

**CST2120**  
**Web Applications and Databases**

**Coursework 1 – Game Website  
Project Proposal**

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## Description of the website

Zombie Invasion is a shooting game. The objective of this game is to score as many points as possible while fending off the relentless zombie onslaught. Players must use their shooting skills and quick reflexes to eliminate zombies before they get too close. As one progresses in the game, the challenge intensifies as the number of zombies increases and appears faster, requiring you to stay sharp and focused.

## Game Demonstration - YouTube link

<https://youtu.be/iczNO3dB9c8>

## How to play

1. Use the mouse to move the player around the grid, allowing you to aim at the approaching zombies.
2. Press the space bar to fire your weapon.

## Website pages

### Home Page

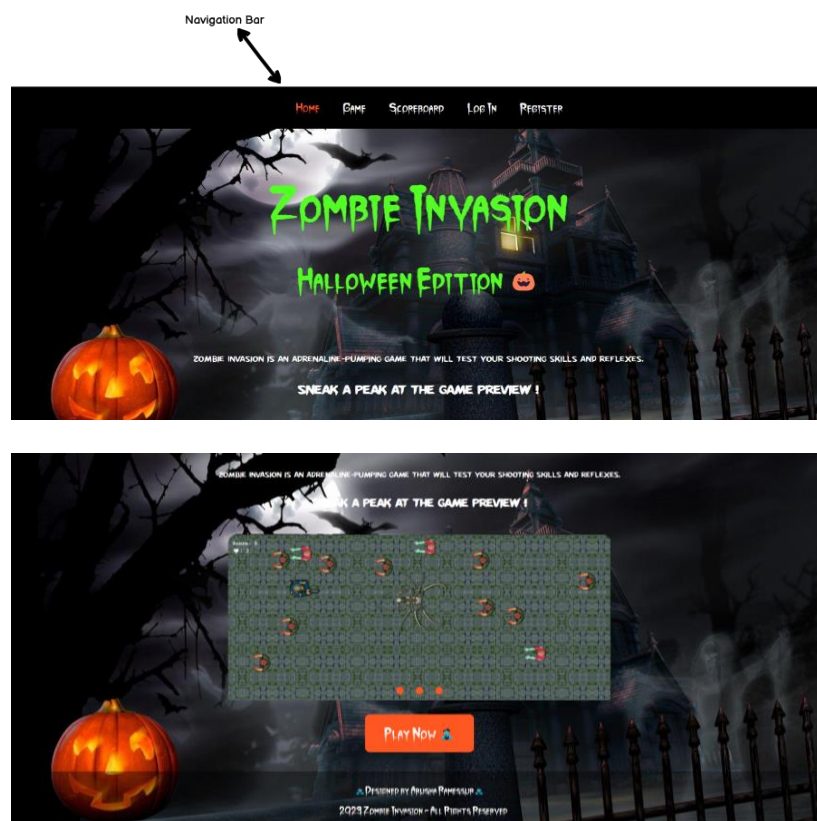


Figure 1 - Home Page

The Home Page provides a brief game description to prompt user to play. In other words, this page is like a welcome page for the user. When user point its cursor on Home in the navigation bar, and on the play button, a hover effect will appear. When clicking on the play button, user will have to log in, before playing.

Game Demo Page

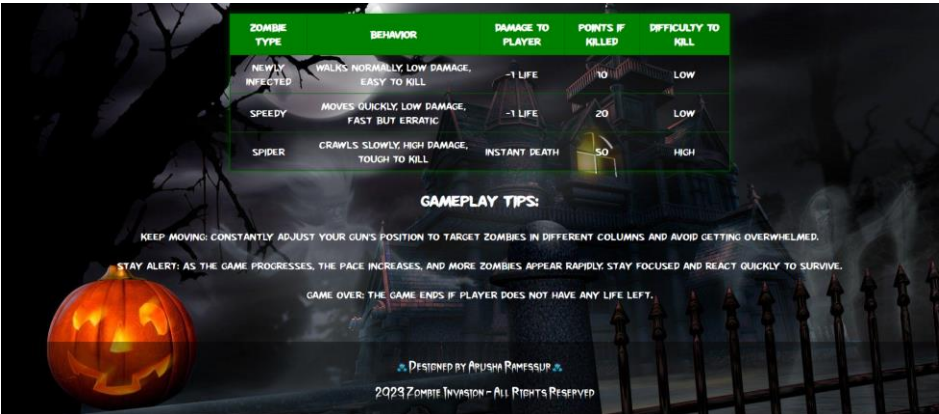
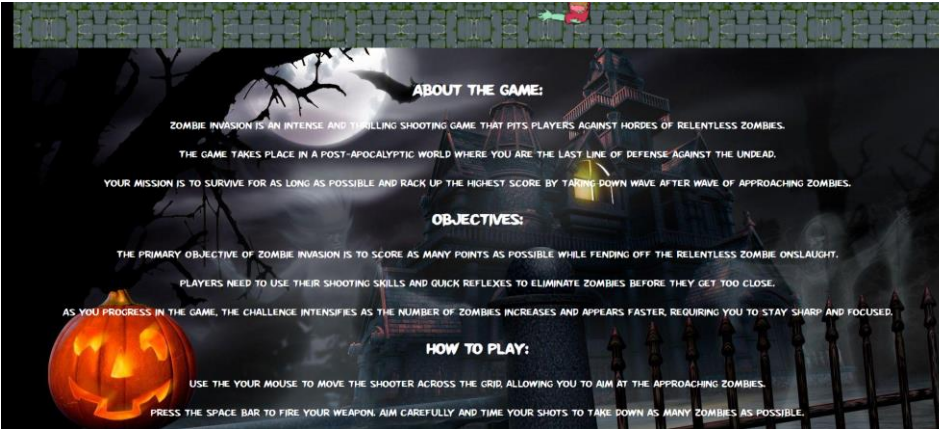


Figure 2 – Game Demo Page



User can play quickly without log in details on this Demo game page. It is a preview of the game, but it will not store any high score as user has not logged in. The game demo page provides a brief overview about the game, its objectives, instructions, and hints to win the game. A hover effect will appear when user point its cursor on Game in the navigation bar.

## Game Page



*Figure 3 - Game Page*

User can play the game on this page after they have logged in. Here, their high score will be stored in html local storage. Initially both score and high score are 0 if user has never played the game. After playing the game for the first time, user's high score is stored in the html local storage. only when he beats his current high score, a new value will appear as his high score.

The game consists of 3 types of zombies: speedy, newly infected and spider.

Newly infected is worth 10points, easy to kill, dies with only 1 bullet. He does low damage that is it takes only player's 1 life.

Speedy is worth 20 points, easy to kill, dies with only 1 bullet. He walks quickly and blindly without caring where he is going. He does low damage that is it takes only player's 1 life.

However, the spider is worth 50 points, tough to kill. Takes 20 bullets to kill it. He crawls slowly and does a lot of damage that is it takes player's all 3 lives.

When player fire its weapon, there are gun sound effect.

When player's each life is taken, there is a man's scream sound effect.

The game page also provides a brief overview of the game, its objectives, instructions, and hints to win the game just like the game demo page. A hover effect will appear when the user points its cursor on Game in the navigation bar.

## Scoreboard Page



Figure 4 - Scoreboard Page

The Scoreboard Page show users their rankings and how many points they scored throughout the game in descending order using JavaScript to dynamically populate the table.

When user point its cursor on Scoreboard in the navigation bar, and on the ranking table, a hover effect will appear.

If user points the cursor on the first winner, a gold yellow colour effect will appear.

If user points the cursor on the second winner a silver-grey colour effect will appear.

And if user points cursor on the third winner a bronze colour effect will appear.

Then the other ranking starting from the 4<sup>th</sup> to the last, they have a normal orange colour hover effect.

## Log In Page



Figure 5 - Log In Page

User who already created their accounts, can log in with their appropriate credentials on this Log In Page and then play afterwards. When user point its cursor on Log In in the navigation bar, and on the Log In button, a hover effect will appear.



## Sign-Up Page



Figure 6 - Sign-Up Page

The Sign-Up Page help user to create their accounts by inserting their basic information. Once their credentials are store in the database, they will be able to log in their account and play the game. When user point its cursor on Register in the navigation bar, and on the Sign-Up button, a hover effect will appear.



## Validation for Log In & Sign-up Form

### Log In Page



Figure 7 - Log In Validation

Figure 6 shows a combination of CSS and JavaScript that perform the log in validation. If an invalid email or short password is written in the input box, the borders of the input box will appear red. On the other hand, if a valid email and a strong password consisting of at least 8 characters, including a capital letter, a number, and a special character must be written, for borders of the input box appear green.

### Sign-Up Page

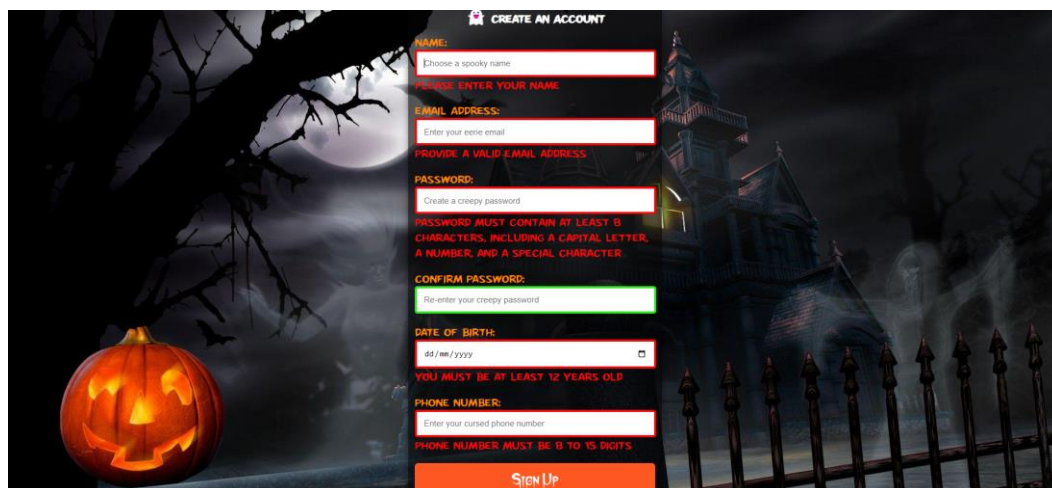


Figure 8 - Sign-Up Validation

Figure 7 shows a combination of CSS and JavaScript that perform the sign-up validation. If an invalid data is written in the input box, the borders of the input box will appear red. On the other hand, if a valid data is written, the borders of the input box will appear green.

## HTML local storage

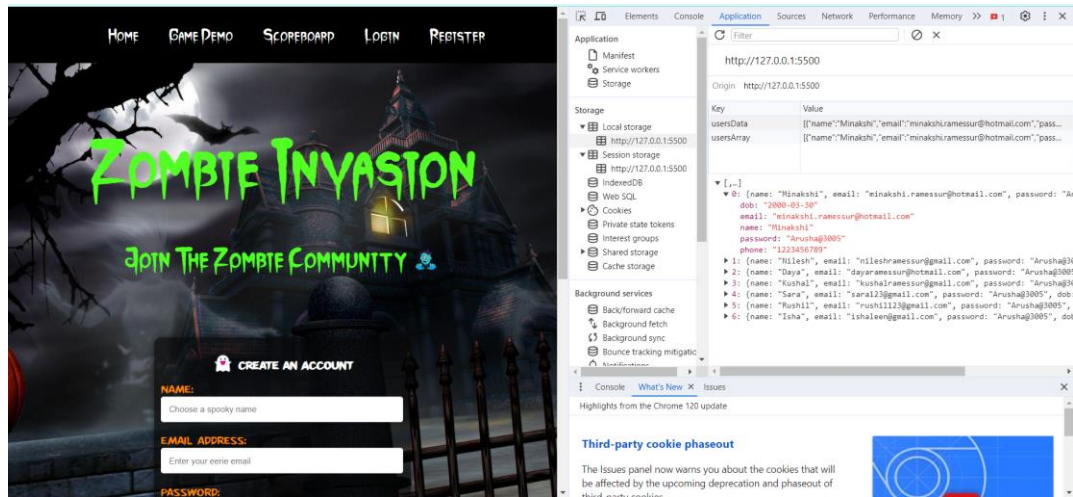


Figure 9 - HTML Local Storage (User Data)

Figure 9 shows the local storage containing all the details (userData) of registered users in an array of object.

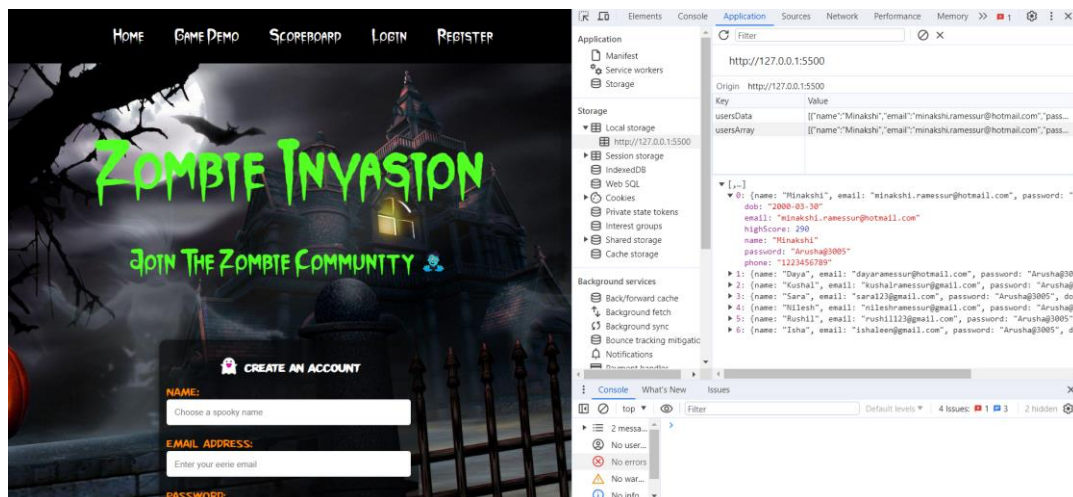


Figure 10 - HTML Local Storage (User Array)

Figure 10 shows the local storage containing all user details along with their high score. Once the user start playing the game, these details are store in the userArray as an array of object.

## Session storage

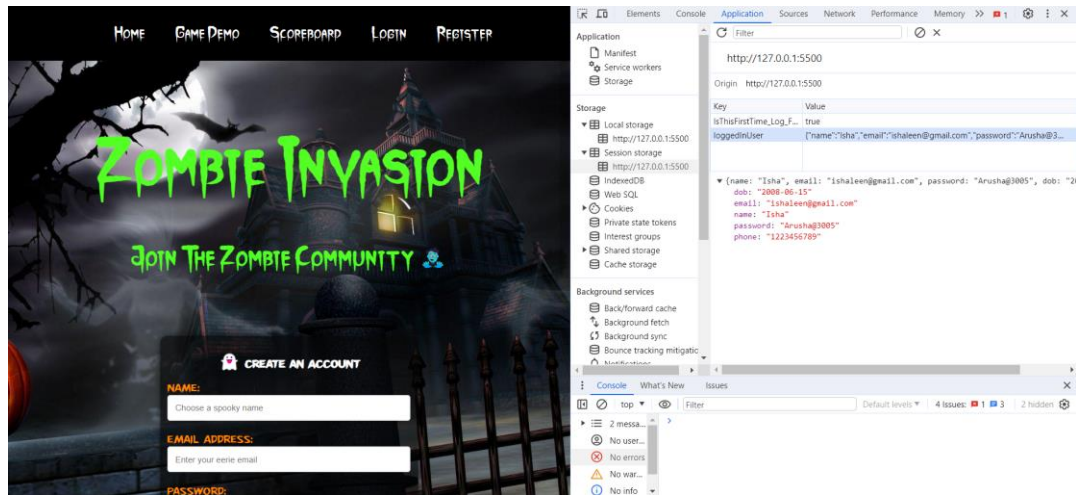


Figure 11 - HTML Session Storage (loggedInUser)

Figure 10 shows the session storage containing all the details of the currently logged user in loggedInUser object.

## Conclusion

In brief, our report includes a fully functional game website with the home page, game demo page, game page, scoreboard, Log In page, and Sign-Up page. Our websites consist of HTML, CSS, JavaScript, and HTML local storage.