COMP 353 – Databases

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Main Project

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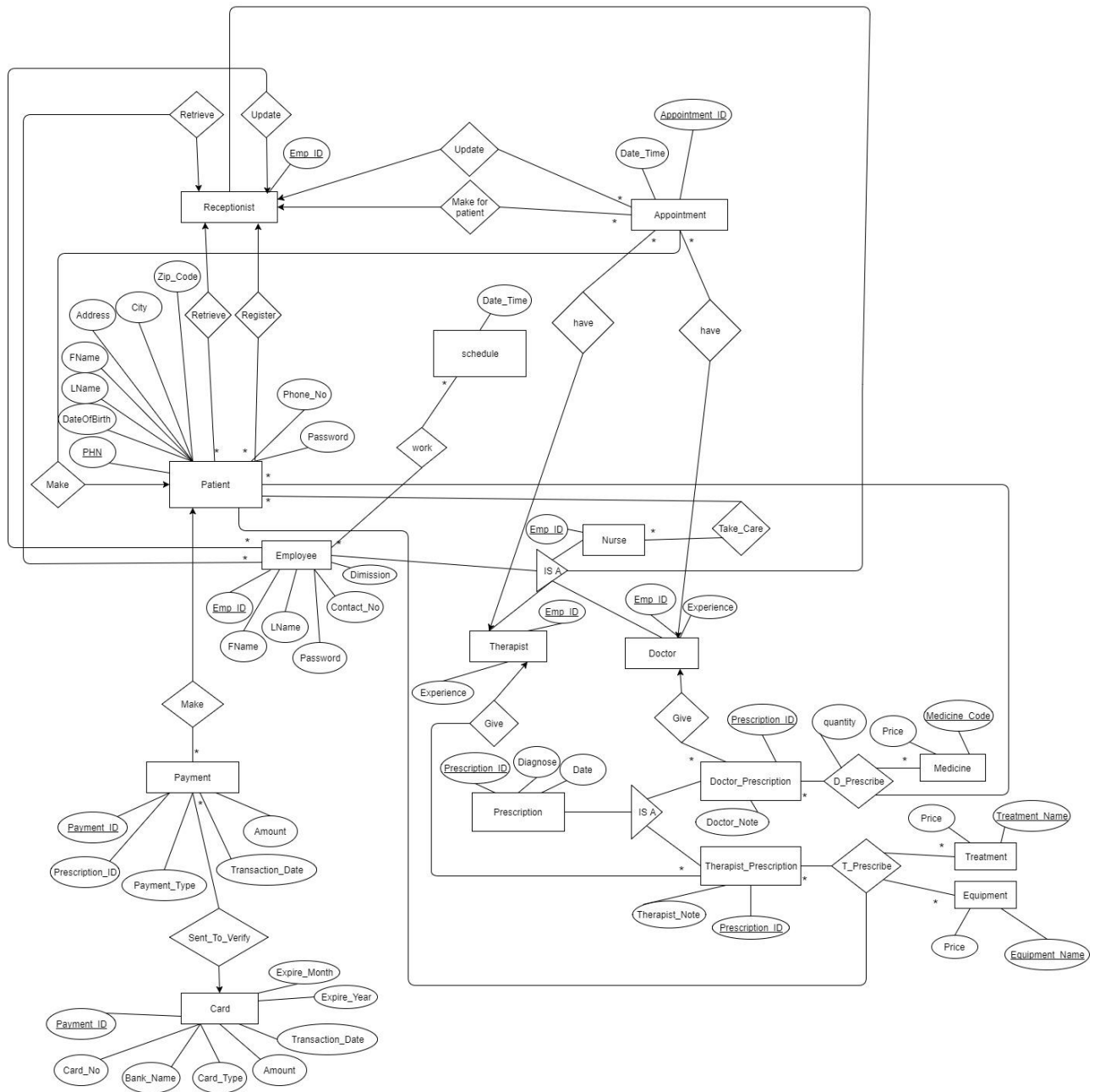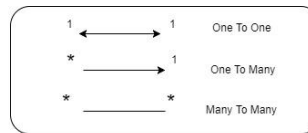
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Project Description

BSPC System is a web application our team design and implement. The system was created to organize the operational management for its patients. The system allows users to be of four different kinds: Patient, Doctor/Nurse, Therapist and Receptionist. Patients can make appointment, view appointment and view the bills. Doctor/Nurse can view Patient Record, Update Patient Record, Create Prescription, view Appointment and view Patients' medical History find medicine under certain price range. Therapist can view Patient Record, Update Patient Record, Create Prescription, view Appointment and view patients' medical history, unused equipment, find equipment and treatment under certain price range. Receptionist can Register Patient or employee, Update and view Patient's or employee's Record, receive payment, make and update appointment and view eight types of report include bill, therapist's workload, etc.

Implementation:

BSPC was built using HTML and CSS for front end appearance, PHP for back end interaction and MySQL for database storage.BSPC is an easy to use web application and satisfy the need of those four types of users.

ER Diagram

1 ———→ 1		One To One
* ———→ 1		One To Many
* ——— *		Many To Many

Retrieve   Update

Emp_ID

Appointment_ID

Date_Time

Update

Receptionist

Make for patient

Appointment

Zip_Code

Address   City

FName

LName

DateOfBirth

PHN

Retrieve   Register

Date_Time

schedule

Phone_No

Password

have

have

Make

Patient

work

Emp_ID

Nurse

Take_Care

IS A

Employee

Dimission

Emp_ID

Contact_No

Experience

FName

LName

Emp_ID

Password

Therapist

Emp_ID

Doctor

Experience

Make

Experience

Give

Give

Prescription_ID

quantity   Price

Medicine_Code

Payment

Payment_ID

Amount

Prescription_ID

Payment_Type

Transaction_Date

Prescription_ID   Diagnose   Date

Prescription

Doctor_Prescription

D_Prescribe

Medicine

IS A

Doctor_Note

Treatment_Name

Price

Sent_To_Verify

Therapist_Prescription

T_Prescribe

Treatment

Expire_Month

Expire_Year

Card

Transaction_Date

Payment_ID

Card_No   Bank_Name   Card_Type   Amount

Therapist_Note

Prescription_ID

Equipment

Price

Equipment_Name

Assumptions

Prescription：

Assuming that the Prescription_ID is unique, which means the doctor's prescription and the therapist's prescription can not have the identical Prescription_ID .

Each doctor/therapist can give many prescription, each prescription can only given by one doctor or therapist.

We assuming all the users are living in CANADA, and they all use the canadian Zip_Code.

Doctor prescription can prescribe many medicine, each prescription was prescribed to one patient.

Therapist prescription can prescribe many treatment and equipment.

Patient and employee:

Assume Patient's and employee's Phone number can be null and different patient can have same phone number (eg. Couple share same phone number).

Payment:

Assume every patient can make several payments. Each payment can only paid by one patient. Each prescription can be paid by several method. The detail of cards will daily sent to the card processing agency to verify.

Appointment:

The patient can make appointment by himself or he can ask receptionist to do that.

Each patient referred by a trainer and present the prescription number when he/she makes the appointment.

Schedule:

Each doctor/therapist have the same fix working schedule, the time slot is every day and every one hour from 9:00AM to 4:00 PM.

Constraints

Patient:

The Patient must be at least 18 years old

Appointment:

A appointment can be made not more than 8 week in advance.

Limited to one appointment for one day.

System does not allow patient to make appointment with doctor and therapist at the same time.

Payment:

Payment amount is double type;

For payment type: CA = "Cash"; CC = "Credit Card"; DC = "Debit Card"; CH = "Cheque"

Doctor:

The doctor must have at least 6 years of prior experience

Doctors can only prescribe medicine but not treatment or equipment

Therapist:

The therapist must have at least 2 years of prior experience

Therapist can only prescribe treatment and equipment but not medicine

System records doctor/therapist availability for upcoming 60days.

Prescription：

Diagnosis text limit of 100 words.

Access rights:

Receptionist:

- View information and availability of staff
- Make or update appointments for patients
- View patient records
- Update staff details

Nurse/doctor:

- Update, insert, alter, view patient table.

Patient:

- View appointment

- Make appointment

Relational database schema

Patient(PHN, FName, LName, DateOfBirth, Address, City, State, Zip_Code, Phone_No, Password)

    Primary Key: PHN

Employee(Emp_ID, FName, LName, Contact_No, Password, Dimission**)**

    Primary Key: Emp_ID

Receptionist(Emp_ID**)**

    Primary Key: Emp_ID

    Foreign key: Emp_ID references Employee(Emp_ID)

Nurse(Emp_ID)

    Primary Key: Emp_ID

    Foreign key: Emp_ID references Employee(Emp_ID)

Doctor(Emp_ID, Experience)

    Primary Key: Emp_ID

    Foreign key: Emp_ID references Employee(Emp_ID)

Therapist(Emp_ID, Experience)

    Primary Key: Emp_ID

    Foreign key: Emp_ID references Employee(Emp_ID)

Prescription(Prescription_ID, Diagnose, Date)

    Primary Key: Prescription_ID

Doctor_Prescription(<u>Prescription_ID</u>, Doctor_Note, DocID, PHN)

    Primary Key: Prescription_ID

    Foreign key: Prescription_ID references Prescription(Prescription_ID)

    Foreign key: DocID references Doctor(Emp_ID)

    Foreign Key: PHN references Patient(PHN)

Therapist_Prescription(<u>Prescription_ID</u>, Theapist_Note, TherID, PHN)

    Primary Key: Prescription_ID

    Foreign key: Prescription_ID references Prescription(Prescription_ID)

    Foreign key: TherID references Therapist(Emp_ID)

    Foreign Key: PHN references Patient(PHN)

D_Prescribe(<u>Prescription_ID</u>, <u>Medicine_Code</u> , quantity)

    Primary Key: Prescription_ID, Medicine_Code

    Foreign Key: Prescription_ID references Doctor_Prescription (Prescription_ID)

    Foreign Key: Medicine_Code references Medicine (Medicine_Code)

T_Prescribe(<u>Prescription_ID</u>, <u>Equipment_Name</u>, <u>Treatment_Name</u>)

    Primary Key: Prescription_ID, Equipment_Name, Treatment_Name

    Foreign Key: Prescription_ID references Therapist_Prescription

                 (Prescription_ID)

    Foreign Key: Equipment_Name references Equipment (Equipment_Name)

    Foreign Key: Treatment_Name references Treatment (Treatment_Name)

Appointment(<u>Appointment_ID</u>, Date_Time, PHN, Doc_ID, Ther_ID)

    Primary Key: Appointment_ID

    Foreign Key: PHN references Patient (PHN)

    Foreign Key: Doc_ID references Doctor(Emp_ID) CAN BE NULL

    Foreign Key: Ther_ID references Therapist(Emp_ID) CAN BE NULL

Schedule(<u>Date_Time</u>)

    Primary Key: Date_Time

Treatment(<u>Treatment_Name</u>, Price)

    Primary Key: Treatment_Name

Equipment(<u>Equipment_Name</u>, Price)

    Primary Key: Equipment_Name

Medicine(<u>Medicine_Code</u>, Price)

    Primary Key: Medicine_Code

(Medicine Code is Medicine name)

Payment (<u>Payment_ID</u>, Prescription_ID, Payment_Type, Transaction_Date, Amount, Patient_ID)

    Primary key: Payment_ID

    Foreign key: Prescription_ID (reference Prescription_ID in Prescription)

    Foreign key: Patient_ID (reference Patient_ID in Patient)

Card (<u>Payment_ID</u>, Card_No, Bank_Name, Card_Type, Expire_Year, Expire_Month, Amount, Transaction_Date)

    Primary key: Payment_ID

    Foreign key: Payment_ID, Amount, Transaction_Date

3NF Solution

For those tables who have only 1 or 2 attributes and one of them is primary key, it is obvious that this is 3NF, for example:

Nurse(Emp_ID)   Primary Key: Emp_ID

Doctor(Emp_ID, Experience)   Primary Key: Emp_ID

Therapist(Emp_ID, Experience)   Primary Key: Emp_ID

Prescription(Prescription_ID, Diagnose, Date)   Primary Key: Prescription_ID

Receptionist(Emp_ID) Primary Key: Emp_ID

Schedule(Date_Time)   Primary Key: Date_Time

Treatment(Treatment_Name, Price)   Primary Key: Treatment_Name

Equipment(Equipment_Name, Price)   Primary Key: Equipment_Name

Medicine(Medicine_Code, Price)   Primary Key: Medicine_Code

For those tables who have more than 2 attributes, we check all the functional dependencies carefully to make sure it is 3NF:

Patient(PHN, FName, LName, DateOfBirth, Address, City, State, Zip_Code, Phone_No, Receptionist_ID, Password)   Primary Key: PHN
In this table, under our assumption the only unique attribute is PHN, and PHN is in the LHS of all functional dependencies, so this is 3NF

Employee(Emp_ID, FName, LName, Contact_No, Password, Dimission)
Primary Key: Emp_ID
In this table, under our assumption the only unique attribute is Emp_ID, and Emp_ID is in the LHS of all functional dependencies, so this is 3NF.
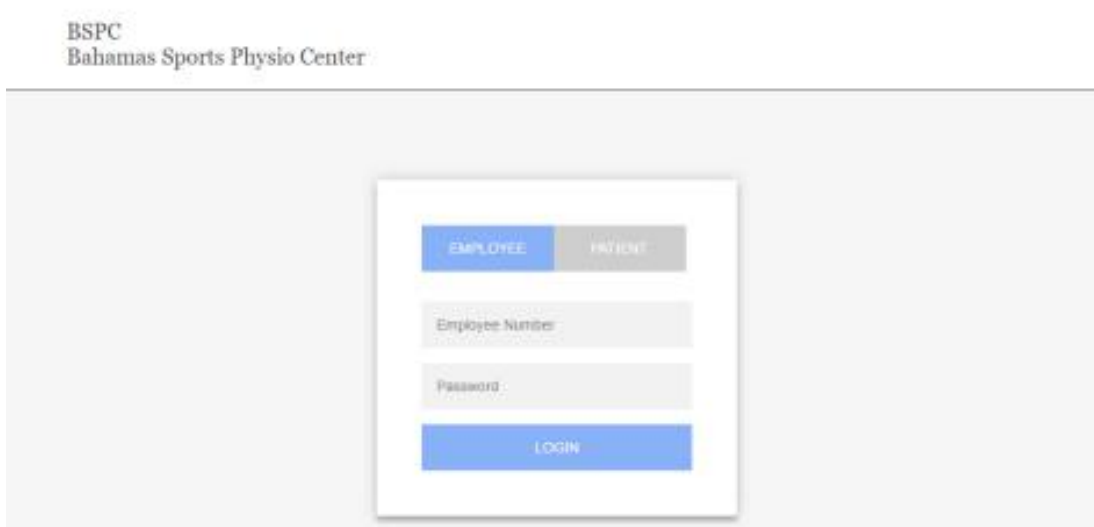
Doctor_Prescription(Prescription_ID, Doctor_Note, DocID, PHN)
Primary Key: Prescription_ID
In this table, under our assumption the only unique attribute is Prescription_ID, and Prescription_ID is in the LHS of all functional dependencies, so this is 3NF.

Therapist_Prescription(Prescription_ID, Theapist_Note, TherID, PHN)

Primary Key: Prescription_ID

In this table, under our assumption the only unique attribute is Prescription_ID,and

Prescription_ID is in the LHS of all functional dependencies, so this is 3NF

D_Prescribe(Prescription_ID, Medicine_Code , quantity)

Primary Key: Prescription_ID, Medicine_Code

In this table, the only functional dependencies is

(Prescription_ID,Medicine_Code)→quantity, so this is 3NF

T_Prescribe(Prescription_ID, Equipment_Name, Treatment_Name)

Primary Key: Prescription_ID, Equipment_Name, Treatment_Name

In this table, all of the attributes are primary key, so this is 3NF

Appointment(Appointment_ID, Date_Time, PHN, Doc_ID, Ther_ID)

Primary Key: Appointment_ID

In this table, under our assumption the only unique attribute is Appointment_ID, and

Appointment_ID is in the LHS of all functional dependencies, so this is 3NF

Payment (Payment_ID, Prescription_ID, Payment_Type, Transaction_Date, Amount,

Patient_ID)   Primary key: Payment_ID

In this table, under our assumption the only unique attribute is Payment_ID, and

Payment_ID is in the LHS of all functional dependencies, so this is 3NF

Card (Payment_ID, Card_No, Bank_Name, Card_Type, Expire_Year, Expire_Month,

Amount, Transaction_Date)   Primary key: Payment_ID

In this table, under our assumption the only unique attribute is Payment_ID, and

Payment_ID is in the LHS of all functional dependencies, so this is 3NF

Application feature and User-interface design

Our design of relational database application system is to for a "realistic" situation. Our implementation of the system runs on the DB server MySQL managed by AITS and this application is a two-tier system: a browser and http server with PHP parser at the server side. This system is expected to support all queries and transactions needed, and produce various desired reports.

Our system has a good GUI that is simple and dedicated for novice users, it can create, delete, edit, view for all kind of users. As an admin, he/she can create, update, view details. As a patient, he/she can view and make an appointment. As a nurse, he/she can update records, insert, alter and view patients updated record. We implemented those features by creating a login form:

After users input his employee number or password, our system will check if this user is patient, doctor or nurse, then give them certain authorities.

Below is the page for patient, we implement buttons for them to perform all the operations.
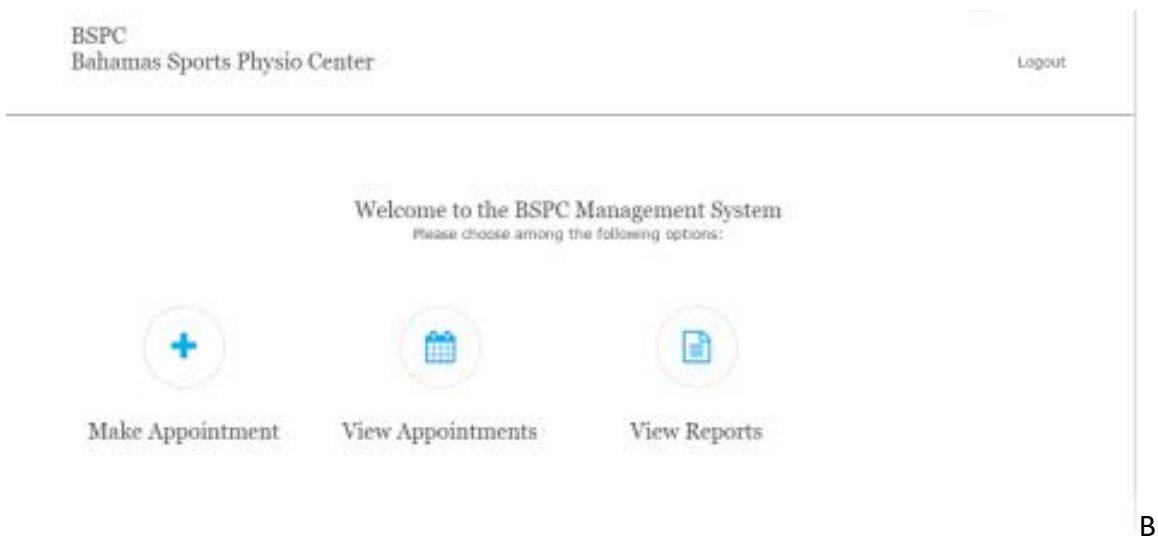
B elow is the page for patient, we implement buttons for them to perform all the operations.
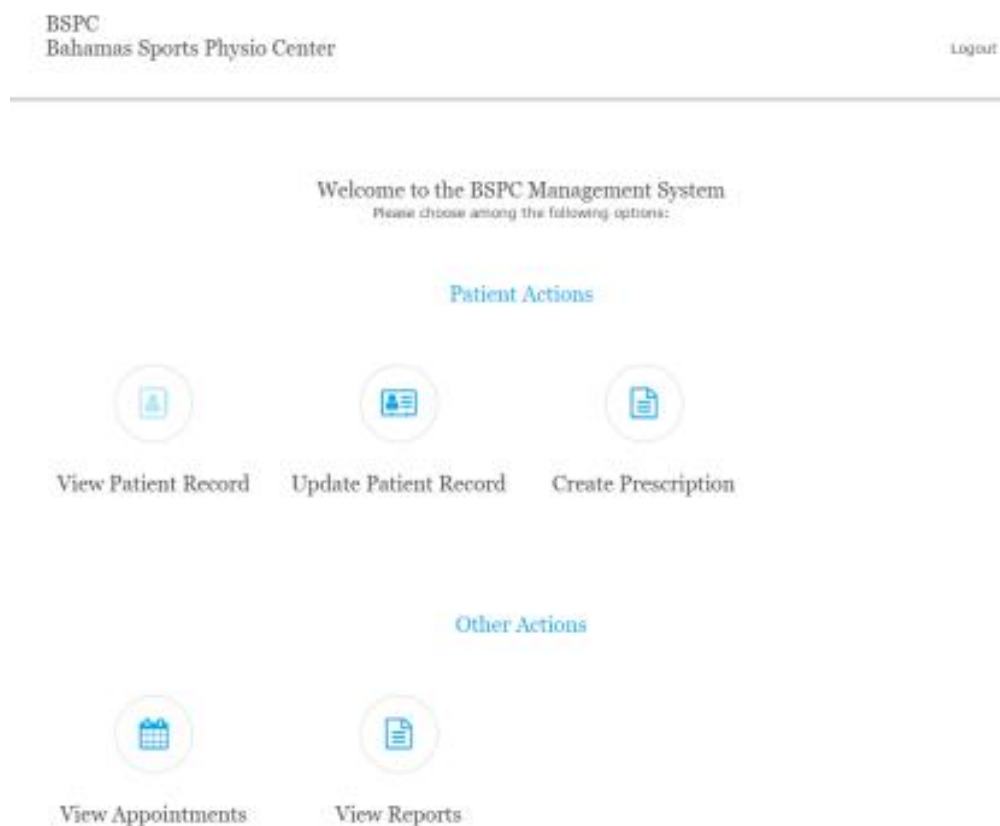
Each button is linked to a specific php file and show all the information, SQL to our database could apply if needed.

To support all the reports mentioned in the requirement: query the patients and equipment, list all the information and details about reservations and employees. We create user-friendly and understandable-easily tables and menu to make those operations easy even for novice users.

For example, below is the report of patient's bill. In the page, we use SQL to get data from our database and then create a table to show all the information.

Patient's Bill Report

The following report shows the bill details about a patient whose Prescription Number is
Prescription No..

SUBMIT

Prescription #: 1110
Date: 2017-07-10
PHN: 1002

Address:
1234 la street
Montreal , U1Y2B3

Patient Information:
Bashu White
Date Of Birth: 1984-04-01
Phone Number: 1245687963

Type	Prescription	Price	Quantity
medicine	Amitriptyline	19.95	3
medicine	Clindamycin	25.44	1
			Total: 85.29

More details could be found in user guide section.

View Reports part:

For the View Reports part, the following details explain how we design and implement:

First of all, all of the BSPC system users can use the "View Reports" function based on different user's authority depending on their user type.

Secondly, there are 12 different reports in total, including:

Reports	authority			
	Patient	Receptionist	Doctor/Nurse	Therapist
All Patients' Information Report		√		
Patients' Reservation Report	√	√		
Patient Medical History Report			√	√
Bill Report	√	√		
Doctor/Therapist Availability Report		√		
Therapist's Workload Report		√		
Former Therapist Report		√		
Current Therapist Report		√		
Medicine Detail Report			√	
Equipment Detail Report				√
Treatment Detail Report				√
Unused Equipment Report		√		√

7 out of 12 are given in the project requirement, the rest of 5 are designed by ourselves. Thirdly, for all the subpages that under the "View Reports" button, if they require user input and the user do not enter anything or enter an invalid input, and click the "submit" button, the alert box will pop up.

Scenario 1: When the *patient* click the "View Reports" button, it will link to the reports.php page, and the message: "Welcome, now you are under the *patient* authority extent " will automatically shows up on the upper left corner of the page in order to clarify the user authority. Patient in this reports.php page can see 2 different icons which means he can only see 2 different reports.

The first icon links to the patientReservation.php page which can show all the appointments information only for this specific patient's PHN. This page requires an input of a specific PHN in order to find all the appointments based on this PHN. However a specific patient can only see his own appointment details, so I decided to show the patient PHN explicitly and do not allow the patient to change it. The queries are :

$query1 = "SELECT PHN, Appointment_ID, Date_Time, FName, LName

       FROM appointment

       INNER JOIN employee

       ON PHN = '$PHN' AND Doc_ID = Emp_ID ";

// query1 used to find appointment with doctor

$query2 = "SELECT PHN, Appointment_ID, Date_Time, FName, LName

       FROM appointment

       INNER JOIN employee

       ON PHN = '$PHN' AND Ther_ID = Emp_ID ";

// query2 used to find appointment with therapist

The second icon links to the bill.php page which can show the bill details for a specific prescription ID given by user input. The queries are :

// query1 used to find patient information

$query1 = " SELECT PHN, FName, LName, DateOfBirth, Address, City, Zip_Code, Phone_No

        FROM patient

```
                        WHERE PHN = (

                                        SELECT DISTINCT PHN

                                        FROM doctor_prescription

                                        WHERE Prescription_ID = $prescriptionId

                                        UNION

                                        SELECT DISTINCT PHN

                                        FROM therapist_prescription

                                        WHERE Prescription_ID = $prescriptionId ) ";
```

// query2 used to find presctiption detail (medicine, equipment and treatment)

$query2 = " SELECT Prescription_ID, 'equipment' AS TYPE,e.Equipment_Name AS
PRESCRIPTION, Price AS PRICE, 1 AS QUANTITY

```
                FROM t_prescribe

                JOIN equipment e ON t_prescribe.Prescription_ID = $prescriptionId AND

        t_prescribe.Equipment_Name = e.Equipment_Name

                UNION

            SELECT Prescription_ID, 'treatment', t.Treatment_Name, Price, 1

            FROM t_prescribe

            JOIN treatment t ON t_prescribe.Prescription_ID = $prescriptionId AND

t_prescribe.Treatment_Name = t.Treatment_Name

                UNION

                SELECT Prescription_ID, 'medicine', m.Medicine_Code, Price,

d_prescribe.quantity

                FROM d_prescribe

                JOIN medicine m ON d_prescribe.Prescription_ID = $prescriptionId AND

d_prescribe.Medicine_Code=m.Medicine_Code  " ;
```

// query3 used to find the date of the specific prescription

$query3 = " SELECT Date

```
                FROM prescription

                WHERE Prescription_ID = $prescriptionId";
```

Scenario 2:

When the *receptionist* click the "View Reports" button, it will link to the reports.php page, and the message: "Welcome, now you are under the *receptionist* authority extent" will automatically shows up on the upper left corner of the page in order to clarify the user authority. *Receptionist* in this reports.php page can see 8 different icons which means he can see 8 different reports.

The first icon links to the patientInfo.php page which show all the information for patients who have been at this center. The query is:

$query1 = " SELECT PHN, FName, LName, DateOfBirth, Address, City, State, Zip_Code, Phone_No FROM patient";

The second icon links to the availability.php page which shows the availability for therapist/doctor during a specified period of time. User need to choose either doctor or therapist and select the start date/time and the end date/time. The queries are:

// query1 used for doctor availability

$query1 = " SELECT Fname, LName, t2.available

    FROM employee

    JOIN (

        SELECT Emp_ID, t1.Date_Time as available

        FROM appointment

        RIGHT JOIN (

            SELECT Emp_ID, Date_Time

            FROM doctor, schedule

            WHERE Date_Time BETWEEN '$sDate_Time' AND

'$eDate_Time') AS t1 ON appointment.Doc_ID = t1.Emp_ID AND
appointment.Date_Time = t1.Date_Time WHERE appointment.Doc_ID IS NULL) AS t2 ON
employee.Emp_ID = t2.Emp_ID AND employee.Dimission <> 1

        ORDER BY FName";

// query2 used for therapist availability

$query2 = " SELECT Fname, LName, t2.available

    FROM employee

    JOIN (

```
SELECT Emp_ID, t1.Date_Time as available

FROM appointment

RIGHT JOIN (

SELECT Emp_ID, Date_Time

FROM therapist, schedule

WHERE Date_Time BETWEEN '$sDate_Time' AND
'$eDate_Time') AS t1 ON appointment.Ther_ID = t1.Emp_ID AND
appointment.Date_Time = t1.Date_Time WHERE appointment.Ther_ID IS NULL) AS t2
ON employee.Emp_ID = t2.Emp_ID AND employee.Dimission <> 1

ORDER BY FName";
```

The third icon links to the unusedEquipment.php page which shows All the Unused Equipments. The query is:

$query1 = " SELECT Equipment_Name AS Unused_Equipment

FROM equipment

WHERE Equipment_Name NOT IN (

SELECT Equipment_Name

FROM t_prescribe)";

The forth icon links to the bill.php page which is as same as the Scenario 1.

The fifth icon links to the pastTherapist.php page which lists all the information for therapists who have been at this center. The query is:

$query1 = " SELECT therapist.Emp_ID, FName, LName, Contact_No

FROM employee

INNER JOIN therapist

ON employee.Emp_ID = therapist.Emp_ID AND Dimission = 1 " ;

The sixth icon links to the currentTherapist.php page which lists all the information for therapists who work at this center. The query is:

$query1 = " SELECT therapist.Emp_ID, FName, LName,Contact_No,Experience

FROM employee

INNER JOIN therapist

ON employee.Emp_ID = therapist.Emp_ID AND Dimission = 0 " ;

The seventh icon links to the therapistWorkload.php page which lists how many patients has each Therapist seen in a specified period of time. User need to select the start date/time and the end date/time. The query is:

$query1 = " SELECT Emp_ID AS Therapist_ID, FName, LName,

COUNT(t1.Appointment_ID) AS Patient_Number

        FROM employee

        INNER JOIN (

                SELECT Appointment_ID, Ther_ID, appointment.Date_Time

                FROM appointment

                WHERE Date_Time > '$sDate_Time' AND Date_Time < '$eDate_Time')

AS t1 ON employee.Emp_ID = Ther_ID

                GROUP BY Therapist_ID" ;

The last icon links to the patientReservation.php page which is almost the same as the Scenario 1, but only one difference which is under the *receptionist* authority extent, user can see any patient's reservation details instead of the user himself under the *patient* authority. In another word, the *receptionist* can enter any valid PHN.

Scenario 3:

When **Doctor/Nurse** click the "View Report" button, the page will show "Patient's Medical History" and "Medication Details" options.

patientPrescription.php provides the report that shows all the personal medical history about the patient with PHN the doctor/nurse entered in the input area. The report contain the Patient's name and date of birth, and his medical history: Prescription#, doctor/therapist Note, Diagnose and Date.

QUERY:

1. Get Patient information

 SELECT FName, LName, DateOfBirth FROM patient WHERE PHN = $phn

2.Find all prescription of the specific patient and get the diagnosis and doctor/therapist notes

SELECT T1.Prescription_ID, Content, Diagnose, Date

FROM prescription

INNER JOIN

((SELECT therapist_prescription.Prescription_ID, 'T_Notes' AS Category, Therapist_Note AS Content FROM therapist_prescription WHERE therapist_prescription.PHN = $phn)

UNION

(SELECT doctor_prescription.Prescription_ID, 'D_Notes', Doctor_Note FROM doctor_prescription WHERE doctor_prescription.PHN = $phn))AS T1

ON T1.Prescription_ID = prescription.Prescription_ID

medicationPrice.php provide the reports that shows all medicines under the price range user inputs, that will help users to find the medicine all medicine in that price range.

QUERY:

SELECT Medicine_Code, Price

FROM medicine

WHERE Price > '$LowPrice' AND Price < '$HighPrice'

Scenario 4:

When the ***therapist*** click the "View Reports" button, it will link to the reports.php page, and the message: "Welcome, now you are under the *therapist* authority extent " will automatically shows up on the upper left corner of the page in order to clarify the user authority. Therapist in this reports.php page can see 4 different icons which means he can see 4 different reports.

The first icon links to the patientPrescription.php page which is as same as the Scenario 3.

The second icon links to the equipmentPrice.php which shows the differnet kinds of equipments that under the given price range. User need to input the lowest price and the highest price. The query is:

$query1 = " SELECT Equipment_Name, Price

FROM equipment

WHERE Price > '$LowPrice' AND Price < '$HighPrice' ";
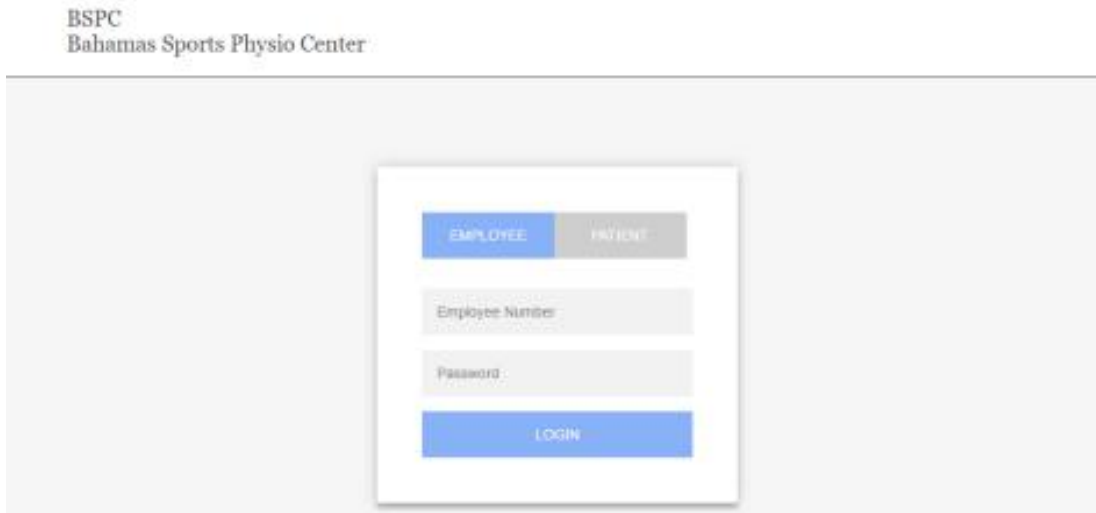
The third icon links to the treatmentDetails.php page which shows the differnet kinds of treatments that under the given price range. User need to input the lowest price and the highest price. The query is:

$query1 = " SELECT Treatment_Name, Price

FROM treatment

WHERE Price > '$LowPrice' AND Price < '$HighPrice' ";

The forth icon links to the unusedEquipment.php page which is as same as the Scenario 2 third icon.
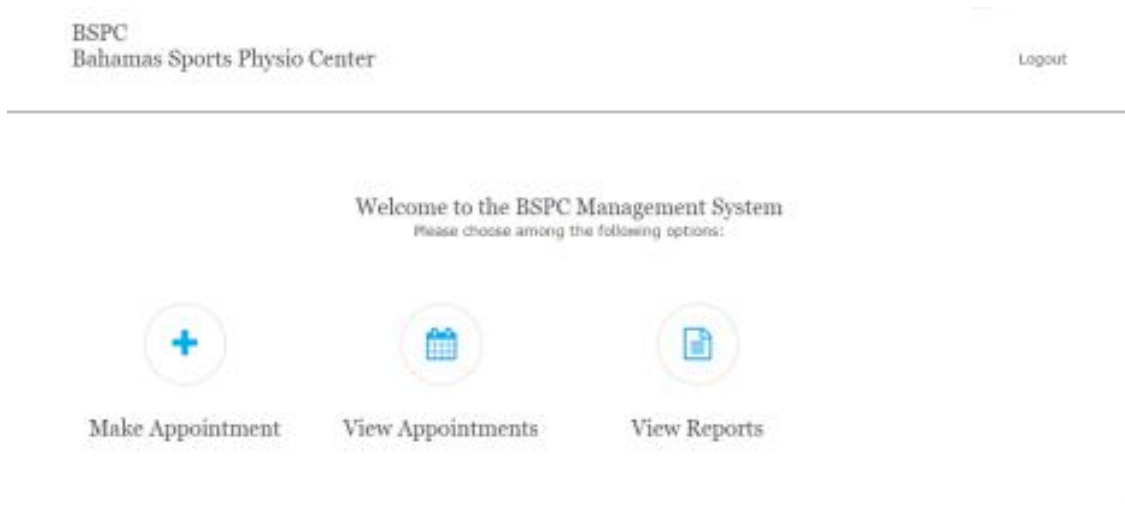
User guide

First of all, when you open our login page, the picture shown below is the one you will see.

You can login as employee or patient. For employee, you need to enter your employee number and password. On the other hand, as a patient, you need to enter your personal health number(PHN) and password.

Login as a

patient:

When you login as a patient, you will see the the picture as shown above, then you will be able to:

*make appointment,

*view existing appointments,

*view reports.

To make appointment, you need to choose which doctor/therapist you want to meet, and select proper date and time. Then you can submit your appointment.

In order to view your existing appointment, you will see the picture shown below, in detail.

Patient's Reservation Report

The following report shows the reservation details about a patient whose Personal Health Number is

1021

SUBMIT

Patient's Reservation Report
Created: 2017/08/09

Bahamas Sports Physio Center	BCPS Corp.
1234 Beach Street	Bochuan An
Nassau, Bahamas 12345	info@bspc.com

Patient's reservation details:

Order	PHN	Appointment ID	Appointment Schedule	Position	First Name	Last Name

You have o appointments

In View report page, you will see:

*patient's reservation,

*bill

BSPC
Bahamas Sports Physio Center   Logout

BSPC Reports
The following reports categories are available for you.

Welcome, now you are under the patient authority extent

Patient's Reservation   Bill

When you enter your prescription number, you will get your bill in detail as picture shown below:

Patient's Bill Report

The following report shows the bill details about a patient whose Prescription Number is

Prescription No..

[SUBMIT]

Prescription #: 1110
Date: 2017-07-10
PHN: 1002

Address:	Patient Information:
1234 la street	Bashu White
Montreal , U1Y2B3	Date Of Birth: 1984-04-01
	Phone Number: 1245687963

Type	Prescription	Price	Quantity
medicine	Amitriptyline	19.95	3
medicine	Clindamycin	25.44	1
			Total: 85.29

Login as an employee:

You will see the figure shown below, and you are able to:

*view patient record,

*update patient record,

*create prescription,

*view appointments(same as patient),

*view report(same as patient).

Welcome to the BSPC Management System
Please choose among the following options:

Patient Actions

View Patient Record	Update Patient Record	Create Prescription

Other Actions

View Appointments	View Reports

View patient record, just enter the PHN to check the specific patient's information:

Patient Record
To view a patient's record, please enter the PHN number of the patient.

PHN: 1003

SUBMIT

After press submit, you will see all information of patient 1003(Julian)

First Name	Last Name	Date of Birth	Address	City	State	Zip Code	Phone Number
Julian	Robinson	1998-12-03	515 Portage Ave	Montreal	QC	H1B3N5	(514) 872-4127

Update patient record, same as view record. Enter the PHN and press submit.

Patient Update

To update a patient's information, please fill out the form below.

PHN: 1003

SUBMIT

Now you can update this patient's information, and save it for later use.

Patient Update

To update a patient's information, please fill out the form below.

First Name: Julian
Last Name: Robinson
Date of Birth: 1998-12-03
Address: 515 Portage Ave
City: Montreal
State: QC
Zip Code: H1B3N5   Pattern: A9A9A9
Phone Number: 5148724127

SUBMIT

In view report as an employee, you will see more stuff than patient:

BSPC Reports

The following reports categories are available for you.

Welcome, now you are under the Therapist authority extent

Patient's Medical History   Equipment Details   Treatment Details

Unused Equipment

*patient's medical history, by enter PHN to check specific patient's medical history

*equipment details, you need to enter the range of price of equipment that you would like to check.

Equipment Price Report
Created: 2017/08/09

Bahamas Sports Physio Center	BCPS Corp.
1234 Beach Street	Bochuan An
Nassau, Bahamas 12345	info@bspc.com

All available equipments which are under the given price range are:

Order	Equipment Name	Equipment Price
1	Anesthesia_Machines	166.28
2	EKG_Machines	199.99
3	Endoscopy Equipment	177.77
4	Medical_Gas_Equipment	144.44
5	Monitor	179.81
6	Patient_Beds	199.76
7	Surgical_Lights	188.99

There are 7 different kinds of equipments that under the given price range.

*treatment details, you can enter the range of treatment price to check which treatment we have in that range.

Treatment Price Report
Created: 2017/08/09

Bahamas Sports Physio Center	BCPS Corp.
1234 Beach Street	Bochuan An
Nassau, Bahamas 12345	info@bspc.com

All available treatments which are under the given price range are:

Order	Treatment Name	Treatment Price
1	Citalopram	59.95
2	electrical massage	66.66
3	Fluvoxamine	79.97
4	massage	77.77
5	Protriptyline	76.67
6	ultrasound stimulation	55.55

There are 6 different kinds of treatments that under the given price range.

*unused equipment

Unused Equipments Report
Created: 2017/08/09

Bahamas Sports Physio Center	BCPS Corp.
1234 Beach Street	Bochuan An
Nassau, Bahamas 12345	info@bspc.com

All the Unused Equipments are:

Order	Equipment Name
1	Defibrillators
2	Defibrillatorsa
3	Electrosurgical_Units
4	Medical_Gas_Equipment
5	Patient_Beds
6	Respiratory_Ventilators
7	Sterilizers
8	Stress_Systems
9	Stretchers
10	Surgical_Headlights
11	Surgical_Lights
12	treadmill
13	weights

The total number of the Unused Equipment is: 13

DDL and BackEnd Constraint

CREATE TABLE `appointment` (

 `Appointment_ID` int(6) NOT NULL,

 `Date_Time` datetime NOT NULL,

 `PHN` int(6) NOT NULL,

 `Doc_ID` int(6) NOT NULL,

 `Ther_ID` int(6) NOT NULL

)

CREATE TABLE `doctor` (

 `Emp_ID` int(6) NOT NULL,

 `Experience` int(6) NOT NULL

)

CREATE TABLE `doctor_prescription` (

 `Prescription_ID` int(6) NOT NULL,

 `Doctor_Note` varchar(255) NOT NULL,

 `DocID` int(6) NOT NULL,

 `PHN` int(6) NOT NULL

```
)
CREATE TABLE `d_prescribe` (
  `Prescription_ID` int(6) NOT NULL,
  `Medicine_Code` varchar(255) NOT NULL,
  `quality` int(6) NOT NULL
)

CREATE TABLE `employee` (
  `Emp_ID` int(6) NOT NULL,
  `FName` varchar(255) NOT NULL,
  `LName` varchar(255) NOT NULL,
  `Contact_No` int(11) DEFAULT NULL,
  `Password` int(6) NOT NULL,
  `Dimission` tinyint(1) NOT NULL
)

CREATE TABLE `equipment` (
  `Equipment_Name` varchar(255) NOT NULL,
  `Price` double NOT NULL
)

CREATE TABLE `medicine` (
  `Medicine_Code` varchar(255) NOT NULL,
  `Price` double NOT NULL
)

CREATE TABLE `nurse` (
  `Emp_ID` int(6) NOT NULL
)
```

```sql
CREATE TABLE `patient` (
  `PHN` int(6) NOT NULL,
  `FName` varchar(255) NOT NULL,
  `LName` varchar(255) NOT NULL,
  `DateOfBirth` date NOT NULL,
  `Address` varchar(255) NOT NULL,
  `City` varchar(255) NOT NULL,
  `State` varchar(255) NOT NULL,
  `Zip_Code` varchar(255) NOT NULL,
  `Phone_No` int(10) NOT NULL,
  `Receptionist_ID` int(6) NOT NULL,
  `Password` int(6) NOT NULL
)

CREATE TABLE `prescription` (
  `Prescription_ID` int(6) NOT NULL,
  `Diagnose` varchar(255) NOT NULL,
  `Date` date NOT NULL
)
CREATE TABLE `receptionist` (
  `Emp_ID` int(6) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
CREATE TABLE `schedule` (
  `Date_Time` datetime NOT NULL
)

CREATE TABLE `therapist` (
  `Emp_ID` int(6) NOT NULL,
  `Experience` int(6) NOT NULL
)
```

```sql
CREATE TABLE `therapist_prescription` (
  `Prescription_ID` int(6) NOT NULL,
  `Therapist_Note` varchar(255) NOT NULL,
  `TherID` int(6) NOT NULL,
  `PHN` int(6) NOT NULL
)


CREATE TABLE `treatment` (
  `Treatment_Name` varchar(255) NOT NULL,
  `Price` double NOT NULL
)

CREATE TABLE `t_prescribe` (
  `Prescription_ID` int(6) NOT NULL,
  `Equipment_Name` varchar(255) NOT NULL,
  `Treatment_Name` varchar(255) NOT NULL
)
ALTER TABLE `appointment`
  ADD PRIMARY KEY (`Appointment_ID`);


ALTER TABLE `doctor`
  ADD PRIMARY KEY (`Emp_ID`);


ALTER TABLE `doctor_prescription`
  ADD PRIMARY KEY (`Prescription_ID`);


ALTER TABLE `d_prescribe`
  ADD PRIMARY KEY (`Prescription_ID`,`Medicine_Code`);
```

```sql
ALTER TABLE `employee`
  ADD PRIMARY KEY (`Emp_ID`);


ALTER TABLE `equipment`
  ADD PRIMARY KEY (`Equipment_Name`);


ALTER TABLE `medicine`
  ADD PRIMARY KEY (`Medicine_Code`);


ALTER TABLE `nurse`
  ADD PRIMARY KEY (`Emp_ID`);


ALTER TABLE `patient`
  ADD PRIMARY KEY (`PHN`);


ALTER TABLE `prescription`
  ADD PRIMARY KEY (`Prescription_ID`);


ALTER TABLE `receptionist`
  ADD PRIMARY KEY (`Emp_ID`);


ALTER TABLE `schedule`
  ADD PRIMARY KEY (`Date_Time`);


ALTER TABLE `therapist`
  ADD PRIMARY KEY (`Emp_ID`);


ALTER TABLE `therapist_prescription`
  ADD PRIMARY KEY (`Prescription_ID`);
```

```sql
ALTER TABLE `treatment`
  ADD PRIMARY KEY (`Treatment_Name`);


ALTER TABLE `t_prescribe`
  ADD PRIMARY KEY (`Prescription_ID`,`Equipment_Name`,`Treatment_Name`);


ALTER TABLE `appointment`
ALTER TABLE `doctor`
  ADD CONSTRAINT `doctor_ibfk_1` FOREIGN KEY (`Emp_ID`) REFERENCES `employee`
(`Emp_ID`);
```

Trigger:

```sql
DELIMITER $$
CREATE TRIGGER checkpatientAge
on patient
for insert
as
if(select DateOfBirth from patient, inserted
where patient.DateOfBirth<'19990809')
begin
Rollback;
end
$$
DELIMITER ;

DELIMITER $$
CREATE TRIGGER checkDocExperience
BEFORE INSERT OR UPDATE OF experience ON Doctor
NEW ROW AS new
FOR EACH ROW
if(SELECT experience FROM Doctor, inserted
WHERE Doctor.experience<6)
Begin
print 'the Doctor must have at least 6 years experience'
ROLLBACK;
End$$
DELIMITER ;
```

```sql
DELIMITER $$
CREATE TRIGGER checkTherapistExperience
BEFORE INSERT OR UPDATE OF experience ON Therapist
NEW ROW AS new
FOR EACH ROW
if(SELECT experience FROM Therapist, inserted
WHERE Therapist.experience<2)
Begin
print 'the Therapist must have at least 2 years experience'
ROLLBACK;
End
$$
DELIMITER ;


DELIMITER $$
CREATE TRIGGER checkCardPayment
BEFORE INSERT OR UPDATE ON card
FOR EACH ROW
BEGIN
INSERT temp_payment
SELECT Payment_ID, Card_No, Bank_Name, Card_Type, Expire_Year, Expire_Month,
Amount, Transaction_Date
FROM card
END
$$
DELIMITER;
```

Contributions

Team Member	Contribution

Yang An	1. Database Design
	    ● ER-Diagram
	    ● Assumptions + Constraints
	    ● Database Schema
	2. Some database tables creation
	3. Some record insertions
	4. All the ViewReports website pages
	5. Documentation for Assumptions + Constraints+Relational Schema

Bochuan An	1. Database Design
	    ● ER-Diagram
	    ● Assumptions + Constraints
	    ● Database Schema
	2. Some database tables creation
	3. Some record insertions
	4. All the ViewReports website pages
	5. Documentation for Application feature and Interface Design(View Reports part)

Andrés Vazquez	1. Database Review and Fixes 2. Database Constraints and Referential Integrity 3. Some record insertions 4. All website pages except Reports 5. Some documentation
Zhaoyang Li	1. Some database tables creation 2. Most record insertions 3. 3NF solution 4. DDL in the documentation 5. Application feature and User-interface design in the documentation
Shihao Ning	1. Some database tables creation 2. Some record insertions 3. User Guide

Reference

1.Webpage Template:

Template Name: Jeren http://www.os-templates.com

2.Reports appearance css:

https://github.com/sparksuite/simple-html-invoice-template