# Final Project

## Catch the Buttons – Reflex Game

### Submitted By

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### 1. Project Overview

Catch the Buttons is a fast-paced reflex game built using core web technologies: HTML, CSS, and JavaScript. The objective is simple yet engaging: players must click as many visible “Catch!” buttons as possible within the given time. The buttons appear randomly across a grid layout and disappear after a short time, challenging the user’s attention and speed.

### 2. Project Objective

The main goal of the project is to develop a responsive, browser-based reflex game that tests and improves the player’s reaction speed and hand-eye coordination. The game is designed to be fun, accessible, and visually appealing for players of all ages.

### 3. Features

* Multiple Catch Buttons: Random buttons appear across the screen. Players must click them quickly before they disappear.
* Score Counter: A live score is displayed in the top-right corner of the screen, increasing with each successful click.
* Randomized Visibility: Buttons are randomly shown at intervals, adding unpredictability and excitement.
* Background Styling: A visually appealing background image enhances user experience.
* Responsive Design: Works seamlessly across desktops, tablets, and smartphones.

### 4. Technical Details

#### Frontend Development

* HTML5: Defines the structure of the game interface, including the score display and button grid.
* CSS3: Handles layout styling, button effects, and background image integration. Responsive grid layout ensures usability across devices.
* JavaScript (ES6): Powers the game logic, including random button display, score tracking, and event handling for clicks.

#### Game Logic

* Buttons are displayed in a grid and randomly activated.
* Players click visible buttons to earn points.
* The set of visible buttons updates every second using setInterval.
* Scores update instantly based on user interactions.

#### UI Elements

* Game Title: A heading at the top introduces the game.
* Score Display: Fixed in the top-right corner for real-time score tracking.
* Game Grid: A flexible layout with up to 9 buttons, with 8 shown randomly each cycle.

### 5. Future Improvements

* Game Timer: Add a countdown to limit game duration.
* Game Over Screen: Display final score with restart option.
* Difficulty Levels: Increase button speed or reduce visibility time.
* Leaderboard: Save and display high scores.
* Sound Effects: Add audio for button clicks and score milestones.
* Theme Support: Include alternate themes (e.g., dark mode, seasonal themes).

### 6. Conclusion

Catch the Buttons offers a fun and effective way to test user reflexes using core front-end technologies. With its responsive layout, real-time interaction, and potential for enhancements, it serves as a strong foundational project in interactive web development. The simplicity of the concept makes it easy to play, yet the fast-paced action keeps it challenging and engaging.