Dy-Sudoku – Game Design Document

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# Introduction

## Game Summary Pitch

Dy-Sudoku is a classic Sudoku puzzle game designed with accessibility in mind, especially for players with dyslexia. The game features a clean, readable interface, dyslexic-friendly fonts, and adjustable visual settings to reduce cognitive load.

## Inspirations

### Microsoft Sudoku

Microsoft Sudoku is the main inspiration for the accessibility and ease of use. Especially the ability to customise your experience through themes. MS Sudoku provides a clean interface, intuitive controls, and optional assistance tools such as note taking and error-checking.

(Microsoft Corporation, 2014)

### Sudoku.com / Mobile Sudoku Apps

These apps inspire Dy-Sudoku’s mobile-first design and the inclusion of adjustable difficulty levels, daily puzzles, and hint systems that enhance engagement for casual players.

(Easybrain, 2018)

### Accessibility-Focused Games

While not Sudoku-specific, games designed for accessibility—particularly those using dyslexia-friendly fonts and UI—have heavily influenced Dy-Sudoku’s core design, ensuring it’s usable by people who typically find text-based puzzles difficult to engage with.

## Player Experience

Each puzzle level is designed to stimulate logical thinking without overwhelming the player visually. With features such as dyslexic-friendly fonts, customizable contrast, and calming visuals, the player can focus on solving rather than struggling with the interface.

## Platform

Dy-Sudoku is planned to be developed primarily for Android devices but could possibly be released for PC/Web browsers using itch.io.

## Development Software and Asset Creation

* Game Engine – Unity 6.1 (6000.1.2f1)
* Programming Language – C#
* Outsourcing music and assets

## Genre

Singleplayer, Puzzle, Casual, Educational

## Target Audience

Puzzle enthusiasts, casual mobile gamers, and individuals looking for accessible and stress-free mental stimulation.

# Concept

## Gameplay Overview

Players must complete Sudoku puzzles by filling a grid with numbers so that every row, column, and region contains each number exactly once. Grid sizes are adjustable (from 4x4 to 10x10), and tools such as hints, note-taking, and error checking assist gameplay.

## Primary Mechanics

|  |  |
| --- | --- |
| Mechanic | Description |
| Number Input | Tap a tile and choose a number to insert or tap a number and tap the tile you want to insert the number. |
| Notes Mode | Toggle a mode that allows multiple pencil marks in a tile. |
| Hint System | Automatically reveal a correct number when used. |
| Error Checking | Option to highlight incorrect numbers. |

## Secondary Mechanics

|  |  |
| --- | --- |
| Mechanics | Description |
| Theme Switching | Players can switch between light/dark mode and high-contrast mode. |
| Dyslexia Mode | Activates OpenDyslexic font and adjusts spacing for clarity. |
| Grid Scaling | Sliders to adjust the horizontal and vertical grid sizes (up to 10x10). |
| Undo/Redo | Revert or repeat the last action. |

# Art Direction

A soft, minimalistic aesthetic using pastel tones and high-contrast borders. Font choices prioritize readability, using either OpenDyslexic or Lexend.

# Audio

## Music

Calming background music loops inspired by lo-fi and ambient piano tracks.

## Sound Effects

Soft taps and swooshes for interactions, with positive chimes for successful actions and gentle cues for mistakes.

# Development Timeline

## Pre-Production

|  |  |
| --- | --- |
| **Task** | **Notes** |
| Write Game Design Document | Use expanded structure (inspiration, research, dev journal) |
| Define core mechanics | Number input, notes, hints, error checking |
| Define accessibility features | Dyslexia font toggle, high contrast themes, audio cues |
| Research similar games | Microsoft Sudoku, Sudoku.com, Brain Training |
| Set up Agile or relaxed task board | Use Notion, Trello, or paper notes |
| Choose visual and audio style | Calm, accessible, lo-fi style |

## Project Setup

|  |  |
| --- | --- |
| **Task** | **Notes** |
| Create Unity project | Choose 2D template |
| Set up version control | Git with GitHub |
| Add .gitignore for Unity | Prevent uploading unnecessary files |
| Set up project structure | Folders for Scripts, Art, Audio, UI, Scenes |
| Add support libraries | TextMeshPro, Input System (if needed) |

## Core Gameplay Development

|  |  |
| --- | --- |
| **Feature** | **Notes** |
| Dynamic grid (4x4–10x10) | Controlled by sliders |
| Tile system | Visual representation and number logic |
| Number input system | Tap/click to place numbers |
| Notes/pencil marks | Toggleable |
| Error checking | Optional toggle for highlighting mistakes |
| Hint system | Limited use per puzzle |
| Undo/redo system | Store game states |

## UI & Accessibility Features

|  |  |
| --- | --- |
| **Feature** | **Notes** |
| Main menu | Start game, options, quit |
| In-game UI | Timer (optional), buttons, hint/undo toggles |
| Font toggles | OpenDyslexic, Lexend, default font |
| Colour themes | Light, dark, high contrast modes |
| Responsive UI | For different screen sizes |
| Input feedback | Visual and sound cues for success/errors |

## Audio Design

|  |  |
| --- | --- |
| **Task** | **Notes** |
| Background music | Calm, lo-fi/ambient |
| Sound effects | Tap, confirm, error, hint, etc. |
| Audio toggles | Mute music/SFX independently |

## Testing

|  |  |
| --- | --- |
| **Task** | **Notes** |
| Functional testing | Does every feature work as expected? |
| Accessibility testing | Dyslexia support, colour themes |
| Device testing | Multiple Android screen sizes + PC (optional) |
| UX testing | Is the experience relaxing, clear, and helpful? |
| Playtest feedback | Ask friends, dev forums, Reddit, etc. |

## Content

|  |  |
| --- | --- |
| **Task** | **Notes** |
| Build sample puzzles | Manually or with generator (start with 4x4–6x6) |
| Create level progression | Easy → Medium → Hard |
| Optional: daily puzzle mode | Use date-based seed |

## Polish & Optimization

|  |  |
| --- | --- |
| **Task** | **Notes** |
| Add animations | Smooth transitions, tile highlights |
| Particle effects | Subtle polish like number entry |
| Mobile optimization | Scaling, memory usage, resolution handling |
| Add splash screen / app icon | Brand the experience |
| Final bug testing | Stability and edge cases |

## Publishing (Google Play)

|  |  |
| --- | --- |
| **Task** | **Notes** |
| Create signed APK/AAB | Use Unity’s Android build settings |
| Fill in Play Store listing | Title, description, screenshots, promo images |
| Upload and test via internal release | Install on phone |
| Submit for review | Wait for Google approval |
| Add privacy policy | If using analytics or ads |

## Post-Launch

|  |  |
| --- | --- |
| **Task** | **Notes** |
| Monitor feedback | Google Play reviews, emails |
| Release updates | Bug fixes, new puzzles, features |
| Add analytics (optional) | Track usage and engagement |
| Plan content roadmap | Themes, daily challenges, etc. |

# References

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