

VIETNAM INTERNATIONAL UNIVERSITY - HO CHI MINH CITY  
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**WEB APPLICATION DEVELOPMENT PROJECT  
INTERNET CAFE WEBSITE**

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A report sent to the School of Computer Science and Engineering  
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## I. INTRODUCTION

We extend our sincere appreciation to Prof. Nguyen Van Sinh for his invaluable guidance and unwavering support throughout the development of this proposal for the Internet Café shop project.

### 1. About us

Nowadays, internet cafes are increasingly popular and valuable spaces for both gamers and professional players. With their high-speed internet and ultramodern gaming stations, more individuals seek out these cafes to enhance their online experience and productivity.

To simplify the way customers access and use our services, we have developed a user-friendly web platform for easy access to our services, allowing customers to explore facilities, check pricing, and make reservations effortlessly. Our seamless system lets users book computer stations and access information conveniently from home. The enhanced website includes real-time availability, customer reviews, and direct commenting for an interactive experience, aiming to make visits to our Internet Cafe simpler, quicker, and more enjoyable.

### 2. Programming language

- **HTML**

HTML is the common markup language for creating and organizing online content. Using components like headers, paragraphs, lists, links, photos, and other multimedia elements, it describes the organization of web pages. Tags are used to stand for HTML components, while the Document Object Model (DOM) defines the overall structure.

- **CSS**

CSS is a style sheet language used to specify how an HTML or XML page is presented. The way elements should appear on a screen, on paper, or in another medium is specified by CSS. It gives developers more freedom and control over the layout, colors, fonts, and overall appearance of web pages by separating the text structure (HTML) from the visual design (CSS).

- **JavaScript**

JavaScript is an interpreted programming language at an important level that allows dynamic content and interactive web sites. It is one of the three main web technologies, along with HTML and CSS. JavaScript can work with the DOM, manage events, verify forms, and set up connections with services via APIs (Application Programming Interface). Although it may be used on the server side with environments like Node.js, it works on the client side (in the browser).

- **Java**

JSP (Jakarta Server Pages) is a Java-based server-side technology for creating dynamic web applications. It blends HTML with JSP tags to embed Java code directly into web pages, helping the development of dynamic and platform-independent content.

### 3. Framework and Library

- **JEE**

Jakarta EE, formerly Java EE, is a set of specifications that extend Java SE with features for enterprise-grade applications. It provides a robust, scalable platform for building and deploying large-scale, multi-tiered, and secure network applications, including web services, enterprise beans, and component-based architecture.

- **Bootstrap**

Bootstrap is a front-end framework that is free and open-source for creating mobile-first and responsive websites. It has templates for typography, forms, buttons, navigation, and other interface elements based on HTML, CSS, and JavaScript.

- **Google Fonts and Icons**

Google Fonts is a web-based UI (user interfaces) framework for building user-friendly, interactive applications with modular, responsive design. It pairs well with the Icon Framework, which offers a scalable library of vector-based icons for clear, visually appealing interfaces.

## 4. Tools

- **IDE: NetBeans**

NetBeans IDE is a versatile, open-source development environment for Java and other languages. It features robust tools for code editing, debugging, and testing, along with a user-friendly interface and extensive plugin support.

- **JSP**

JavaServer Pages (JSP) is a technology for developing dynamic web pages using Java. It allows embedding Java code in HTML, enabling seamless integration of dynamic content generation with web presentation. JSP is widely used for creating responsive and interactive web applications.

- **SQL Server**

Microsoft's relational database management system, SQL Server, is designed to serve a broad range of business intelligence, analytics, and data transaction processing applications. It handles data management and manipulation using Structured Query Language (SQL). For managing corporate data, SQL Server offers a scalable, dependable, and secure environment.

- **GitHub**

GitHub is a web-based platform that uses Git, a distributed version control system. It allows developers to store and manage their code repositories, track changes, and collaborate with other developers. GitHub provides features such as pull requests, issues, and project management tools, making it easier to collaborate on code and manage software development projects.

## **II. REQUIREMENT ANALYSIS AND DESIGN**

### **1. Functional requirement**

These functional requirements define the features and functionalities that the Internet Café website must perform its intended tasks to help find user needs and the intended functionality of the software.

#### **1.1 Login**

- Display a login page that allows the user to enter the account username and password
- Get the account information that matches the currently logged in Account from the database and store in Cookies.
- Decrypt the user account password from the database.
- Check the validity of user login account.
  - o Requirement: The login information valid.

#### **1.2 Register**

- Display a requesting account information page from user.
- Checks the validity of the account username.
- Insert the new user account into the database.
- Display error message when input existed account or invalid confirm password.
  - o Requirement: Valid account information (unique account, not input whitespace, matching passwords)

#### **1.3 Home page**

- Display header tags to move to other pages.
- Show basic information about the Internet Café.
- Display customers feedback and allow users to place feedback and rate.
- Include message alert for feedback (null input or confirm feedback)
- Store user's feedback to database.
  - o Requirements: Compulsory to fill all the fields before leaving feedback.

#### **1.4 About Us page**

- View detailed information about the Internet café.
- Show contact information.
  - o Requirement: None.

#### **1.5 Specs page**

- Show the details information and price of each area (include specifications of computer, mouse, keyboard, headphone...).
  - o Requirement: None

## 1.6 Menu page

- Display image gallery of menu with name and price.
- Show menu by chosen filters.
  - o Requirement: Sample images, description – From database

## 1.7 Booking page

- Allows users to make online reservations and optionally order food and drinks.
- Support users to choose usage area and time along with specific number of computers.
- Also display the area's information for users to easily compare.
- Allows users to choose dishes according to their preferences with optional quantity.
- Displays an error message when input data is missing, or the computer orders do not match the data conditions.
- Insert user's order to database and move to Orderpage if all input information is valid.
  - o Requirement: Require fill in all fields before placing order and select computers quantity with remaining number of computers.

## 1.8 Order page

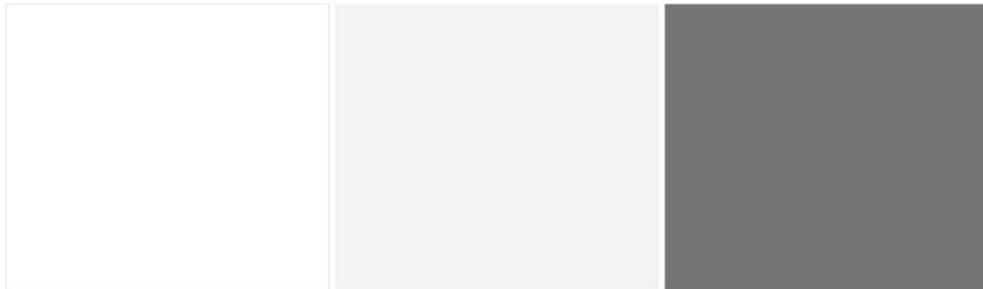
- Display the order information that user had booked before (Computer, food, drink...), the price of each section and final total price of their order.
- Show user's personal information in cookies.
- Allows users to choose payment methods and add discount coupons.
- Show alert of invalid coupon.
- Insert Bill information into database.
- Show bill information when click submit button.
  - o Requirement: Valid input coupon.

## 1.9 Account page

- Display user's personal information and order history with its status.
- Allows user to change their information
- Update new change to database.
- Show alert of not matching password.
  - o Requirement: matching password.

## 2. Design

### 2.1 Color Palette



#FFFFFF

RGB 255, 255, 255

#F2F2F2

RGB 242, 242, 242

#757575

RGB 117, 117, 117



#333333

RGB 51, 51, 51

#0D0D0D

RGB 13, 13, 13

#000000

RGB 0, 0, 0



#AB04D9

RGB 171, 4, 217

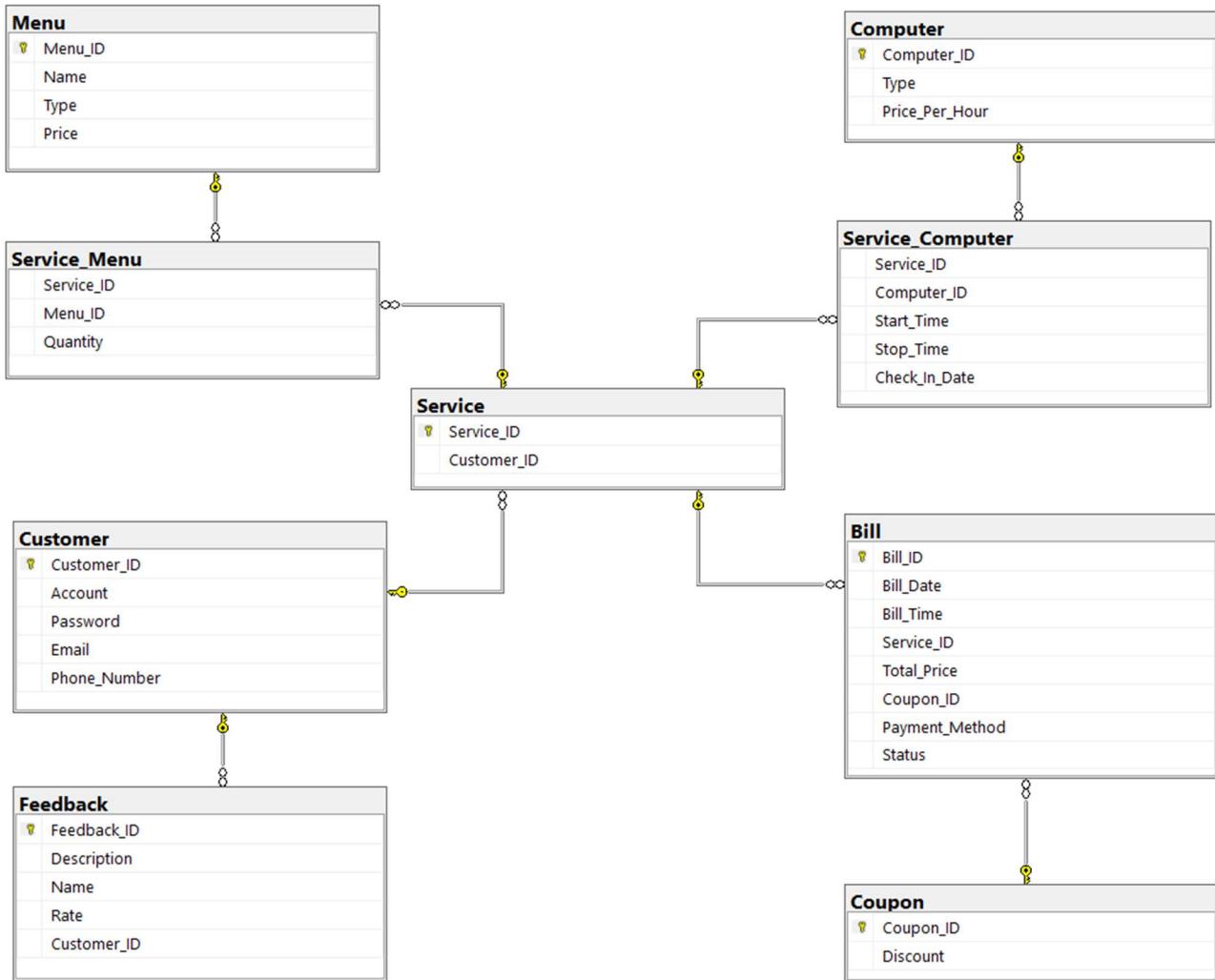
#460259

RGB 70, 2, 89

#1E0126

RGB 30, 1, 38

## 2.2 Relational Diagram



**Customer** (Customer\_ID, Account, Password, Email, Phone\_Number)

**Feedback** (Feedback\_ID, Description, Name, Rate, Customer\_ID)

**Service** (Service\_ID, Customer\_ID)

**Computer** (Computer\_ID, Type, Price\_Per\_Hour)

**Service\_Computer** (Service\_ID, Computer\_ID, Start\_Time, Stop\_Time, Check\_In\_Date)

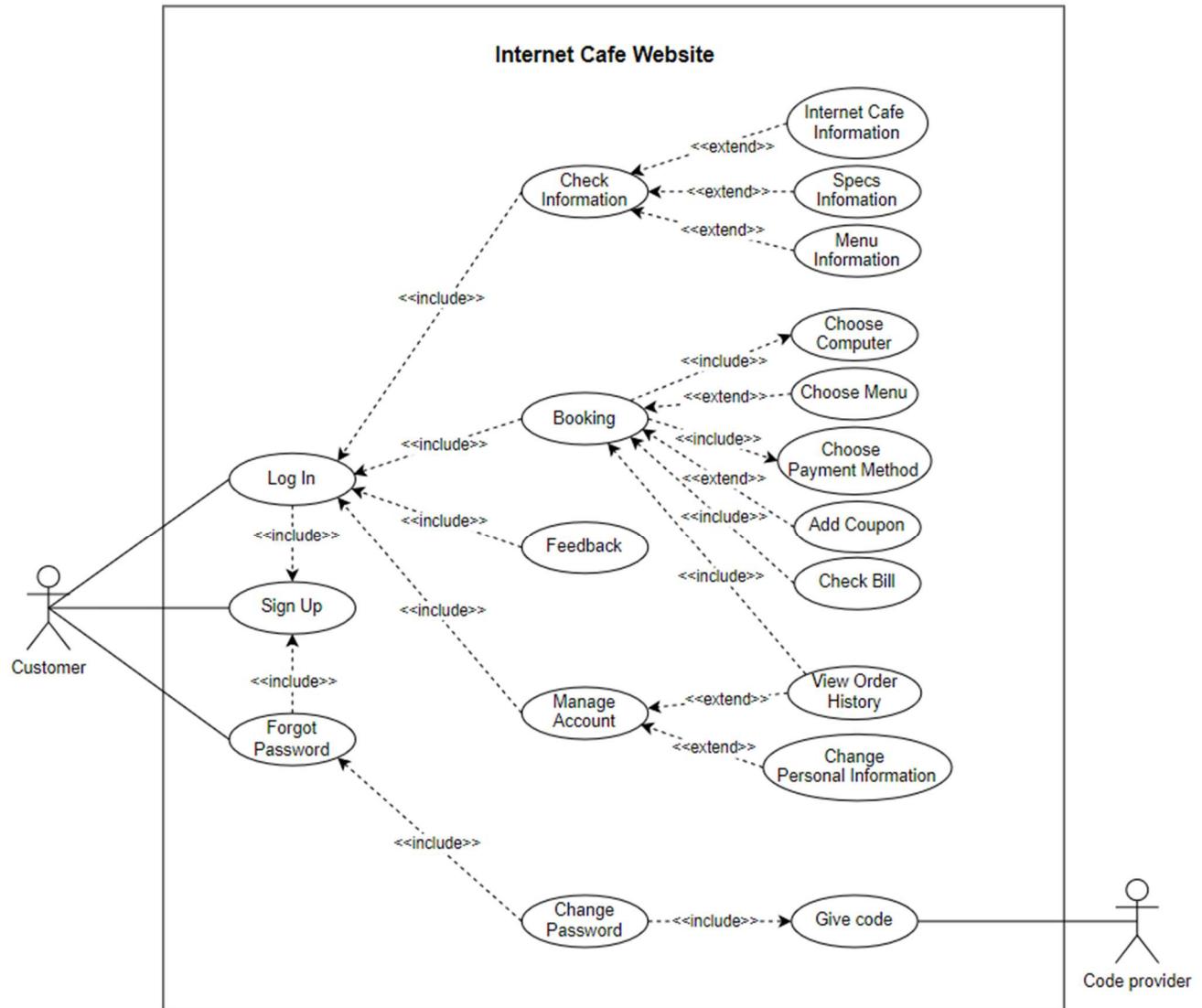
**Menu** (Menu\_ID, Name, Type, Price)

**Service\_Menu** (Service\_ID, Menu\_ID, Quantity)

**Coupon** (Coupon\_ID, Discount)

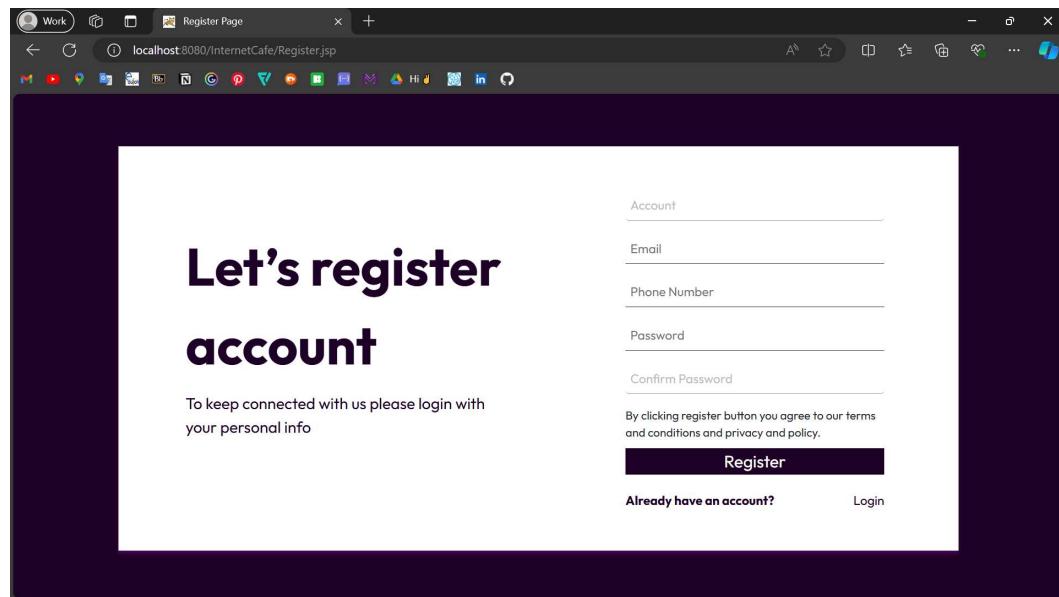
**Bill** (Bill\_ID, Bill\_Date, Bill\_Time, Service\_ID, Total\_Price, Coupon\_ID, Payment\_Method, Status)

## 2.3 Usecase Diagram



### III. IMPLEMENTATION

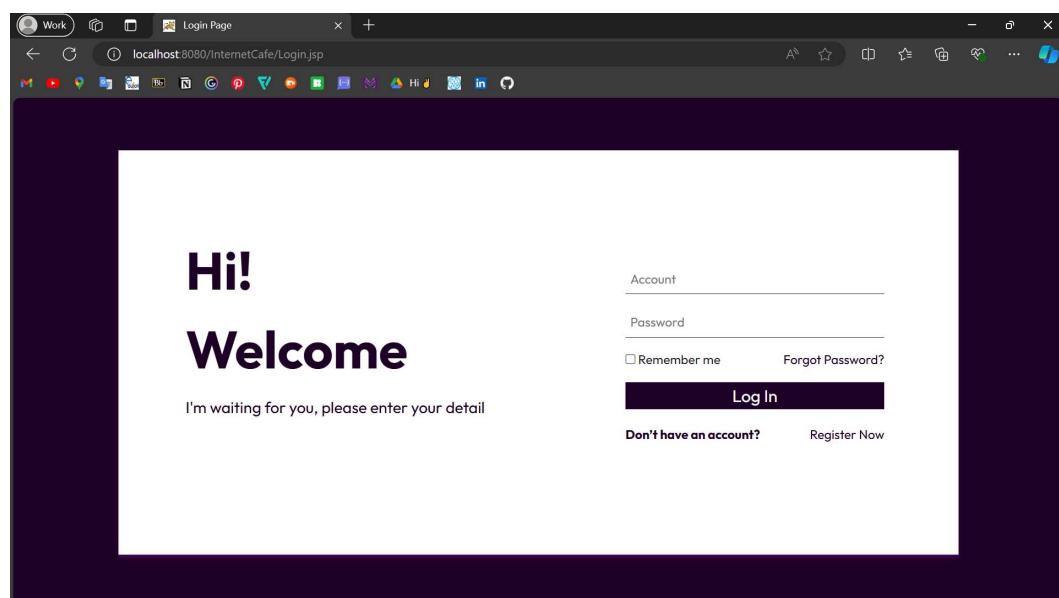
#### 1. Register a new account



Registration Error
Passwords do not match!
<button>Close</button>

Registration Error
Account already exists!
<button>Close</button>

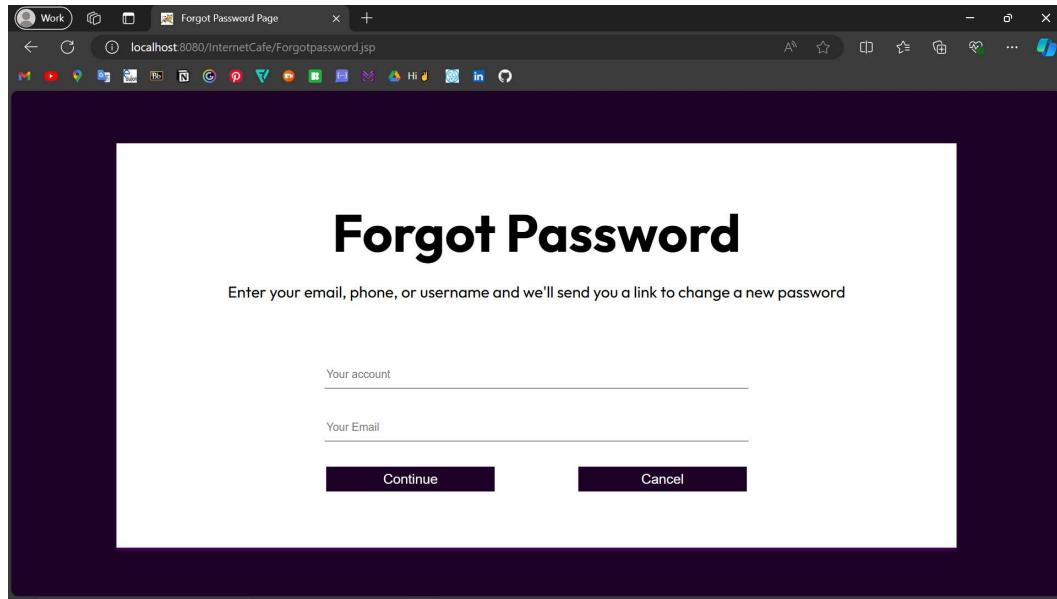
#### 2. Login to website



Announce
Invalid Account or Password. Please enter again!
<button>Close</button>

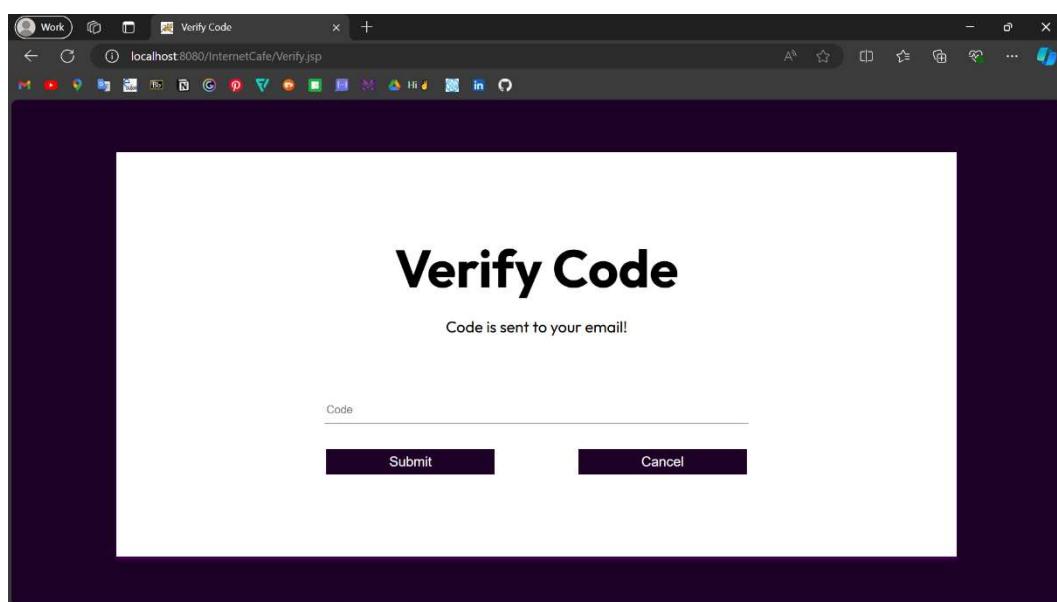
### 3. Forgot password

- If you Forgot password, click Forgot password?

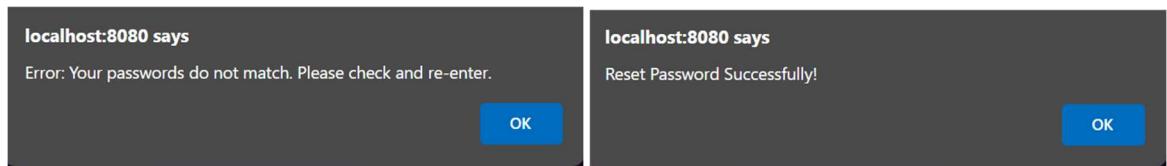
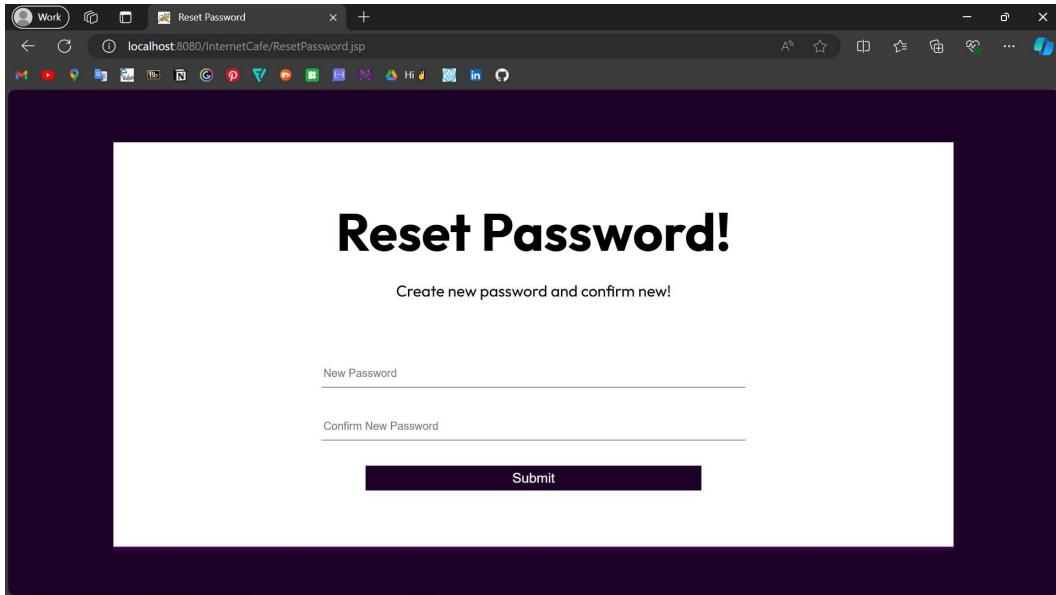


- Enter your email and the code will be sent to you

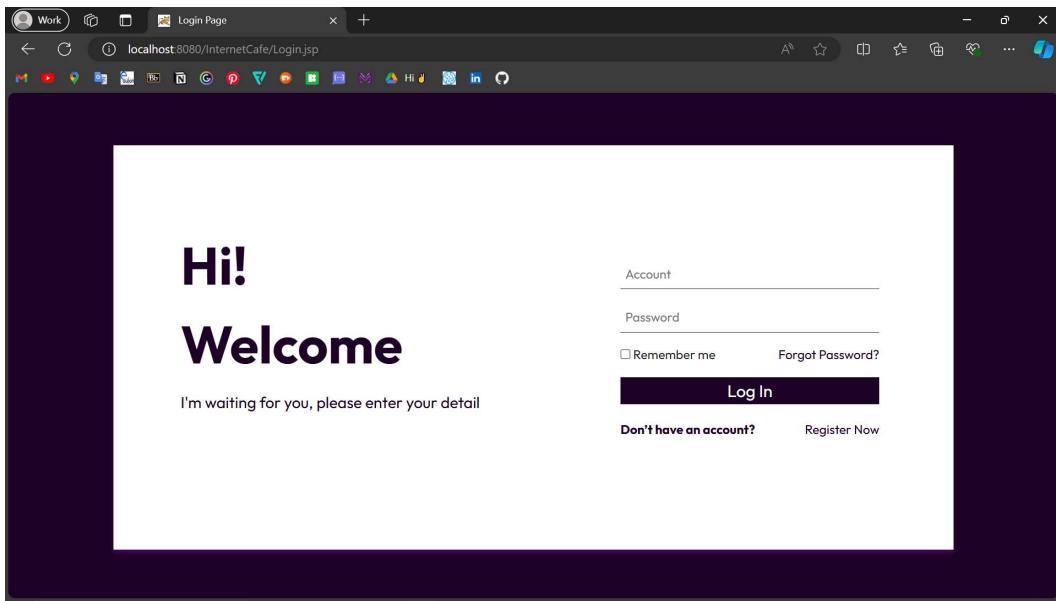
Your code is: 624735



- If you enter valid code, you can change your password

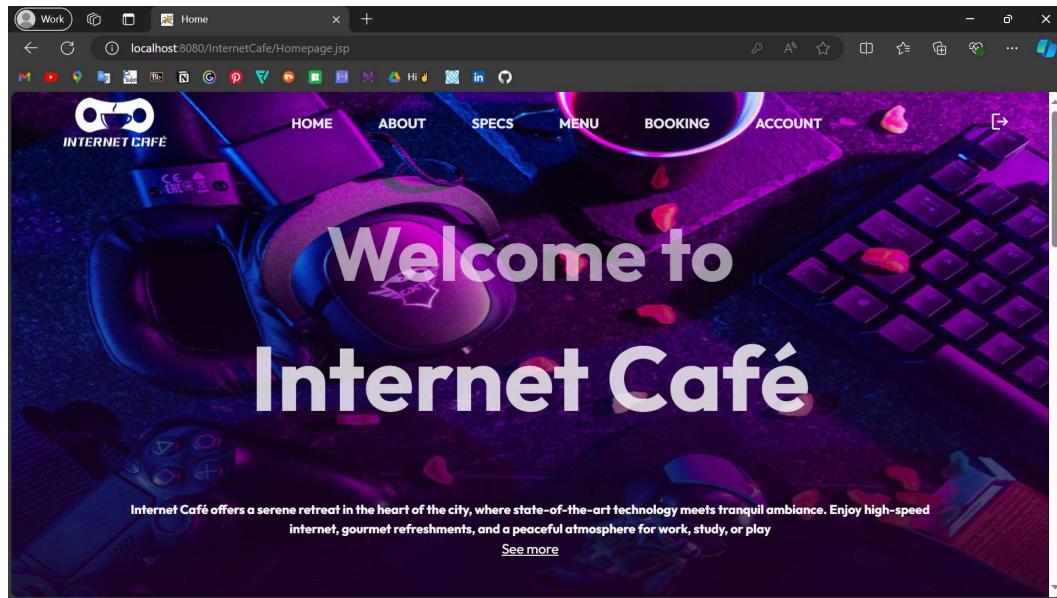


- If you complete change password success full it will return to login page

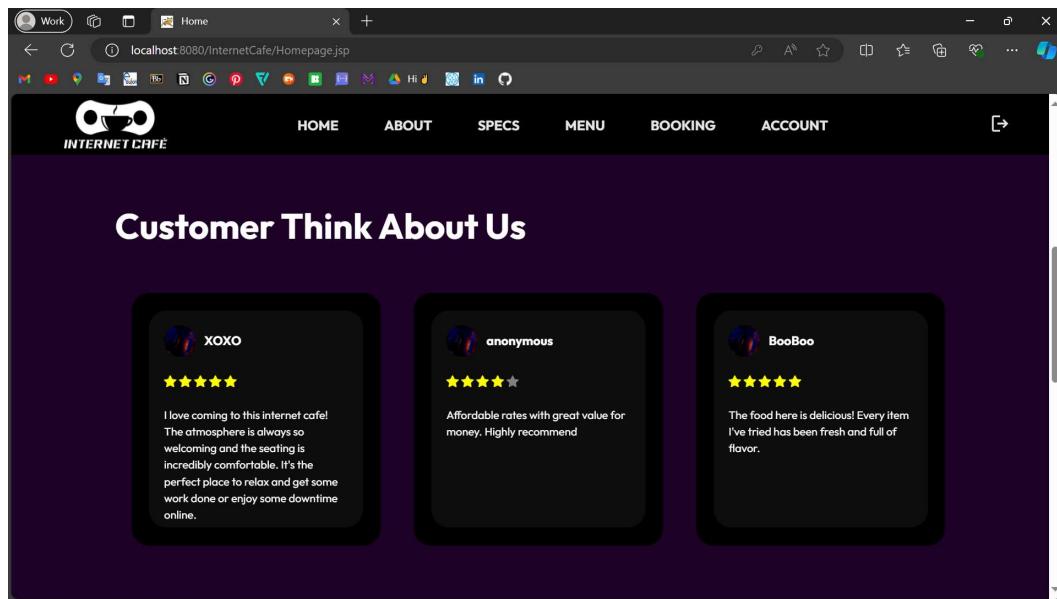


#### 4. View homepage

- After inputting valid account and password, click login button, it move to homepage



- Scroll down, then you will see the feedback of many customers



- Down more is where you can leave feedback and the footer

The screenshot shows a dark-themed web page for an Internet Cafe. At the top, there's a navigation bar with links for HOME, ABOUT, SPECS, MENU, BOOKING, and ACCOUNT. Below the navigation is a large, bold "Feedback" heading. To the left of the main form, there's a graphic of five stars with the text "HELP US TO IMPROVE" and "Tell us what you think!". The main form contains fields for "Name:" (with a redacted input) and "Feedback:" (with a redacted input). A "Submit" button is at the bottom right of the form. Below the form, there's a footer section with three columns: "Contact" (Phone: +84 88888888, Email: internetcafe@gmail.com, Office: 123 Street 2, District 2, Ho Chi Minh City, VietNam), "Support" (Feedback, Privacy Policy), and "Account" (My account, View all orders).

- Press the Star to rate and input your thoughts about our internet café

This screenshot is similar to the one above, showing the feedback section of the Internet Cafe website. The main difference is that the "Feedback:" field now contains the text "fantastic !!!". The rest of the page, including the navigation bar, footer, and other UI elements, remains the same.

- Click submit, confirm message will show up, confirm, then your feedback will be display.

The screenshot shows a 'Feedback' dialog box with the question 'Do you want to submit feedback?' and two buttons: 'Cancel' and 'Confirm'. Below this, a browser window displays the 'Customer Think About Us' section of the Internet Café website. It features three review cards: one from 'Superman' rating 5 stars with the comment 'The gaming setup here is awesome! The computers are super fast and the graphics are top-notch.'; one from 'Alleyyyyy' rating 5 stars with the comment 'Everything is set up very nice. The monitors, keyboards, and mice are all high quality and in great condition.'; and one from 'memeo' rating 5 stars with the comment 'fantastic !!!'.

## 5. Get more information about us

- To get more information about Internet Café shop, choose About tag

The screenshot shows the 'ABOUT INTERNET CAFÉ' section of the website. It includes a photograph of a person working at a computer station, a heading 'ABOUT INTERNET CAFÉ', and a paragraph describing the café's mission: 'At Internet Café, we believe in creating a harmonious blend of technology and tranquility. Located in the heart of the city, our café is designed to be a serene oasis where digital connectivity meets relaxation. Whether you're a freelancer looking for a peaceful place to work, a gamer seeking the best online experience, or a student needing a quiet spot for study and research, Internet Café is your perfect destination.' Below this is a 'Mission & Vision' section with a paragraph stating: 'Our mission is to provide a premium internet café experience where our customers can connect, create, and collaborate in a serene and comfortable environment. We strive to offer the latest technology, high-speed internet, and exceptional customer service to ensure every visit is productive and enjoyable.' Another paragraph continues: 'At Internet Café, we envision a community where digital innovation and relaxation coexist. We aim to be more than just an internet café; we want to be a hub for creativity, collaboration, and connection. Our space is designed to inspire and support your digital endeavors, whether you're working on a groundbreaking project, diving into an epic gaming session, or simply catching up on the latest news.'

## 6. Find out more about device specifications for each area

- Gaming area

The screenshot shows a dark-themed website for an Internet Cafe. At the top, there's a navigation bar with links for HOME, ABOUT, SPECS, MENU, BOOKING, and ACCOUNT. A logo featuring a stylized controller icon and the text 'INTERNET CAFE' is positioned above the navigation. Below the navigation, the word 'Specs' is centered. On the left, a large black box contains the title 'Gaming Area' and its price '\$10/hour'. To the right of this box is a sidebar with a list of components: Screen, PC, Mouse, KeyBoard, Headphone, and Chair, each preceded by a '+' sign. The main content area contains descriptive text about the gaming setup.

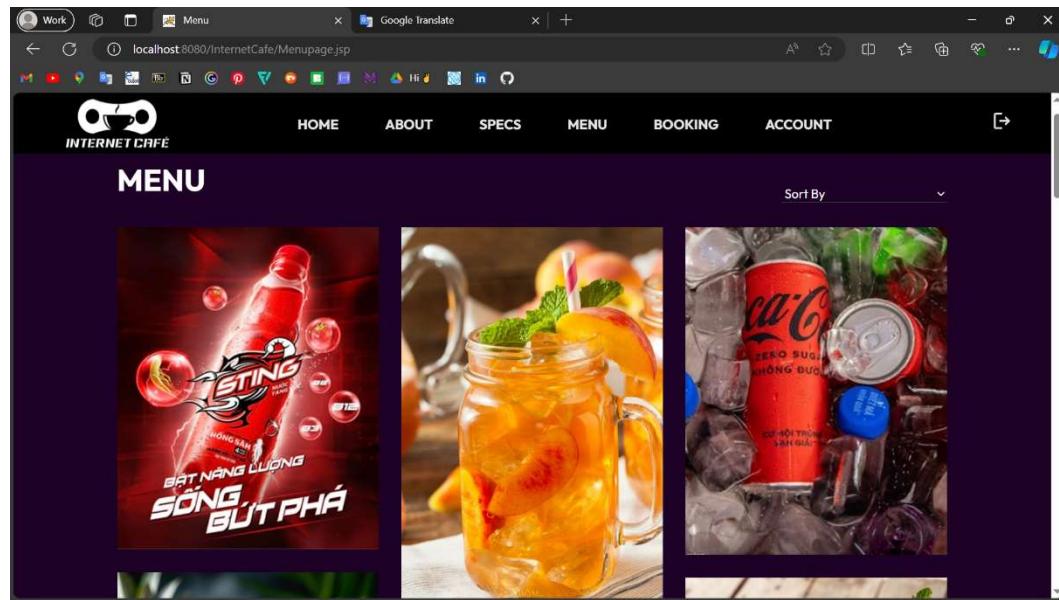
- VIP area

This screenshot shows the 'VIP Area' specifications page. The layout is similar to the 'Gaming Area' page, with a dark theme and a navigation bar at the top. The main content area features the title 'VIP Area' and its price '\$5/hour'. To the left is a sidebar with components: Screen, PC, Mouse, KeyBoard, Headphone, and Chair. The main content area contains descriptive text about the VIP experience.

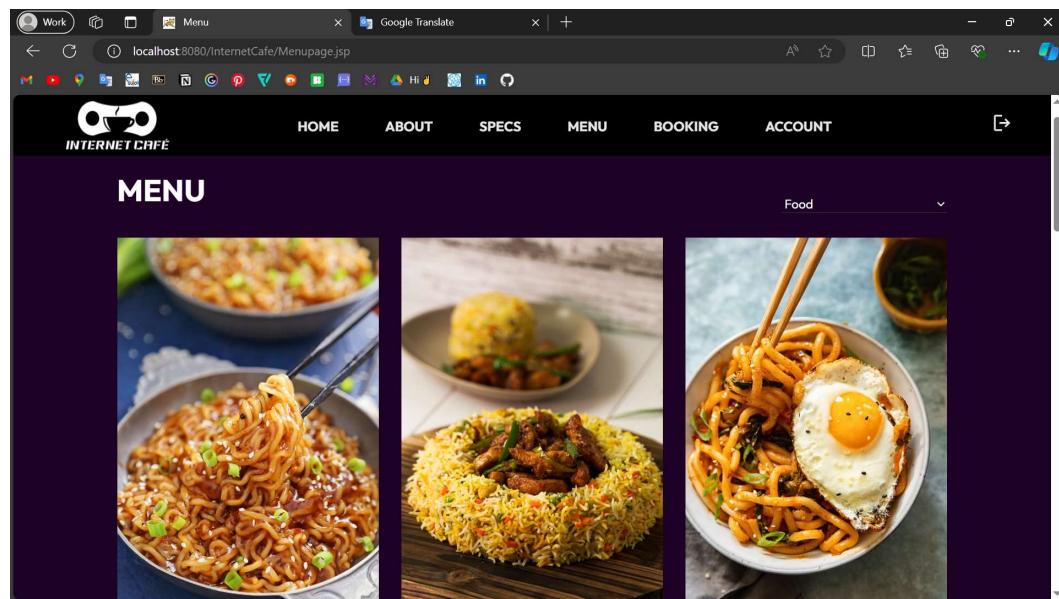
- Normal area

This screenshot shows the 'Normal Area' specifications page. The structure is consistent with the others. The main content area features the title 'Normal Area' and its price '\$2/hour'. To the left is a sidebar with components: Screen, PC, Mouse, KeyBoard, Headphone, and Chair. The main content area contains descriptive text about the normal internet environment.

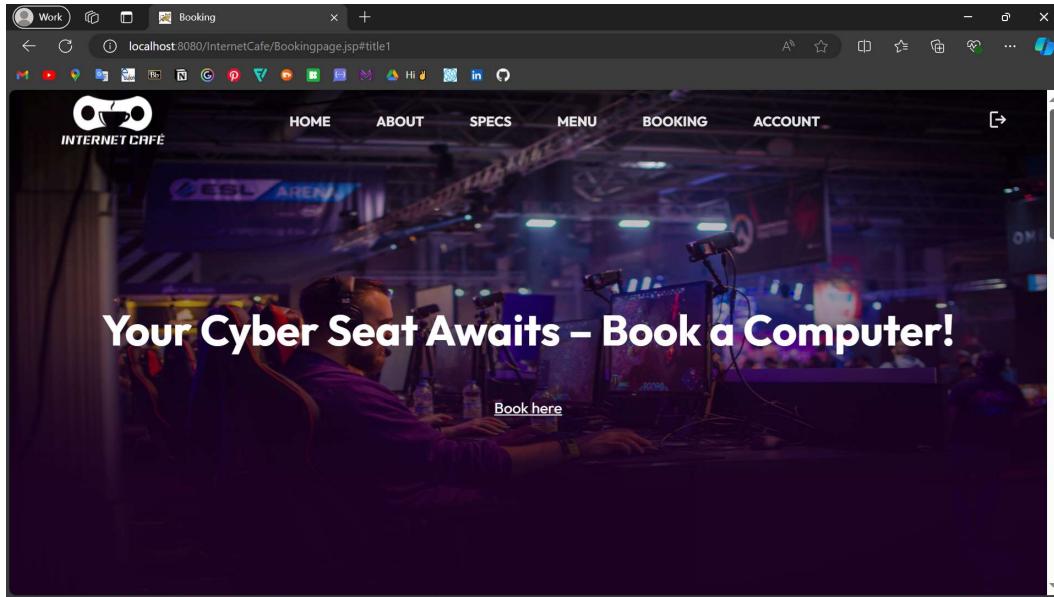
## 7. Product viewing functions



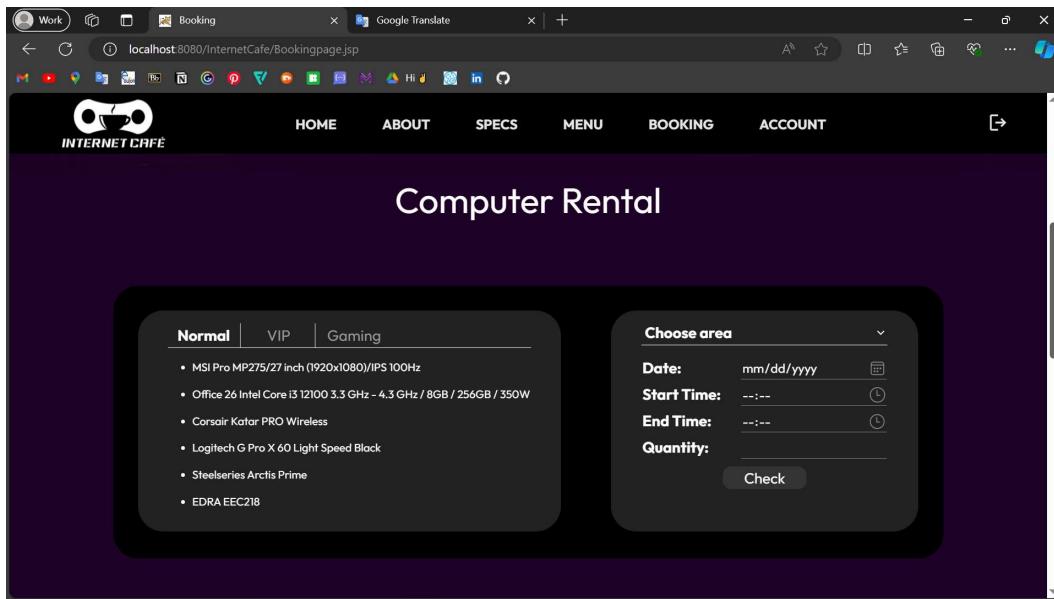
- Sort by filter



## 8. Make a reservation



- Book Computer first, there is specs of each area for you to choose
- Choose area, play and end time, quantity.



- Then you can choose food and drink, or skip

Food	Status	Quantity
Noodles	<input type="checkbox"/>	_____
Noodles with Egg	<input type="checkbox"/>	_____
Fried Rice With Chicken	<input type="checkbox"/>	_____
Skewer	<input type="checkbox"/>	_____

Drink	Status	Quantity
Sting	<input type="checkbox"/>	_____
Coca	<input type="checkbox"/>	_____
Peach Tea	<input type="checkbox"/>	_____
Pineapple Juice	<input type="checkbox"/>	_____

**Book**

Modal title

Please choose the quantity!

**Close**

## 9. View information about your order

- When click Book button, it moves to Order page
- Check your order again and choose payment method and add coupon

**Your Information**

Account: superman

Email: super@gmail.com

Phone: 999999999

Payment method: Credit Card

I agree with Terms & Conditions

**Submit** **Cancel**

**Your Cart**

VIP	Computer	30.00\$
C13, C14		
Noodles with Egg		24.0\$
Food		x2
Coca		4.5\$
Drink		x1
<b>Total</b>		58.50\$

Payment method: Credit Card

I agree with Terms & Conditions

Credit Card

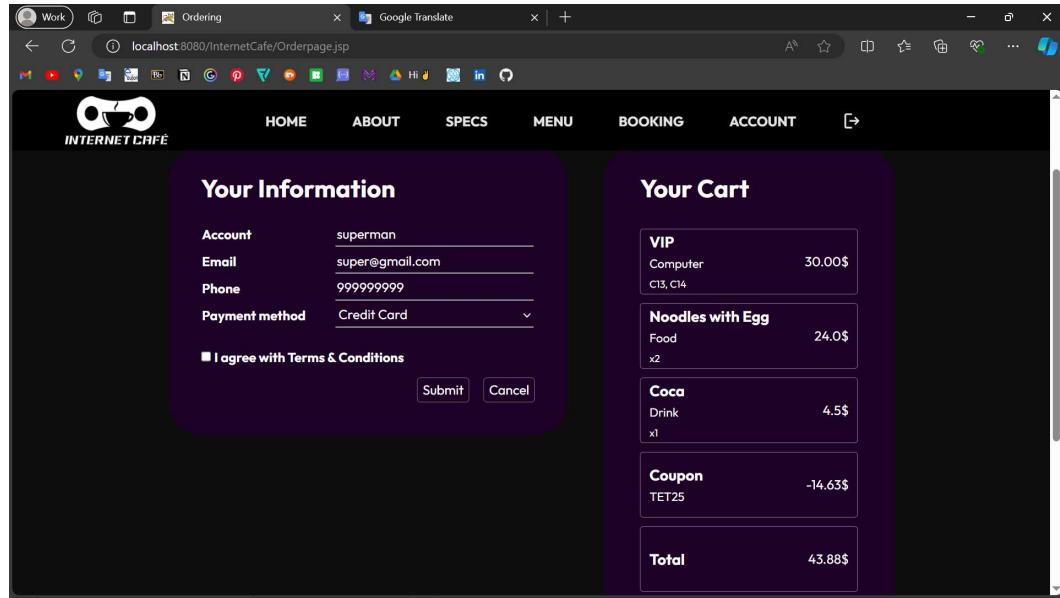
Debit Card

Internet Banking

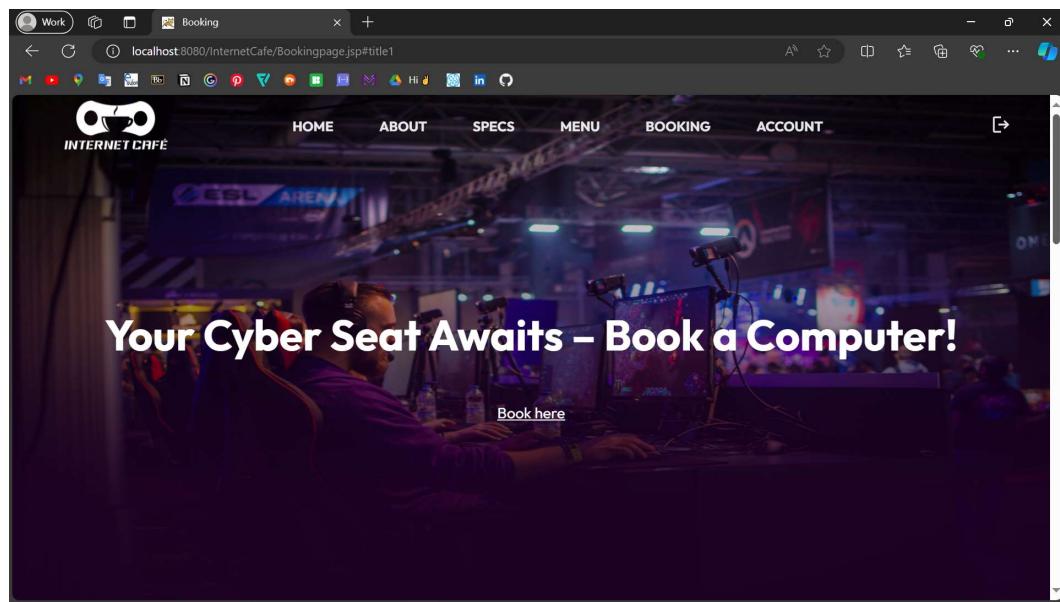
Enter Your Coupon

**Add**

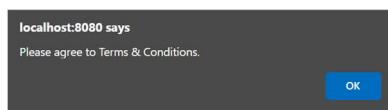
- After adding a valid coupon, it will show the money that you get discounted



- Press cancel, it returns to Booking page again



- Press submit, if you have chosen agree Term and Conditions, it will show alert



- If you have chosen agree checkbox then it will show the bill

The screenshot shows a web browser window for 'localhost:8080/InternetCafe/Orderpage.jsp'. The main content area displays a 'Your Bill' summary. The bill is for 'Internet Café' located at '123 Street 2, Direct 2, Ho Chi Minh City, VietNam' with phone number '888 888 888'. The bill is labeled 'INVOICE' with 'Bill No. 34' and date '2024-06-21'. The total amount is '\$91.17'. The breakdown of items is as follows:

Item	Quantity	Price	Total
VIP	2	\$5.0	\$79.17
Computer(Noodles with Egg)	1	\$12.0	\$12.0
<b>Subtotal</b>			\$91.17
<b>Total Due</b>			<b>\$91.17</b>

Below the table, there is a QR code for payment, payment information (Vietcombank Account Name: Internet Café Account No.: 08 08 08 08), and a note: 'Must be paid within 3 hours after ordering! Can scan the QR code to pay!'. To the right, there is a 'Thank You, Internet Café' message and a sidebar with payment amounts: '79.17\$', '12.0\$', and '91.17\$'.

## 10. Manage your account

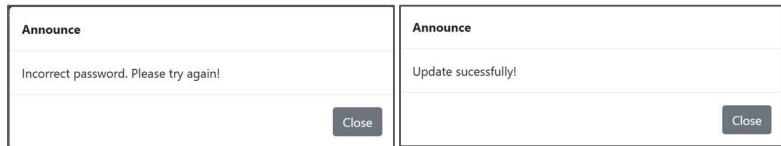
The screenshot shows a web browser window for 'localhost:8080/InternetCafe/Accountpage.jsp'. The main content area displays 'My Account' information for the user 'superman'. The account details are as follows:

- Display name:** superman (with an 'Edit' button)
- Password:** \*\*\*\*\* (with an 'Edit' button)
- Email:** super@gmail.com (with an 'Edit' button)
- Phone:** (with an 'Edit' button)

- You can change your account information and enter your password to update

The screenshot shows a modal dialog titled 'Change your account'. It contains fields for 'Display name' (superman) and 'New account' (empty). Below this, there is a section for password changes with 'Current password' (empty) and 'Enter your new account and existing password' instructions. At the bottom are 'Cancel' and 'Update' buttons.

- If wrong password it will show alert or else it will send successful message



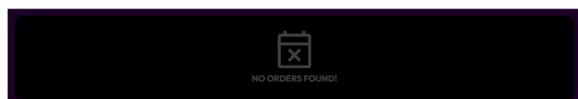
- To check your order history, scroll down

Bill ID:	Amount	Trans. Date, Time	Check-in
#18	\$47.47	2024-06-19   16:23	2024-06-05   16:25
#19	\$43.50	2024-06-19   16:26	2024-07-04   18:26
#20	\$45.58	2024-06-20   00:52	2024-06-26   03:46
#21	\$45.58	2024-06-20   00:55	2024-06-26   03:46

- Click to choose order status you want to see

Bill ID:	Amount	Trans. Date, Time	Check-in
#18	\$47.47	2024-06-19   16:23	2024-06-05   16:25
#19	\$43.50	2024-06-19   16:26	2024-07-04   18:26

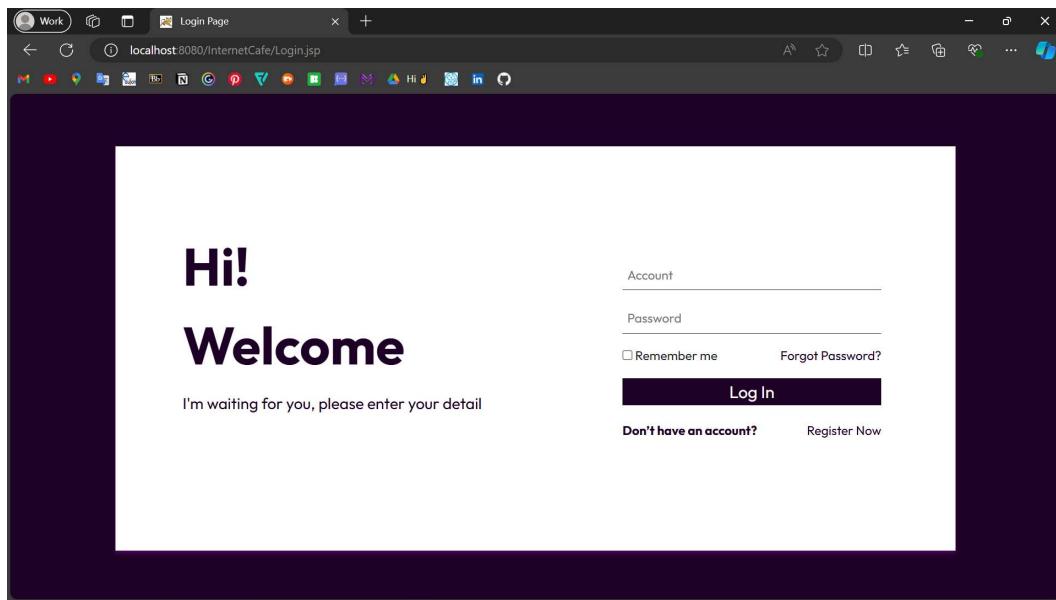
- If there are no order in chosen status, it will display not found



## 11. Log out



- Press logout icon to return login page



## IV. DISCUSSION AND CONCLUSION

Internet Café have evolved significantly from their original role of providing basic internet access to the public. With the widespread availability of home and mobile internet, the demand for traditional internet cafes has decreased in many areas. However, they have adapted by focusing on niches such as gaming and coworking spaces. Gaming cafes offer high-end computers and a social environment for gamers, while some cafes have transitioned into coworking spaces to cater to freelancers and remote workers. In developing countries and tourist areas, internet cafes still play a crucial role in offering internet access to those who lack it at home.

Despite the decline in some regions, internet cafes continue to have significant social and economic impacts. They democratize access to information and technology, foster community building, and provide economic opportunities. The future of internet cafes will likely involve further specialization to meet emerging technologies and user demands. By adapting to these changes, internet cafes remain relevant and vital, especially in bridging the digital divide in underserved areas.

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## GitHub

<https://github.com/JiangHoang/WebApp-InternetCafe>