Production Document - Color Dash Development Journey

Introduction

Color Dash evolved from a concept inspired by color-based puzzle games, specifically targeting a broad audience with its casual, yet engaging mechanics. This production document outlines the development process, teamwork, individual contributions, playtesting feedback, and personal reflections.

Game Development Progress

Initial Concept and Inspiration - Color Dash drew from games like Hue, but aimed to simplify the puzzles for wider appeal. The game features a robot protagonist, the Color Guardian, on a quest to restore color to a monochromatic world, symbolizing narrative progression and emotional journey.

Major Iterations and Decisions.

In the development journey of our game, the team executed several important iterations and enhancements, aimed at refining gameplay and the player's experience.

Refined Team Roles and Preliminary Development

- The project started with a strategic reallocation of tasks among team members based on our key strengths and the time allotted for the project:
    - I (Rene) became responsible for designing and writing the scripts for the starting menu, level selection, pause menu, and integrating these elements, in addition to overseeing project management.
    - Caleb focused on designing the initial three levels, embedding new mechanics aligned with the game design documen, alongside sound design and debugging.
    - Iatisam focused on the design for levels 4 to 6, improving the game's theme, conducting user testing, and designing and implementing the win screen.
    - Carlos established the major foundational mechanics, providing a solid base for Caleb and Iatisam to build upon.

Development Highlights and Iterative Enhancements

- **Gray Scale Effect Development -** A significant milestone was the development of the Gray Scale Effect involving shader coding in Unity. Carlos played a crucial role in this.
- **Asset Selection** - The PlopSaga pixel art collection from the Unity Store was selected based on it graphics and the look and feel we were going for and outlined in our initial design. This was instrumental in bringing our initial game vision to life.
- **Mechanic Refinements and Level Design** - The team worked through some tricky design and technical changes, including bringing back the way color affects how you play the game. Caleb and Iatisam designed levels 1-6, adding new challenges and making sure the game gets harder as you go.
- **Interface Implementation and User Testing**: I then integrated the designed menu interfaces and code in three iterations.,
    - **Iteration 1**- In the first iteration of the start, pause, and level selection menus, the design was basic, featuring a standard user interface (UI) without any animations and not aligning with the game's overall aesthetic. Following the collection of feedback from player testers, I undertook a significant redesign. I incorporated elements and designs from the game's levels into the menus, ensuring a cohesive look and feel across the game. Additionally, I utilized Unity's Animator feature to animate button objects, the game logo, and various background elements, thereby enhancing the visual appeal and user engagement.
    - **Iteration 2 pause menu** - The initial design of the pause menu functioned as a separate scene, activated when the player pressed the escape key. However, based on user feedback, it became apparent that this approach disrupted the gameplay experience. Responding to this, I developed a second iteration of the pause menu. I revised the underlying code to enable a UI canvas object that toggles on and off over the current game scene upon pressing the escape key. This approach proved to be more practical and seamless for pausing the game, as it maintained the player's immersion by avoiding the transition to a separate scene.

    - **Iteration 3-** In the third iteration, I focused on enhancing the interactive experience of all three menu screens. I implemented a button audio manager to trigger a distinct sound effect with each button click, adding an auditory layer to the user interaction. This addition was aimed at enriching the sensory feedback provided to the player, further aligning the menus with the game's immersive environment. Overall, these iterative refinements caused by user feedback and technical improvement, resulted in a set of menu screens that were not only visually and functionally integrated with the game but also contributed to a more engaging and cohesive user experience. The process underscored the value of iterative development and user feedback in achieving a polished and user-centric interface design.
- **Gameplay Enhancements -** Based on user feedback, significant gameplay enhancements were made, including the introduction of a mechanic allowing players to defeat enemies by jumping on them similar to that of the Mario Bros game. This addition, while not originally in the GDD, represents a key strategic shift in our development process. It reflects our adaptable approach and dedication to player satisfaction..
- **Animation and Sound Improvements-** We enhanced the game's atmosphere with animations, sound effects, and visual improvements. These additions create a more immersive and engaging gameplay experience
- **Debugging and Final Adjustments -** The final development phase focused on debugging, sound integration, and fine-tuning game mechanics. These efforts ensured a polished and cohesive gaming experience, aligning with our vision and user expectations.
- **Conclusion and Final User Feedback**- our development efforts was validated through a final round of user testing. The feedback was overwhelmingly positive, reflecting the successful incorporation of enhancements and the game’s evolution based on iterative feedback.

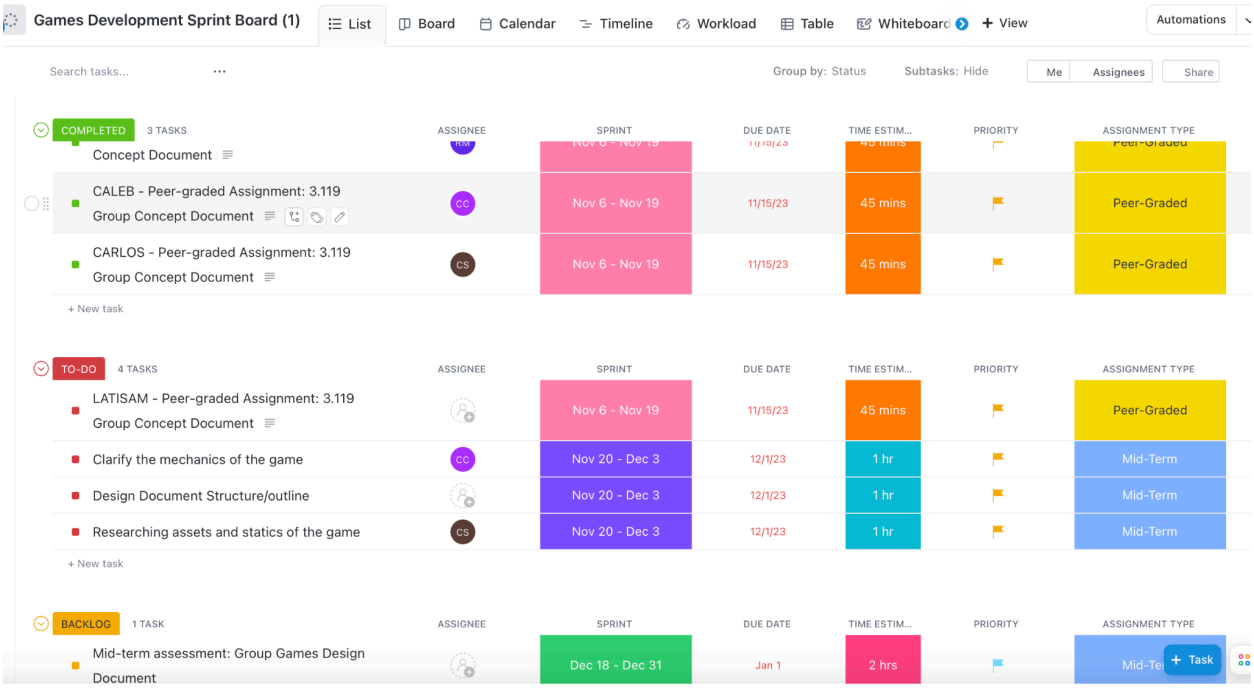
Problems Encountered

- **Animated Menu Backgrounds -** While working on animated backgrounds for the menu screens, I initially tried to use an MP4 file directly in Unity by attaching it to a raw component. This approach hit a roadblock when the MP4 file wouldn't show up in the

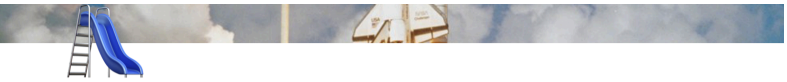
component's selection menu, hinting at a compatibility issue. In the midst of figuring this out, Unity crashed unexpectedly, leading to the loss of some progress. Despite this hurdle, I quickly managed to get back on track and restore what was lost. I then shifted to using Unity's built-in UI tools, particularly the animator component, which allowed me to successfully create the animated backgrounds for the starting menu screens. This experience taught me the value of regular and incremental commits vs committing my work in large chunks to prevent significant loss of work, a lesson I'll carry forward in my future projects.

Teamwork and Collaboration

- **Work Distribution:** The work was carefully divided based on individual capabilities and strengths, as outlined in the task division image, utilizing ClickUp for task management and sprint planning which I was incharge of. You may view and example of our sprint board below:



- I also decided to utilize notion.so for collaboration and meeting agendas you can view and example our notion's teamspace below:



Work Docs & Assignments

▸ **Sprint 1 - Individual Design Docs**

▾ **Sprint 2 -**

Design Document Draft

- ...

Clarify the mechanics of the game

- ...

Researching assets and statics of the game

- ...

Game Development Asset List.pdf 56.5KB

Player/character experience.

- List

Add New Agenda

Agenda Friday [Date]

Weekly updates

Please post your updates below

- latisam
  - Press 'space' for AI, '/' for commands...
- Rene
  - List
- Caleb
  - List
- Carlos
  - List

Game Development Asset List.pdf 56.5KB

Questions and discussions

Please post questions and talking points below

- latisam
  - ☐ ...Are you comming to our next meeting tommorrow?
  - ☐ yes
- Juliet

- **Challenges and Successes**

Coordinating the integration of art, design, and code posed significant challenges. However, our effective sprint management and collaborative

Teamspace Home

👋 Welcome to the team! Our mission is to:

🎮 For our final project, we are building a game using Unity. It's a cross-platform game engine that allows us to design a 3D games. Our team is working diligently to create an immersive and engaging game that showcases our skills and creativity.

Team Resources

- Weekly Team Update Meeting
- Work Docs & Assignments
- Team Sprint Board
- Game Design Document

problem-solving were key successes. Additionally, we faced challenges with version control, which led to the project becoming corrupted due to some incorrect usage of branches and executed commands. We were able to resolve the issue by merging two branches, completely deleting mine, and then deciding to work exclusively from the main branch moving forward. To prevent any further issues, we also decided to switch to using SourceTree instead of the terminal, as it offers a user-friendly interface for pulling, committing, and pushing changes. Encouraging my team to actively use the sprint kanban board and notion document I set up also proved challenging. I aimed to have everyone post updates on their tasks, highlighting successes, issues, and next steps or questions. Despite integrating the ClickUp app with our Slack channel for task updates and deadline reminders, the team showed a preference for live Slack meetings for all updates. This preference made it difficult to ensure consistent and structured progress tracking.

Contribution Statement

Throughout the development of the game each team member played an important role in transforming our initial concept into an actual game. The following is an assessment of individual contributions to the project, alongside a fair estimate of the percentage of work contributed by each team member.

Carlos (25%)

- **Core Mechanics Programming -** Built the foundational code that governs how the game operates. This includes aspects like physics calculations, how players interact with objects, and overall game behavior. Essentially, he programmed the core functionality that makes the game playable.
- **Quality Assurance and Iteration -** Tested the game functionality to identify bugs and issues impacting the player experience. He then suggested solutions and fixes, likely contributing to multiple development cycles to ensure a polished final application.

Caleb (25%)

- **Level Design -** Suggested and implemented the core gameplay mechanic color-based platforming and designed Levels 1, 3, and 4. Additionally, adjusted difficulty in Levels 2, 5, and 6.

- **Mechanisms Implementation -** Implemented mechanics related to colored objects interactions, object destruction, spawn points, traps (based on user testing), audio triggers, button lock/unlock in level selection, and improved existing mechanics.
- **Debugging -** Fixed various bugs throughout the game, including audio delay, grayscale object visibility, screen element overlapping after compilation, particle effect layering, and removed unused obstacles.

Iatisam (25%)

- **Level Design (Levels 2, 5, and 6) -** Designed these levels, incorporating challenges and obstacles for engaging gameplay.
- **Game Win Screen Design and Implementation -** Created and implemented the game win screen, ensuring a smooth transition from gameplay.
- **Mechanisms Implementation -** Introduced the jump'n'run mechanic for dynamic gameplay and integrated various mechanics to enhance interactivity.
- **Audio Integration -** Implemented sound effects and background music that complement the gaming experience.
- **Theme Enhancement -** Improved the game's visual theme and included animations for better aesthetics.
- **Liveliness Integration -** Added dynamic animations to make the game world feel more alive and responsive.
- **User Testing -** Organized and conducted user testing to gather valuable feedback and identify areas for improvement.

Rene (25%)

- **Game Menu Design -** Designed the visual layout and style of the main menu, pause menu, and level selection screen. Ensured these interfaces were both user-friendly and visually aligned with the game's overall theme.
- **Menu Functionality Development -** Coded the underlying logic that makes the menus interactive and functions with the rest of the game. This includes how players navigate between menus, select options, and transition between different game states (playing, paused, level selection, etc.)

- **Project Logistics Management -** Organized and tracked the team's progress. Responsibilities included scheduling meetings, assigning tasks, and maintaining a timeline to ensure project goals were met.
- **Team Leadership -** Provided guidance and support to the team, fostering collaboration and driving timely completion of project milestones.
- **Direct Design and Development -** Actively participated in the creation of the game's menu systems, utilizing Unity's tools to build the UI elements and the necessary scripts to make them function as intended as well as testing the functionality.
- **Total: 100%**

Reflections and Takeaways

The iterative nature of the Color Dash game development has taught me the significance of adaptability and continuous refinement/ improvement. In the early stages, we encountered several roadblocks, particularly with the integration of different game components. This experience has taught me the value of flexibility in game design and the necessity of revising ideas in response to technical and gameplay challenges. In retrospect, the task of integrating the artistic elements, design principles, and coding for the menu screens presented a unique set of complexities. If I had fully grasped the depth of these intricacies at the beginning, I would have pushed for a comprehensive prototyping phase focused on these aspects. This approach would have allowed us to uncover and solve the integration challenges between the UI design and the underlying code much sooner.

The process of creating animated backgrounds, for instance, highlighted the need for a more detailed exploration of Unity's capabilities and limitations. Initially attempting to use MP4 files for animations, and encountering technical hurdles, was a learning curve that could have been flattened with referencing lectures and additional research beforehand. Such a phase would have provided valuable insights into alternative methods, like Unity's UI animation tools, which ultimately proved to be the solution.

Furthermore, the simultaneous responsibility of managing the project compounded the challenge, emphasizing the importance of a methodical

approach to task prioritization and workflow management. An early focus on prototyping the menu screens could have not only streamlined their development but also offered lessons in balancing creative and managerial duties more effectively.

Time Management and Multitasking Challenges

In addition to the technical and creative challenges encountered during the development of the game, managing my time effectively emerged as a significant obstacle. Balancing the demanding workload of this project with the responsibilities of coding applications for other modules was a test of my organizational skills and discipline.

Juggling multiple projects required a strategic approach to time management. It was crucial to prioritize tasks, set realistic deadlines, and allocate my time efficiently across projects. Despite these efforts, there were instances where the overlap in deadlines led to stressful situations, challenging my ability to maintain focus and productivity.

This experience has been enlightening, teaching me the importance of foresight in planning and the value of flexibility in adjusting to unforeseen demands on my time. It has also highlighted the necessity of self-care and maintaining a balanced workload to prevent burnout.

Playtesting and Feedback

Playtesting at various development stages was critical, providing insights that significantly influenced the game's evolution. Feedback on the GrayScaleEffect was positive, affirming our technical direction and the visual impact of this feature. Initial player responses however highlighted the need for more intuitive controls, prompting us to refine the control scheme to ensure a seamless and enjoyable player experience.

Player testing for the starting and pause menu also revealed that the logic I wrote for the quit game button malfunctioned continuously or did not function at all in some instances which led me to revisit the code and rewrite the logic that controlled the button. Players also commented on the initial design being too plain and not completely matching the overall theme of the game which led me to incorporate more designs from each of the existing game levels into the menu design to match the look and feel of the game.

Each playtesting session served as a milestone, steering the game's progression and refining both gameplay mechanics and UI/UX design. The feedback gathered was diligently reviewed and often led to immediate iterative improvements, demonstrating the game's growth and our team's commitment to quality.

Conclusion

The development journey of the game with its ups and downs, has been a good learning experience. It highlighted not only the collaborative effort required to bring a game to life but also the personal growth that comes from navigating the challenges of time management and multitasking. Moving forward, I will apply these lessons to future projects, ensuring a more balanced and effective approach to project management and personal development.