

# **<Hello World> Web Application Final Report**

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## Introduction

The <Hello World> web application is developed to enhance the visitor experience at the <Hello World> Theme Park, a thrilling destination for nerdy adventure enthusiasts. The web app enables users to explore various attractions, including rides, dining, and shopping options, while also providing functionalities for purchasing tickets, season passes, and optional add-ons. The application is built using Node.js for the backend, ensuring efficient handling of user interactions and transactions, while SQL is employed for seamless data management and retrieval. The user interface is designed with Figma, ensuring an intuitive, responsive, and engaging experience across both desktop and mobile devices. By leveraging Node.js for server-side scripting and SQL for data operations, the app allows users to interact with the park's features, manage their profiles, and make purchases with ease, all while ensuring secure and accurate data handling.

## Project Objectives

The primary objectives of the project were:

- **Intuitive and Engaging User Interface:** To create a visually appealing and easy-to-navigate interface that allows visitors to explore park attractions, make purchases, and manage their profiles seamlessly.
- **Effective Data Management with SQL:** To implement SQL-based data operations, ensuring smooth and efficient retrieval, insertion, updating, and deletion of user information, transactions, and park details.
- **Data Integrity:** To maintain accurate, secure, and consistent information across all transactions.
- **Seamless Backend Integration with Node.js:** To provide a robust and scalable backend using Node.js, ensuring fast, reliable, and secure communication between the frontend and the database.
- **Personalized User Experience:** To offer users the ability to personalize their experience by tracking purchases history and managing their accounts through a simple and efficient login and account management system.

## Technologies Used

The project was implemented using the following technologies:

- **Backend:** Node.js for server-side scripting and API implementation.
- **Frontend:** HTML, CSS, and Figma for user interface design and development.
- **Database:** SQL for efficient data storage, retrieval, and manipulation.
- **Task Tracking:** Jira board created in Google Sheets.

## Functionalities

The <Hello World> Web Application includes the following key features:

### A. Home Page

- Provides an overview of the park, highlighting key attractions, promotions, and events.
- Includes links to navigate to different sections, such as rides, tickets, and user profiles.

### B. Tickets & Passes

- Displays ticket and pass options, including daily tickets, season passes, and premium memberships.
- Users can view detailed information about add-ons and select desired options for purchase.

### C. Rides

- Users can explore park rides categorized as:
  - **All Rides**
  - **Thrill Rides**
  - **Family Rides**
  - **Kids Rides**
- SQL SELECT statements retrieve and filter ride information based on the chosen category.
- Details include descriptions, locations, ride types, and height requirements.

### D. Dining and Shopping

- Displays dining options based on user criteria, such as cuisine type or dietary preferences, using SQL SELECT statements.
- Users can search stores by product categories or location within the park.

### E. User Profile

- **Login Functionality:** Users can log in to access personalized options such as order history and added functionality such as the user session is saved so if they login, they are the current user. If they log out, the session removes them as the current user. There was extra functionality of password checking so if the user did not use the correct password, a pop-up notification will be displayed informing them of this along with email verification that alerts them if they are not a valid user.
- **Personal Information Modification:** Users can modify their personal information such as phone number, payment information, and address, updating the database using SQL UPDATE statements.

- **Order Cancellation:** Users can cancel orders after a two-step verification, using SQL DELETE operations.
- **Customer Registration:** When a new user registers for the site, their information is added to the **customer** table in the database using SQL INSERT INTO statements. This operation stores essential customer details such as name, email, and login credentials, allowing for personalized access and future transactions.

## F. Ticket Purchasing

- Users can purchase tickets or memberships and add-ons with detailed options.
- SQL INSERT INTO statements store purchase information in the **order** table, **contain** table, and the **place** table.
- Purchases are linked to the user's account for tracking.

## Design and Implementation

### Architecture

The application follows a client-server architecture:

- **Frontend:** Designed in Figma and implemented using HTML and CSS for responsiveness and user engagement.
- **Backend:** Built with Node.js to handle user requests and interact with the SQL database.
- **Database:** MySQL database contained on the Google Cloud server stores and manages data related to rides, tickets, dining/shopping options, user accounts, and transactions.

### Database Operations

- **SQL SELECT:** Retrieves data for user queries (e.g. rides, dining/shopping options, order history).
- **SQL INSERT INTO:** Stores ticket purchases and user information.
- **SQL UPDATE:** Updates existing account details.
- **SQL DELETE:** Cancels order upon user's request.

## Summary

The <Hello World> Web Application successfully delivers a user-friendly platform for exploring the theme park's features and managing user transactions. With a robust backend and efficient database operations, the application ensures reliable and secure data handling. Future enhancements would be to focus on additional customization and scalability to further improve the user experience.