course as c

WHERE f.FacultyID = s.FacultyID

AND s.CourseNumber = c.CourseNumber

AND c.Title = '" . $course . "')

ORDER BY f.LastName";

$result = mysqli\_query($conn, $sql);

if (mysqli\_num\_rows($result) > 0) {

// output data of each row

echo "<table border='1'><tr><th>Instructors who haven't taught " . $course . " </th></tr>";

while($row = mysqli\_fetch\_assoc($result)) {

echo "<tr><td align='center'>".$row["CONCAT(f.FirstName, ' ', f.LastName)"]."</td></tr>";

}

echo "</table>";

} else {

echo "0 results";

}

mysqli\_close($conn);

?>

**5b Produce a chronological list of all courses taken by a \*specified student\*. Show grades earned. Include overall hours taken and GPA at the end. (10 points)**

<?php

$servername = "db.soic.indiana.edu";

$username = "i308f16\_team29";

$password = "my+sql=i308f16\_team29";

$dbname = "i308f16\_team29";

// Create connection

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

// Check connection

if (!$conn) {

die("Connection failed: " . mysqli\_connect\_error());

}

else

{echo "Established Database Connection <br>";}

function test\_input($data) {

$data = trim($data);

$data = stripslashes($data);

$data = htmlspecialchars($data);

return $data;

}

//escape variables for security sql injection

$studentid = mysqli\_real\_escape\_string($conn, test\_input($\_POST['student']));

$sql = "SELECT c.Title, sts.Letter

FROM Student\_Takes\_Section as sts, Section as sec, Student as s, Semester as sem, Course as c

Where sts.SectionID = sec.SectionID

AND s.StudentID = sts.StudentID

AND c.CourseNumber = sec.CourseNumber

AND sem.SemesterCode = sec.SemesterCode

AND sts.StudentID = '" . $studentid . "'

ORDER BY sem.Start\_Date, c.Title";

$hours = "SELECT SUM(c.Credit\_Hours) as creditHours, SUM(c.Credit\_Hours\*sts.GradePoints) as Hours\_Earned

FROM Student\_Takes\_Section as sts, Section as sec, Student as s, Semester as sem, Course as c

Where sts.SectionID = sec.SectionID

AND s.StudentID = sts.StudentID

AND c.CourseNumber = sec.CourseNumber

AND sem.SemesterCode = sec.SemesterCode

AND sts.StudentID = '" . $studentid . "'

ORDER BY sem.Start\_Date, c.Title";

$result = mysqli\_query($conn, $sql);

$hoursAttempted = mysqli\_query($conn, $hours);

$hoursEarned = mysqli\_fetch\_assoc($hoursAttempted)["Hours\_Earned"];

$hoursAttempted = mysqli\_query($conn, $hours);

$creditHours = mysqli\_fetch\_assoc($hoursAttempted)["creditHours"];

$gpa = $hoursEarned / (int)$creditHours;

if (mysqli\_num\_rows($result) > 0) {

// output data of each row

echo "<table border='1'><tr><th>Course Title</th><th>Letter Grade</th></tr>";

while($row = mysqli\_fetch\_assoc($result)) {

echo "<tr><td align='center'>".$row["Title"]."</td><td align='center'>".$row["Letter"]."</td></tr>";

}

echo "</table>";

echo "<table border='1'><tr><th>Hours Attempted</th><th>Grade Points Earned</th><th>GPA</th></tr>";

echo "<tr><td align='center'>". $creditHours ."</td><td align='center'>". $hoursEarned."</td><td align='center'>". round($gpa, 2) ."</td></tr>";

echo "</table>";

} else {

echo "0 results";

}

mysqli\_close($conn);

?>

**6c Produce a list of students and faculty who were in a \*particular building\* at a \*particular time\*, during a \*particular semester\*.Also include in the list faculty and advisors who have offices in that building. (15 points)**

<?php

$servername = "db.soic.indiana.edu";

$username = "i308f16\_team29";

$password = "my+sql=i308f16\_team29";

$dbname = "i308f16\_team29";

// Create connection

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

// Check connection

if (!$conn) {

die("Connection failed: " . mysqli\_connect\_error());

}

else

{echo "Established Database Connection <br>";}

function test\_input($data) {

$data = trim($data);

$data = stripslashes($data);

$data = htmlspecialchars($data);

return $data;

}

//escape variables for security sql injection

$buildingid = mysqli\_real\_escape\_string($conn, test\_input($\_POST['building']));

$atime = mysqli\_real\_escape\_string($conn, test\_input($\_POST['time']));

$semestercode = mysqli\_real\_escape\_string($conn, test\_input($\_POST['semester']));

$student = "SELECT CONCAT(s.LastName, ', ', s.FirstName)

FROM Student as s, Semester as sem, Building as b, Student\_Takes\_Section as sts, Section as sec, Room as r

WHERE s.StudentID = sts.StudentID

AND sts.SectionID = sec.SectionID

AND sec.SemesterCode = sem.SemesterCode

AND sec.RoomID = r.RoomID

AND r.BuildingID = b.BuildingID

AND b.BuildingID = '" . $buildingid . "'

AND sem.SemesterCode = '" . $semestercode . "'

AND sec.StartTime <= '" . $atime . "'

AND sec.EndTime >= '" . $atime . "'

ORDER BY s.LastName";

$faculty = "SELECT CONCAT(f.LastName, ', ', f.FirstName)

FROM Faculty as f, Semester as sem, Building as b, Section as sec, Room as r

WHERE f.FacultyID = sec.FacultyID

AND sec.SemesterCode = sem.SemesterCode

AND sec.RoomID = r.RoomID

AND r.BuildingID = b.BuildingID

AND b.BuildingID = '" . $buildingid . "'

AND sem.SemesterCode = '" . $semestercode . "'

AND sec.StartTime <= '" . $atime . "'

AND sec.EndTime >= '" . $atime . "'

ORDER BY f.LastName";

$facoffices = "SELECT CONCAT(f.LastName, ', ', f.FirstName)

FROM Faculty as f, Building as b, Room as r

WHERE f.RoomID = r.RoomID

AND b.BuildingID = r.BuildingID

AND r.Type = 'Office'

AND b.BuildingID = '" . $buildingid . "'

ORDER BY f.LastName";

$advoffices = "Select CONCAT(a.LastName, ', ', a.FirstName)

FROM Advisor as a, Building as b, Room as r

WHERE a.RoomID = r.RoomID

AND b.BuildingID = r.BuildingID

AND r.Type = 'Office'

AND b.BuildingID = '" . $buildingid . "'

ORDER BY a.LastName";

$studentsresult = mysqli\_query($conn, $student);

$facultyResult = mysqli\_query($conn, $faculty);

$facofficesResult = mysqli\_query($conn, $facoffices);

$advofficesResult = mysqli\_query($conn, $advoffices);

if (mysqli\_num\_rows($studentsresult) > 0) {

// output data of each row

echo "<h2>Students and Faculty in this bulding<h2>";

echo "<table border='1'><tr><th>Name</th><th>Position</th></tr>";

while($row = mysqli\_fetch\_assoc($studentsresult)) {

echo "<tr><td align='center'>".$row["CONCAT(s.LastName, ', ', s.FirstName)"]."</td><td align='center'>Student</td></tr>";

}

while($row = mysqli\_fetch\_assoc($facultyResult)) {

echo "<tr><td align='center'>".$row["CONCAT(f.LastName, ', ', f.FirstName)"]."</td><td align='center'>Faculty</td></tr>";

}

echo "</table>";

} else {

echo "No students or faculty were in this building at the specified time";

}

if (mysqli\_num\_rows($facofficesResult) > 0) {

// output data of each row

echo "<h2>Offices in this bulding</h2>";

echo "<table border='1'><tr><th>Name</th><th>Type</th></tr>";

while($row = mysqli\_fetch\_assoc($facofficesResult)) {

echo "<tr><td align='center'>".$row["CONCAT(f.LastName, ', ', f.FirstName)"]."</td><td align='center'>Faculty</td></tr>";

}

while($row = mysqli\_fetch\_assoc($advofficesResult)) {

echo "<tr><td align='center'>".$row["CONCAT(a.LastName, ', ', a.FirstName)"]."</td><td align='center'>Advisor</td></tr>";

}

echo "</table>";

} else {

echo "No offices are in this building";

}

mysqli\_close($conn);

?>

**7a Produce an alphabetical list of students with their majors who are advised by a \*specified advisor\* (5 points)**

<?php

$servername = "db.soic.indiana.edu";

$username = "i308f16\_team29";

$password = "my+sql=i308f16\_team29";

$dbname = "i308f16\_team29";

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

// Check connection

if (!$conn) {

die("Connection failed: " . mysqli\_connect\_error());

}

else

{echo "Established Database Connection <br>";}

function test\_input($data) {

$data = trim($data);

$data = stripslashes($data);

$data = htmlspecialchars($data);

return $data;

}

$advisor = mysqli\_real\_escape\_string($conn, test\_input($\_POST['advisor']));

$sql = "SELECT distinct CONCAT(s.FirstName, ' ', s.LastName) as sName, m.Name

FROM Student as s, Studies as st, Major as m, Advises as a, Advisor as ad

WHERE s.StudentID = st.StudentID

AND a.StudentID = s.StudentID

AND st.MajorID = m.MajorID

AND a.AdvisorID = '" . $advisor . "'

AND a.AdvisorID = ad.AdvisorID

AND ad.Specialty = m.Name

ORDER BY s.LastName, s.FirstName";

$result = mysqli\_query($conn, $sql);

if (mysqli\_num\_rows($result) > 0) {

// output data of each row

echo "<table border='1'><tr><th>Student Name</th><th>Major</th></tr>";

while($row = mysqli\_fetch\_assoc($result)) {

echo "<tr><td align='center'>".$row["sName"]."</td><td align='center'>".$row["Name"]."</td></tr>";

}

echo "</table>";

} else {

echo "0 results";

}

mysqli\_close($conn);

?>