BOOKING PORTAL

Booking Platform for Businesses and Customers

|Systems Requirements Specification Document|

Luke Fetin

USYD | ELEC3609 MAJOR PROJECT

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Project Plan

Project Justification

Booking Portal streamlines the booking process for both Customers and Businesses by providing a simple, elegant and complete platform both to create simple Booking Systems and to easily book Businesses Assets and Services.

Booking Portal provides a fast, efficient, cost-effective and simple way for Businesses to easily create a Booking System to allow their customers to easily find them and book their Assets and Services. Businesses have the capability to effortlessly connect external hardware or software to each individual Asset in their Booking System through Booking Portal's API.

Product Characteristics and Requirements

1. The Booking Portal must be designed using the MVC Framework
2. The Booking Portal must talk must be able to communicate securely to external hardware and software using an API.
3. The new system must work on the latest 3 versions of all browsers (Firefox, IE, Edge, Chrome)
4. The main requirements of the system are to:
    a. Allow users to easily create, login and update an account.
    b. Businesses can easily create, edit and view Booking Tables and Assets and have the option to connect these Assets to their corresponding physical hardware through the API
    c. Allow customers to easily view, edit and make bookings by searching for businesses Booking Tables

Summary of Project Deliverables

Project Management Deliverables

- System Requirements Analysis and Use Case Modelling
- System Design Specification
- Testing Requirements

Product Deliverables (Minimum Viable Product)

- User Account Creation and Login
    - Business
    - Customer
- Dashboard and Site Navigation

    - Provide Dashboard that provides navigation for site functionality
    - Top bar navigation
- Account Page
    - Able to view and update Account details from here
- Create, edit and monitor Booking Tables for Businesses
    - Businesses can also add, change and edit individual Assets in Booking Table
- Search for and view Booking Tables for Customers
    - Customers able to book Assets/ Services when viewing Booking Table
- View Bookings
    - And make changes to them e.g. cancel, change time.
- Businesses connect their external hardware and software Assets to the corresponding Asset in Booking Table through API.

Performance Goals

- Incorporate Google Maps for Businesses locations and search Businesses near you
- Payment integration
- Business booking analytics page
- UI Adapt to Mobile Viewers
- Extra password protection e.g. captchas

Project Success Criteria

All functionality implemented so that it is simple, effective and user-friendly provided to users through a clean, seamless, user-friendly, responsive and elegant user interface.

Milestones and Task Allocation (Sole Project)

Week 3 - 5: Software Requirements Specification Completed
- Website wireframes
- Use Cases
- Project Plan
- Presentation

Week 5 - 7: System Design Specification Completed
- Data Model
- Code Structure
- Dependencies
- Exclusions

Week 6 - 8: User Account and Dashboard Functionality Completed
- Front End - Login/ Create Account Page
    - Test for password requirements
    - Test for account email re-use
- Back End – Store and retrieve User Account information on request
    - Store and verify User Account Login and Sign ups
    - Store and update User Account Information
- Front End – User Dashboard Page
    - Create required UI design and Navigation for Dashboard

Week 8- 10: Booking Tables Functionality Completed

- Front End – UI For Creating, Viewing, Searching and Changing Tables
    - Create Booking Tables Page and Navigation
    - Display and Manipulate Tables
    - AJAX – Change and Search for Tables in Real Time
- Back End – Storing and Retrieving Table Data

Week 10-11: CSS Styling of web site, API Functionality, security checks enforced and all MVP functionality (*Week 5 - Week 11 Milestones*) finished.

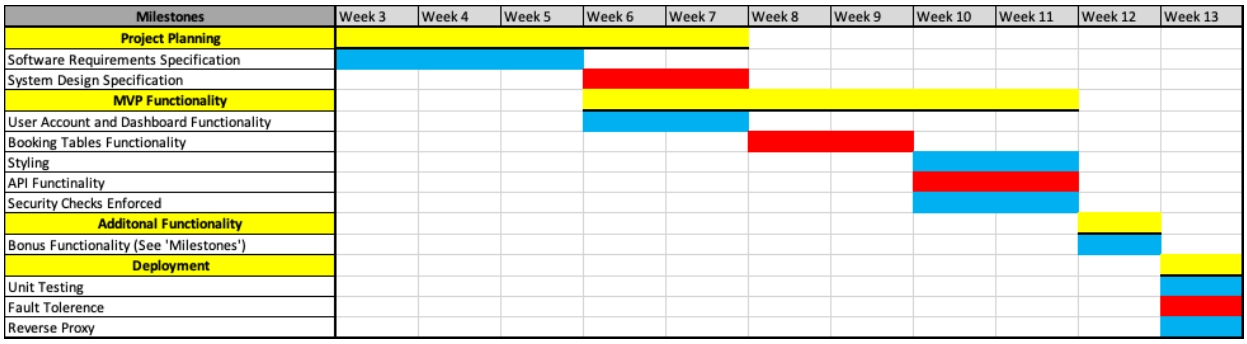
Week 12: Completely implemented and production ready. Additional functionality beyond MVP implemented, including subset from and not limited to:

- Incorporate Google Maps for Businesses locations and search Businesses near you
- Payment integration
- Business booking analytics page
- UI Adapt to Mobile Viewers
- Extra password protection e.g. captchas

Week 13: Deployment Completed

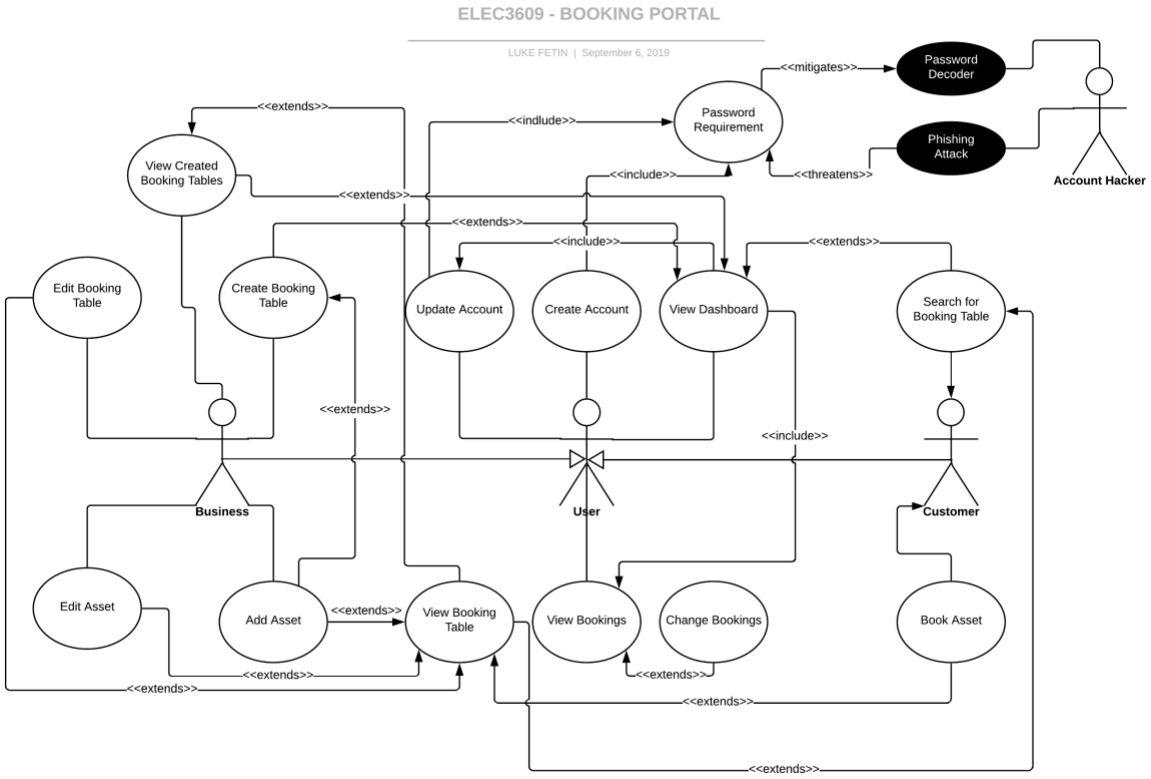
- Deployment on Linux server on AWS
- Reverse proxy
- Fault tolerance
- Unit testing

Project Timeline



Use Case Requirements

Use Case Diagram



Use Cases

UC1 Create/ Login Account Use Case
UC2 Update Account Details Use Case
UC3 View Dashboard Use Case
UC4 Create Booking Table Use Case
UC5 Add Assets/ Services Use Case
UC6 View Booking Table Use Case
UC7 Edit Asset/ Service Use Case
UC8 Edit Booking Table Use Case
UC9 Search for Booking Tables Use Case
UC10 Book Asset Use Case
UC11 View Bookings Use Case
UC12 Change Booking Use Case
UC13 View Created Booking Tables Use Case
UC14 Attacker Attempts to Access to User Account *Misuse Case*

Flow of Events for Use Cases

UC1 Flow of Events for the Create/ Login Account Use Case

1.1 Preconditions:

None

1.2 Main Flow:

When a user accesses any webpage from this site and they are not logged into any account, they will be automatically directed to Create/ Login an account.

1.3 Subflows:

[S1] A user creates an account by entering their email or phone number and password when they click 'Create Account'.
[S2] If the user creates the account as a Business, they will be prompted to enter their ABN, bank and location details of their business.
[S3] If the user creates a Customer account, they will be prompted to enter their payment method.
[S4] The user logs into their account by clicking 'Log In' and entering the email or phone number and password.

1.4 Alternative Flows:

[E1] The password has to contain at least 10 characters, consist of letters (upper and lower case), numbers and special characters. A prompt will be displayed if the password entered does not meet this requirement, the user account will not be created, and they will be required to re-enter a password. This password requirement allows account hackers to be mitigated [UC14].
[E2] The email, phone number, payment method or ABN entered cannot be associated with another account. If the information has already been used, the account won't be created, a prompt will be displayed and ask the user to try different information.
[E3] Phone number, email, payment method or ABN has to be confirmed via SMS, email, with the bank and the ABR respectively. If any can't be confirmed, the account won't be created, they will be prompted and required to re-enter the information.
[E4] If the login details do not match any account, they will not be logged in, they will be alerted and required to re-enter login details.

UC2 Flow of Events for the Update Account Details Use Case

2.1 Preconditions:

1. Users are logged into their existing Created Account [UC1]

2.2 Main Flow:

A user can update any of their account details (name, phone number, location, payment method or ABN, email and password). They are directed to this form by clicking 'Update Account Details' from the Dashboard [UC3]

2.3 Subflows:
None

2.4 Alternative Flows:
[E1] The password has to contain at least 10 characters, consist of letters (upper and lower case), numbers and special characters. A prompt will be displayed if the password entered does not meet this requirement, the password won't be updated, and they will be required to re-enter a password. This password requirement allows account hackers to be mitigated [UC14].
[E2] The email, phone number, payment method or ABN entered cannot be associated with another account. If the email has already been used, a prompt will be displayed, the account detail will not be updated, and they will be asked to re-enter the details.
[E3] Phone number, payment method or ABN has to be confirmed via SMS, with the bank or the ABR respectively. If it can't be confirmed, the information will not be updated, and they will be asked re-enter.

UC3 Flow of Events for the View Dashboard Use Case

3.1 Preconditions:
1. Users are logged into a created Account [UC1]

3.2 Main Flow:
User is directed here after logging in, creating an account or clicking the 'Dashboard' line from the top navigation bar. Dashboard displays navigation to all parts of website, update account details [UC2] and view bookings [11].

3.2 Subflows:
[S1] A customer is also shown on their Dashboard a search engine to search for Businesses Booking Tables [UC9].
[S2] Businesses are also shown a link to create a Booking Table [UC4] and to view their created Booking Tables [UC13]

3.3 Alternative Flows:
None

UC4 Flow of Events for the Create Booking Table Use Case

4.1 Preconditions:
1. Users are logged into a created Business Account [UC1]

4.2 Main Flow:
When a Business selects to Create Booking Table from their Dashboard [S3], they will be directed to a form to create a Booking Table. The user enters information about what the Booking Table is associated to; name (e.g. USYD Tennis Courts), place (Quadrangle, University of Sydney), type (Court Hire), description, time increment (minute, hourly, daily, weekly) etc. After the user successfully creates a Booking Table, they will be directed to View this Booking Table [UC6] and prompted to Add Asset [UC5].

4.3 Subflows:
None

4.4 Alternative Flows:
[E1] The name can't be the same as any other Booking Table created by this user or other users. As this unique name will distinguish it from the others and is one of the ways Customers can find this Booking Table. If the name is not unique, the Booking Table will not be created, the user will be alerted and required to re-enter a new name.
[E2] All fields are required to be filled. If they are not, the Booking Table won't be created, the user will be alerted of the missing information and required to enter the missing information

UC5 Flow of Events for the Add Assets/ Services Use Case

5.1 Preconditions:
1. Users are logged into a created Business Account [UC1]
2. Users have created a Booking Table. [UC4]

5.2 Main Flow:
A user is prompted a form to add Asset to their Booking Table after they have just created one [S4] or by clicking add Asset when viewing their Booking Table [S6]. The user is required to an enter name (e.g. Court 1), availability (e.g. Mon-Sun, 9am-9pm), price per time-increment, cancellation policy and description (e.g. Rear Court). When a user successfully fills the form he will be directed back to view the Booking Table [S6] and see the newly created Asset.

5.3 Subflows:
None

5.4 Alternative Flows:
[E1] The name can't be the same as any other Asset in this Booking Table. As this unique name will be used to distinguish between the different Asses in the Booking Table. If the name isn't unique the Asset won't be created, the user will be alerted and requested to re-enter a different name.
[E2] All fields are required to be filled. If they are not, the Asset won't be created, the user will be alerted of the missing information and requested to re-enter the information.
[E3] The user has to specify the availability using the time-increment they chose. If they do not the Asset won't be created, they will be alerted with the missing information and requested to re-enter the information.

UC6 Flow of Events for the View Booking Table Use Case

6.1 Preconditions:
1. Users are logged into a created Account [UC1]

6.2 Main Flow:
View Booking Table shows the Booking Table and all the Assets it contains and their availability. The details about the Booking Table are also showed below such as location and description.

6.3 Subflows:
[S1] A Business can view Booking Tables they have created by selecting one from their View Created Booking Table [UC13] view. Also, Businesses will be presented with more options, namely add Asset [UC5], edit Asset [UC7] and edit Booking Table [UC8].
[S2] A customer can view Booking Tables by selecting one after using the Search Engine [S9] from the Dashboard [S3]. Customers also have the option to Book an Asset [UC10] by clicking on it.

6.3 Alternative Flows:
None

UC7 Flow of Events for the Edit Asset/ Service Use Case

7.1 Preconditions:
1. User is logged into a created Business account [UC1]
2. User has created a Booking Table [UC4]
3. User has created an Asset [UC5]

7.2 Main Flow:
A Business can edit an Asset by clicking it when viewing their Booking Table [UC6]. The user will then be presented with a form with the Asset's details including the availability and have the option to update or to delete the Asset.

7.3 Subflows:
None

7.4 Alternative Flows:
[E1] The updated name can't be the same as before or any other Asset in this Booking Table. The name will not be updated, the user will be alerted and requested to re-enter a different name.

UC8 Flow of Events for the Edit Booking Table Use Case

8.1 Preconditions:
1. User is logged into a created Business account [UC1]
2. User has created a Booking Table [UC4]

8.2 Main Flow:
A Business can edit a previously created Booking Table [UC4] by clicking 'Edit Booking Table' when viewing it [UC6]. The Business will then be presented with a form with the Booking Table's details and have the option to update or to delete the Booking Table.

8.2 Subflows:
None

8.3 Alternative Flows:

[E1] The updated name can't be the same as previous name or any other Booking Table created by this user or other users. If the name is not unique it won't be updated, the user will be alerted and requested to re-enter a different name.

UC9 Flow of Events for the Search for Booking Tables Use Case

9.1 Preconditions:

1. User is logged into a created Customer account [UC1]

9.2 Main Flow:

A Customer will be able to search for Booking Tables by using the search form on their Dashboard [S3]. The user can choose to search using name, location or type. The user will be presented with a list of matching Booking Tables, showing the name, location and type of each. Upon clicking one the user will be directed to view the Booking Table [UC6].

9.3 Subflows:

None

9.4 Alternative Flows:

[E1] If no Booking Tables match the search criteria, no Booking Tables will be displayed.

UC10 Flow of Events for the Book Asset Use Case

10.1 Preconditions:

1. User is logged into a created Customer account [UC1]

10.2 Main Flow:

A Customer will be able to book an Asset after clicking it when viewing a Booking Table [UC6]. The user can select from available time shown and is then presented with the price, the user clicks 'Book' and the Asset is booked and now shows on View Bookings [UC11] (for both the Business and Customer) and the Booking Table [UC6] will also be updated.

10.3 Subflows:

None

10.4 Alternative Flows:

[E1] The user has to select an amount of time from the available time. If the user does not select an acceptable time and clicks 'Book', the Asset won't be booked, they will be alerted and request to select from available time.
[E2] The user's payment method has to be able to authorise the transaction for the amount at the time of booking. If the payment method isn't able to authorise the transaction, the Asset won't be booked, and they will be alerted.

UC11 Flow of Events for the View Bookings Use Case

11.1 Preconditions:
1. Users are logged into a created Account [UC1]

11.2 Main Flow:
A Customer or Business can view their bookings by selecting View Bookings from their Dashboard [UC3]. All bookings past, present and future are displayed reverse chronologically. Each booking in the list displays details about the booking such as name, place, time and price.

11.3 Subflows:
[S1] If a Customer has any upcoming bookings, they will be prompted with a pop-up notification informing them of their upcoming booking.
[S2] When a Business views their bookings, they will be prompted with a notification outlining how many bookings they have for this day.

11.4 Alternative Flows:
[E1] If the user has no bookings, there will be no bookings displayed.

UC12 Flow of Events for the Change/ Cancel Booking Use Case

12.1 Preconditions:
1. Users are logged into a created Account [UC1]

12.2 Main Flow:
A Customer or Business can change or cancel a booking by clicking it when viewing their bookings [UC11].

12.3 Subflows:
[S1] If a Customer chooses to change or cancel their booking, they will be alerted by with the Business's cancellation policy for that asset e.g. 'If Cancelled within 1 day you are required to pay 50% of booking fee'.
[S2] If a Business choses to change or cancel a booking, they will be prompted with a window to enter a message that will be sent to the Customer providing them with a reason why the booking was changed/ cancelled.

12.4 Alternative Flows:
[E1] If the user has no bookings, there will be no bookings displayed.
[E2] The Business is required to enter a reason in the message box. If they do not enter any information, the booking will not be changed and they will be prompted to enter the details.
[E3] The Customer has to accept the Business's chancellation policy. If the Customer does not accept, the booking won't be changed and they will be alerted.

UC13 Flow of Events for the View Created Booking Tables Use Case

13.1 Preconditions:
1. Users are logged into a created Business Account [UC1]

13.2 Main Flow:
A Business can view their created Booking Tables by clicking the link from their dashboard [UC3]. All brief summary of each Booking Table will be displayed in a list reverse chronologically. Business can click a Booking Table summary and be directed to View the Booking Table [UC6].

13.2 Subflows:
None

13.3 Alternative Flows:
None

UC14 Flow of Events for the Attacker Attempts to Access to User Account Misuse Case

14.1 Preconditions:
None

14.2 Main Flow:
Attack attempts to gain unauthorized access to user account.

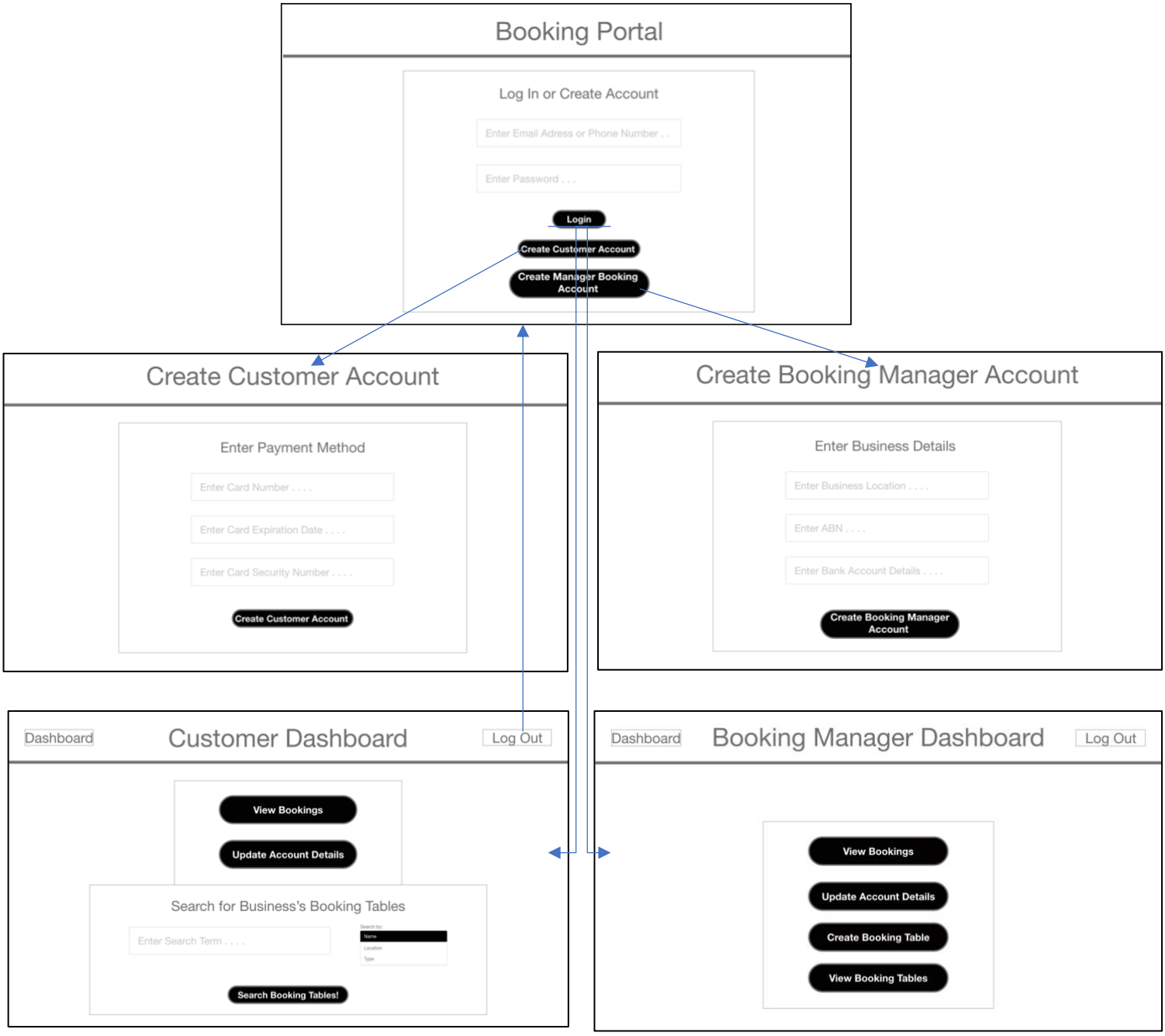
14.3 Subflows:
[S1] Attacker gains access to account using phishing attack.

14.4 Alternative Flows:
[E1] Attacker attempts to guess/ decode users's password. Attacker is unsuccessful due to password requirements making it difficult for it to be attacked.

Wireframes

Note: *Zoom in to view wireframe correctly.*

User Sign up and Login Funnel



Core Functionality

Customer User Functionality

Shared User Functionality

Business User Functionality