

Opera Reservation System

Objectives

- ILO1: Practice Fundamental Web Design
- ILO2: Apply Dynamic HTML Techniques
- ILO3: Develop multi-user system
- ILO4: Develop multi-authority system
- ILO5: Use Database in Web Applications

Introduction

In this project, you are a web designer and you will create a web application requested by a client. The client specifies the required business model and the main features. You will be free to design the website hierarchy and the suitable user interface.

An online automated ticket reservation system for opera events is requested by the client. The system allows the opera management to create, manage and maintain current and future events. The system should allow the users to reserve specific seats for the events they want to attend.

You are required to **design** and **develop** an automated system for the reservation process. The system is used by the opera management to keep track of events schedules, number of attendees and the registered users.

Business Model

The Opera Management provided you with the following description of each user:

1- Site Administrator

The Site Administrator is the IT Engineer who manages the users' creation and website authorities.

2- Opera Management

The Opera Management is an employee who manages and creates the events offered in details (Description, Date, and Hall).

3- Customer

He/she is the end-user that has registered their personal data. He/she can reserve any available seats at any event.

4- Guest

He/she is an unregistered user or a user who hasn't logged in yet. He/she can log in, register, and view the current available events.

Each event should have the following **details**:

- 1- Event Name
- 2- Description
- 3- Event Poster (Image)
- 4- Date & Time
- 5- Hall Number

Each customer should have the following **personal data**:

- 1- Username (**Must be Unique**)
- 2- Password
- 3- First Name
- 4- Last Name
- 5- Birth Date
- 6- Gender
- 7- City
- 8- Address (Optional and could be skipped by the user).
- 9- Email (**Must be Unique**)

Functionality Requirements

The main features required are:

- **Site Administrator:**
 - Approve new user as an authority.
 - New Users should sign-up & the user account is given an authority when the administrator approves their authority.
 - Remove an existing user.
 - The Administrator could remove an existing account.
 - Give an existing user a new authority.
 - The Administrator could change the type of the user for an existing user.
- **Opera Management:**
 - Create a new event.
 - The Opera Manager can create a new event and add its details.
 - Cancel an existing event.
 - The Opera Manager can cancel an existing event.
 - Upload event poster.
 - The Opera Manager can upload an image file to be displayed in the event page.
 - Edit the details of an existing event.
 - The Opera Manager can change/edit the details of a certain event.
 - Create a new hall.
 - The Opera Manager can create a new hall and define its shape and number of seats.
 - Edit an existing hall.
 - The Opera Manager can change/edit an existing hall details.
 - View vacant/reserved seats for each event.
 - The Opera Manager can only view the overall seat status for each event (vacant/reserved).

- **Customer:**
 - Edit his/her data.
 - The customer can edit their personal data (except for the username and email).
 - See the available events.
 - The customer can see available events details.
 - The customer can see vacant seats for the event.
 - Reserve vacant seat/s in an available events.
 - The customer could select vacant seat/s only.
 - The customer is asked to enter a credit card number & its pin number.
 - Then the reservation is confirmed and a reservation ticket number (unique) is generated.
 - Cancel a reservation.
 - The customer can cancel a reserved ticket only 3 days before the start of the event.
 - The seat/s in the reservation should be vacant again.
- **Guest:**
 - Register a new account.
 - The guest can register a new account.
 - Sign in as an existing account
 - The guest can log in as an existing account.
 - View the available events
 - The guest can view available events details (whether signed in or not).

Additional required features for any user type:

- Hall shape:
 - The hall shape is rectangular, where the length and width is defined by the number of rows in the halls and the number of seats per row respectively.
- Reserving a specific seat graphically.
 - The whole hall seats should be visible to the user.
 - Vacant/Reserved seats should be clearly distinguishable.
- Reservation Conflicts:
 - A specific seat is reserved to a single user.
 - For example, if two users try to reserve a specific seat at the same time, the system should reserve the seat to only one of them.
- Automatic seats status update:
 - The seats status should be updated automatically when the user is in the reservation view
 - i.e.: if another client reserved a seat, it should be shown to the user whom is currently opening the reservation view

The main webpages that must exist:

- Website Homepage (The main page for the Opera)
- Login Page (The user should enters his username & password)

- Contact Page (If a user has a problem could send his problem by email “use mailto”)

As stated in the sections, the basic requirements that must be met on the project are:

- HTML files.
- CSS and Styling to design an appealing UI to your website.
- Client-side scripting (JavaScript or JQuery)
- Server-side scripting (PHP)
- Implementing a database to store your data (MYSQL as an option)
- Meeting basic web design fundamentals.

You are free to use the following frameworks for front-end and back-end respectively:

- Front End: AngularJS, React.
- Back End: Laravel, Node.js
- For CSS and styling: Bootstrap

Teams

Each team consists of three members. **Deadline:** Prepare and deliver a spreadsheet with the teams & names by Dec 8th, 2019.

Final Delivery

Deadline: Dec 25th, 2019 at the section time.

- You will be required to send your project by email as a zipped folder before the deadline.

Note: Complete Projects from the internet will get zero.

- You will be required to deliver a report that contains:
 1. DB Tables & Relations used.
 2. Site Map. (Create a diagram for each user type specifying his site map_
 3. A summary of the files in the application in a table; the name of the file and description of it , something like that:

Name	Description
Index.php	Main front page of site for users. Shows the user a list of categories in the system.