Main Project
For
COMP353 – DATABASES

BAHAMAS SPORTS PHYSIO CENTER - BSPC.

Submitted to

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Abstract

Databases are defined as a set of structured data stored within a computer that can be accessed in a variety of ways. The basis of creating databases is to better interpret, manipulate, store and use data acquired through various inputs. This can be very helpful for all big and small enterprises in being well organized and allow them to have valuable information at their fingertips. Databases are extremely important in every sector, from storing and organizing books in a library, to managing bank accounts, it is a tool that this day and age wouldn't exist without it.

Introduction

   The main project for this semester is to create, design and apply a relational database application system for a "realistic" situation. It is then to be implemented running on the DB server MySQL which is managed by AITS. There will be a client side as well as a PHP parser server side. This system supports all representatives of the Bahamas Sports Physio Center (BSPC), all their queries and transactions which will even produce desired reports. The access rights to use this system will be at the administration level where the receptionist and medical staff (doctors and nurses) can retrieve staff information, update, add alter and view patient records as well as update appointment for patients and staff details. Also at the patient level where patients and view and make an appointment. First, we will design the database through an Entity/Relationship Model diagram (to be now referred to as an E/R diagram), and then coding the tables and making the website using MYSQL database server.

Project Plan

Date	Time	Duration	Details	Present	Location
07/24/17	11:30-14:45	3h15	Organizing roles	All Team Members	Hall Building
07/26/17	10:30-14:30	4h00	Starting E/R Diagram	Michael, Matthew, XiaoJing, Fatin	Hall Building
07/28/17	18:30-21:00	2h30	Finishing E/R Diagram, Starting DDL code	All Team Members	Online
07/31/17	11:00-14:30	3h30	Starting Documentation, Starting Website	All Team Members	Hall Building
02/08/17	9:00-14:30	5h30	Continuing Website, DDL code	Matthew, XiaoJing, Fatin	Hall Building
04/08/17	9:00-14:30	5h30	Documentation	Michael, Miguel	Hall Building
06/08/17	21:00-1:00	4h00	Continuing Website, Documentation, finishing DDL code	All Team Members	Online
07/08/17	11:00-14:00	3h00	Continuing Website, Documentation	All Team Members	Hall Building
07/08/17	20:00-24:00	4h00	Continuing Website, Documentation	All Team Members	Online
08/08/17	12:00-18:00	6h00	Continuing Website, Documentation	All Team Members	Online
08/08/17	19:30-23:55	4h25	Finishing Website, Submitting it	Matthew, Fatin	Online
09/08/17	16:00-23:55	7h55	Finishing Documentation, User Guide, Finishing touches, Submitting it	Michael	Online

* Online = On Skype, Slack and Facebook

* Hall Building = On campus, 8th floor of Hall Building

E/R Diagram

An E/R Diagram is a graphical method of database modeling that is widely used today. From reading the guidelines of the project description, our team conjured up the following E/R diagram in which we feel best represents the database our client seeks to utilize:
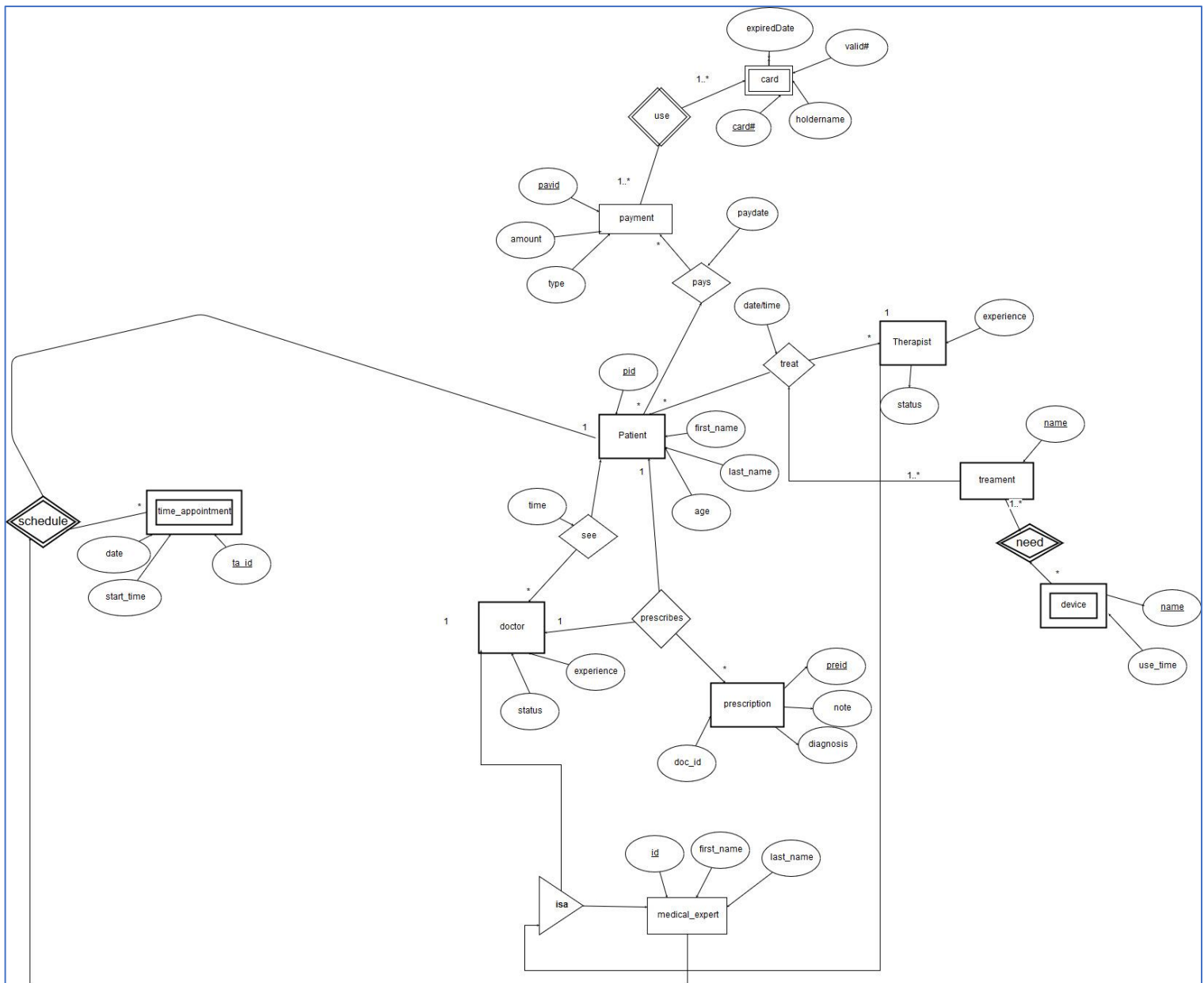
Figure 1: E/R Diagram for the BSPC System

The E/R diagram just above contains 10 entities of which 7 are strong and 3 are weak. The strong entities in this E/R diagram are; Payment, Therapist, Patient, Treatment, Doctor, Medical_Expert and Prescription. The 3 other entities are weak due to the fact that if they are not related to another specific entity they would not exist independently. These 3 weak entities are; Card, Time_Appointment and Device. All the updating work will be done automatically through triggers that are created within the database. All the relations are in 3NF form since each entity only has one candidate key and one function dependency.

- **Payment:** Every Patient must make payments, with that we must register the payment date, type, amount, and a Payment ID for referencing. Payments are made by using a card.

- **Patient:** Each Patient has a pid to identify them, first and last name and age. Patients also need to see doctors, get prescriptions, make appointments and be treated by therapists. They must also pay for their treatments.

- **Therapist:** Each Therapist has experience and status. They treat Patients at a specific date/time with their treatments. They need a schedule, and they are medical experts.

- **Doctor:** Each Doctor has experience and status, and is a medical expert. They have a schedule as well as prescript prescriptions to Patients. They see the patient at a specific time.

- **Treatment:** Each treatment has a name and each treatment needs devb to be completed. The therapist treats patients with treatment.

- **Medical_Expert:** Every doctor and therapist is a medical_expert. They require a specific ID to identify them, first and last names.

- **Card:** Each card has an expired date, valid number, card number and holder name. Each patient uses a card to make a payment.

- **Time_Appointment:** Each time appointment has a date, start time, duration and ta_id to identify it. A patient appoints a time appointment but can also schedule it themselves through the system instead of through the receptionist. The time appointment is then added to the schedule.

- **Prescription:** Each prescription has a pried to identify it, note, diagnosis and doc_id. Each prescription is prescribed by a doctor and given to a patient.

- **Device:** Each device has a name and use time. Each treatment uses device to treat the patient with the Therapist.

The above list is the description of each entity/relation and what they represent. It also describes how they relate to each other.

Assumptions

The assumptions made by our team when creating and designing this database are as follows, by stating these assumptions, the creation of the tables as well as the thinking behind the steps we took in order to design the database to our knowledge will be better understood:

- In the Doctors table, there are no name duplications.

- Patient doesn't have two prescriptions with the same ids.

- There are enough devices available if there are therapists available.

- There will be an error message if a receptionist tries to add a Patient that already exists, this will indicate that the patient is already registered.

- The Center is opened 24/7 and accepts appointments throughout all hours in the day.

- If the patient is already registered then his/her Personal Health Number is retrieved; otherwise, the receptionist will register the new patient.

- Doctors and Therapists should be registered before patients

- Personal Health Number = pid

- Patient (**pid**, first_name, last_name, age) // Assumptions: first name and last name cannot be null.

- FD: pid-> first_name *last_name *age.

- Payment (**payid,** amount, type, **pid,** paydate) // Assumptions: only one type of payment for each traction. Only cash, or only by cards. pid is foreign key of table patient.

- FD: payid, pid -> amount*type*paydate

- Card (**cardid**, holdername, expiredDate, validNum, **payid, pid**)

- FD: payid, pid, cardid   -> holdername* experiedDate*validNum

- Therapist (**the_id**, first_name, last_name, experience, status)

- FD: the_id -> holdername* experiedDate*validNum

- Doctor (**doc_id**, first_time, last_time, experience, status)

- FD: doc_id-> first_name*last_name*experience*status

- See (**doc_id, pid, date**) // maintained by doctor, which records the time two parties see each one.

- Nurse (**n_id**, name)

- time_appointment (**ta_id**, duration, date, start_time, **pid**)

- schedule (**employee_id, ta_id, pid**)

- Prescription (**pre_id,** note, diagnosis, doc_id, **pid**)

- Prescribe (**pre_id, pid,** doc_id)

- Device (**treat_name, device_name,** used_time)

- Treat (**pid, the_id, date,treatment**) // maintained by doctor, which records the time two parties see each one.

- Nurse_time (**time_id, n_id**, days, time_slot) // Nurses use statistic working schedule, just simply shows which day they should work.

The following section presents the code for the tables that were designed and created within SQL. By following the guidelines presented within the project description as well as utilizing our E/R diagram and assumptions, we've come up with the BSPC system database presented here:

```
CREATE TABLE IF NOT EXISTS patient (
  pid INT AUTO_INCREMENT,
  first_name CHAR(25),
  last_name CHAR(25),
  age SMALLINT,
  pre_id INT NOT NULL,
  PRIMARY KEY (pid),
  CONSTRAINT chk_age CHECK (age >= 18)
) ENGINE=MYISAM DEFAULT CHARSET=LATIN1;

CREATE TABLE IF NOT EXISTS prescription (
  pre_id INT AUTO_INCREMENT,
  pid INT NOT NULL,
  doc_id INT NOT NULL,
  note VARCHAR(400),
  diagnosis VARCHAR(100) NOT NULL,
  PRIMARY KEY (pre_id),
  FOREIGN KEY (pid)
  REFERENCES patient(pid)
) ENGINE=MYISAM DEFAULT CHARSET=LATIN1;

CREATE TABLE IF NOT EXISTS payment (
  payid INT NOT NULL AUTO_INCREMENT,
  pid INT NOT NULL,
  amount FLOAT(2) DEFAULT 0,
  type CHAR(15) NOT NULL,
  status BOOLEAN DEFAULT TRUE,
  paydate TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
  PRIMARY KEY (payid),
  FOREIGN KEY (pid) REFERENCES patient(pid),
  CONSTRAINT chk_type CHECK (type IN ('Cash', 'Credit Card', 'Debit Card'))
) ENGINE=MYISAM DEFAULT CHARSET=LATIN1;

CREATE TABLE IF NOT EXISTS card (
  payid INT NOT NULL,
  card_id INT NOT NULL,
  validNum SMALLINT NOT NULL,
  status BOOLEAN DEFAULT TRUE,
  holdername VARCHAR(50),
  experi_date DATE NOT NULL,
  amount FLOAT(2),
  PRIMARY KEY (payid,card_id),
  FOREIGN KEY (payid) REFERENCES payment(payid),
) ENGINE=MYISAM DEFAULT CHARSET=LATIN1;
```

Figure 2: Table Creation 1/3

```sql
CREATE TABLE IF NOT EXISTS therapist (
  the_id INT AUTO_INCREMENT PRIMARY KEY,
  first_name CHAR(25),
  last_name CHAR(25),
  status BOOLEAN DEFAULT TRUE, #still works for the centre or not.
  experience CHAR(7), #format"YYYY-MM", STARTING DATE FOR THE PERSON
  #CONSTRAINT chk_exp CHECK (DATE_ADD(experience,INTERVAL 24 MONTH) <= now())
) ENGINE=MYISAM DEFAULT CHARSET=LATIN1;

CREATE TABLE IF NOT EXISTS doctor (
  doc_id INT AUTO_INCREMENT PRIMARY KEY,
  first_name CHAR(25),
  last_name CHAR(25),
  status BOOLEAN DEFAULT TRUE,
  experience CHAR(7),
  #CONSTRAINT chk_exp CHECK (DATE_ADD(experience,INTERVAL 24 MONTH) <= now())
) ENGINE=MYISAM DEFAULT CHARSET=LATIN1;


CREATE TABLE IF NOT EXISTS see (
  docid INT ,
  pid INT,
  see_date  TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
  PRIMARY KEY (docid,pid,see_date),
  FOREIGN KEY (pid) REFERENCES patient(pid);
  FOREIGN KEY (docid) REFERENCES doctor(doc_id);
) ENGINE=MYISAM DEFAULT CHARSET=LATIN1;

CREATE TABLE IF NOT EXISTS nurse (
  n_id INT AUTO_INCREMENT PRIMARY KEY,
  first_name CHAR(25),
  last_name CHAR(25),
)

ALTER TABLE doctor AUTO_INCREMENT=10000;
ALTER TABLE therapist AUTO_INCREMENT=20000;
ALTER TABLE nurse AUTO_INCREMENT=40000;
ALTER TABLE prescription AUTO_INCREMENT=50000000;
ALTER TABLE device ADD the_id int(11);

CREATE TABLE IF NOT EXISTS device (
  treat_name VARCHAR(50),
  name VARCHAR(50),
  use_time INT DEFAULT 0,
  PRIMARY KEY (treat_name,name)
) ENGINE=MYISAM DEFAULT CHARSET=LATIN1;

CREATE TABLE IF NOT EXISTS treat (
  pid INT,
  the_id INT ,
  treat_day TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
  treat_name VARCHAR(50),
  PRIMARY KEY (pid,the_id,treat_day,treat_name),
  FOREIGN KEY (pid) REFERENCES patient(pid),
  FOREIGN KEY (the_id) REFERENCES therapist(the_id)
) ENGINE=MYISAM DEFAULT CHARSET=LATIN1;
```

Figure 3: Table Creation 2/3

```
CREATE TABLE IF NOT EXISTS time_appointment
 (
  ta_id INT AUTO_INCREMENT,
  pid INT,
  duration SMALLINT NOT NULL, # unit is mimute.
  date_treat DATE NOT NULL,
  start TIME,
  PRIMARY KEY (pid,ta_id),
  FOREIGN KEY (pid) REFERENCES patient(pid)
) ENGINE=MYISAM DEFAULT CHARSET=LATIN1;

CREATE TABLE IF NOT EXISTS schedule
 (
  ta_id INT ,
  emp_id INT,
  pid INT,
  patient_appoint INT,
  PRIMARY KEY (emp_id,ta_id,pid),
  FOREIGN KEY (pid) REFERENCES patient(pid),
  FOREIGN KEY (emp_id) REFERENCES doctor(doc_id),
  FOREIGN KEY (emp_id) REFERENCES therapist(the_id),
  FOREIGN KEY (ta_id) REFERENCES time_appointment(ta_id)
  ON DEFAULT CASCADE
) ENGINE=MYISAM DEFAULT CHARSET=LATIN1;

CREATE TABLE tobe_verified
 (
  payid INT NOT NULL;
  pid INT,
  card_id INT,
  amount FLOAT (2),
  holdername CHAR(50),
  status BOOLEAN DEFAULT FALSE,
  paydate DATE DEFAULT CURRENT_TIMESTAMP
) ENGINE=MYISAM DEFAULT CHARSET=LATIN1;

CREATE TABLE nurse_time
 (
   time_id INT AUTO_INCREMENT,
          n_id INT,
          days ENUM('MON','TUE','WED','THU','FRI'),
          slot ENUM('9am-12pm','12pm-15pm','15pm-18pm'),
          PRIMARY KEY (time_id,n_id),
          FOREIGN KEY n_id REFERENCES nurse(n_id)
          ON DELETE CASCADE
 )ENGINE=MYISAM DEFAULT CHARSET=LATIN1;

SET time_zone ='-5:00';
SET GLOBAL event_scheduler = 1;
DROP EVENT IF EXISTS verify_card;
DELIMITER $$
CREATE EVENT verify_card
on SCHEDULE EVERY 1 DAY STARTS TIMESTAMP '2017-08-04 17:00:00'
```

Figure 4: Table Creation 3/3

Triggers

Trigger for counting how many times a device is used:

```
CREATE TRIGGER increase_use
AFTER INSERT  ON treat
REFERENCING
NEW ROW AS NewTuple
FOR EACH ROW
UPDATE device
SET usetime = usetime+1
WHERE treat_name = NewTuple.treat_name;
```

Event:

```
CREATE PROCEDURE copy_pay()
BEGIN
DELETE FROM tobe_verified;
INSERT INTO tobe_verified (payid,card_id,amount,holdername)
  SELECT payid,card_id,amount,holdername
  FROM payment NATURAL JOIN card

  WHERE(TO_DAYS(NOW()) = TO_DAYS( paydate) AND (type='Credit Card' OR
type='Debit Card'));
END$$
DELIMITER ;

SET time_zone ='-5:00';
SET GLOBAL event_scheduler = 1;
DROP EVENT IF EXISTS verify_card;
CREATE EVENT verify_card
on SCHEDULE EVERY 1 day STARTS TIMESTAMP '2017-08-04 17:00:00'
DO CALL copy_pay();
```

Figure 5: Trigger and Event

Tables In SQL

Patient Table:

PATIENT				
pid	first_name	last_name	age	pre_id
35	Matthew	Masi	24	10001
60	Mike	G	24	10003
59	Donald	Trump	70	10004
61	John	Denver	70	10001
67	ImaPatient	NeedaFix	20	13
63	gordan	ramy	22	10005
64	Mike	Masi	27	10002
65	Joe	Rogan	40	10002
66	Justin	Trudeau	45	10002
68	Patient	One	45	20015
68	Patient	One	45	20015

Figure 6: Patient Table

Doctor Table:

DOCTOR				
doc_id	first_nam	last_name	status	experience
10001	Doctor	One	1	8
10002	Doctor	Two2	1	36
10003	Doctor	Three	1	11
10004	Bob	Billy	0	13
10014	The	Doc2	1	30
10006	dorctor	five	1	7
10007	Mr. Doc	six6	1	25
10008	doctorDr.	7seven7	1	22
10009	doctor	eight	1	10
10010	doctor	nine	1	11
10011	Doctoer	Twenty	1	24
10012	Doc	Tor	1	12
10013	The	Doc	1	24
10015	Docteur	Chat	1	12

Figure 7: Doctor Table

Therapist Table:

THERAPIST				
the_id	first_name	last_name	status	experience
20001	Bob	Roberts	1	9
20005	Julie	Trudel	1	4
20004	Bill	Jonez	1	20
20006	Nice	Guy	1	4
20007	Thera	Pist	1	20
20008	therapist	one	1	2
20009	therapist	two2	1	36
20010	therapist	three	1	5
20011	therapist	five	1	12
20012	therapist	six	1	8
20013	Therry	Paste	1	14
20014	T	One	1	4
20015	T	Two	1	8

Figure 8: Therapist Table

Nurse Table:

NURSE		
n_id	first_nam	last_name
40000	AAAA	CCC
40001	Nurse	Two2
40002	thebest	nurseIsVeryGood
40003	Sabrina	Jane
40004	nurse	two
40005	nurse	four4
40006	Nurse	Chansey
40007	Nurse	Chansey
40008	Nurse	Smile
40009	N	U
40010	A	Nurse
40011	A	Nurse2
40012	Good	Nurse
40013	Joliette	Noire
40014	Julia	Miss

Figure 9: Nurse Table

Appointment Table:

APPOINTMENT				
ta_id	pid	duration	date_treat	start
1	68	1	2017-08-23	15:00:00
4	59	1	2017-08-23	15:00:00
1	64	1	2017-08-27	10:00:00
1	61	1	2017-08-23	10:00:00
1	35	1	2017-08-23	15:00:00
3	59	6	2017-09-05	15:00:00
1	66	1	2017-08-23	15:00:00
2	59	1	2017-08-27	15:00:00
2	60	3	2017-08-23	10:00:00
2	35	1	2017-08-27	15:00:00
3	35	1	2017-08-22	10:00:00

Figure 10: Appointment Table

Payment Table:

PAYMENT					
payid	pid	amount	type	status	paydate
1	35	12	Credit Card	1	2017-08-08 12:53:33
2	60	13	Credit Card	1	2017-08-08 12:53:33
3	59	14	Credit Card	1	2017-08-08 12:53:33
4	61	15	Credit Card	1	2017-08-08 12:53:33
5	67	16	Credit Card	1	2017-08-08 12:53:33
6	67	17	Credit Card	1	2017-08-08 12:53:33
7	63	18	Credit Card	1	2017-08-08 12:53:33
8	64	19	Credit Card	1	2017-08-08 12:53:33
9	66	20	Credit Card	1	2017-08-08 12:53:33
10	66	10	Credit Card	1	2017-08-08 12:53:33
11	66	12	Cash	1	2017-08-08 12:53:40

Figure 11: Payment Table

Device Table:

DEVICE		
treat_name	name	use_time
bike	stationary bike	0
mill	treadmill	0
spin strech	sandbags	0
massage	weights	0
heat	oven	0
ice	frigo	0
arm strech	weiths	0
electrical stimulation	electricity	0
relex	N/A	0
arm bruise	ice	0
back cure	N/A	0

Figure 12: Device Table

User Guide

Click on Register

Figure 13: Register

Administration Level

Receptionist

Select Receptionist and enter username and password to register as a receptionist.

Figure 14: Receptionist Registering

Return to Log-in Page and log-in with the username and password you just entered. It will bring you to this page:

Figure 15: Logged-In Page for Receptionist

From the Register Menu, the receptionist can register a Patient or book an appointment for him/her:

Figure 16: Patient Register from Receptionist

Make an Appointment

Back to Control Panel

| August ∨ | 2017 ∨ | Go | | << Previous Month | Next Month >> |

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

24/08/2017

14:00

34

Make Appointment

Figure 17: Receptionist Make an appointment for Patient

Click View All Payments to see all payments:

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All Payments

Back to Control Panel

Number of payments: 13

pid	amount	type	paydate	card_id	validNum	holdername	experi_date
35	12	Credit Card	2017-08-09 11:57:52	123456	123	matt	2018-08-08
60	13	Credit Card	2017-08-09 11:59:24	123457	123	matt1	2018-08-08
59	14	Credit Card	2017-08-09 11:57:52	123458	123	matt2	2018-08-08
61	15	Credit Card	2017-08-09 11:57:52	123459	124	matt3	2018-08-08
67	16	Credit Card	2017-08-09 11:57:52	123460	124	matt4	2018-08-08
67	17	Credit Card	2017-08-09 11:57:52	123461	124	matt5	2018-08-08
63	18	Credit Card	2017-08-09 11:57:52	123462	124	matt6	2018-08-08
64	19	Credit Card	2017-08-09 11:57:52	123463	125	matt7	2018-08-08
66	20	Credit Card	2017-08-09 11:57:52	123464	126	matt8	2018-08-08
66	10	Credit Card	2017-08-09 11:57:52	123465	127	matt9	2018-08-08
66	12	Cash	2017-08-09 11:57:52				
64	16	Cash	2017-08-09 13:31:50				
64	1	Credit Card	2017-08-09 13:33:41				

Figure 18: List of Payments

Click on Make Payment to make a payment:

Figure 19: Make a payment page

From the View records list in the opening page for receptionist there are many options:

Figure 20: View Records Receptionist

If the receptionist clicks on one, it will list all the databases information on the Option, Example

Doctors:

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All Doctors

Back to Control Panel

Number of doctors: 14

ID	First Name	Last Name	Status	Experience (years)
10001	Doctor	One	Active	8
10002	Doctor	Two2	Active	36
10003	Doctor	Three	Active	11
10004	Bob	Billy	inactive	13
10006	dorctor	five	Active	7
10007	Mr. Doc	six6	Active	25
10008	doctorDr.	7seven7	Active	22
10009	doctor	eight	Active	10
10010	doctor	nine	Active	11
10011	Doctoer	Twenty	Active	24
10012	Doc	Tor	Active	12
10013	The	Doc	Active	24
10014	The	Doc2	Active	30
10015	Docteur	Chat	Active	12

Update Doctor Information

Figure 21: List of Doctors from Receptionist

From the update staff information list, you can update the staff's information:

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Receptionist's Control Panel

Register

View Records

Update Staff Information

Update Nurse Information
Update Doctor Information
Update Therapist Information

Other

Figure 22: Update Staff Information List Receptionist

Example for Therapists: Updating Information on Therapist with ID 20001:

Figure 23: Updating Therapist from Receptionist

Figure 24: Update Therapists 20001's Information

Doctor

Register as a Doctor or Nurse Select and Enter username and password, then register:

Figure 25: Registration for Doctor

Return to Log-in Page and log-in with the username and password you just entered. It will bring you to this page:

Figure 26: Login Page for Doctor

Click on Manage records to Create or Edit a prescription:

Figure 27: Manage Records Doctor

Create/Edit prescriptions, fill in table All my patients are listed just under the enter prescription button:

Figure 28: Create Prescription

Go back to the Log-In page and click on List All patients to obtain the list of patients that doctor has:

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Doctor's Control Panel

Manage Records
List All Patients   ←
View Prescriptions
Edit Prescription

Figure 29: Log-In Page, List all Patients for Doctor

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All Patients

Back to Control Panel

Number of patients: 16

ID	First Name	Last Name	Age	Pre_id
35	Matthew	Masi	24	10001
59	Donald	Trump	70	10004
60	Mike	G	24	10003
61	John	Denver	70	10001
63	gordan	ramy	22	10005
64	Mike	Masi	27	10002
65	Joe	Rogan	40	10002
66	Justin	Trudeau	45	10002
67	ImaPatient	NeedaFix	20	13
68	Patient	One	45	20015
69	Pat	Pat	18	2
70	pat	two	34	20014
71	pat	three	77	20014
72	pat	four	18	20014
73	Tommy	Hughes	19	4
74	Michael	Gravino	24	34

Figure 30: Patient List for a given Doctor

Go Back to the Log-In Page and click view prescriptions as a doctor:

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Doctor's Control Panel

Manage Records
List All Patients
View Prescriptions
Edit Prescription

Figure 31: Log-In Page, List all Prescriptions you gave as a Doctor

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All Prescriptions

Back to Control Panel

Number of prescription: 8

Prescription ID	Patient ID	Doctor ID	Note	Diagnosis
29	35	10001	He fell at work and hurt his elbow	Broken Elbow
30	64	10002	His back hurts	Bad Back
31	66	10002	He suffers from being prime minister	primeminitis
38	65	10002	his knee hurts a lot	Bad knee
32	65	10002	His head is massive.	Big Head
35	11	10016	Therapy	Torn ACL
36	70	10017	Got hit by a baseball bat	Broken Jaw
37	70	10017	Feels head spinning	Dizziness

Update Prescription

Figure 32: List of Prescriptions you gave as a Doctor

Register as a nurse at the registration page:

Figure 33: Nurse Registratrion

Go back to the Log-In Page, log-in as the nurse, and it brings you to this:

Figure 34: Log-In Page for Nurse

Click on List all patients to receive a list of all the patients:

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All Patients

Back to Control Panel

Number of patients: 16

ID	First Name	Last Name	Age	Pre_id
35	Matthew	Masi	24	10001
59	Donald	Trump	70	10004
60	Mike	G	24	10003
61	John	Denver	70	10001
63	gordan	ramy	22	10005
64	Mike	Masi	27	10002
65	Joe	Rogan	40	10002
66	Justin	Trudeau	45	10002
67	ImaPatient	NeedaFix	20	13
68	Patient	One	45	20015
69	Pat	Pat	18	2
70	pat	two	34	20014
71	pat	three	77	20014
72	pat	four	18	20014
73	Tommy	Hughes	19	4
74	Michael	Gravino	24	34

Figure 35: List of All Patients as Nurse

Go back and Click on View Prescriptions:

Bahamas Sports Physio Center

Nurse's Control Panel

List All Patients
View Prescriptions
Edit Prescription

Figure 36: Log-In page for Nurse, View Prescriptions

Bahamas Sports Physio Center

All Prescriptions

Back to Control Panel

Number of prescription: 8

Prescription ID	Patient ID	Doctor ID	Note	Diagnosis
29	35	10001	He fell at work and hurt his elbow	Broken Elbow
30	64	10002	His back hurts	Bad Back
31	66	10002	He suffers from being prime minister	primeminitis
38	65	10002	his knee hurts a lot	Bad knee
32	65	10002	His head is massive.	Big Head
35	11	10016	Therapy	Torn ACL
36	70	10017	Got hit by a baseball bat	Broken Jaw
37	70	10017	Feels head spinning	Dizziness

Update Prescription

Figure 37: List of all Prescriptions logged in as Nurse

Go back, click on edit prescription:

Bahamas Sports Physio Center

Nurse's Control Panel

List All Patients
View Prescriptions
Edit Prescription

Figure 38: Edit Prescription as Nurse

Insert a prescription ID from the list of prescriptions:

Bahamas Sports Physio Center

Which Prescription To Update?

Back to Control Panel

29

Continue

See list of prescriptions

Figure 39: Edit Prescription as Nurse

Now you can update the prescription of that patient (same can be done as Doctor):

Bahamas Sports Physio Center

Update Prescription (id=29)

Back to Control Panel

He fell at work and hurt his elbow

Broken Elbow

Update

Figure 40: Updating Prescription as Nurse

Therapist

Registering as a Therapist:

Figure 41: Registering as a Therapist

Log in with the username and password you just created and it will bring you to this page:
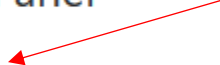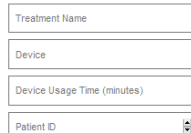
Figure 42:Therapist Log In Screen

Click on Manage Treatment and this page will appear:

Figure 43: Treatment Registration

Fill out the information for a specific patient, we create patient 11 in the user guide with a torn

ACL so:

Figure 44: Treatment Filled Out

We obtain the following:
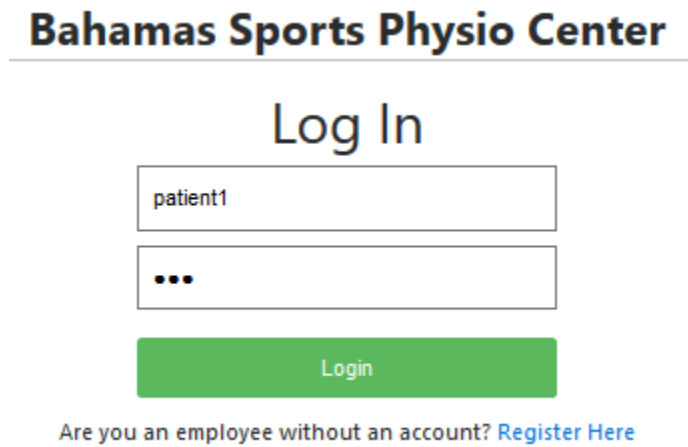
Figure 45: Treatment Logged Into Database

Patient Level

Patient
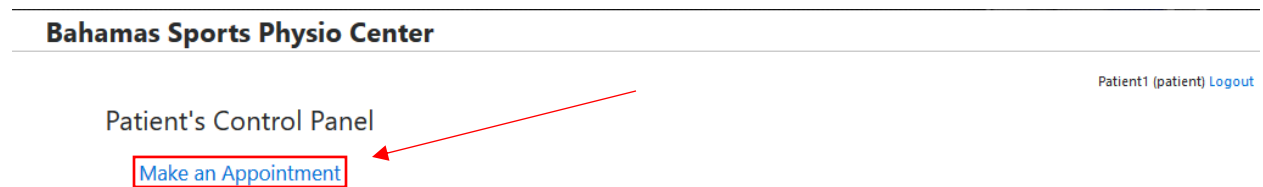
Login as a Patient with the username and password the receptionist created for you:

Figure 46: Logging in as a Patient

Log-in Page for Patient shows a Make an appointment option:

Figure 47: Patient Log-In Page

By pressing Make an Appointment, the Patient can create his own appointment by filling out the date and time and by clicking the make appointment button:

Figure 48: Make an Appointment Page

Once appointment I created it will appear on the calendar on the left.

Queries

All seven queries asked to answer can be solved from the receptionist's log in page:

Bahamas Sports Physio Center

Receptionist's Control Panel

Register
Register Patient Book an Appointment for a Patient
View Records
Update Staff Information
Other

Figure 49: Queries to be Answered

You Obtain the Following List:

Bahamas Sports Physio Center

Receptionist's Control Panel

Registration/Appointments
View Records
Update Staff Information
Other
1. Patients seen by each physio therapist in a specified period of time 2. Equipment that was never used 3. All info on physio patients who have been at the center 4. All info on therapists who have been at the center 5. All info on therapists who work at the center 6. Reservation details for a specific patient 7. Availability of therapist/doctor during a specified period of time.

Figure 50: List of Queries

Query 1

Enter a period of time to see all appointments in that time:

Bahamas Sports Physio Center

Select Start and End Dates

Back to Control Panel

| 01/05/2016 | 31/12/2017 | Continue |

Figure 51: Query 1

We then click Continue and get the list:

Bahamas Sports Physio Center

How many patients has each physio therapist seen in a specified period of time?

From 2016-05-01 to 2017-12-31

Back to Control Panel

Number of therapists: 3

Therapist ID	Number Of Patients
20014	4
20015	3
20016	1

Figure 52: Number of Patients the specific Therapist sees in that time period

Query 2

Click on the 2nd option in other for the answer of said query and we obtain:

Bahamas Sports Physio Center

Which piece of equipment has never been used?

Back to Control Panel

Number of unused equipment: 9

Unused Equipment
stationary bike
treadmill
sandbags
weights
oven
frigo
weiths
electricity
ice

Figure 53: Query 2 Answer

Query 3

Click on the 3rd option in other for the answer of said query and we obtain:

Bahamas Sports Physio Center

All information available for physio patients who have been at the center

Back to Control Panel

Number of patients: 28

first_name	last_name	age	patient_ID	note	diagnosis	payid	amount	type	date_treat
Matthew	Masi	24	35	He fell at work and hurt his elbow	Broken Elbow	1	12	Credit Card	2017-08-23
Matthew	Masi	24	35	He fell at work and hurt his elbow	Broken Elbow	1	12	Credit Card	2017-08-19
Mike	Masi	27	64	His back hurts	Bad Back	8	19	Credit Card	2017-08-22
Mike	Masi	27	64	His back hurts	Bad Back	8	19	Credit Card	2017-08-02
Justin	Trudeau	45	66	He suffers from being prime minister	primeminitis	9	20	Credit Card	2017-08-23
Justin	Trudeau	45	66	He suffers from being prime minister	primeminitis	9	20	Credit Card	2017-08-25
Justin	Trudeau	45	66	He suffers from being prime minister	primeminitis	10	10	Credit Card	2017-08-23
Justin	Trudeau	45	66	He suffers from being prime minister	primeminitis	10	10	Credit Card	2017-08-25
Justin	Trudeau	45	66	He suffers from being prime minister	primeminitis	11	12	Cash	2017-08-23
Justin	Trudeau	45	66	He suffers from being prime minister	primeminitis	11	12	Cash	2017-08-25
Joe	Rogan	40	65	his knee hurts a lot	Bad knee				
Joe	Rogan	40	65	His head is massive.	Big Head				
pat	two	34	70	Got hit by a baseball bat	Broken Jaw				
pat	two	34	70	Feels head spinning	Dizziness				
Mike	G	24	60			2	13	Credit Card	
Donald	Trump	70	59			3	14	Credit Card	2017-08-27
Donald	Trump	70	59			3	14	Credit Card	2017-08-02
John	Denver	70	61			4	15	Credit Card	2017-08-05
John	Denver	70	61			4	15	Credit Card	2017-08-27
ImaPatient	NeedaFix	20	67			5	16	Credit Card	
ImaPatient	NeedaFix	20	67			6	17	Credit Card	
gordan	ramy	22	63			7	18	Credit Card	
Patient	One	45	68						2017-08-23
Pat	Pat	18	69						
pat	three	77	71						
pat	four	18	72						
Tommy	Hughes	19	73						
Michael	Gravino	24	74						

Figure 54: Query 3 Answer

Query 4

Click on the 4th option in other for the answer of said query and we obtain:

Bahamas Sports Physio Center

All info on therapists who have been at the center

Back to Control Panel

Number of results: 5

first_name	last_name	working_experience	appointment	patient_ID_served	name	treat_name
T	Two	8	2017-08-23	68	Arm Fixer	Arm Fix
T	Two	8	2017-08-23	68	Leg Machine	Leg Fix
T	Two	8	2017-08-23	68	Leg Straightner	Leg Fix
T	Two	8	2017-08-23	68	Leg Machine	Leg Fix
T	Two	8	2017-08-23	68	Leg Straightner	Leg Fix

Figure 55: Query 4 Answer

Query 5

Click on the 5th option in other for the answer of said query and we obtain:

Bahamas Sports Physio Center

All info on therapists who work at the center

Back to Control Panel

Number of results: 17

| first_name	last_name	working_experience	appointment	patient_ID_served	name	treat_name	patient_ID_reserved
Michael	Gravino	3		11	Massage	Strengthen Knee	
T	One	4		70	Foot Fixer	Foot Fix	
T	One	4		71	Face Fixer	Face Fix	
T	One	4		72	Ear Fixer	Ear Fix	
T	One	4		72	Jaw Straightner	Jaw Fix	
Bob	Roberts	9					
Julie	Trudel	4					
Bill	Jonez	20					
Nice	Guy	4					
Thera	Pist	20					
therapist	one	2					
therapist	two2	36					
therapist	three	5					
therapist	five	12					
therapist	six	8					
Therry	Paste	14					
Thien	Bob	3					

Figure 56: Query 5 Answer

Query 6

Click on the 6th option in other, we are asked to give a patient ID:

Bahamas Sports Physio Center

Enter Patient ID

Back to Control Panel

Enter Patient ID

Continue

See list of patients

Figure 57: Query 6

We input a patient ID and obtain the reservation details for said patient:

Bahamas Sports Physio Center

Reservation details for a specific patient

Patient ID = 35

Back to Control Panel

Number of reservations: 2

expert_first_name	expert_last_name	date	time
Doctor	One	2017-08-19	15:00:00
Doctor	One	2017-08-23	15:00:00

Figure 58: Query 6 Answer

Query 7

By clicking on option 7 of other we get to this page:

Bahamas Sports Physio Center

Specify Doctor and Start & End Dates

Back to Control Panel

Enter Doctor ID

dd/mm/yyyy   dd/mm/yyyy   Continue

See list of doctors

Figure 59: Query 7

Inputting the specific data and you will obtain the availability of a specific therapist/doctor during the specified time period:

Bahamas Sports Physio Center

Availability of therapist/doctor during a specified period of time

Doc_id = 10001
From 2016-01-01 to 2017-12-31

Back to Control Panel

Number of results: 4

Date	Start_from	Duration
2017-08-23	15:00:00	1
2017-08-05	15:00:00	1
2017-08-19	15:00:00	1
2017-08-27	10:00:00	1

Figure 60: Query 7 Answer

Contributions

This section will indicate what team members did in the realization of this project from start to finish.

Michael Gravino

All the documentation has been done by this team member as well as help in the creation of the E/R diagram shown earlier in this report. He also helped manage the team by organizing team meetings and distribute tasks to other team members with the help of Matthew Masi.

Matthew Masi

This team member acted as the role of manager throughout the semester. His contribution to the team was the creation of the whole website in PHP and all of the SQL queries that comes with it. He also did most of the work for the E/R diagram seen earlier in this report.

Fatin Tazwar Hossain

This team member helped with the registration, login system as well as user permissions in PHP. He also did the web styling in CSS and the query made by receptionist to list all users in PHP.

Xiaojing Yang

This team member took on the role of writing all the DDL code, in other words all the creation of tables as well as the triggers. He also helped immensely with the E/R diagram and had great fundamental knowledge of course materials to help us where we needed help in the early roots of this project.

Miguel Angel Meneses Bernal

This team member helped wherever he was needed. Also, co-wrote the user guide with Michael Gravino. He was also in charge of the inserts and gathering data to populate tables.

Web Server

The website was made using PHP, CSS & HTML and can be found at this weblink that can be found just below:

Web Link: https://auc353_1.encs.concordia.ca/

Username: auc353_1

Password: BrownCOW

This was provided by the course and the files for the website can be found in the directory:

Directory: nfs/www/groups/a/au_comp353_1

Conclusion

In conclusion, the intricacies of this project helped us understand in greater detail the material that this course offers. It also helped us work as a cohesive team and develop our competencies in becoming better engineers in the future. This BSPC system, in our minds, is exactly representative of what the project guidelines state. The BSPC system has been completed from the project description to a real database. In our minds, we have best represented the requirements and we have met all of them based on our E/R diagram as well as our assumptions.