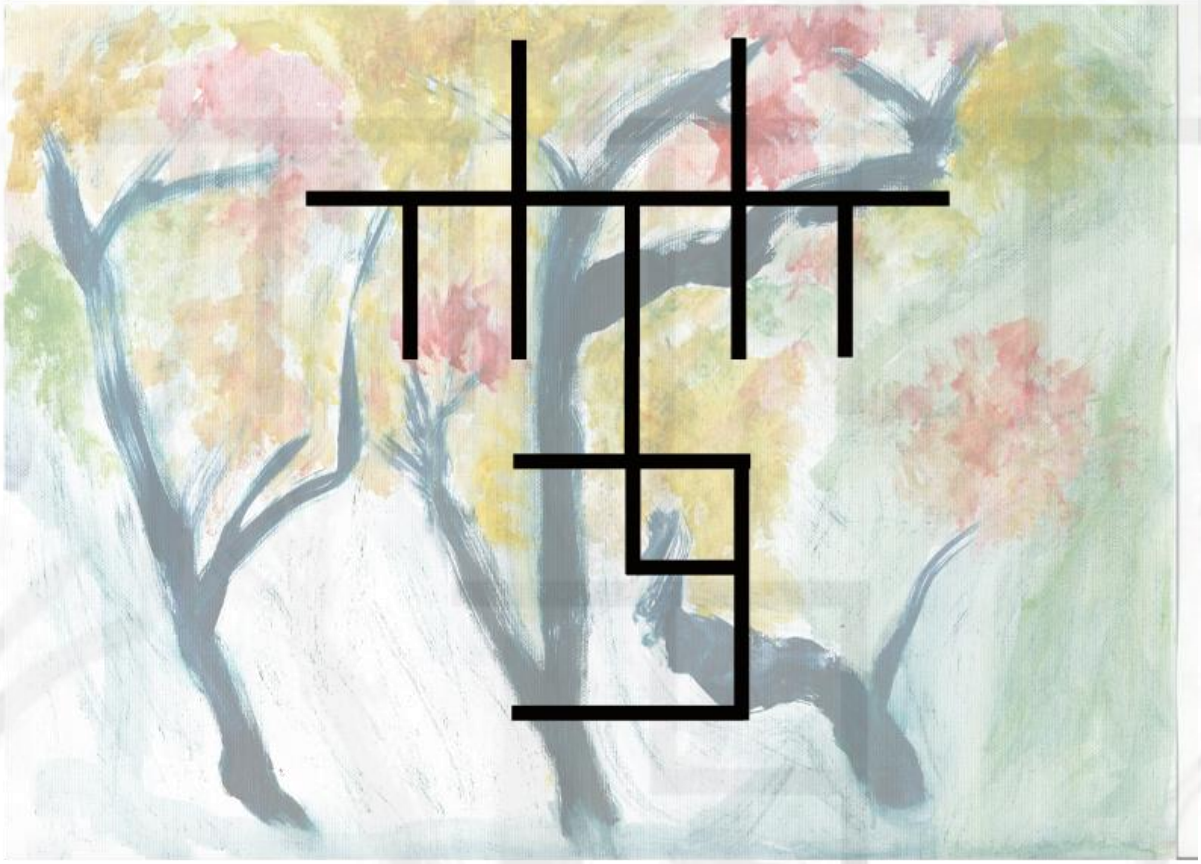
VARIATIONS ON A DREAM

GAME DESIGN DOCUMENT



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1. INTRODUCTION

Variations on a Dream is a first-person music experiencing game, with music-based light gameplay elements from **puzzle** and platform adventure genres. The player plays as a dreamer travels across and explores the fantastic variations (levels)[1] of the **dream** teeming with music, looking for the entrance to the next level of **dream** under the guidance and challenges of the **harmony, melody, rhythm, tempo, dynamics and music style** of the music which is also of the musical form of variation and constantly playing in the background, but functioning as the core mechanics. The player doesn't respond to the music directly but the music affects the environments in the **dream** as well as the player avatar's properties, leading the player in the dark **dream** scenes; however tuneless, ominous sounds may lead the player to the **nightmare** and he/she might wake up. There's no winning or losing in the game, but just the unique way of music experiencing as a journey.

1.1 UNIQUE SELLING POINTS

- **Unparalleled Interactive Music Appreciation Experience:** The game features this experience that immerses the player in the game world and gameplay which are totally based on the game's ludic interpretations and the player's appreciation/perception of the music.
- **Puzzle and Platform Adventure Revolved around the Music:** The game draws classic gameplay elements from puzzle and platform adventure genres and connects them with the basic elements of music.
- **Interrelated Level Design and Music Variations[2] on the Theme of "Dream":** Both the music and the essential game have one enchanting theme—"**Dream**" and based on it variations of the music and the interrelated levels of **dream** are composed, designed and unified.
- **Unlit Environments and Sparse GUI Highlighting the Audio:** The environments of the game are largely unlit to emphasise the player's own exploration with the avatar's dim light under the guidance of **audio clues** in the environments and enhance the experience of the music.

1.2 DESIGN GOALS

- **Unified Experience as a Journey:** The music will be unified with and integrated into the gameplay, creating a whole experience of music-driven adventure emphasising on the process itself but not the results.

[1] In the document, "level", "scene" and "variation" are constantly used as synonyms.
[2] "Variation" in the game as well as the document has two meanings:
1. The different design and implementation of a level of dream;
2. One piece of music based on the theme, and is associated to the level of dream in which it is played.

- **Highlighting Audio Signals:** In the game, visual signals will be properly reduced to highlight the audio signals which contribute to the music-oriented experience the game aims to convey.
- **Moderate Difficulty:** The game's difficulty, on both aspects of the perception/appreciation of the music and the gameplay will be moderate and with an immersive tutorial to appeal to a potentially larger audience.
- **Various Emotions:** The music will vary to express and convey various emotions related to the levels of the **dream**.

1.3 Gameplay Overview

Variations on a Dream conveys a linear experience of variations of **dreams**, in terms of both the game levels and the associated music with each level. As the player travels across and explores a level of **dream**, the player will discover entrance to the next **dream** or the **nightmare** version of the current **dream**. The player, as well, can fall to the **nightmare** as the avatar's **light** dims out or simply fall off from edges. See **Section 2.1** for more detailed explanations.

In the **dream**, the player will experience these gameplay elements:

- **Exploration:** The player explores the largely unlit **dream** scene with the avatar's own light under the guidance of **audio clues** in the scene which produce different **harmony** effects together with the music to indicate the good or bad events/situations ahead in general. There will also be various **consumable items** distributed in the scene to be collected.
- **Puzzles:** The **puzzles** in the game will be totally based on music, containing challenges of musical pattern (**melodies**, **rhythms** and **music styles)** recognition, memorisation and inference related to the music playing in the current **dream**. **Puzzle** solving rewards the player with light and unlocks passage or secret area.
- **Action Platform Adventure**: There will be various traps activated by the **rhythm** of the music. Also there will be challenges of platform jumping and the player's **speed** and **height of jump** are affected by the **tempo** and **dynamics** of the music.

1.4 Target Audience and Platforms

As a game focusing on music experience, ***Variations on a Dream*** aims to appeal to players who enjoy music games and potential players, including true music lovers (especially classical music lovers) and people who have some basic knowledge about music theory (e.g. music students). The game may also attract indie game lovers who would like to try out something new.

As a music game that requires hearing for directions, playing with headphones on is recommended. Therefore, the game aims to be developed for and released on platforms of PC, Mac, iOS and Android.

2. GAME SETTINGS, MECHANICS AND STRUCTURE

2.1 GAME SETTINGS

Variations on a Dream begins from the title scene, where the theme of the music "Dream" is playing and the player can see the painting as the **dream's** motif which will appear at every entrance to the next level of **dream** and indicates that the dream is about the three trees in the painting. As the avatar closes the eyes, the **dream** begins.

Dream is the level/scene where the gameplay takes place. It is composed of adventure game's level elements (e.g. terrain, rooms, passages, traps, **puzzle**s, platforms, etc.) and depicted in a fantastic, dreamlike way. There's one entrance to the next **dream** in every level of **dream** and in some levels there are also entrances to the **nightmare**. Each **dream** has a title suggesting the environment and settings of the **dream** as a variation but there's no explicit narrative content in the **dream/nightmare** but the environments should increasingly stress the implicit environmental storytelling as the game progresses. The music in a **dream** is one variation of the theme music, working as the basis of the gameplay in the level, and also should increasingly stress its narrative characteristics as "ballades".

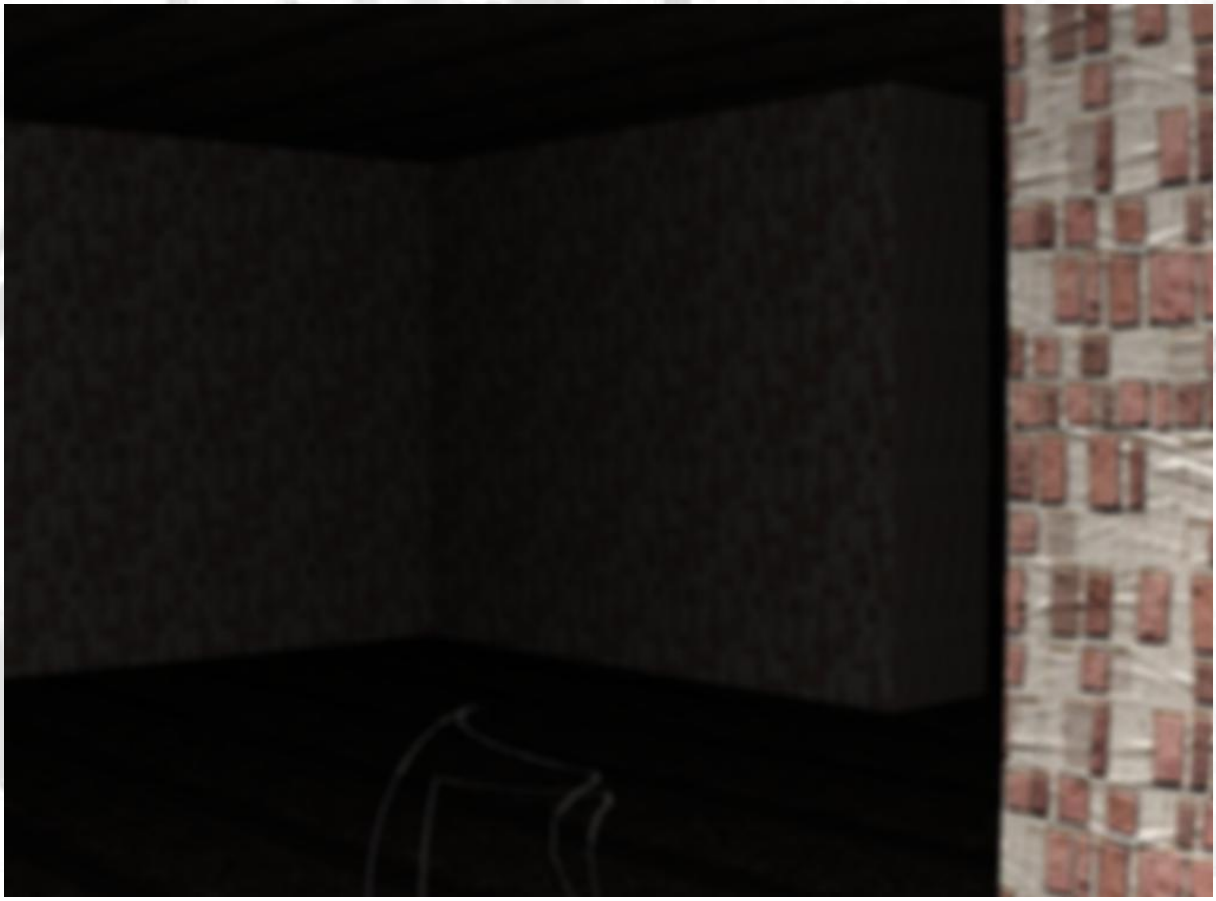

Figure 1. Screenshot of Dream Variation III: Little Maze

Nightmare is the distorted version of the current **dream** with the discordant version of the music in that **dream**. In a **nightmare**, the player is limited to look around and feel the uneasy music as the avatar keeps falling. The **nightmare** is the transition between **dreams** and serves no purpose of gameplay.

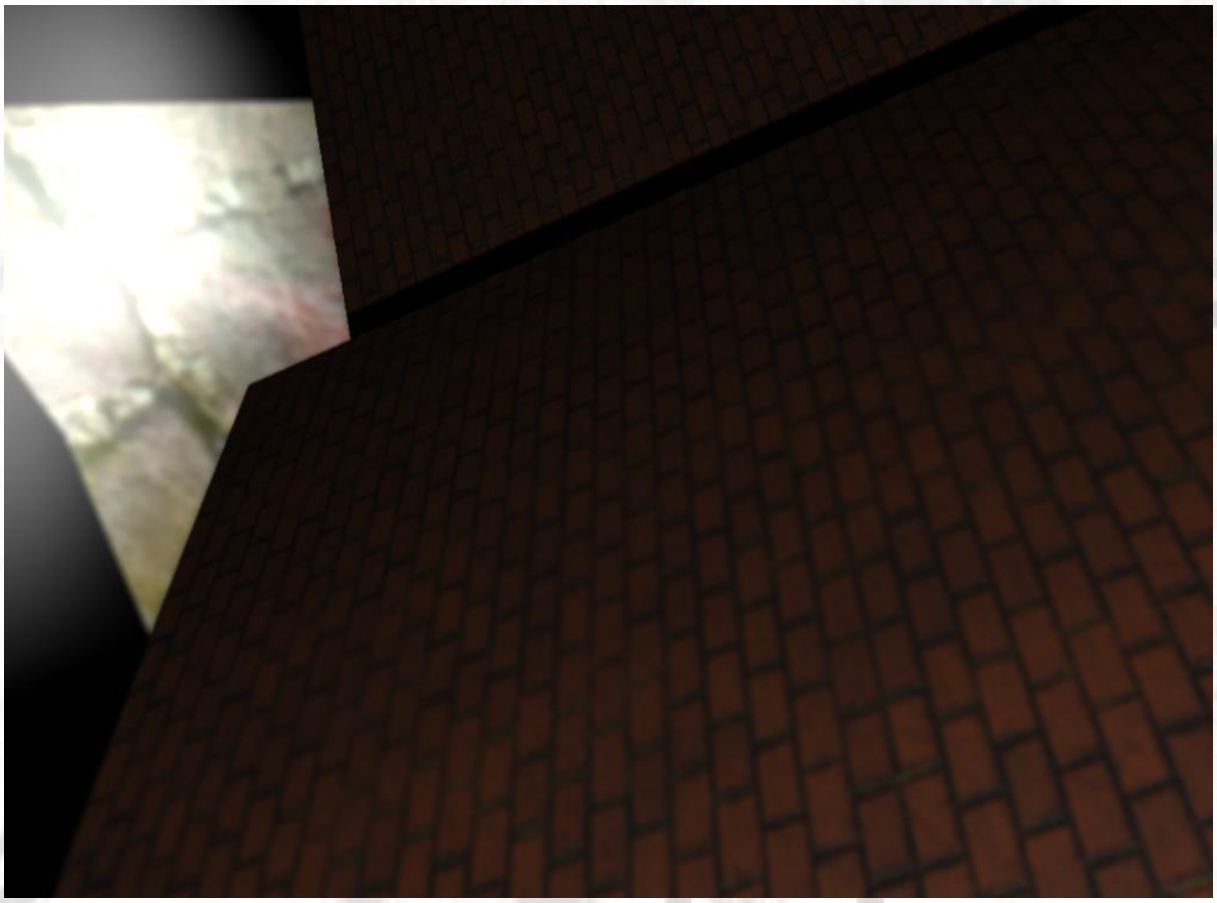

Figure 2. Screenshot of Nightmare Variation III: Little Maze: The player is falling

Figures 1 and **2** show the example of the **dream** and its corresponding **nightmare**.

As an interpretation of the **dream** about falling in real life, the transitions between and progressions of **dreams** and **nightmares** in the game happen along with the avatar's falling from high places to the level and falling off the level.

Figure 3 illustrates how these processes work. As described, when the player reaches the entrance to the next **dream**, the avatar falls off the level to the next **dream**; otherwise when the player reaches the entrance to the **nightmare**, the avatar falls off the level to the **nightmare** and then to the next **dream**. There are other cases where the player will undergo the **nightmare** and then fall back to the current **dream** for retrying, including situations of losing all the avatar's **light** (see **Section 2.2** for further details) and accidental (though usually it is part of the action challenge) falling off the edges in the level. However, the player's avatar will **wake up** to the title scene if the player has experienced too

many **nightmares**, but the player can restart the last **dream** later at no penalty. Section 2.3 will introduce the progressions on the whole game's structure scale.

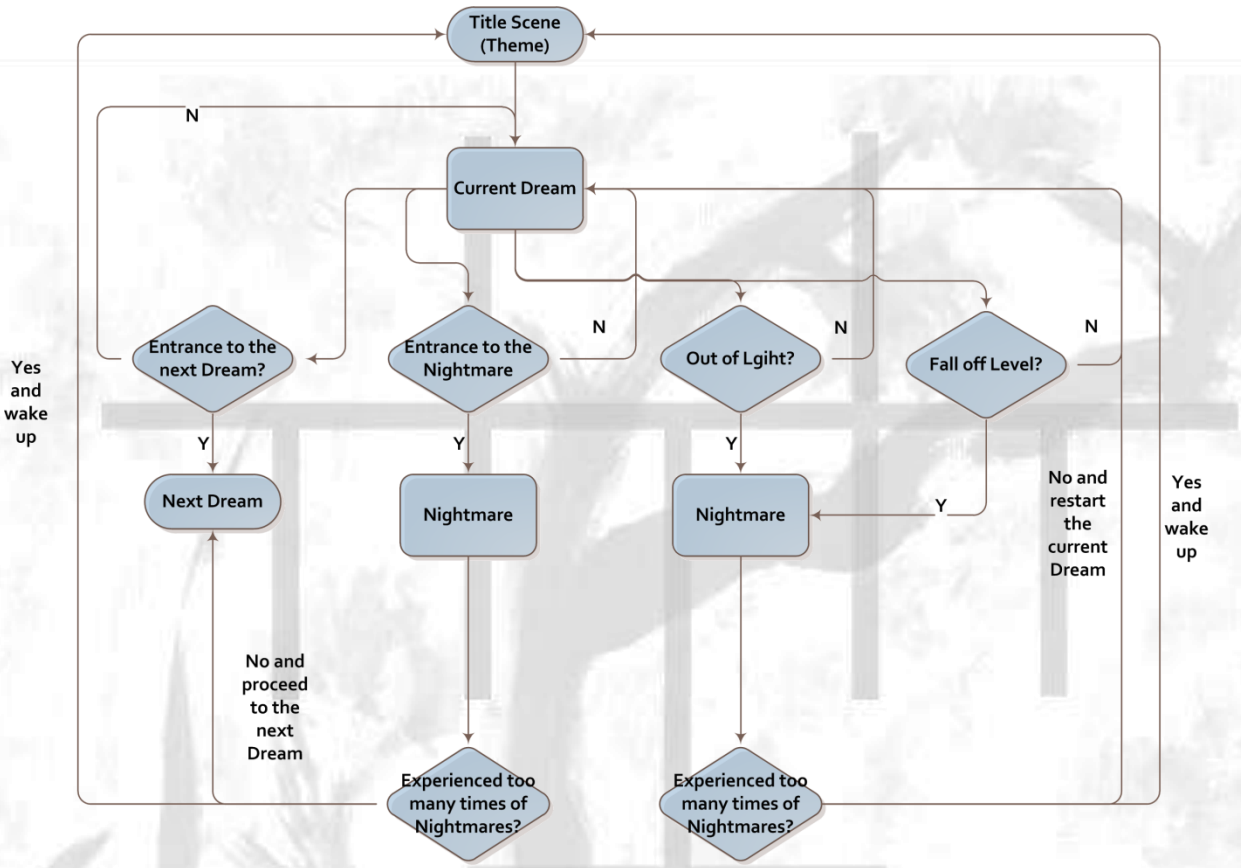

Figure 3. Flowchart of the Transitions between and Progressions of Dreams and Nightmares

2.2 Core Mechanics

This section outlines the core mechanics the gameplay is built on. Specific designs will be exemplified in **Section 5**.

2.2.1 Avatar Actions and Properties

As introduced in **Section 1.3**, the gameplay elements are considered as challenges to be overcome by the player on the journey. The player's avatar is enabled with actions described in **Table 1** to deal with the challenges. These actions are all related to and affected by the musical elements of the music and the player's perception of the music is the key to use these actions to overcome the challenges.

Table 1. Avatar Actions

Avatar Action	Description	Control Scheme
Movement and	The player can move and look around to **explore** and venture forth into the **dream** scene. Together with jump, the player can	PC/Mac: WASD keys and mouse iOS/Android: Slide on the left/right

Observation	collect consumable **items**, avoid **traps** and jump between platforms in the level.	part of screen
Jump	Applied with movement, the player can jump towards a certain direction.	PC/Mac: Space key iOS/Android: Tap on the bottom of the screen
Interact	The player can interact with **puzzles** in the **dream** to solve them.	PC/Mac: E key iOS/Android: Tap on the **puzzle** object

Besides these actions, the player can choose to **wake up** at any moment in a **dream**.

Associating the actions and the music, the player's avatar has properties listed in **Table 2** below.

Table 2. Avatar Properties

Avatar Property	Description
Light	The **light** is the "Health" property in a conventional game context. It is not displayed as an explicit GUI element. The avatar itself is a spot light source to light up the area around. The **light** increases as the player collects the consumable **item** of light or solves the **puzzle** while it dims as the player gets hit by the **trap** of light or makes a wrong attempt in **puzzle** solving. When the **light** dies out, the avatar falls off from the level of **dream** automatically to the **nightmare**.
Speed	The **speed** is how fast the avatar moves. It is instantly affected by the **tempo** of the music and increases/decreases with it.
Height of Jump	The **height of jump** is how high the avatar jumps. It is instantly affected by the **dynamics** of the music and increases/decreases with it.

2.2.2 Design Elements:

Musical Elements:

Since the gameplay revolves around the music, the musical elements therefore provide rich ludic potentials for core mechanics to be designed and developed from. **Table 3** lists and explains the

musical elements utilised in ***Variations on a Dream*** and the interpretations of their ludic properties as the design elements of the core mechanics.

Table 3. Musical Elements and Their Ludic Properties

Musical Element	Ludic Properties
Harmony	An **audio clue** of **harmony** is an audio source in the dream scene. It plays a clip of sound to produce a certain **harmony** effect together with the constantly playing music to indicate the good or bad events/situations ahead in general. **Concordant** sounds (positive) indicate the way out, safe passages, hidden areas with items or entrance to the next **dream**. On the contrary, **discordant** sounds (negative) indicate dead ends, edges, passages with traps or entrance to the **nightmare**.
Melody	Mostly, the **melody** is implemented as a type of pattern in **puzzles**.
Rhythm	All **traps** are activated by the **rhythm** of the music. Additionally, **rhythm** can also be implemented as a type of pattern in **puzzles**.
Tempo (speed of the music)	**Tempo** of the music affects the avatar's **speed**.
Dynamics (volume of the music)	**Dynamics** of the music affects the avatar's **height of jump**.
Music Style	**Music style** is implemented as a type of pattern in puzzles. An **audio clue of music style** plays a clip of music of certain **music style** in the dream scene as a cue for **puzzles**.

The following design elements are presented in the game as **interactive objects**.

Puzzles:

All clues to the puzzles exist in the music. The **puzzles** in the game are mostly optional as part of the rewarding system. Solving them will reward the player with **light** and unlock secret areas and even music as rewards. There will also be some mandatory ones to be solved to unlock the entrance to the next **dream**. When the player looks at a **puzzle object** (a small light spot) at a close distance, it plays an audio clip as the cue and then the player can interact with it to make puzzle solving choices. When the **puzzle** is solved, responding music will be played.

Types of **puzzles** are shown in **Table 4** below.

Table 4. Types of Puzzles

Type	Description
Melody/Rhythm match	The player will hear a **melody/rhythm** clip related to the current music. Several options of responding **melody/rhythm** clips are presented. One or more need to be chosen as the correct match that fits the music (usually in the order of the music playing).
Melody/Rhythm completion	The player will hear an uncompleted **melody/rhythm** clip related to the current music. Several options of **music note/rhythm value** are presented. One or more need to be chosen to complete the **melody/rhythm**.
Melody/Rhythm composition	The free version of the **melody/rhythm completion** type. The player can choose any number of the options and adjust the order of them to "compose" the music clip. In some harder puzzles of this type, **melody** and **rhythm** compositions need to be done at the same time.
Music style match	At the first puzzle of this type in a **puzzle group**, the player will be presented several music clips of different **music styles** (which are also variations of the current music) and any one of them can be chosen. At the following puzzles, the player has to identify and choose the music clips of the same **music style**. The choices from the current **dream** can affect puzzle solving of this type in the following **dreams**.
Puzzle as **audio clue of music style**	Some puzzles also function as **audio clues of music style** as part of the **music style match puzzles**.

In later comprehensive levels, any of the **puzzles** can form a **puzzle group** as a continuous puzzle challenge. **Puzzle objects** can become collectable and usable and increasingly hard to be located, which increases the difficulty of the challenge of **exploration**, involving less passive choice and more generative creativity.

Traps:

Generally, there are two forms of **traps**. One is the projectile trap which is launched across the **dream** scene and the other's position is fixed. **Traps** of both forms are activated by the **rhythm** of music, usually when a strong beat or an accent appears. The types of traps are listed in **Table 5**.

Table 5. Traps of Puzzles

Type	Effect
Light	Decrease the avatar's **light**.
Tempo	Slow down the **tempo** of the music and thus decrease the **speed** of the avatar for a period of time.
Dynamics	Decrease the **volume** of the music and thus decrease the **height of jump** of the avatar for a period of time.

Items:

As with **traps**, there are consumable **items** distributed around the dream scene to be collected. They are instantly consumed upon contact with the avatar and last a much longer period of time than **traps**. **Table 6** lists the types of **items**.

Table 6. Types of Items

Type	Effect
Light	Increase the avatar's **light**.
Tempo	Speed up the **tempo** of the music and thus increase the **speed** of the avatar for a period of time.
Dynamics	Increase the **volume** of the music and thus increase the **height of jump** of the avatar for a period of time.
Dream	Increase the upper limit of the how many **nightmares** the player can experience in a single dream journey.

2.3 Game Structure

Variations on a Dream takes a circular linear structure shown in **Figure 4**, which means that after the player finishes the very last **dream**, the game is reset to the initial state and no past progressions can be reloaded. As what will be exemplified in **Section 5**, the replay experiences can be different as the player chooses to solve certain **puzzles** differently. Together, the structure and the dream/nightmare transitions and progressions introduced in **Section 2.1** form the two layers of the game loops.

Figure 4. The Circular Linear Game Structure

In total, there will be 10-15 levels of dream, each lasting 5-10 minutes. A single journey will take about 1.5 to 2 hours to experience (and that's the average duration of a concert).

In terms of the content of gameplay, the levels can be grouped into two parts. One is the tutorial levels featuring the musical gameplay elements progressively and the other is the comprehensive levels featuring all the elements through various designs (that's what the word "variation" means here!).

Table 7 outlines the content of gameplay in each level.

Table 7. Gameplay Content in Each Dream

	Variation of dream	Musical elements featured
Tutorial levels	I: Two Paths	**Audio clue of harmony**
	II: The Garden	**Melody puzzles**
	III: Little Maze	**Traps**, **items** and **rhythm puzzles**
	IV: Broken Bridge	Mechanics of **tempo** and **speed**
	V: The Mountain	Mechanics of **dynamics** and **high jump** and **music style puzzles**
Comprehensive levels	VI: The Waterfall	The first comprehensive level with various

		recurring gameplay elements
	…	…
	Variation n	The last dream to conclude the journey

3. Audio Design

All the sounds in the game are diegetic and stereo so the environmental sound sources can be located by hearing.

3.1 Music

As the music is associated with the level of **dream** and integrated with the gameplay, the length (2-10 minutes in general) of a variation needs to be relative to the scale of the level. To make the musical elements clear to perceive, concise and minimal music style is recommended and thus the music in the prototype takes the form/style of string quartet and minimalism. However, the music should also meet the design goal of "various emotions". In later comprehensive levels, one variation can be divided into several sections and played separately to be associated with the player's progression in the level.

3.2 Sound Effects

All sound effects are short clips of music to be coherent with the overall game's musical feel. Besides various **audio clues** and **puzzles**, there are also expressive sounds for the effects of **traps** and **items** (e.g. a crescendo scale for the **item** of **dynamics**). In turn, these ludic effects also affect the overall audio experience (see **Section 2.2**).

4. Visual Design

4.1 Perspective

The game takes the first-person avatar perspective model all the time. There's no extra point of view as the whole game experience is to be delivered in the most direct and uninterrupted way.

4.2 Visual Style

The visual style should always stick to the low lighting but **high-contrast** style to highlight the **audio clues** and overall music experience. In general, the lighted background and interactive objects contrast

the unlit environments. Example scenes delineated in this visual style are shown in **Figures 1, 2, 5, 7, 8, 9** and **10**.

Figure 5. Screenshot of Dream Variation I: Two Paths

The visual style of interactive objects in the game is mainly musically thematic and symbolic. **Figures 6** and **7** show some of the textures for the **traps** and platforms.

Figure 6. Music Themed Textures

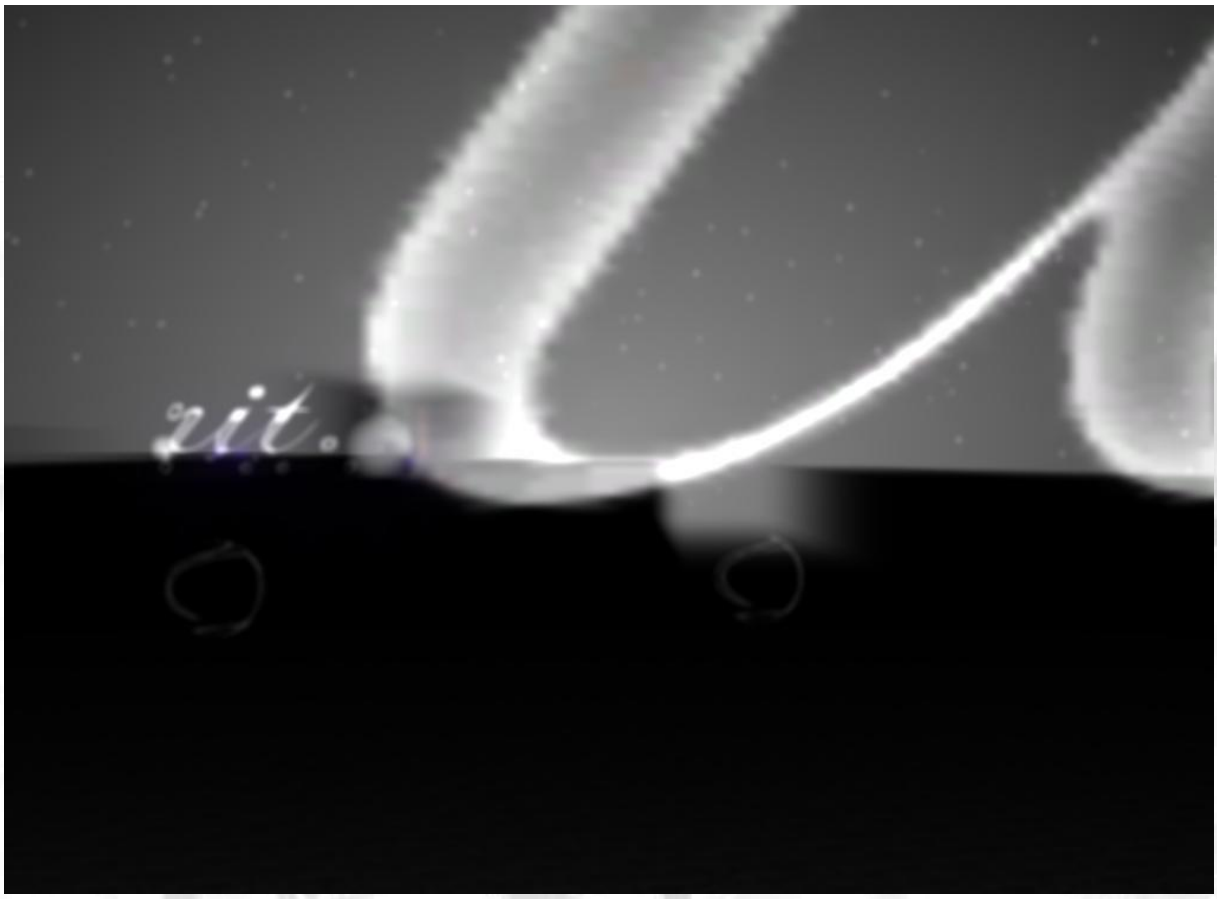

Figure 7. Music Themed Textures Applied to In-game Objects

In addition, white screen fade-in/out is used for the transitions in the **dream** and **nightmare** (See **Figure 9**).

4.3 ENVIRONMENTS

Skybox is used as the background (not light source) for the **dream** and in the nightmare the background becomes mingled with the motif painting. In outdoor scenes, white light shafts are used to depict the dreamlike feel of the environments. According to different scenes of dream, various visual effects such as fog, stars, etc. can be used to help portray the environments. Although the **dream** scene is largely unlit, vital light clues for directions and interactions are usually shown (See **Figure 10**).

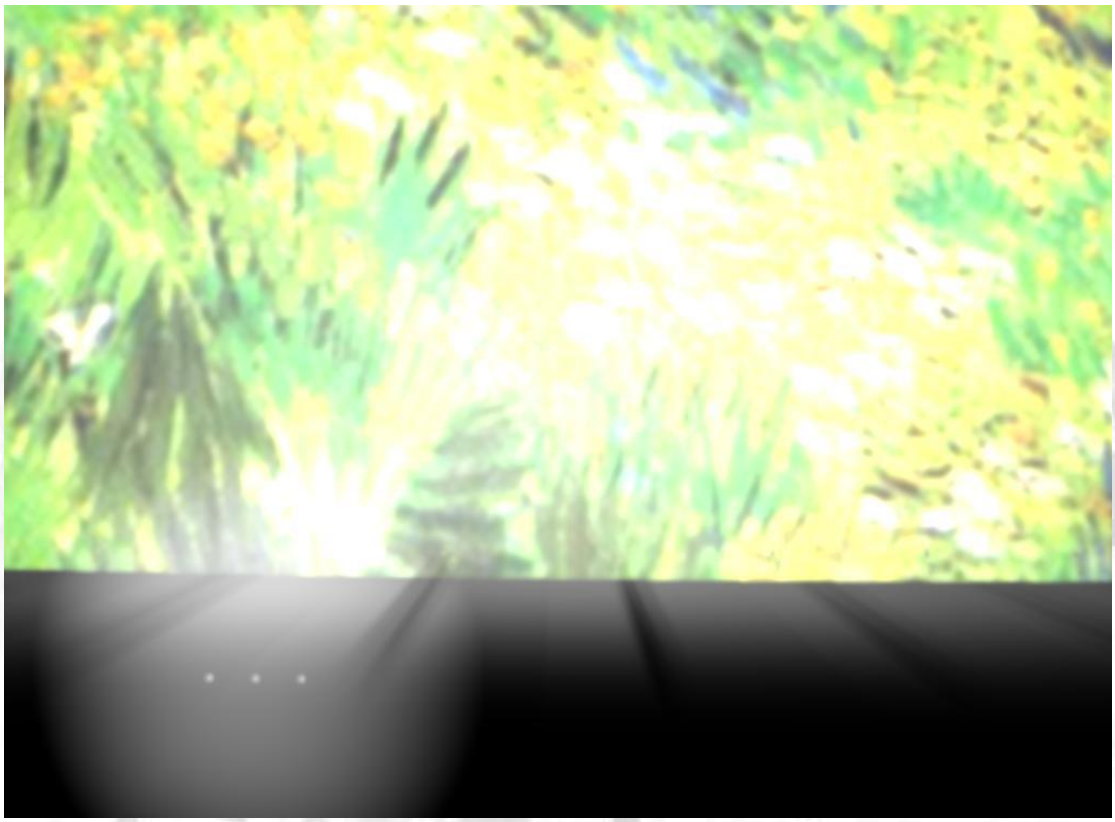

Figure 8. Screenshot of Dream Variation II: The Garden, showing the high contrast skybox, light shafts and a puzzle

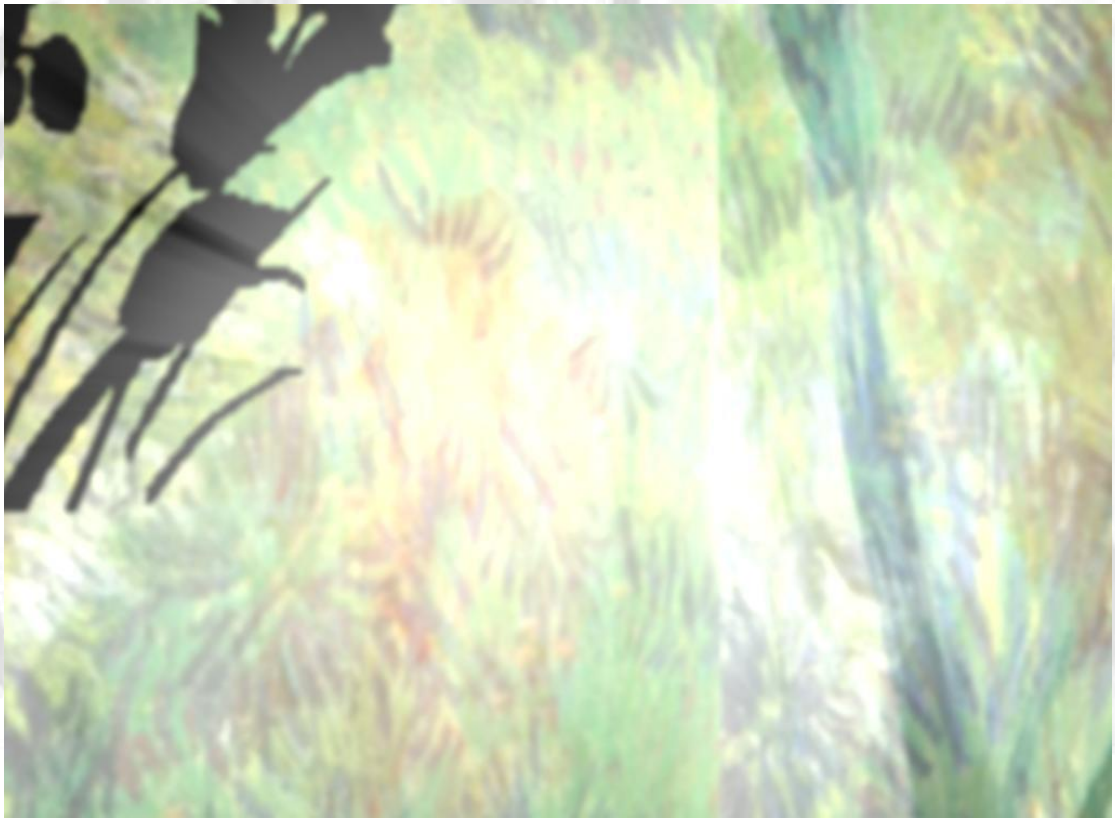

Figure 9. Screenshot of Nightmare Variation II: The Garden, showing the mingled skybox and light shafts (white screen)

Figure 10. Self-lit platforms, puzzles and items and fog effect

4.4 GUI

Sparse, concise GUI also contributes to the more immersive game experience. **Figure 11** sketches out the layout of the title scene (main menu). There will be no more GUI elements besides this one and a simpler in-game pause menu. There will be prompts for **puzzle** interaction for the first time and a small amount of music information.

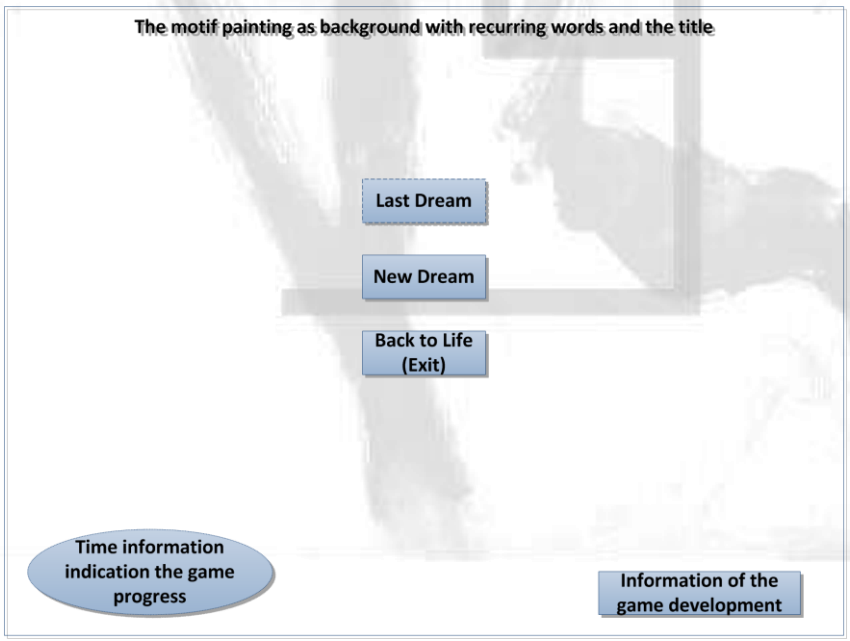

Figure 11. Layout of the Title Scene

5. Prototype Design

5.1 Variation I: Two Paths

Variation I introduces the **audio clue of harmony** and also the controls. It is set in a dark forest with three-colour lighted T-shaped paths which the player is confined to. The music is a simple piece with only one chord. As the player walks towards the negative **audio clues**, the avatar's **light** and forward **speed** will decrease but the backward **speed** will increase as a signal to notify the player of the different sounds on the two paths.

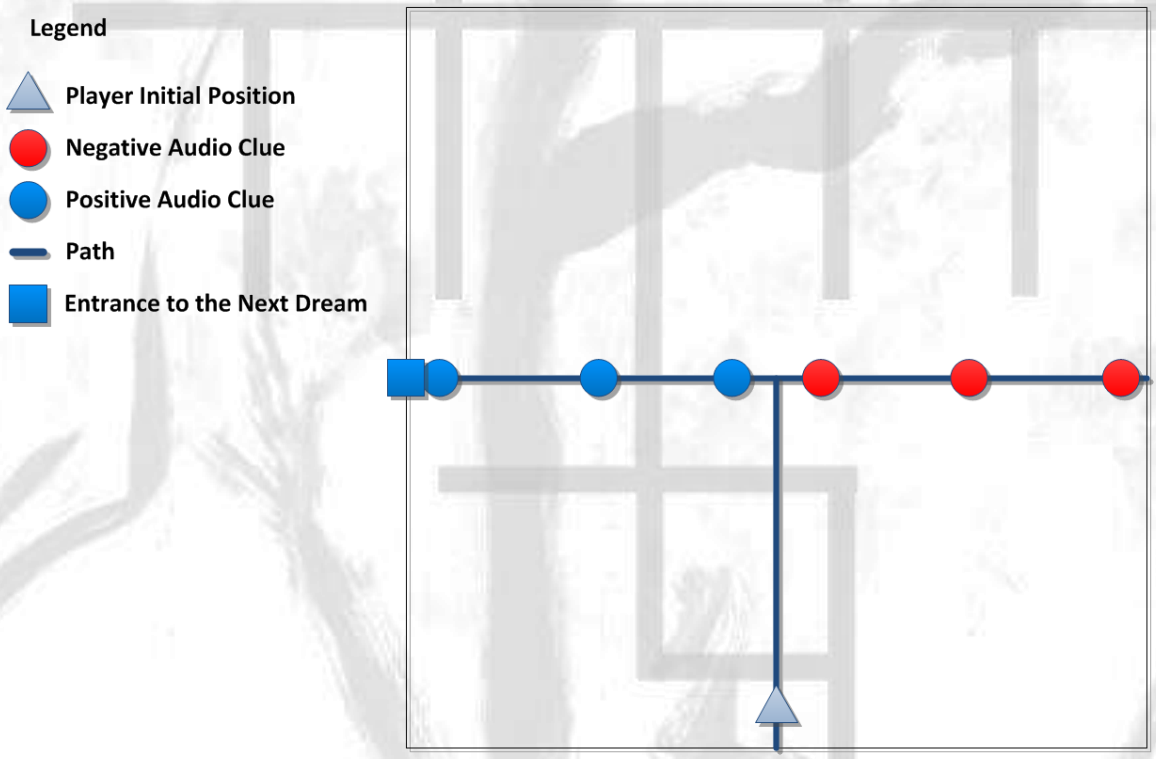

Figure 12. Layout of Dream Variation I

5.2 Variation II: The Garden

Variation II introduces the **melody match puzzle**. It is set in a mysterious open "garden" fenced by walls. The music features repeated patterns of melody. As the player solves the **puzzles**, specific walls become unlocked. The **audio clues** also indicate what's behind the walls.

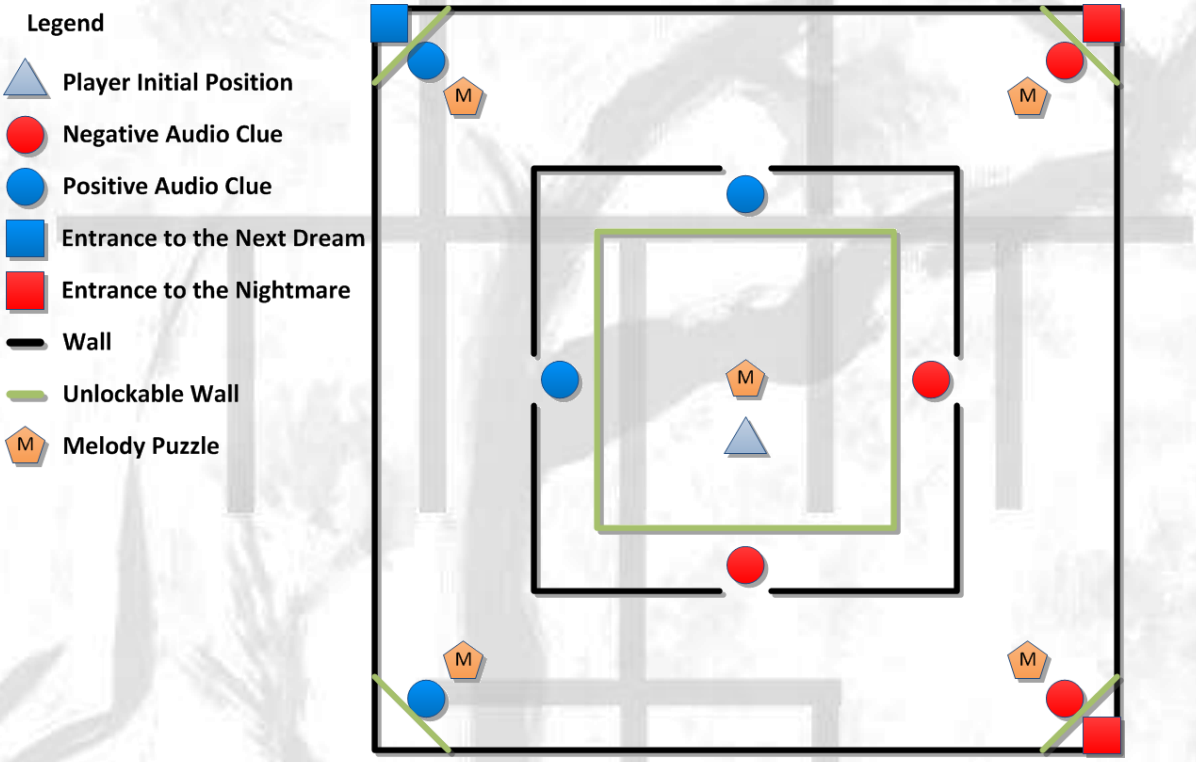

Figure 13. Layout of Dream Variation II

5.3 Variation III: Little Maze

Variation III introduces **traps**, **items** and **rhythm match puzzles**. It is set in a maze of small scale for the player to explore. The scherzo music features different patterns of rhythms. **Traps of light** are projected across the level and **items of light** are also disturbed around. The hidden **item of dream** becomes unveiled after the more difficult second **rhythm match puzzle** is solved. And after the final **puzzle** is solved, the entrance to the next dream finally appears.

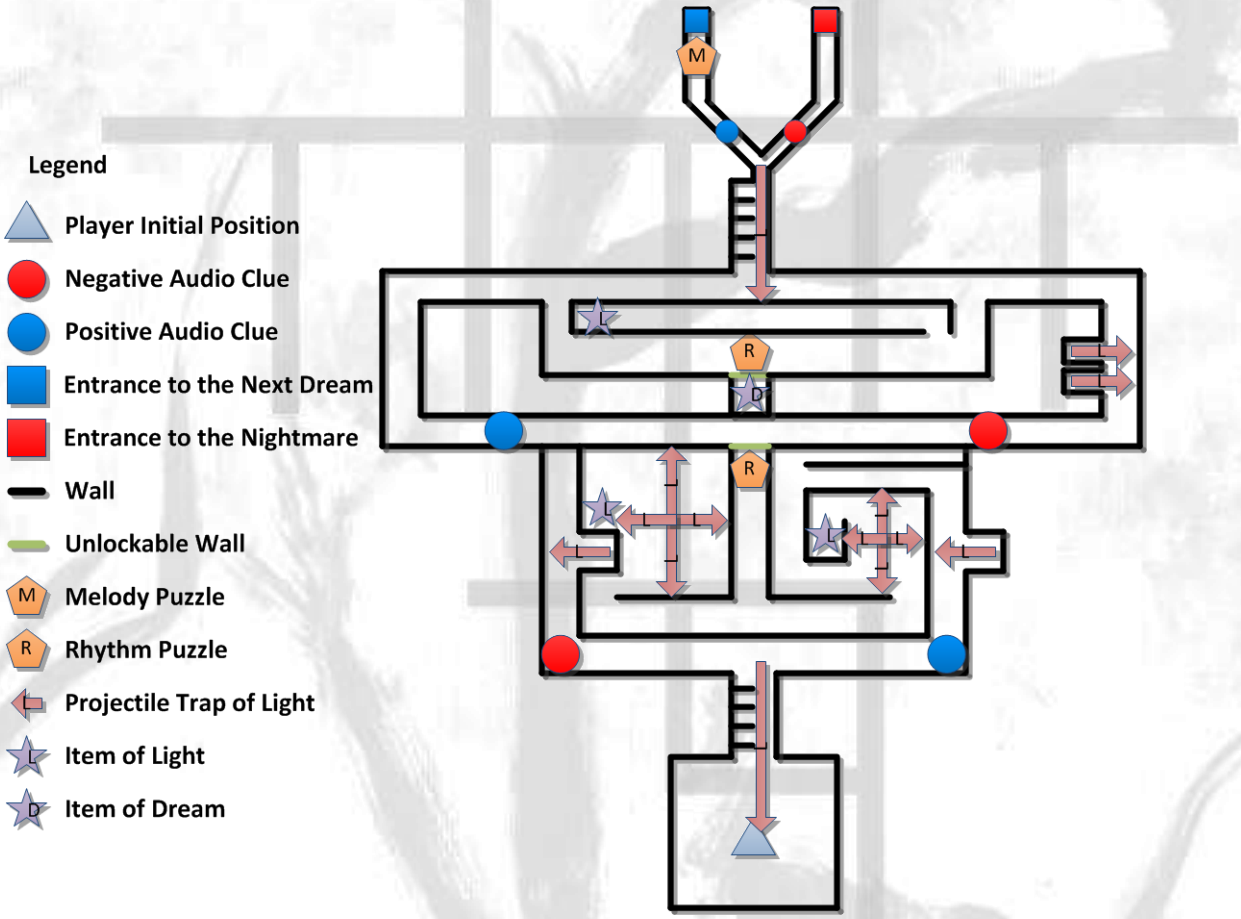

Figure 14. Layout of Dream Variation III

5.4 Variation IV: Broken Bridge

Variation IV introduces the mechanics of **tempo** and **speed**. It is set in the outer space in which a broken bridge floats. The music has a looping pattern of different **tempos**. As the player progresses, the gap between two platforms (bridge segments) becomes wider, requiring a more precise perception/control of the **tempo**/**jump**. There are **items of light** to be collected between the gaps, accompanied by danger of **traps of light and tempo**. By solving **melody completion puzzles**, **items of tempo** will become available to help the player make further jumps.

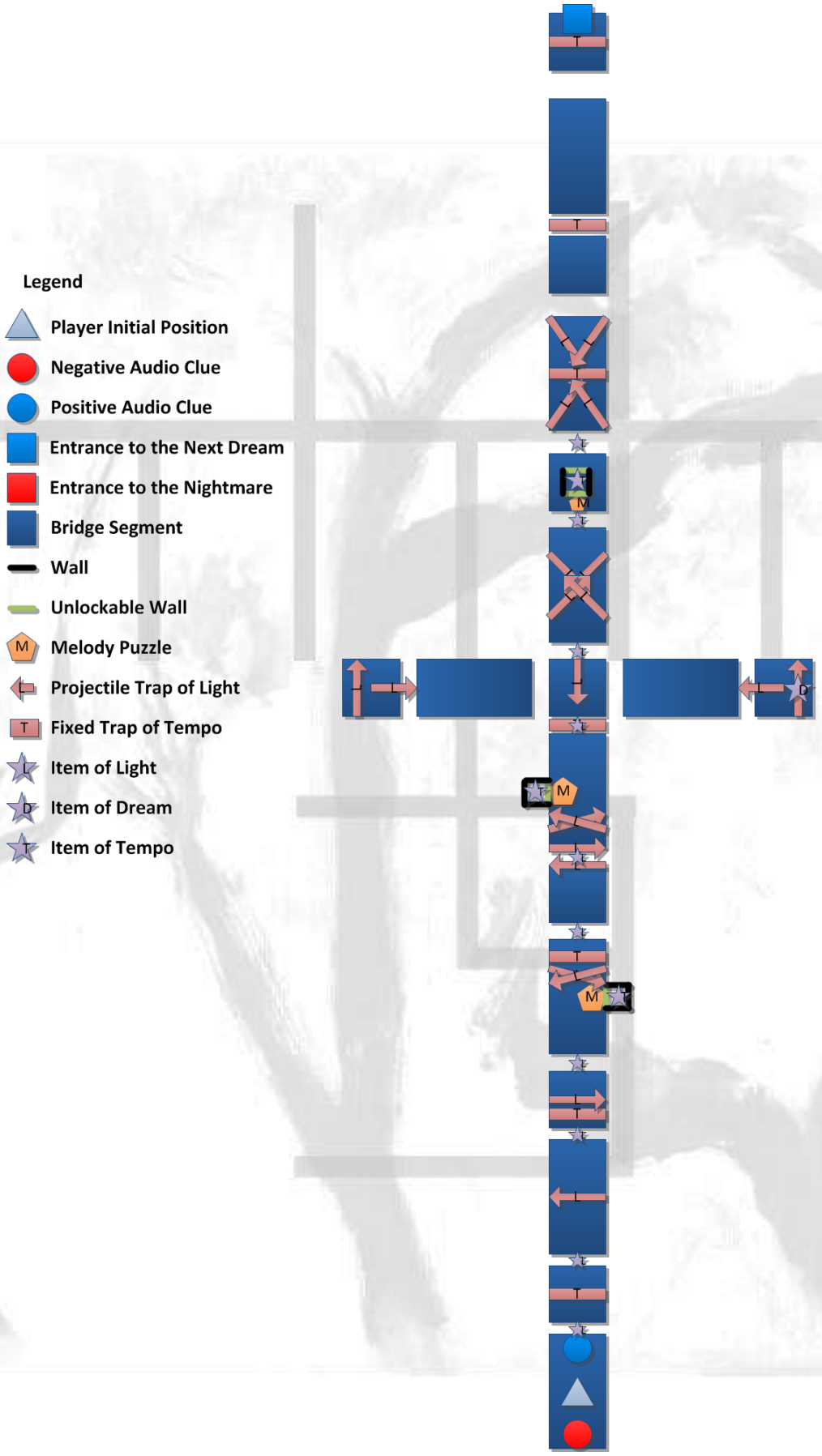

Figure 15. Layout of Dream Variation IV

5.5 Variation V: The Mountain

Variation V introduces the mechanics of **dynamics** and **height of jump**. It is set in a mountain scene with stairs of platforms spiral up to the top. The dynamic music has a looping pattern of different **dynamics**. As the player climbs up and solves the **music style puzzles**, the secret platform will be revealed and a piece of music of the same style of the completed puzzle will be played as a reward there.

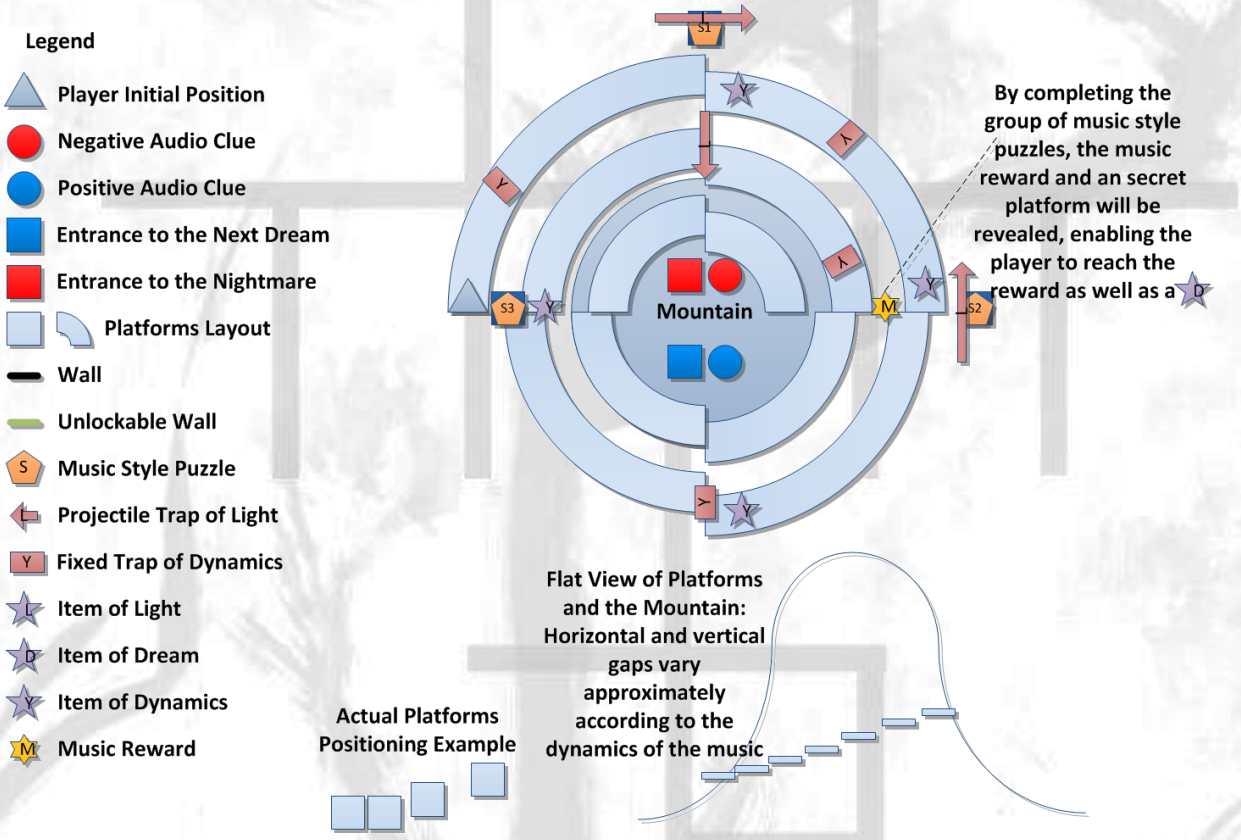

Figure 16. Layout of Dream Variation V

5.6 Variation VI: The Waterfall

Variation VI is the first comprehensive level as an example for design of later levels. It is set in a valley scene with a waterfall. For the first time the player has to refer to past gameplay experiences to proceed in this level. The serene music is also comprehensive on all aspects of the musical elements.

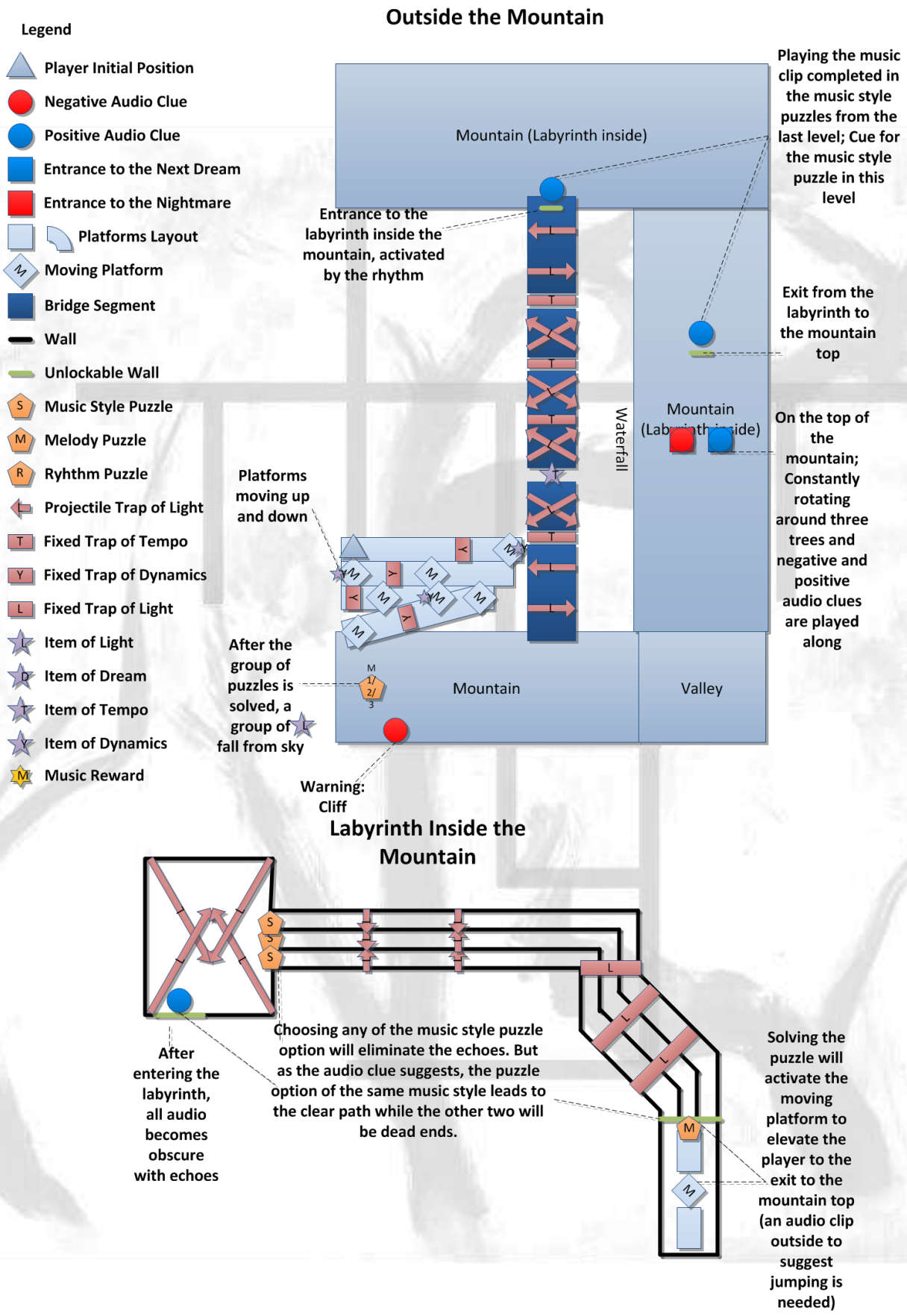

Figure 17. Layout of Dream Variation VI

6. Technical Specifications and Development Cost

6.1 Technical Specifications

The game should be able to run smoothly at most scenes with default settings on most mainstream devices.

Basic PC system requirements:

OS: Windows XP Service Pack 3 / Windows Vista / Windows 7

CPU: Core 2 Duo 2GHz or equivalent

RAM: 2 GB RAM

VGA: ATI or NVidia card with 1024 MB RAM

HDD: 700 MB Free space

6.2 Development Cost

The game will be developed using Unity 4, which brings a cost-effective multi-platform development and distribution solution. Considering the scale of the game, the development will likely take 120-150 man-months. The estimated development cost then will be around £ 300,000. Funding from art foundations and organisations and crowd funding are possible and worth considering.

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