

SENIOR PROJECT PROPOSAL REPORT

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1.TITLE OF THE PROJECT

Syncopation

2. AIM:

We are planning to present a Rhythm-based 2D platformer puzzle game that has a set of generated stages those classified by difficulty levels. While moving freely with the character, player must jump, shoot, and time the movement patterns of the shifting objects by conforming to the rhythm of the music.

Another special feature is the player can play with own uploaded music. There will be some limitations on chosen music but the idea is calculating the tempo of the uploaded music to play it on an endless parkour map.

Survive the tricky designed levels where one missed note can lead to your death. Gain new unique abilities as you progress in the game and get a chance to have an immersive experience.

(Clearly explain what the project aims to achieve. What are the milestone targets you want to achieve, and what is the final product you want to present to the users.)

3. IMPACT and SCOPE:

On rhythm-based games, there are mostly no free movement or any freedom on playstyle. What we want to achieve is making it half rhythm-based so player can decide where and how to use the actions to join to the tempo of the music that is playing. So, player can move on the map freely until any other action button needed.

Adding up the rhythmic gameplay to a 2D platformer game will raise the immersion of the player because of the extra focus needed.

(You should make a literature review (using books, academic papers, existing software projects, etc.) and point out the gap you want to fill. In other words, what are the existing solutions to the closest (if not the same) problem you are solving and explain what will be the concrete need you are addressing.)

(Also explain what is the scope of the project. What is the setting and what are the assumptions you make about the problem you are solving.)

4. MATERIAL ve METHODS:

The movement must be based on rhythm. Player actions such as jump and shoot should begin and end between those times.

Also about the physics part, the physics model maintains information about the character's capabilities and the different types of jumps available. The model includes the character's size, maximum movement speed, initial jumping velocity, and the height the avatar can jump given a short, medium, or long jump button press.

In this way, there will be various limitations according to the status that the player in and this will help the player to stay in the rhythm while playing the game.

MATERIALS:

- Unity Game Engine.
- Adobe Photoshop
- C#/C++/C Programming Languages
- Adobe Audition
- Audacity

(What are the dependent and independent variables of your work, and on top of these variables define what are your success criteria. Then explain the methodology you will use to satisfy these success criteria. Explain the experiments you will conduct to measure how these success criteria will be met. What are the materials you will use in this project. These materials can be hardware/software/also things like cloud services/or any other stuff you need/etc.)

5. EXPECTED BENEFITS:

In Syncopation, all of your actions and the actions that taken by the stage elements are tied to the rhythm of the music. The game itself essentially is a 2D Platformer game but it has innovated by such features as rhythmic and puzzle driven gameplay. You can double jump, dash, shoot and use more unique skills to beat the level.

- Get hooked on the absorbing gameplay and enjoy the music.
- Extra game modes for competitive players: Endless Mode, Challenges.
- The game will offers both, a unique immersive experience and competitive, addictive gameplay.

(In this section, you need to make clear what concrete benefits your project will offer. Who will be your target group/audience? What they get from your product?)

6. REFERENCES:

https://www.researchgate.net/publication/220795055_Rhythm-based_level_generation_for_2D_platformers
<https://dl.acm.org/doi/10.1145/1536513.1536548>
<https://dl.acm.org/doi/abs/10.1145/1536513.1536548?download=true>
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