A chocolate bar with a cherry logo

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Cherry Chocolate

Bachelor of Science in Software Design with Artificial Intelligence Cloud Computing

**Web Development 3.1**

Ivan Lapickij

A00277326

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# Introduction

In The Web Development 3 project in 2023 was a dedicated endeavor to craft an immersive and user-centric Single Web Page Application (SPA) with a strong emphasis on a well-structured architecture. This comprehensive project served to underscore the implementation of RESTful web services and robust CRUD functionalities designed to efficiently manage multiple entities and user/admin profiles.

The core of this project was the development of an engaging and responsive user interface that leveraged the versatile elements within the Bootstrap framework. These encompassed Glyph icons, Progress bars, Cards, Dialog boxes/Modals, and Data Tables, fostering an interactive and visually compelling experience for users.

# Project Focus

This project specifically centered around the creation of "Cherry Chocolate Bars," a virtual storefront catering to a delectable assortment of chocolate bars. The application was meticulously designed to facilitate an immersive shopping experience for chocolate enthusiasts, offering a myriad of chocolate bar products in a user-friendly interface. Further I am going to explain design elements , functionality & working process.

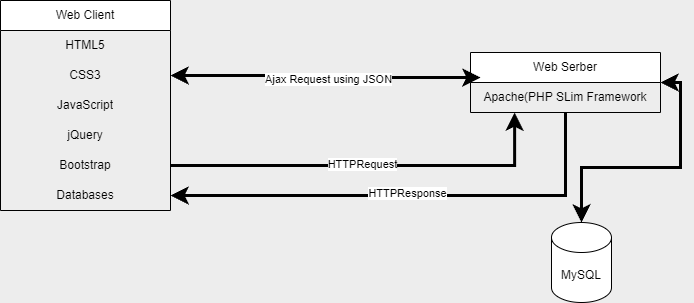
# Design

A screenshot of a computer

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I selected a color scheme leaning towards darker tones and pastel shades to create a comfortable visual environment, aiming to encourage users to spend more time browsing the webpage.

# Architecture



# Functionality

Main PHP file **index.php** that initiates a web application for managing and displaying chocolate bar data.

Here's an overview of its functionality:

1. Database Connection and Authentication:

* Initializes a connection to a database and checks if an admin is logged in.

2. Data Retrieval:

* Executes SQL queries to retrieve information about chocolate bars and users.
* Retrieves the count of each chocolate type and calculates the total count of all chocolate types.
* Calculates the average sugar percentage of chocolate bars.
* Retrieves information about the cheapest and most expensive chocolate bars.

A blue rectangular object with a black stripe

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3. Web Interface Structure:

* HTML structure is used to define the appearance of the web page.
* Includes the utilization of Bootstrap for styling.

4. Key Elements in the Web Interface:

* *Cherry 🍒 Chocolate*: Positioned at the center, showcasing the title of the application.
* Navbar: Contains a sidebar toggle for the 'Admin Dashboard' button. A screenshot of a computer

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* Modals for CRUD Operations: Provides modal structures for users and chocolate bars to perform CRUD actions. A screenshot of a menu

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* Admin Dashboard: Interface dedicated to admin functionalities. A screenshot of a computer

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* Table for Displaying Chocolate Bars: Represents the chocolate bars in a tabular format. A screenshot of a computer screen

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* Cards for Cheapest and Most Expensive Chocolate Bars: Showcases the cheapest and most expensive chocolate bars available. A screenshot of a computer

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* Progress Bars: Represents the average sugar percentage, dependent on database data, and updates dynamically if data changes. A green and black striped background

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* Logout Confirmation Modal: Ensures a user-friendly logout experience with a confirmation modal. A close up of a person's face

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* Delete Confirmation Modal: Ensures delete safety experience with a confirmation modal A screenshot of a computer

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* Update User Modal: A screenshot of a computer

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* File Organization: Drawing from my experience working with React, I restructured the code into components. This approach significantly enhanced readability and streamlined the comprehension of functionalities at first glance. A screenshot of a computer program

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# User Stories

1. As a admin I want to read chocolate bars table data from database to see how many there are.
2. As a admin I want to read users table data from database to see how many there are.
3. As a admin I want to read particular chocolate bars table data from database to see how many there are.
4. As a admin I want to read particular user table data from database to see how many there are.
5. As a admin I want to create chocolate bar into database to add more to database.
6. As a admin I want to create user data into database to add more to database.
7. As a admin I want to delete chocolate bar data from database to add more to database.
8. As a admin I want to delete user bar data from database to add more to database.

# Testing

|  |  |
| --- | --- |
| User Story | 1. As a admin I want to read chocolate bars table data from database to see how many there are. |
| Test ID | 1 |
| Description | Using valid URL |
| Given | 1. The Application, Server and Database Server is running  2. Postman REST Client Opened |
| When | 1. 1. Set GET request 2. 2. Enter URL http://localhost/chocolateSprint/api/cbtable 3. 3. Press send |
| Then | All chocolate bar table data displayed |
| Test Status | PASSED |

A screenshot of a computer

Description automatically generated

|  |  |
| --- | --- |
| User Story | 1. As a admin I want to read users table data from database to see how many there are. |
| Test ID | 2 |
| Description | Using valid URL |
| Given | 1. The Application, Server and Database Server is running  2. Postman REST Client Opened |
| When | 1. 1. Set GET request 2. 2. Enter URL http://localhost/chocolateSprint/api/users 3. 3. Press send |
| Then | All users table data displayed |
| Test Status | PASSED |

A screenshot of a video game

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|  |  |
| --- | --- |
| User Story | As a admin I want to read particular chocolate bar table data from database to see only which I need. |
| Test ID | 3 |
| Description | Using valid URL |
| Given | 1. The Application, Server and Database Server is running  2. Postman REST Client Opened |
| When | 1. 1. Set GET request 2. 2. Enter URL http://localhost/chocolateSprint/api/cbtable/1 3. 3. Press send |
| Then | Chocolate bar with ID 1 table data displayed |
| Test Status | PASSED |

A screenshot of a computer

Description automatically generated

|  |  |
| --- | --- |
| User Story | As a admin I want to read particular user data from database to see only which I need. |
| Test ID | 4 |
| Description | Using valid URL |
| Given | 1. The Application, Server and Database Server is running  2. Postman REST Client Opened |
| When | 1. 1. Set GET request 2. 2. Enter URL http://localhost/chocolateSprint/api/users/3 3. 3. Press send |
| Then | User ID 3 table data displayed |
| Test Status | PASSED |

A screenshot of a computer

Description automatically generated

|  |  |
| --- | --- |
| User Story | As a admin I want to create chocolate bar data from database to add more to database. |
| Test ID | 5 |
| Description | Using valid URL |
| Given | 1. The Application, Server and Database Server is running  2. Postman REST Client Opened |
| When | 1. 1. Set POST request 2. 2. Enter URL http://localhost/chocolateSprint/api/cbtable 3. 3. Press send |
| Then | Chocolate bar with ID 1 table data displayed |
| Test Status | PASSED |

A screenshot of a computer

Description automatically generated

|  |  |
| --- | --- |
| User Story | As a admin I want to create user data into database to add more to database. |
| Test ID | 6 |
| Description | Using valid URL |
| Given | 1. The Application, Server and Database Server is running  2. Postman REST Client Opened |
| When | 1. 1. Set POST request 2. 2. Enter URL http://localhost/chocolateSprint/api/cbtable 3. 3. Press send |
| Then | Chocolate bar with ID 11 table data displayed |
| Test Status | PASSED |

|  |  |
| --- | --- |
| User Story | As a admin I want to delete chocolate bar data from database to add more to database. |
| Test ID | 7 |
| Description | Using valid URL |
| Given | 1. The Application, Server and Database Server is running  2. Postman REST Client Opened |
| When | 1. 1. Set POST request 2. 2. Enter URL http://localhost/chocolateSprint/api/cbtable 3. 3. Press send |
| Then | Chocolate bar with ID 11 table data displayed |
| Test Status | PASSED |

A screenshot of a computer program

Description automatically generated

|  |  |
| --- | --- |
| User Story | As a admin I want to delete user bar data from database to add more to database. |
| Test ID | 8 |
| Description | Using valid URL |
| Given | 1. The Application, Server and Database Server is running  2. Postman REST Client Opened |
| When | 1. 1. Set POST request 2. 2. Enter URL http://localhost/chocolateSprint/api/cbtable 3. 3. Press send |
| Then | Chocolate bar with ID 11 delete and in table data not displayed |
| Test Status | PASSED |

A screenshot of a computer

Description automatically generated

|  |  |  |
| --- | --- | --- |
| Test Type | Number Passed | Number Failed |
| Manual | 8 | 0 |

Sample Bug Report

There are currently no known existing bugs in this project.

# Summary

During this project, I have acquired valuable insights and skills that have significantly contributed to my growth and development. The key learnings from this project include:

1. Technical Proficiency: I have enhanced my technical skills in web development, including a better understanding of Single Web Page Application (SPA) architecture and RESTful web services. I've gained experience in creating CRUD functionalities for managing various entities and user/admin profiles, as well as utilizing Twitter Bootstrap elements like Glyph icons, Progress bars, Cards, Dialog boxes/Modals, and Data Tables.
2. Database Interactions: Through this project, I have become adept in interacting with databases, executing SQL queries, and performing data retrieval and manipulation, particularly related to the chocolate bar inventory and user/admin data.
3. Frontend Development: I've honed my frontend development skills, creating a responsive and user-friendly interface that caters to different device sizes. I've learned how to structure a webpage using HTML, CSS, and JavaScript frameworks like Bootstrap to deliver an engaging user experience.
4. Testing and Automation: The project emphasized the significance of testing. I've delved into testing methodologies and explored avenues for automating certain test procedures, ensuring the reliability and accuracy of the application.
5. Dynamic Data Display: I've learned to connect and display dynamic data from the database, incorporating elements like progress bars and cards that update in real-time, reflecting changes in the underlying data.
6. Application Deployment: I've gained insights into deploying and managing applications, understanding the intricacies of web hosting, and making applications accessible for end-users.
7. Project Organization and Componentization: Leveraging experience from React, I've learned to structure the project into components, significantly enhancing the readability and maintainability of the codebase.
8. User-Centric Design: I've recognized the significance of user-centric design, implementing features that enhance the user experience, such as login/logout functionalities, clear and concise UI elements, and functionalities that cater to the needs of both customers and administrators.
9. Continuous Improvement: This project has instilled in me the importance of continual learning and improvement. It has provided a solid foundation and inspired a curiosity to explore and further advance my skills in web development.

Overall, this project has been an enriching experience, providing a robust learning environment and a platform to apply and expand my skills in web development.