CMPE 491

SENIOR PROJECT 1

Project Name

Astroni

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1. Introduction

Welcome to the fascinating world of "Astroni", an epic 2D top-down adventure pixel art game that will transport you to the enchanting land of Eldoria. In this expanded introduction, we will paint a vivid picture of this immersive gaming experience by delving into the intricacies of its engaging story, interactive game mechanics, and exciting features.

1.1 Description

Project "Astroni" is an exciting 2D Top-Down Adventure Pixel Art game developed using Unity Game Engine. The game is set in the fascinating world of Eldoria, where the legend of the lost star Astroni has captivated the hearts and imaginations of all different races.

In the mystical land of Eldoria, the legend of the lost star Astroni has been a source of hope and wonder for countless generations. Our story follows Emelcuil, a young and adventurous elf who falls deeply in love with this ancient legend. One fateful night, Emelcuil has a mysterious dream that reveals a cosmic map that directs him to the truth behind Astroni's disappearance.

The map reveals several stars, each representing a different region of Eldoria, and these celestial waypoints give rise to separate chapters in Astroni's grand narrative. Emelcuil's mission is to follow the stardust and piece together the puzzle surrounding the missing star.

During the first stage of his journey, Emelcuil encounters a wise sage who is knowledgeable about the legend of Astroni. This sage becomes Emelcuil's guiding light and helps him on his epic journey.

Throughout the adventure, Emelcuil interacts with characters of various races living in Eldoria. The player's choices and their relationships with these characters play a crucial role in revealing Astroni's secrets. As Emelcuil progresses, he will encounter those seeking the power of Astroni, leading to encounters and conflicts that will test his resolve and determination.

1.2 Constraints

1.2.1. Implementation Constraints

- Github and Trello will be used for project management, tracking and work Task distribution and task tracking will be managed via Trello. Shares and the common project file will be managed via github.
- C# development will be made for the project to be developed with Unity Game Engine. It will be done in Rider IDE and Unity's own libraries will be used.
- Copyright-free models and sounds will be used for the assets to be used in the project. We will also use our own developed assets in the game.
- The game will be optimized to be played on both mobile and computer platforms.

1.2.2. Hardware Constraints

- The game "Astroni" is intended to be released on multiple platforms such as PC, mobile devices and possibly game consoles. Each platform has unique hardware features, screen sizes and input methods.
- Ensuring the game runs smoothly on these platforms is a major constraint. It may require adapting the game's controls, optimizing the graphics and adapting to different screen resolutions.

1.2.3 Software Constraints

- A version of Unity that aligns with the project goals will be selected and potential updates will continue to that version during development.
- Plugins will be optimized to be compatible with the Unity version.
- With support for multiple platforms, the game's code base will be adapted to accommodate different operating systems and hardware configurations.
- Cross-platform development, attention will be paid to platform-specific APIs, UI tuning and compatibility testing.

1.2.4. Health and Safety Constraints

- Content ratings are crucial to ensuring the game is suitable for players of all ages. Restrictions in this area will include the need to restrict certain content, themes, or visual elements to meet certain age-appropriate ratings such as For Everyone For Teens or For Adults. Adhering to content ratings is crucial to reaching the target audience and avoiding potential editing issues.
- Accessibility requirements may include customizable control options, subtitles, and features for gamers with hearing or vision impairments.
- The game may contain content that may be disturbing or triggering for some players. Implementing appropriate content warnings and options to skip or replace such content is a restriction on players' welfare. The development team will decide how to handle potentially sensitive themes to ensure the player's safety and comfort.
- Care will be taken to carefully evaluate and comply with relevant legal requirements to avoid legal issues that may affect the development and release of the game.

1.2.5. Ethical Constraints

- The content of the game, including themes, narrative and visual elements, will comply with ethical standards. With this restriction, the development team will avoid content that promotes discrimination, hate speech, or offensive stereotypes.
- Ethical restrictions also extend to the game's handling of player data. Protecting player privacy and ensuring that data is collected and used responsibly will be among our core ethical considerations.
- The implementation of in-game purchases and monetization strategies will be ethical. This will include transparency in pricing, avoiding predatory practices that exploit players, and providing value for real-world money.
- The game's potential real-world impact is an ethical consideration, and developers are aware of how the game's themes and mechanics may affect players' attitudes and behavior and will take steps to ensure a positive impact.

1.3. Professional and Ethical Issues

- Professional behavior within the development team is essential. Maintaining a positive and collaborative work environment, respecting team members, and communicating effectively are essential professional issues.
- Promoting diversity and inclusion within the development team is both an ethical and professional matter.
- Complying with copyright and intellectual property laws is a professional restriction. This includes securing rights to any third-party assets and ensuring that game content does not infringe the intellectual property of others.
- Open and transparent communication with stakeholders, including players, is a professional matter. Providing accurate information about the game's features, development process and changes is important to maintain trust.
- Conducting comprehensive quality assurance and testing is a professional imperative. Providing players with a polished and error-free game is very important for the game's reputation and player satisfaction.
- Professional conduct includes listening to players' feedback and responding to their concerns. It's important to fix bugs, make improvements based on feedback, and maintain a healthy player-developer relationship.
- Developers have a professional and ethical responsibility to contribute positively to the gaming community and society. This includes promoting fair play, addressing harmful behavior, and supporting social causes where appropriate.

2. Requirements
2.1. User Requirements

Engaging experience: Engaging experience: The game should deliver an engaging experience that sparks players' imaginations, offering an immersive, interactive and visually stunning adventure in the pixel art world of Eldoria. The game will feature stunning pixel art visuals that will immerse players in the world of Eldoria. Players will be able to enhance the immersion of the game by interacting with the game world, characters and objects. "Astroni" aims to provide players of all ages with a game that allows them to have an enjoyable and entertaining experience from start to finish.

Adaptive Difficulty: The difficulty of the game will adapt to accommodate various types of players, from beginners to experienced players. Levels will become increasingly challenging as players progress, allowing newcomers to ease into the game while providing an appropriate level of difficulty for experienced players.

2.2. System Requirements

For the PC version, the following minimum system requirements are required for the "Astroni" game to run. A Windows 7 and MACOS or newer operating system. These requirements ensure that the game runs smoothly on many different PC configurations.

Recommended system requirements are designed for higher visual quality and performance. Windows 10 or newer operating system or MACOS

For the mobile version, the following minimum system requirements are required for the game "Astroni" to run smoothly. Android and iOS operating systems are supported. Minimum requirements are designed to run on a variety of mobile devices. These include processor speed, amount of RAM, and graphics processor capacity.

Recommended system requirements are designed to ensure that the game offers higher performance and visual quality on mobile devices. Suitable for newer and more powerful mobile devices, these requirements provide players with a more in-depth mobile gaming experience.

Internet connection requirements for both platforms are important for updates, multiplayer features, and availability of online content.

2.3. Technical Requirements

Unity game engine: "Astroni" will be developed using the Unity game engine. It is a reliable and widely used game engine that can handle 2D graphics and interactions required for gaming.

C# scripting: "Astroni" will use a C# scripting language for programming; A popular and easy-to-learn language widely used in game development.

2D models: "Astroni" will include 2D models for player understanding and immersion.

Audio: "Astroni" will include audio elements to enhance the immersive experience. Experiences such as background music, sound effects, and voice-overs provide instructions and guidance.

2.4. Assessment Requirements

Player Progress Tracking: The game will have a system to track players' progress and performance. This includes tracking levels completed, items collected, and achievements. Progress tracking will allow evaluation of player proficiency.

Scoring and Metrics: The game will provide a scoring system or metrics to evaluate the player's performance and skill. This may include point-based scoring or other in-game metrics that allow players to measure their progress and compare it with others.

Feedback and Reports: The game will provide players with feedback on their performance. This may include in-game hints, hints, or post-level summaries.

2.5. Game Design Requirements

Engaging Gameplay: The design of the game will focus on creating engaging and immersive gameplay, offering challenges, puzzles and interactions that will fascinate players throughout their journey. The design will be adapted to keep players motivated to explore and progress.

Exploration and Discovery: Game design will encourage exploration and discovery, and players will have the freedom to uncover hidden secrets, information, and unique elements in the game world.

Narrative Integration: The design of the game will seamlessly integrate the narrative into the game. Storytelling elements will be intertwined with game mechanics, creating a coherent and immersive experience. Choices and interactions can change the overall narrative.

Balanced Difficulty: A balance will be struck between game design, difficulty and accessibility. Difficulty levels will adapt to the player's skill, allowing both novice and experienced players to enjoy the experience.

Pixel Art: The visual design of the game follows the pixel art aesthetic and will contribute to the overall atmosphere of Eldoria.

Interactions with NPCs: Players will be able to meaningfully interact with characters of different races. The game design will streamline dialogue options and relationship mechanics, allowing players to connect with in-game characters and learn more about the legend of Astroni.

Progression and Upgrades: "Astroni" introduces a progression system that allows players to improve their character's abilities, equipment, or other in-game elements.

3. References

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