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Project Title: Bob's Burger's

1. Project Overview:

The goal of my web development project is to build a web-based food order delivery application. A user will be able to log into their account or order as a guest. From there, they will decide what type of burger they would like, what toppings they would like, what drink they would like, etc. They will also input their name and address into the form which would be required for delivery. Once the user clicks the Submit button with all required information, the user will get a pop-up message stating that their order has been placed. The website is meant to provide customers with an intuitive web-based solution for ordering burgers from their local burger restaurant.

2. Project Timeline:

08/07/2023 – 08/11/2023

This is a busy week for me with two quizzes and my summer internship wrapping up. As such, I plan to have the UI/front-end finished by the end of this Friday (08/11/2023.) This should include the HTML, CSS, and JavaScript, for the login page, new user registration page, and the order page. Having this wrapped up will open me up to work on setting up log-in and database functionality.

08/12/2023 – 08/15/2023

Build out the back end/database portion of my food delivery application. The database should store the username and password of each user/account. This should enable the user to login to their account and place an order using their account rather than just as a guest. This will be done using PHP and SQL.

3. Project Architecture

My web application consists of 7 files (register.php, login.html, login.php, lab2.html, about.html, style.css, and Jscript.js.) "register.php" enables the user to create an account by entering their username and password. User registration data is stored in a MySQL database. "login.html" provides a login form for users to enter their username and password credentials. Upon successful login, users will be redirected to "lab2.html". "login.php" is the PHP script that enables this login process. The script verifies the entered credentials with the stored hashed password in the database and redirects to "lab2.html" upon successful login. "lab2.html" is the main page of the web application that enables users to enter their order information. "about.html" displays a picture of the family who owns this family-owned business as well as a link back to the homepage (lab2.html.) "style.css" defines the appearance of the web pages

including background images, colors, fonts, and positioning. "Jscript.js" contains code that handles the submission of the order form in lab2.html. Once the submitted has submitted their order, an alert will pop up containing their name stating their order has been placed, along with resetting the form fields in which the user entered their order.

MySQL is the database system used for user registration and login. The registration form (register.php) collects a username and a password and stores the user's information into the 'users' table in the database after hashing the password. The login form (login.html) collects the user's credentials. The associated PHP script (login.php) retrieves the hashed password from the password based on the provided username, compares the hashed password with the entered password using "password_verify", and redirects to "lab2.html" upon successful login. Navigation is established using links within the pages. Users can navigate to the login page from the registration page by clicking the login button. The "About Us" link in the header of "lab2.html" allows users to navigate to the about page and the "Back to Homepage link in "about.html" allows users to navigate back to the order page.

4. User Interface (UI) Design

The layout follows a clean and organized structure to ensure ease of navigation and information accessibility. Each page consists of a centered content container to maintain focus and readability. A consistent header with navigation links is intended to enhance user orientation. Textual content and form fields are presented on a light gray background (#f0f0f0) to ensure readability. Call-to-action buttons stand out with a gradient effect that shifts from the primary color (#007bff) to a slightly darker shade upon hover. Links exhibit a similar color change on hover, with an underlined appearance. Interactive form fields, checkboxes, and radio buttons incorporate subtle shadows and rounded corners for a modern touch. Images maintain their opacity but smoothly transition to a slightly lower opacity on hover to indicate interactivity. The UI design aims to create a cheerful, engaging, and user-centered experience through a thoughtful combination of layout, colors, typography, and interactive elements.

5. Database Design

The database schema for this project centers around a single table named "users" within the "userauth" database. The "users" table contains three key attributes: "id," "username," and "password." The "id" attribute serves as a primary key, ensuring each user is uniquely identified with an automatically incremented value. The "username" attribute stores the chosen username for authentication purposes and is designed to be unique to avoid duplications. Meanwhile, the "password" attribute stores the hashed password associated with the user's account, ensuring security. The "users" table forms the foundation for user account management, facilitating secure access to the web application while adhering to established best practices for password storage and data integrity.

id	username	password

1	shteinb	$2y$10$4dC9…
2	test	$2y$10$c/Gfh…
3	shteinb1	$2y$10$YSLF…

6. Functionality & Features

The website offers a range of user-oriented functionalities and features, designed to ensure a seamless and engaging experience. Users can begin by registering and logging in using unique usernames and securely hashed passwords, providing a personalized access point. The burger order form stands as a central feature, allowing users to customize and place orders effortlessly, specifying preferences, delivery dates, and contact details. Additionally, the "About Us" page furnishes insight into how customers are supporting a small family-owned business, enriching user understanding.

Aesthetic enhancements are integrated through interactive image opacity, which subtly changes upon hover, providing visual feedback. The date of delivery input streamlines the order process, allowing users to choose their desired delivery date. Dynamic checkbox selection empowers users to tailor their orders with preferences, complementing the customizable experience. All forms are meticulously designed for user-friendliness and visual appeal.

Furthermore, navigation between pages is made intuitive with interactive navigation links, ensuring smooth transitions between the homepage, about page, and login page. Password hashing offers an essential layer of security, with passwords being securely hashed before storage. Interactive buttons add an engaging touch, with users able to seamlessly interact with buttons like "Login" and "Submit." Collectively, these features leverage HTML, CSS, and JavaScript to cater to user needs while maintaining security and enhancing the overall web experience.

7. Technology Stack

The web application is built using a comprehensive set of technologies and tools spanning various layers. For the front-end, HTML5 structures the content, while CSS3 styles it to perfection, ensuring a visually pleasing layout, and JavaScript enriches the user experience with interactivity.

At the back-end, PHP, version 8.0.26, takes the lead in processing user requests and generating dynamic content, while the Apache web server serves PHP scripts and handles HTTP requests, ensuring a seamless flow of information. MySQL, version 8.0.31, acts as the relational database management system, storing essential user data and authentication

information. The widely used password_hash function secures passwords with bcrypt encryption, bolstering the system's security measures.

Key development tools include Git for version control, ensuring codebase integrity, and Visual Studio Code as well as Notepad++ for efficient coding and management. The local development environment, XAMPP, seamlessly integrates Apache, MySQL, PHP, and phpMyAdmin, streamlining the development process. XAMPP is a free and open-source cross-platform software package that provides a local web server environment for developers to build and test web applications on their own computers. The incorporation of HTML5's built-in date picker simplifies date selection for users. Altogether, this well-rounded technology stack ensures a dynamic, secure, and engaging web application.

8. Challenges & Mitigation

List the challenges or roadblocks you faced during the development process. Describe how you addressed or mitigated these challenges effectively.

I have never taken a databases course prior to this project and as such had virtually zero experience with SQL going in. This led to me struggling quite a bit with the database portion of this web development project. I initially started off using MySQL Workbench but my professor (Dr. Sharma) informed me that I should use WampServer instead as that would be easier to work with. I downloaded WampServer and managed to get localhost set up in my edge browser with the help of google and informational YouTube videos. In much the same way, I was able to figure out how to create a MySQL database named 'userauth' which contains a table 'users'. The 'users' table stores the user's id, username, and password. I also had zero experience with PHP going into this project but was able to configure the 'register.php' and 'login.php' files to connect with the users table and store/retrieve the username and password of the user. My lack of experience with setting up databases and PHP was by far my biggest hindrance throughout the development process, but I was able to work through it with grit and determination.

9. References

Include any relevant resources, research papers, or tutorials that have inspired or influenced your project's concept and development.

https://chat.openai.com/

https://www.w3schools.com/html/

https://www.w3schools.com/css/

https://www.w3schools.com/js/

https://www.hulu.com/series/bobs-burgers-fdeb1018-4472-442f-ba94-fb087cdea069