<Utep Edge Project>
Assignment 3

Version 1.0
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1.2 - Table of Contents

I - Document Control

1.1 Front Page

1.2 Table of Contents

II - Scope, Requirements and Assumptions

1.3 Database Scope and Requirements

1.4 Assumptions

III - Models

1.5 Entity - Relational Model

1.6 Relational Model

1.7 Normalized Schema

IV - SQL Queries

1.8 Database Schema in MySQL

1.9 Database Records

1.10 SQL Queries

1.11 IIS Web server and GUI

V - References

1.12 References

1.13 Appendix

1.3 - Database Scope and Requirements

1.3.1 - Scope

We will develop a website for Engineering edge center advisors and students (Focus in lower division students) of the University of Texas at El Paso to facilitate advising and changes such as major. Also, other services that the page need to include are graduation application (link to download/print), under graduation opportunities, grad school, assemble of engineer (ring size), student travel package. Every application should have a status where advisors can update it and for students to check it. The system will store the number of students that were helped by day, week, and month.

The system will store the advisor's username, password and several students that were helped. For students the data stored will be username, password, sex, major, ethnicity, and comment made by the advisor.

Also, there should be an interface with a queue for students to register for any type of service and for advisor to pick a student.

1.3.2 - Requirements

1. The website will provide different categories for these different services offered by UTEP EDGE:
    a. Advising
    b. Graduate studies
    c. Undergraduate research
    d. College accreditation process
    e. Undergraduate forms and Graduation applications
    f. Engineering students success programs
2. The students will be able to create appointments with their specific advisors by filling applications to advisors. Each application will contain:
    a. Type
    b. Status
    c. Form Number
3. There will be a log-in system where each user will store:
    a. Username
    b. ID
    c. Password
    d. Name(First, Middle Initial, Last)

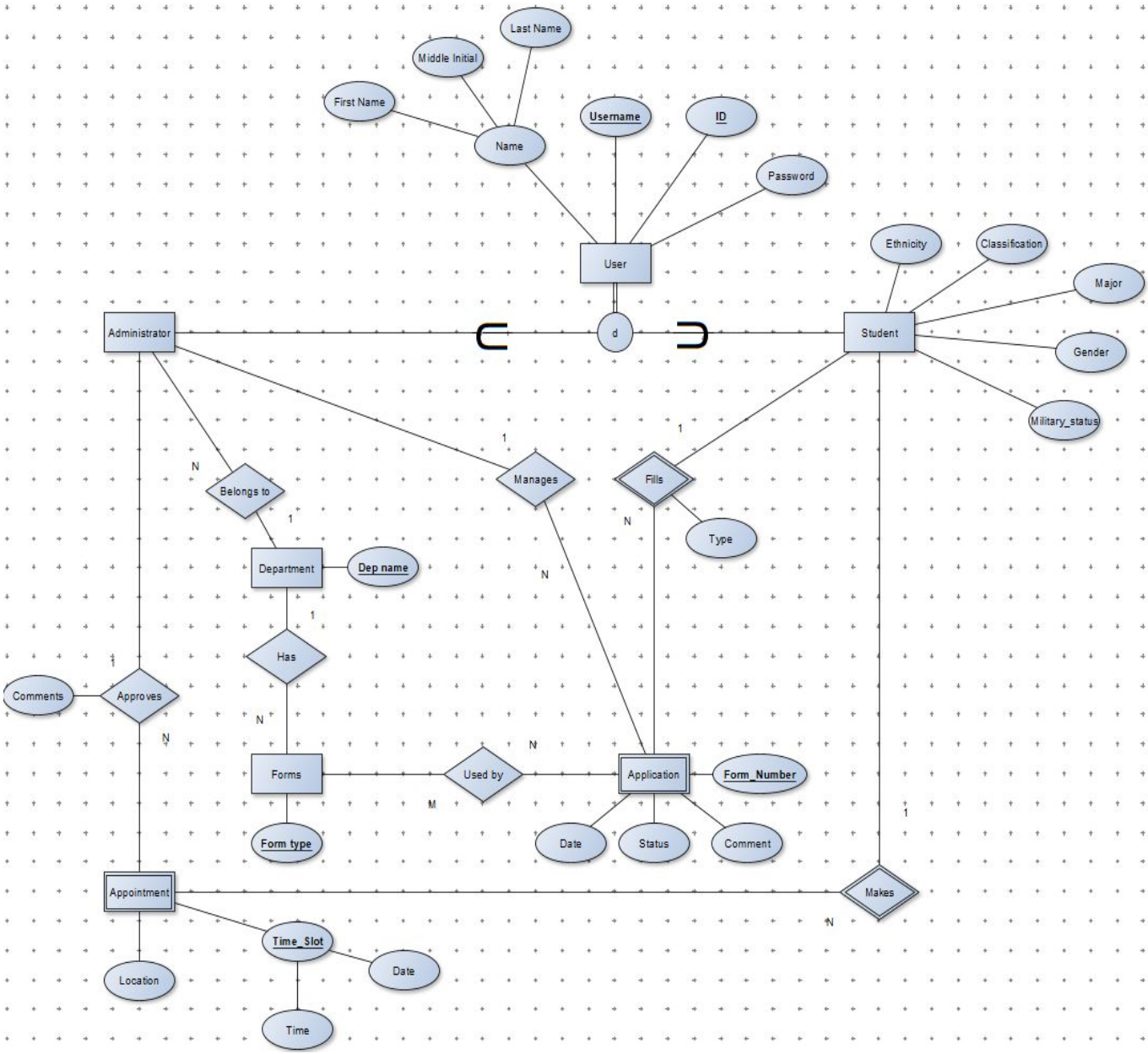
4. After every appointment the system will generate a report containing the student's demographic information as well as the reason for the visit.
5. An administrator will need to approve an appointment for it to be valid (to occur.) Each appointment will contain:
    a. Time slot with date and time
    b. Location
6. An application will have different statuses depending on if the application is pending for approval, processed, approved or denied.
7. Each student will be categorized by:
    a. Major
    b. Gender
    c. Classification (Freshman, Sophomore, etc.)
    d. Ethnicity
    e. Military Status

1.4 - Assumptions

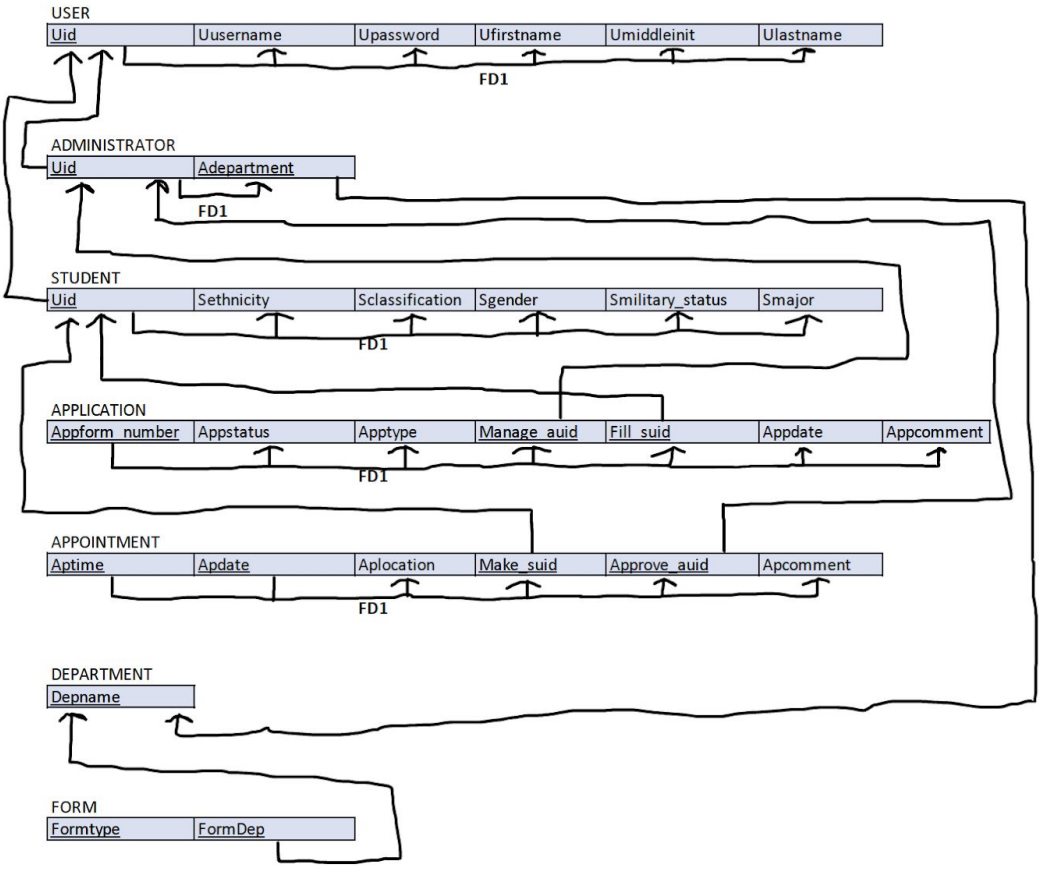
We are assuming that students will have a basic level of digital literacy. Student should be attending in person to get advising, but they will be able to access their account anywhere and anytime so they can check the status of the applications submitted.

We are also assuming that on the website that ONLY students will be able to register, and Admins will have to go through a network operator or another admin in order to have admin privileges.

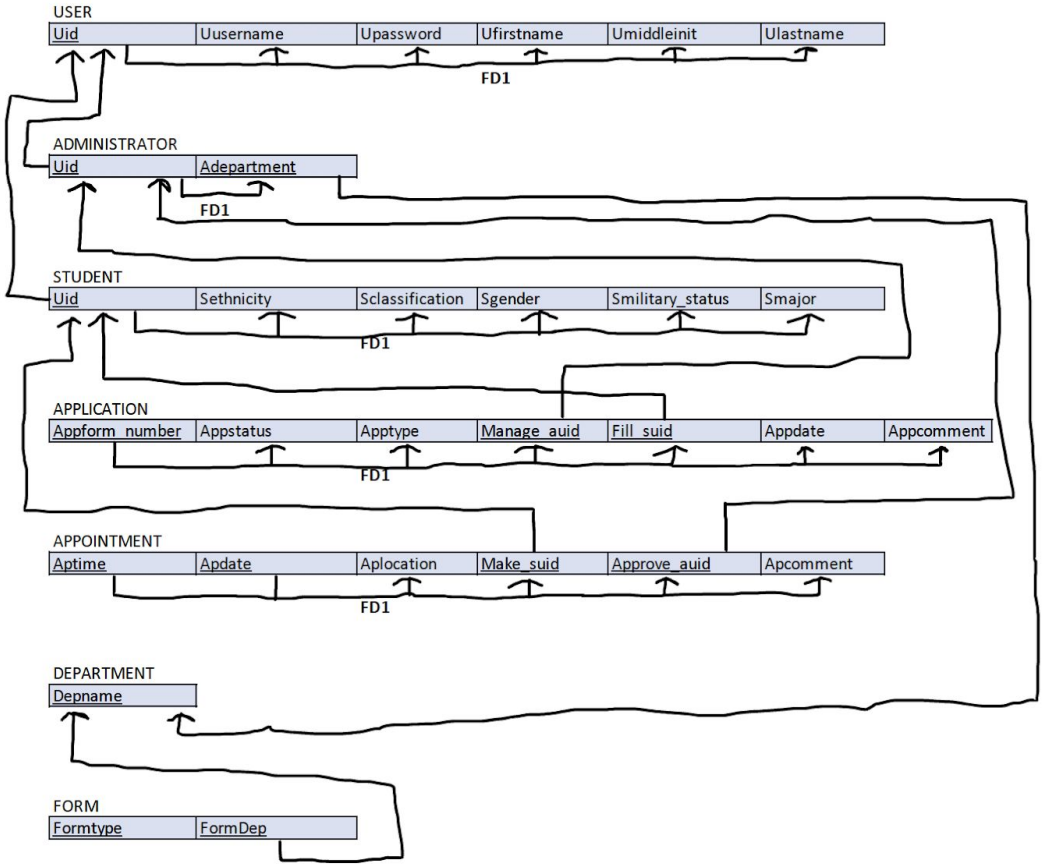
1.5 - Entity - Relational Model



1.6 - Relational Model



1.7 - Normalized Schema



When creating the normalized schema for the relational model we discovered that the relational model already fulfilled 3NF.

1. User is in 1NF form, because none of the attributes were multivalued, so each column only had atomic values. It is in 2NF because it only has one primary key, Uid, and it is in 3NF because all of the dependencies are based only on the primary key.
2. Administrator is in 1NF, because it is not multivalued, 2NF because there's only one primary key, and 3NF because the only other value depends on the primary key.
3. Student is 3NF, because it has only atomic attributes, 2NF because there's only one primary key, and 3NF because all other values depend on the primary key.

4. Application is in 3NF, because none of the values are multivalues. It is in 2NF because Appform_number is the only primary key. It fulfills 3NF because all of the values depend on the primary key.
5. Appointment is in 3NF, because it fulfilled 1NF because none of the values are multivalued. In 2NF because all of the values depended on both Primary keys, and 3NF because all of the values were dependent on only the primary keys, and none of the other attributes in this table.
6. Department was in 3NF because only having one attribute, it could not break 1NF or 2NF.
7. Form was in 3NF because its only functional dependency was with FormDep, which is not multivalued. In 2NF because there was only one Primary Key, and 3NF because it's only dependency in this table was on the one Primary Key.

1.8 - Database Schema in MySQL

```
mysql> CREATE TABLE User(
    -> Uid CHAR(30) NOT NULL,
    -> Uusername CHAR(30),
    -> Upassword CHAR(30),
    -> Ufirstname CHAR(30),
    -> Umiddleinit CHAR(1),
    -> Ulastname CHAR(30),
    -> PRIMARY KEY(uid))Engine=InnoDb;

mysql> CREATE TABLE administrator(
    -> Uid CHAR(30) NOT NULL,
    -> Adepartment CHAR(30),
    -> PRIMARY KEY(uid),
    -> FOREIGN KEY(uid) REFERENCES User(uid) ON UPDATE CASCADE ON DELETE CASCADE)Engine=InnoDB;

mysql> CREATE TABLE student(
    -> Uid CHAR(30) NOT NULL,
    -> Sethnicity CHAR(30),
    -> Sclassification CHAR(30),
    -> Sgender CHAR(30),
    -> Smilitary_status CHAR(30),
    -> Smajor CHAR(30),
    -> PRIMARY KEY(uid),
    -> FOREIGN KEY(uid) REFERENCES User(uid) ON UPDATE CASCADE ON DELETE CASCADE)Engine=InnoDB;

mysql> CREATE TABLE application(
    -> Appform_number CHAR(30) NOT NULL,
    -> Appstatus CHAR(30),
    -> Apptype CHAR(30),
    -> Muid CHAR(30) NOT NULL,
    -> Fuid CHAR(30) NOT NULL,
    -> FOREIGN KEY(Muid) REFERENCES Administrator(uid) ON UPDATE CASCADE ON DELETE CASCADE,
    -> FOREIGN KEY(Fuid) REFERENCES Student(uid) ON UPDATE CASCADE ON DELETE CASCADE)Engine=InnoDB;

mysql> CREATE TABLE appointment(
    -> TIME(0) NOT NULL,
    -> DATE NOT NULL,
    -> VARCHAR(30),
    -> CHAR(30) NOT NULL,
    -> CHAR(30) NOT NULL,
    -> CHAR(50),
    -> PRIMARY KEY(Aptime,Apdate),
    -> FOREIGN KEY(Mauid) REFERENCES Student(uid) ON UPDATE CASCADE ON DELETE CASCADE,
    -> FOREIGN KEY(Auid) REFERENCES Administrator(uid) ON UPDATE CASCADE ON DELETE CASCADE)Engine=InnoDB;
```

```
mysql>CREATE TABLE Departments(
    -> Depname CHAR (50) NOT NULL,
    -> PRIMARY KEY(Depname))Engine=InnoDB;

mysql>CREATE TABLE Forms(
    -> Ftype CHAR(100) NOT NULL,
    -> Fdepartment CHAR(50) NOT NULL,
    -> PRIMARY KEY(Ftype)
    -> FOREIGN KEY(Fdepartment) REFERENCES departments(Depname) ON UPDATE CASCADE ON DELETE CASCADE)Engine=InnoDB;
```

1.9 - Database Records

```
mysql> INSERT INTO user
    -> VALUES('iseller','iseller','isell33','Janet','Q','Seller');
mysql> INSERT INTO user
    -> VALUES('user','user','user1','Jane','D','Doe');
mysql> INSERT INTO user
    -> VALUES('80483808','jhill84','hi1234','Joe','H','Hill');
mysql> INSERT INTO user
    -> VALUES('admin','admin','admin1','John','D','Doe');
mysql> INSERT INTO user(uid,uusername,upassword,ufirstname,ulastname)
    -> VALUES('jedward','jedward','jedward123','Jane','Edward');
mysql> INSERT INTO user VALUES(uid,uusername,upassword,ufirstname,ulastname)
    -> VALUES('80482888','SJameson33','sj4321','Sherry','Jameson');

mysql> INSERT INTO student
    -> VALUES('80483808','Hispanic','Male','Senior','None','Computer Science');
mysql> INSERT INTO student
    -> VALUES('80482888',Caucasian','Female',Freshman','Veteran','Mechanical Engineering');
mysql> INSERT INTO student
    -> VALUES('user','Hispanic','Female','Senior','Freshman','Computer Science');

mysql> INSERT INTO administrator
    -> VALUES('jedward','Advising');
mysql> INSERT INTO administrator
    -> VALUES('admin',Advising');
mysql> INSERT INTO administrator
    -> VALUES('wiseller',Work study');

mysql> INSERT INTO application
    -> VALUES('3352B','Denied','Study abroad','jedward','80483808');
mysql> INSERT INTO application
    -> VALUES('2234E','Accepted','Work study','iseller','80482888');
mysql> INSERT INTO application
    -> VALUES('2340F','Pending','Change of Major','admin','user');

mysql> INSERT INTO appointment(Aptime,Apdate,Aplocation,Mauid,Auid)
    -> VALUES('14:30:00','2020-04-12','E303','user','admin');
mysql> INSERT INTO appointment
    -> VALUES('08:30:00','2020-03-11','E304','user','iseller','Helped student switch majors');
mysql> INSERT INTO appointment
    -> VALUES('13:00:00','2020-02-09','E302','80482888','jedward','Ran long');
```

```
mysql> SELECT*FROM user;
+----------+------------+------------+------------+-------------+-----------+
| Uid      | Uusername  | Upassword  | Ufirstname | Umiddleinit | Ulastname |
+----------+------------+------------+------------+-------------+-----------+
| 80482888 | SJameson33 | sj4321     | Sherry     | NULL        | Jameson   |
| 80483808 | jhill84    | hi1234     | Joe        | H           | Hill      |
| admin    | admin      | admin1     | John       | D           | Doe       |
| jedward  | jedward    | jedward123 | Jane       | NULL        | Edward    |
| jseller  | jseller    | jsell33    | Janet      | Q           | Seller    |
| user     | user       | user1      | Jane       | D           | Doe       |
+----------+------------+------------+------------+-------------+-----------+
6 rows in set (0.08 sec)

mysql> SELECT* FROM student;
+----------+------------+-----------------+---------+------------------+------------------------+
| uid      | Sethnicity | Sclassification | Sgender | Smilitary_status | Smajor                 |
+----------+------------+-----------------+---------+------------------+------------------------+
| 80482888 | Caucasian  | Freshman        | Female  | Veteran          | Mechanical Engineering |
| 80483808 | Hispanic   | Senior          | Male    | None             | Computer Science       |
| user     | Hispanic   | Senior          | Female  | None             | Computer Science       |
+----------+------------+-----------------+---------+------------------+------------------------+
3 rows in set (0.07 sec)

mysql> SELECT*FROM administrator;
+---------+-------------+
| Uid     | Adepartment |
+---------+-------------+
| admin   | Advising    |
| jedward | Advising    |
| jseller | Work study  |
+---------+-------------+
3 rows in set (0.06 sec)

mysql> SELECT*FROM application;
+----------------+-----------+----------------+---------+----------+
| Appform_number | Appstatus | Apptype        | Muid    | Fuid     |
+----------------+-----------+----------------+---------+----------+
| 2234E          | Accepted  | Work study     | jseller | 80482888 |
| 2340F          | Pending   | Change of Major | admin   | user     |
| 3352B          | Denied    | Study abroad   | jedward | 80483808 |
+----------------+-----------+----------------+---------+----------+
3 rows in set (0.07 sec)

mysql> SELECT*FROM appointment;
+----------+------------+------------+----------+---------+----------------------------+
| Aptime   | Apdate     | Aplocation | Mauid    | Auid    | Appcomment                 |
+----------+------------+------------+----------+---------+----------------------------+
| 08:30:00 | 2020-03-11 | E304       | user     | jseller | Helped student switch majors |
| 13:00:00 | 2020-02-09 | E302       | 80482888 | jedward | Ran long                   |
| 14:30:00 | 2020-04-12 | E303       | user     | admin   | NULL                       |
+----------+------------+------------+----------+---------+----------------------------+
3 rows in set (0.08 sec)
```

```
mysql> ALTER TABLE application CHANGE Muid Manage_auid CHAR(30);
Query OK, 0 rows affected (2.32 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE application CHANGE Fuid Fill_suid CHAR(30);
Query OK, 0 rows affected (2.09 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> Select*FROM application;
+----------------+-----------+----------------+-------------+------------+
| Appform_number | Appstatus | Apptype        | Manage_auid | Fill_suid  |
+----------------+-----------+----------------+-------------+------------+
| 2234E          | Accepted  | Work study     | jseller     | 80482888   |
| 2340F          | Pending   | Change of Major | admin       | user       |
| 3352B          | Denied    | Study abroad   | jedward     | 80483808   |
+----------------+-----------+----------------+-------------+------------+
```

```
mysql> ALTER TABLE appointment CHANGE Mauid Make_suid CHAR(30);
Query OK, 0 rows affected (1.73 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE appointment CHANGE Auid Approve_auid CHAR(30);
Query OK, 0 rows affected (1.91 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT*FROM Appointment;
+----------+------------+------------+-----------+--------------+------------------------------+
| Aptime   | Apdate     | Aplocation | Make_suid | Approve_auid | Appcomment                   |
+----------+------------+------------+-----------+--------------+------------------------------+
| 08:30:00 | 2020-03-11 | E304       | user      | jseller      | Helped student switch majors |
| 13:00:00 | 2020-02-09 | E302       | 80482888  | jedward      | Ran long                     |
| 14:30:00 | 2020-04-12 | E303       | user      | admin        | NULL                         |
+----------+------------+------------+-----------+--------------+------------------------------+
3 rows in set (0.07 sec)
```

```
mysql> ALTER TABLE appointment Modify Apdate CHAR(30);
Query OK, 3 rows affected (1.77 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
mysql> ALTER TABLE appointment Modify Aptime CHAR(30);
Query OK, 3 rows affected (2.58 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
mysql> ALTER TABLE appointment Modify Aplocation CHAR(30);
Query OK, 3 rows affected (2.26 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> DESCRIBE appointment;
+--------------+----------+------+-----+---------+-------+
| Field        | Type     | Null | Key | Default | Extra |
+--------------+----------+------+-----+---------+-------+
| Aptime       | char(30) | NO   | PRI | NULL    |       |
| Apdate       | char(30) | NO   | PRI | NULL    |       |
| Aplocation   | char(30) | YES  |     | NULL    |       |
| Make_suid    | char(30) | YES  | MUL | NULL    |       |
| Approve_auid | char(30) | YES  | MUL | NULL    |       |
| Appcomment   | char(50) | YES  |     | NULL    |       |
+--------------+----------+------+-----+---------+-------+
```

1.10 - SQL Queries

```
MySQL  ilinkserver.cs.utep.edu:33060+ ssl  f19_team9  SQL > SELECT * FROM user;
+-----------+------------+------------+------------+-------------+-----------+
| Uid       | Uusername  | Upassword  | Ufirstname | Umiddleinit | Ulastname |
+-----------+------------+------------+------------+-------------+-----------+
| 00000     |            | username   | user       |             | name      |
| 1111      | test       | test       | Tester     | t           | test      |
| 123456789 | tester     | test       | FAKE       | N           | ame       |
| 80482888  | SJameson33 | sj4321     | Sherry     | NULL        | Jameson   |
| 80483808  | jhill84    | hi1234     | Joe        | H           | Hill      |
| 88999968  | raguilarsa | password   | Ricardo    |             | Aguilar   |
| 999999    | test2      | test       | test       | m           | test      |
| admin     | admin      | admin1     | John       | D           | Doe       |
| jedward   | jedward    | jedward123 | Jane       | NULL        | Edward    |
| jseller   | jseller    | jsell33    | Janet      | Q           | Seller    |
| user      | user       | user1      | Jane       | D           | Doe       |
+-----------+------------+------------+------------+-------------+-----------+
11 rows in set (0.0536 sec)
```

```
MySQL  ilinkserver.cs.utep.edu:33060+ ssl  f19_team9  SQL > Select * from appointment;
+----------+------------+------------+-----------+-------------+--------------------------------+
| Aptime   | Apdate     | Aplocation | Make_suid | Approve_auid | Appcomment                     |
+----------+------------+------------+-----------+-------------+--------------------------------+
| 08:30:00 | 2020-03-11 | E304       | user      | jseller     | Helped student switch majors   |
| 13:00:00 | 2020-02-09 | E302       | 80482888  | jedward     | Ran long                       |
| 13:23    | 2019-11-13 | E303       | user      | NULL        | not approved                   |
| 13:23    | 2019-11-14 | E304       | user      | NULL        | Yeet?                          |
| 14:30:00 | 2020-04-12 | E303       | user      | admin       | NULL                           |
| 21:11    | 2019-11-12 | E304       | user      | NULL        | I am not that fluent in English |
+----------+------------+------------+-----------+-------------+--------------------------------+
6 rows in set (0.0541 sec)
```

```
mysql> INSERT INTO forms VALUES('Fast Track','Graduate Studies');
Query OK, 1 row affected (0.11 sec)

mysql> INSERT INTO forms VALUES('Advising','Lower Division Advising');
Query OK, 1 row affected (0.21 sec)

mysql> INSERT INTO forms VALUES('Probation','Lower Division Advising');
Query OK, 1 row affected (0.13 sec)

mysql> INSERT INTO forms VALUES('Tuition Waivers','Graduate Studies');
Query OK, 1 row affected (0.16 sec)

mysql> INSERT INTO forms VALUES('Thesis Defense','Graduate Studies');
Query OK, 1 row affected (0.16 sec)

mysql> INSERT INTO forms VALUES('Dissertation Defense','Graduate Studies');
Query OK, 1 row affected (0.16 sec)

mysql> INSERT INTO forms VALUES('TA/RA','Graduate Studies');
Query OK, 1 row affected (0.17 sec)
```

```
+-------------------------------+
| Tables_in_f19_team9           |
+-------------------------------+
| administrator                 |
| advising_for_november         |
| all_forms                     |
| application                   |
| applicationcountbystatus      |
| applicationcountbytype        |
| applications_approved         |
| applications_denied           |
| applications_pending          |
| applications_returned         |
| applications_submitted        |
| appointment                   |
| departments                   |
| forms                         |
| freshmen_advising_for_november |
| myfirsttable                  |
| research_for_november         |
| student                       |
| studenttotalsbyclassification |
| user                          |
+-------------------------------+
```

```
mysql> SELECT*FROM departments;
+-----------------------------------------+
| Depname                                 |
+-----------------------------------------+
| College Accreditation Process           |
| Graduate Studies                        |
| Lower Division Advising                 |
| Undergraduate Forms                     |
| Undergraduate Research Opportunities    |
+-----------------------------------------+
5 rows in set (0.07 sec)
```

```
mysql> SELECT*FROM forms;
+-------------------------------------------------------+-----------------------------------+
| ftype                                                 | Fdepartment                       |
+-------------------------------------------------------+-----------------------------------+
| ABET Forms                                            | College Accreditation Process     |
| Dissertation Defense                                  | Graduate Studies                  |
| Fast Track                                            | Graduate Studies                  |
| TA/RA                                                 | Graduate Studies                  |
| Thesis Defense                                        | Graduate Studies                  |
| Tuition Waivers                                       | Graduate Studies                  |
| Advising                                              | Lower Division Advising           |
| Probation                                             | Lower Division Advising           |
| Change of Major                                       | Undergraduate Forms               |
| Course Substitution                                   | Undergraduate Forms               |
| Course Waivers                                        | Undergraduate Forms               |
| Dual Degree                                           | Undergraduate Forms               |
| Faculty add/drop                                      | Undergraduate Forms               |
| GPA Recalculation                                     | Undergraduate Forms               |
| Grade Change                                          | Undergraduate Forms               |
| Graduation Packets                                    | Undergraduate Forms               |
| Minor                                                 | Undergraduate Forms               |
| Petitions For Reinstatement                           | Undergraduate Forms               |
| Program Applications                                  | Undergraduate Research Opportunities |
| Program Recommendation                                | Undergraduate Research Opportunities |
| Student Travel                                        | Undergraduate Research Opportunities |
| Undergraduate Travel Research Conference Grant Application | Undergraduate Research Opportunities |
+-------------------------------------------------------+-----------------------------------+
22 rows in set (0.05 sec)
```

```php
<?php
session_start();

$host ="ilinkserver.cs.utep.edu";
$db = 'f19_team9';
$DBusername = 'raguilarsa';
$DBpassword = '*utep2020!';

$username = $_POST['username'];
$password = $_POST['password'];

$conn = new mysqli($host,$DBusername,$DBpassword,$db);

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

$sql="SELECT Uusername,Upassword FROM user WHERE Uusername = '$username' && Upassword = '$password'";

$result = mysqli_query($conn,$sql);
$num = mysqli_num_rows($result); //if there is a match this should = 1

if($num ==1){
        header('location:home.php');
}
else{
        header('location:login.php');
}
 ?>
```

1.12 - Triggers and Procedures

Procedures

This procedure is used sort between applications by department for creating reports.

```
mysql> \d//
mysql>
mysql> CREATE PROCEDURE ApplicationsByDepartment(IN appdepartmentIn CHAR(50))
    -> BEGIN
    -> SELECT * FROM Application WHERE apptype IN(SELECT ftype FROM forms where fdepartment=appdepartmentIn);
    -> END
    -> //
Query OK, 0 rows affected (0.13 sec)
```

This procedure is used to count the applications by their status. It is used in the reports.

```
\d//

CREATE PROCEDURE NumberOfApplicationsByStatus(IN appstatusIn CHAR(50))
BEGIN
SELECT count(*) FROM Application where Appstatus = appstatusIn;
END
//

\d;
;
```

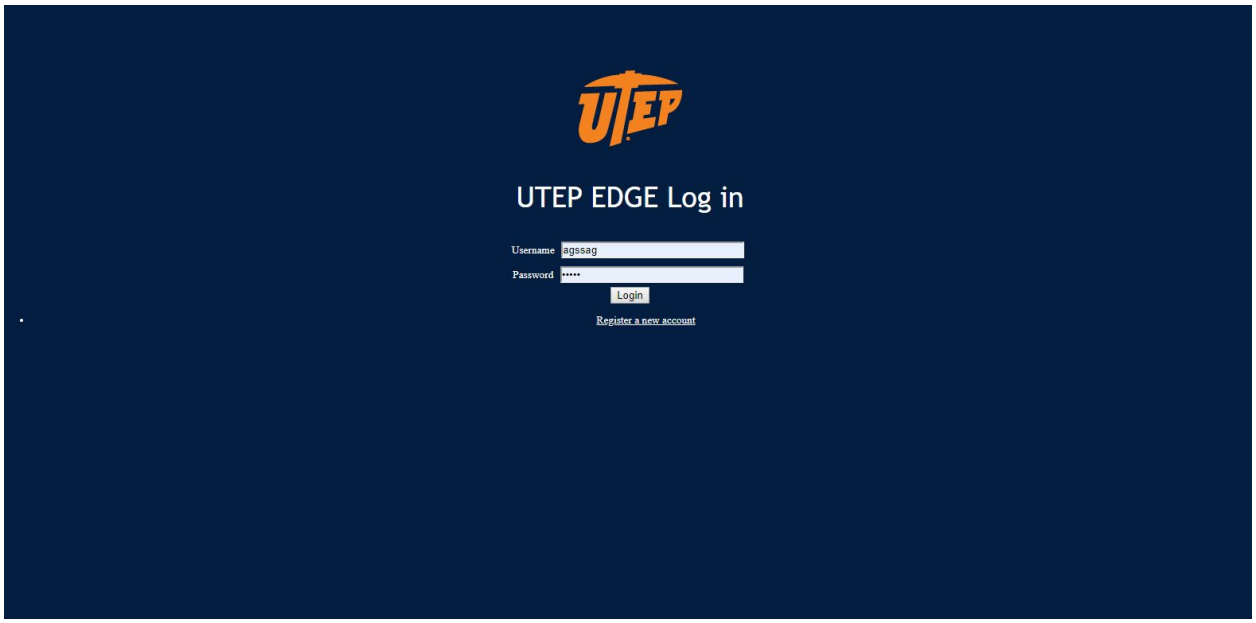
Triggers

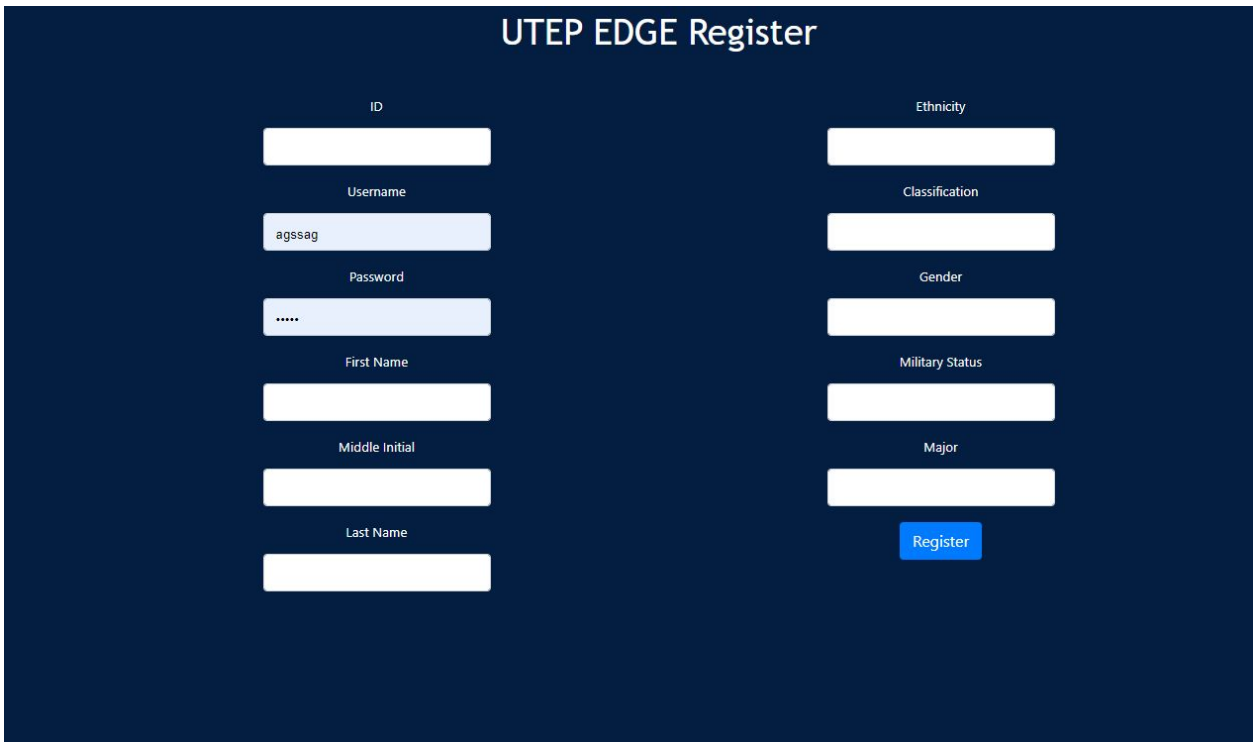
We had trouble actually implementing triggers in this program due to the lack of access to create triggers in the host.

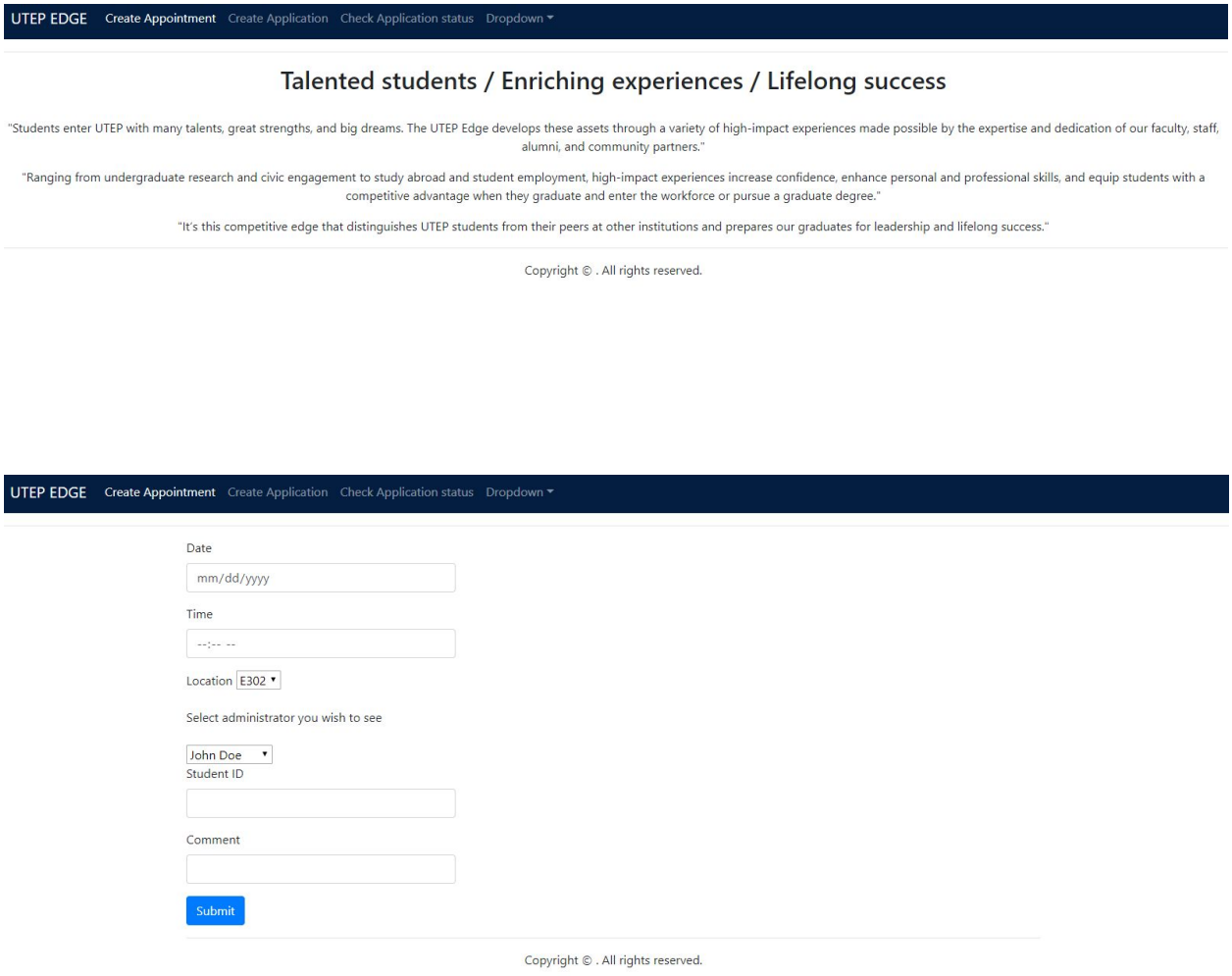
```
\d//

CREATE TRIGGER addingDepartment BEFORE INSERT ON Forms
  FOR EACH ROW BEGIN
    INSERT INTO Departments SET Fdepartment = NEW.depname;
  END;
//

\d ;
;
```

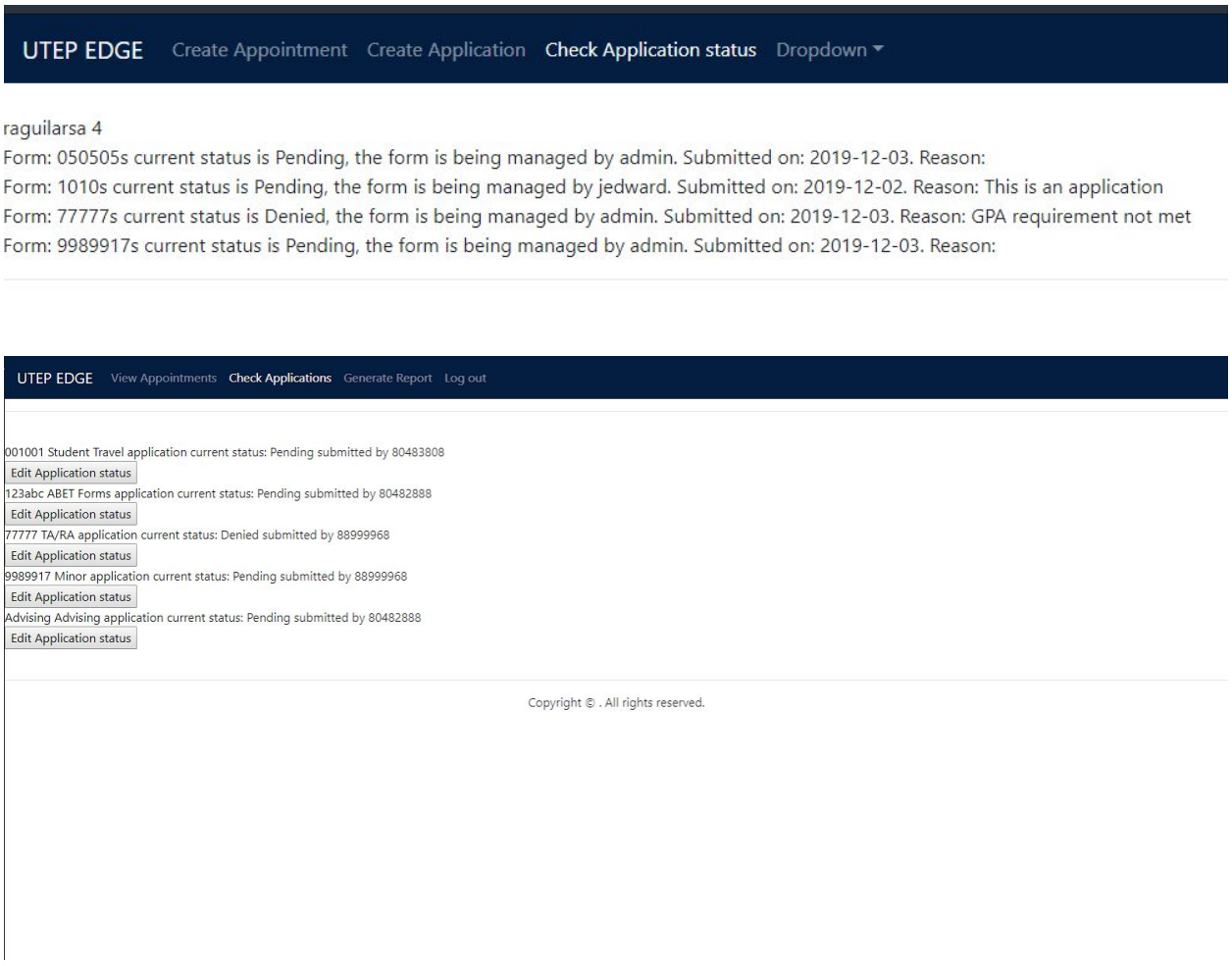
This trigger would insert a new department to the departments table if the one being added to forms was not already in the table.

1.14 - IIS Web server and GUI






UTEP EDGE
Create Appointment
Create Application
Check Application status
Dropdown
Talented students / Enriching experiences / Lifelong success
"Students enter UTEP with many talents, great strengths, and big dreams. The UTEP Edge develops these assets through a variety of high-impact experiences made possible by the expertise and dedication of our faculty, staff, alumni, and community partners."
"Ranging from undergraduate research and civic engagement to study abroad and student employment, high-impact experiences increase confidence, enhance personal and professional skills, and equip students with a competitive advantage when they graduate and enter the workforce or pursue a graduate degree."
"It's this competitive edge that distinguishes UTEP students from their peers at other institutions and prepares our graduates for leadership and lifelong success."
Copyright © . All rights reserved.
UTEP EDGE
Create Appointment
Create Application
Check Application status
Dropdown
Date
mm/dd/yyyy
Time
--:-- --
Location
E302
Select administrator you wish to see
John Doe
Student ID
Comment
Submit
Copyright © . All rights reserved.


UTEP EDGE
Create Appointment
Create Application
Check Application status
Dropdown
raguilarsa 4
Form: 050505s current status is Pending, the form is being managed by admin. Submitted on: 2019-12-03. Reason:
Form: 1010s current status is Pending, the form is being managed by jedward. Submitted on: 2019-12-02. Reason: This is an application
Form: 77777s current status is Denied, the form is being managed by admin. Submitted on: 2019-12-03. Reason: GPA requirement not met
Form: 9989917s current status is Pending, the form is being managed by admin. Submitted on: 2019-12-03. Reason:
UTEP EDGE
View Appointments
Check Applications
Generate Report
Log out
001001 Student Travel application current status: Pending submitted by 80483808
Edit Application status
123abc ABET Forms application current status: Pending submitted by 80482888
Edit Application status
77777 TA/RA application current status: Denied submitted by 88999968
Edit Application status
9989917 Minor application current status: Pending submitted by 88999968
Edit Application status
Advising Advising application current status: Pending submitted by 80482888
Edit Application status
Copyright © . All rights reserved.

UTEP EDGE View Appointments Check Applications Generate Report Log out

Generate Report

Select Report Type Applications

Submitted submit

Pending Signature

ID	Username	Name	Form Number	Application Status	Application type
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805634	agssag	ggg safg	888555888	Pending	Grade Change
88999968	raguilarsa	Ricardo Aguilar	9989917	Pending	Minor

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1.15 - References

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1.16 - Appendix

Hector Dozal - Document Control, Scope, Requirements, Assumptions, Website HTML and CSS.

Armando Ortiz - Relational Model, Normalized Model, Database Schema, Database Records, Reports

Bryan Molina - Entity-Relationship Model, Views, Powerpoint presentation.

Ricardo Aguilar - SQL Queries, Website, php back end development, Powerpoint presentation.