

CST2120

Web Applications & Database Design

Coursework 1

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## **Introduction:**

With the "Hangman Game" project, players of all ages can enjoy a classic word-guessing game in an entertaining and interactive format. This HTML, CSS, and JavaScript combination was used to create a game that goes beyond what is usually seen in a gaming experience. Players may safely register, and log in. The game features a variety of word challenges with dynamic rankings and an easy-to-understand scoring system. Local storage is used to preserve data integrity while enabling users to easily track their progress and scores.

In addition to being entertaining, the Hangman Challenge promotes language learning and cognitive abilities. It offers an immersive experience that blends the components of words, strategy, and pure enjoyment, making it more than just a game. The project effectively caters to a wide audience by embracing both traditional gameplay and technology, thereby making the learning and entertainment aspects equally accessible to players with different skill levels. Whether playing for fun or education, the Hangman Game provides a rich and varied experience that goes beyond the usual boundaries of online gaming. The game offers to register, and login features as well with a few validation checks to make sure the data entered satisfies all conditions.

## **Description:**

The Hangman Game is an engaging and fun word-guessing game played online that aims to test and improve players' vocabulary. With its digital version of the beloved Hangman game, players can now enjoy an engaging and entertaining gaming experience in the modern day.

### **Primary Objectives:**

* Develop an Interactive Hangman Game.
* Implement JavaScript Validation.
* Track and Display user scores.

### **Technologies Used:**

#### Frontend Technologies:

* + **HTML:** Used for structuring the game's web pages.
  + **CSS:** Applied for styling and creating an appealing user interface.
  + **JavaScript:** The core programming language for implementing game logic and interactivity.

#### Backend Technology:

* + **Local Storage:** Employed in storing user data from the registration form, including authentication details and scores.

## **Key features:**

* Intuitive Design: The interface of the game is simple to use and intuitive. The game is simple to use, allowing players to guess, and keep track of their scores with ease.
* Responsive Design: The Hangman Game guarantees a flawless experience across various devices thanks to its responsive design. Users can enjoy the game with maximum usability and visual appeal on a desktop, tablet, or smartphone.
* Game Features: The game offers a wide variety of words in different categories. Players come across a wide variety of words that range from commonplace objects to animals and the natural world, which keeps the game interesting and fun. Players are presented with a mystery word, and they must guess the correct letters to unveil the hidden word. Users can create accounts and log in to track their progress and scores, which allows them to customize their gaming experience.
* Scoring Systems: A scoring system is included in the game to give players rewards for correctly guessing words. With each accurate guess, players receive points, which promotes a sense of achievement.

## **Challenges Faced:**

1. **Implementing Local Storage:** The game's implementation of local storage came with several difficulties. It was very difficult for me to link my login and register forms with the local storage and then access it every time the user tried to log in hence retrieving data was one of the many challenges that I faced. The inability of local storage to erase data even after the browser has closed presented difficulties when managing synchronization. Storing the score in local storage and then showing it on the rankings page was another challenge faced.
2. **Login & Register Form:** There were difficulties in creating safe and easy-to-use login and registration forms. To improve user experience and stop malicious activity, efficient validation, and error handling were essential. Maintaining a smooth user experience while maintaining security measures was a constant challenge. Enforcing password policies, such as complexity requirements, and ensuring secure storage added complexity.

Careful code implementation was necessary to maintain a balance between user-friendly interfaces and due to the addition of six validations during registration. An essential component of the project is input validation. When a user registers, the system verifies that their inputs meet predetermined standards. The development process became even more complex when coordinating server-side and client-side data validation.

# **Screenshots:**

### **Home Page:**

### **A computer screen shot of a blackboard Description automatically generated**Fig 1

### This is the main landing page when you open the Hangman Game website.

### **About Page:**

### **A screenshot of a computer Description automatically generated**Fig 2

### This is the page which includes the description of the game and tells you what the Hangman game is about.

### **Login/Register Page:**

### **A screenshot of a computer Description automatically generated** Fig3

This is the Login/Register page where user has to regsister himself or login inorder to make sure that his scores are being stored in local storage. These two forms also have some validation checks which will not let the user logIn or Register unless these conditions are satisfied. Fig3.1 and Fig3.2 shows example of these validation checks.

### **A screenshot of a computer Description automatically generated** Fig3.1

### **A screenshot of a computer Description automatically generated** Fig3.2

### **Play game page:**

A screenshot of a computer

Description automatically generated Fig4.

This is the page where user will play the hangman game and test their vocabulary.

Fig4.1 and Fig 4.2 show how the visualization in both cases if the user wins or loses. **A screenshot of a computer

Description automatically generated** Fig4.1**A screenshot of a computer

Description automatically generated** Fig4.2

* + 1. **Rankings Page:**

A screenshot of a computer

Description automatically generatedFig5

The Hangman Game's Rankings page functions as a leaderboard, displaying the highest scores that players have attained. By enabling users to compare their scores with those of other players and aim for the top spot on the leaderboard.

**Conclusion:**

An entertaining and educational online gaming experience has been successfully created by the Hangman Game project. Despite the obstacles faced during the process, the addition of user authentication and scoring systems has significantly increased overall user engagement. The project has effectively established a strong foundation for future growth and development despite these obstacles. In addition to demonstrating that the original goals of the Hangman Game have been met, its current state also guides future development and innovation. This online game, which seamlessly combines entertainment and education, is a great tool for people who want to be entertained while also being intellectually challenged. The Hangman Game is a great option for individuals looking for an engaging hobby because it combines entertaining and educational aspects. The process from conception to implementation has been satisfying, signifying not only the completion of a project but also the beginning of a promising path for ongoing development and enhancement. As it stands, the Hangman Game project is successful both as a stand-alone experience and as a launching pad for additional creative development and exploration.