**Countdown Conundrum Game Report**

Developer: Michal Nickel

Date Last Updated: 07/07/2025

Filename: index.php, play.php, Countdown.js, Countdown.css, connection.php

**Introduction**

This report documents the design, development, testing, and evaluation of Countdown Conundrum, a fast-paced, web-based word puzzle game inspired by the classic TV show "Countdown". The project challenges players to unscramble words against the clock while tracking their scores and accuracy. The game showcases key web development concepts such as frontend and backend integration, database-driven content, dynamic gameplay logic, and modern UI/UX practices.

**Project Overview**

**Objectives**

The main goals of Countdown Conundrum were:

* Deliver a fun and educational game that sharpens vocabulary and typing reflexes.
* Provide a visually engaging and responsive user interface using HTML, CSS and Bootstrap.
* Integrate a dynamic word list stored in a MySQL database, accessed through a PHP API.
* Track user progress with real-time counters and a timer system.

**Scope**

The initial implementation was focussed on a single-player web-based experience. It did not include user authentication, multiplayer mode, or advanced leaderboard systems at this stage.

**Rules and Core Mechanics**

**Game Setup**

Players select their desired word length (5,7,9 letter, or mixed). A random word is fetched from a database, scrambled and displayed. The player must guess and submit the correct unscrambled word within the shortest time possible.

**Scoring and Tracking**

* Correct words: Counted and displayed in real-time.
* Timer: Runs continuously during each session and records total elapsed time.
* Accuracy: Calculated based on total attempts vs correct guesses.

**Audio Feedback**

* Countdown background audio during play.
* Distinct sounds for correct and incorrect guesses.
* Celebration audio upon completion.

**Usefulness and Application**

This project offers educational and entertainment value:

* Educational Tool: Enhances spelling, vocabulary and typing speed.
* Programming Practice: Reinforces skills in JavaScript, PHP, MySQL and asynchronous frontend-backend communication.
* Web Design Showcase: Demonstrate responsive design, dynamic gameplay UI and Bootstrap-based layouts.
* Game Development Foundation: Can serve as a base for future online multiplayer or competitive puzzle games.

**Testing**

The game was tested extensively to ensure smooth operation, correctness and responsiveness. The following features and scenarios were verified:

|  |  |  |  |
| --- | --- | --- | --- |
| **Index** | **Feature** | **Screenshot** | **Purpose** |
| 1 | Word Fetching from database | Words in Database and Shuffled Word in Game | Validate dynamic loading of works based on length |
| 2 | Word Scramble Logic | Shuffled Word and Shuffle and Randomiser functions in JavaScript | Ensure correct scrambling and reshuffling on each round. |
| 3 | Timer and Counter | Timer displayed in Game and Timer Functions in JavaScript | Confirm accuracy of timer updates and correct word counter increments. |
| 4 | Audio Feedback | Audio Functions in JavaScript | Verify correct/ incorrect sounds and celebration audio on game end. |
| 5 | Button States | Selectable and Not-Selectable buttons | Check correct disabling/ enabling of length selection buttons during play. |
| 6 | API Connectivity | JavaScript PlayGame function using connection.php and | Validate correct data retrieval and proper error handling from PHP endpoint. |
| 7 | Responsiveness | Desktop and Mobile viewports | Ensure layout scales well across devices and screen sizes |

**Index 1:**

A screenshot of a computer

AI-generated content may be incorrect. A grey background with white text

AI-generated content may be incorrect.

**Index 2:**

A grey background with white text

AI-generated content may be incorrect.

**A computer screen shot of a computer code

AI-generated content may be incorrect.**

**Index 3:**

A computer screen shot of a program code

AI-generated content may be incorrect.

A digital clock with white text

AI-generated content may be incorrect.

**Index 4:**

**A screen shot of a computer program

AI-generated content may be incorrect.A computer screen shot of text

AI-generated content may be incorrect.**

**Index 5:**

**A blue square with white text

AI-generated content may be incorrect.**

A blue square with white text

AI-generated content may be incorrect.

**Index 6:**

A screen shot of a computer program

AI-generated content may be incorrect.A screen shot of a computer program

AI-generated content may be incorrect.

**Index 7:**

**A screenshot of a computer

AI-generated content may be incorrect.**

**A screenshot of a game

AI-generated content may be incorrect.**

**Future Improvements**

Several enhancements can be considered to further develop Countdown Conundrum:

* User Accounts & Profiles: Allow players to create accounts, save scores and track progress over time.
* Leaderboards: Implement a local leaderboard system to increase competition.
* Difficulty Levels: Add varying levels (e.g., time constraints, limited attempts) for more challenging gameplay.
* Hint System: Provide optional hints or letter reveals at a penalty.
* Word Pack Expansions: Enable players to choose or unlock themed word packs (e.g., science, sports, travel).
* Mobile App Version: Develop a native app version for Android and iOS platforms.
* Accessibility Features: Include additional keyboard shortcuts, screen reader support and colourblind-friendly modes.
* Improved AI Challenges: Introduce AI opponents in a race-to-solve format.
* Achievement Badges: Reward players with badges for milestones (e.g., “Speed Typist”, “Word Master”).

**Summary**

Countdown Conundrum successfully met its initial objectives, providing a dynamic, entertaining and educational word puzzle game using modern web technologies. The integration of a MySQL database for word storage, combined with a responsive frontend and real-time feedback mechanisms, demonstrates practical skills in full-stack web development. The project serves as a strong foundation for further feature expansion and community engagement.

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* Helped integrate social icons and in-game visual elements to improve UI engagement.

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* Referenced for general inspiration and implementation of game mechanics (e.g., shuffling logic, accuracy calculations).