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# UNIVERSITY OF LAYYAH

# Submitted To:

Mr Faisal Hafeez

# Project:

Snake Game Development

# Submitted By:

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# Project Proposal

## Title:

Snake Game Development Using HTML5 Canvas and JavaScript.

## Project Overview:

The objective of this project is to design and develop a classic Snake game using HTML5 Canvas and JavaScript. The game will feature a snake that moves around the screen, eats apples, and grows in length. The game will also include collision detection, scoring, and keyboard controls.

## Project Goals:

* Develop a fully functional Snake game using HTML5 Canvas and JavaScript.
* Implement smooth and responsive game mechanics.
* Incorporate collision detection and scoring system.
* Design an intuitive user interface with keyboard controls.
* Optimize game performance for various devices and browsers.

## Project Features:

## Game Loop:

Request Animation Frame-based game loop for smooth animation.

## Snake Movement:

Keyboard-controlled snake movement with velocity and direction.

## Apple Generation:

Randomly generated apples with collision detection.

## Scoring System:

Points awarded for eating apples, with display on screen.

## Collision Detection:

Snake collision with walls, itself, and apples.

## Game Reset:

Automatic game reset on collision or game over.

## Responsive Design:

Game scales to fit various screen sizes and devices.

## Data Structure:

## Array:

## Linked Lists:

## Hash Tables:

## Technical Requirements:

* HTML5 Canvas for game rendering.
* JavaScript for game logic and event handling.
* CSS for styling and layout.
* Keyboard event listeners for user input.

## Methodology:

* Requirements gathering and analysis.
* Game design and planning.
* Implementation of game mechanics and features.
* Testing and debugging
* Optimization and refinement.

## Timeline:

* Requirements gathering and analysis: 2 days
* Game design and planning: 3 days
* Implementation: 10 days
* Testing and debugging: 5 days
* Optimization and refinement: 3 days

## Deliverables:

* Fully functional Snake game.
* Source code (HTML, CSS, JavaScript).
* Documentation (game design, technical details).
* Presentation (game demo, explanation).

## Tools and Resources:

* Visual Studio Code or similar IDE.
* Google Chrome or Firefox browser.
* HTML5 Canvas and JavaScript documentation.
* Stack Overflow and online forums.

## Assumptions and Dependencies:

* Familiarity with HTML, CSS, and JavaScript.
* Access to necessary development tools and resources.
* No external dependencies or libraries.

## Risks and Challenges:

* Complexity of game mechanics.
* Performance optimization.
* Browser compatibility issues.

## Conclusion:

The Snake game project aims to demonstrate proficiency in HTML5 Canvas and JavaScript game development. By completing this project, I will gain hands-on experience in game design, implementation, and optimization.