Design Document for:

Zenith

Ascend the puzzle gauntlet

Website: https://sites.google.com/view/zenithgame/home

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Design History

This is a brief explanation of the history of this document.

Throughout the many weeks of development, there have been many changes and improvements made to help create an overall better gaming experience. The following contains a short summary of the changes made throughout this document which account for the changes made to the gameplay.

Version 1.10

In the initial version of the document, we included the more ambitious goals of the project. These included:

- Wider variety of block types (jump block, icicles, temporary blocks, etc.)
- More spacious, ‘open world’ design
- Level contained the full mountain, rather than just the final ascent

Version 1.20

This second version of the document updated the sections about the block design. Because of limitations in importing Blender models to Unity, we had to scale back the size of our project.

- Instead of modeling the whole mountain, we instead decided to model only a shorter section near the peak
- Because creating the blocks in Unity takes much longer than simply using Blender, we decided to try to reduce the number of blocks we had to place down as much as possible

Version 1.30

Due to the time constraints of the project, we decided to remove several of these new features, to instead focus on creating a higher quality, shorter product. Changes include:

- Limit block types to ice and non-climbable blocks
- Linear design with more discrete levels

Game Overview

Philosophy

Philosophical point #1

In essence, this game is trying to capture the feeling of accomplishment of climbing a mountain. To do this, we seek to convey the slow, methodical process of planning and executing a particular route. For this purpose, a puzzle game is the perfect genre to employ.

Philosophical point #2

Because of the relatively short development timeline for Zenith and the limitations of the Unity engine, we had to have a relatively limited scope for the game. While this was initially seen as a negative, it allowed us to focus more on the core aspects of the game and create puzzles that use these mechanics to their full potential.

Common Questions

What is the game?

Zenith is a turn-based puzzle game where the player must navigate a three-dimensional set of puzzles in order to reach the top. To accomplish this, the player must utilize a combination of climbing, walking, and sliding, while also managing their stamina.

Why create this game?

While there are many video games that feature climbing mechanics, there are very few that truly capture the methodical nature of climbing. We hope to capture the feeling of accomplishment when one ‘figures out’ a difficult problem. So, a turn-based puzzle game is the perfect medium for such a concept.

Where does the game take place?

Zenith takes place on the world’s most difficult mountain to climb, Summit Mountain. While many have tried, no one has succeeded in reaching the top.

What do I control?

The player will control Alex, who is the latest in a long line of adventurers seeking to conquer the mountain. While many have tried to reach the top of Summit Mountain, no one has been able to so far. Alex is well-known among mountain climbers as being one of the best to ever grace the sport.

What is the main focus?

In Zenith, the player seeks to be the first to conquer the mountain, and become the unequivocal best climber in the world. To achieve this, they will need to think through various puzzles utilizing a variety of different mechanics.

What’s different?

The unique feature of this game is that Zenith combines the simple and clear goals of platforming games with a slow and methodical approach found in turn-based puzzle games.

Feature Set

General Features

3D Isometric World

Clean Pixel Art/Simplistic Graphics

Easy-to-learn, yet hard to master gameplay

Gameplay

Movement directed by mouse

Various block types that interact with the character in different ways

Wall climbing limited by stamina

Puzzles featuring stamina management, climbing, and sliding along ice

Three-dimensional puzzles that require careful planning as well as accurate camera movements

The Game World

Overview

The game world consists of the final section before the peak of Summit Mountain. Almost no one has made it to this stretch of difficult terrain, and seen that things are starting to look unnatural. The mountain is starting to look more square, and some sections even seem to be floating in the air!

Blocks

The world consists of a 3-dimensional grid of blocks that can be walked across and climbed. Alex can walk to adjacent flat pieces of terrain, or start climbing an adjacent block face. Alex can continue to climb up the face of the blocks, until he runs out of stamina. However, Alex cannot climb on the bottom of any overhanging block faces.

Special Types

There are various other block types that affect the behavior of both Alex and other blocks. First, there are non-climbable blocks. As expected, these blocks cannot be climbed on, but can still be walked over. Next, there are ice blocks, which cause Alex to slide to the next block when walked over. If an ice block is next to a ledge, Alex will slide off of the block and fall down. Ice blocks are also unclimbable from the sides.

The Physical World

Overview

Summit Mountain is a bleak and desolate environment, consisting of sheer rock faces with small overhangs. The following describes the key components of the physical world.

Key Locations

There are several key locations in Zenith, or ‘sublevels’. This close to the peak of the mountain, strange things happen. When reaching the top of one sublevel, Alex reappears at the bottom of another. There are a total of 4 sublevels in Zenith currently.

Scale

Alex faces the final section of Summit Mountain before the peak. Being so close to the peak of the mountain, the terrain is much smaller than the base of the mountain, yet has become much more complex in return.

Objects

Being at this high altitude means that very little plant and animal life can survive on Summit Mountain. Because of this, there are very few objects to be traversed during your climb. The first of these objects are outcroppings on otherwise smooth rock faces. These can be used to rest and recover stamina while climbing. One other type of object in Zenith are ice blocks. These extremely slippery obstacles will cause Alex to slide across the block.

Rendering System

Overview

The Unity game engine will be used to handle everything within the game, including rendering models.

2D/3D Rendering

A combination of Unity’s 3D game engine and Blender are used to generate various models and combine into various puzzles.

Camera

Overview

The camera will follow the player around as he moves and will come with adjustable zoom and rotation.

Camera Detail #1

The camera is “attached” to Alex, so wherever he goes the camera will follow.

Camera Detail #2

By holding the right mouse button, the camera will move around Alex in the opposite direction of mouse movement. Holding the right mouse button while dragging down will cause the camera to move above Alex and dragging left will move the camera to the right.

Camera Detail #3

The camera is able to zoom in and out through the use of the scroll wheel on the mouse.

Game Engine

Overview

Unity is a game engine developed by Unity Technologies that is designed to be multi-platform and free. It was released in 2005 and is capable of both 2 dimensional and 3 dimensional games. Because it is considered easy to use and learn, we have decided to use it for this project.

Game Engine Detail #1

Unity will keep track of everything in the world such as character movement, object placement, various scenes containing each level of the game, camera movement, and sound storage.

Collision Detection

Our game engine handles collision detection by not having any collisions at all. All objects are rounded to the nearest gridded position, and the movements in the game will always cause the player's next move to go to a gridded position that does not contain an object.

Time

Describe the way time will work in your game or whatever will be used.

Summit Mountain is an area where the rules of reality have twisted and common sense no longer applies. Time spent on the mountain does not pass, however stamina will still be exhausted while climbing it.

Lighting Models

Overview

The sun shines down on the peak of the mountain at a 30 degree angle from above.

Lighting Model Detail #1

The sun emits a one-directional light pointing towards the ground, illuminating all the blocks at an angle.

Lighting Model Detail #2

It is always daytime when climbing Summit Mountain. The sun will always be shining upon you.

The World Layout

Overview

The world is laid out into several smaller portions, each containing a single puzzle. Once a single puzzle is completed, the player can continue to move to the next portion. Each portion is a floating ‘island’, connected by bridges. As more puzzles are completed, the player slowly starts to ascend to reach the top of Summit Mountain.

Game Characters

Alex

Alex is a grizzled veteran of the climbing scene, having been climbing mountains since he was a child. Over his long career, he has ascended every major mountain known to climbers. That is, except for Summit Mountain. Determined to solidify his legacy as the greatest climber of all time, he seeks to be the first to reach the top of the mountain that nobody has climbed before.

User Interface

Overview

Provide some sort of an overview to your interface and same as all the previous sections, break down the components of the UI below.

Zenith implements a very simple UI, displaying a main screen as well as displaying current stamina levels.

The main menu was a free asset downloaded from Unity Asset Store by the creator Walled City Infotech.

Stamina

A display appears at the bottom left of the screen, showing Alex’s current stamina level. This stamina level is replenished every time Alex touches the ground, and is reduced by one every time Alex climbs along a wall.

Musical Scores and Sound Effects

Overview

The musical score consists of a sparse, hollow score, underlined by continuous ambient noises. The score is a roughly 3-minute piece that loops as the player continues. However, the music fades out and in over time, so the player will only hear one short phrase at a time. Instruments used are

Sound Design

The sound design for Zenith largely consists of two samples of wind overlaid on top of each other. Besides the wind samples and the music, the only other features with sound will be the sounds of Alex climbing the mountain. The minimalist design seeks to convey the sense of isolation in a desolate environment.

Single-Player Game

Overview

Zenith is a single-player game that puts your problem solving skills to the test through various puzzles and mechanics in each area of the game.

Here is a breakdown of the key components of the single player game.

Story

Summit Mountain is the tallest mountain in the world, and one that has yet to be climbed by anybody. Because of this, many stories have arisen around the mysterious nature of the mountain. Observers at the base can't seem to see the peak, as it appears to stretch infinitely into the sky. While there have been attempts to view the top from aerial vehicles, Summit Mountain is surrounded by a dense fog at all times. Any attempts to fly into the fog have led to pilots and their instruments being disoriented, unable to know where they are headed. While most simply end up right back where they came, some say that truly unlucky adventurers enter the fog to never return. Despite this, many have attempted to see the peak the old-fashioned way, by simply climbing up Summit's sheer faces. Alex is one such climber, and having been climbing every other notable mountain to prepare, he believes that he can do it. Undeterred by the harrowing accounts of those who tried and were lucky enough to survive, he is determined to be the first to the top.

Hours of Gameplay

While puzzle games tend to have a high range of hours played, we expect that most players will be able to beat Zenith in less than 5 hours.

Victory Conditions

The player wins the game by completing all of the areas of Summit Mountain. This is done by solving the specific terrain puzzle for each area.

Character Rendering

Overview

The character Alex is created in Piskel and rendered within the Unity game engine as a 2D sprite. Multiple sprites of Alex were drawn for each animation, such as walking and climbing. The Unity animation tool was used for the animations.

Character Rendering Detail #1

Alex is drawn in an isometric style from 4 different directions that mimic a 3d character by orienting themselves based both on the direction the character is facing and on the direction that the camera is facing Alex from.

Character Rendering Detail #2

Alex has walking and climbing animations on top of his two idle states: idle standing and idle climbing. The walking animation is 6 frames long at a 12 sample rate. The climbing animation is only 2 frames long at a 3 sample rate. Character animations are handled through Unity's built-in animation state machine.

Marketing

Target Audience

The target audience for Zenith will be players of all ages. However, younger children might have some difficulty solving some of the puzzles, so our marketing strategy will target young adult and adult players more. Our target audience will also be fans of puzzle or strategy games, who have played similar games in the genre. While not as important as the other target demographics, we will also be targeting fans of outdoor activities such as rock climbing, mountaineering, and hiking with our marketing.

Platforms

Since Summit Games is an independent development company with limited resources compared to other publishers, we will adopt a marketing strategy that seeks to maximize the number of players reached without costing too much money. To accomplish this, we will target several platforms known for ‘viral’ trends, such as Reddit, TikTok, and YouTube. Some of our budget will be spent on having creators on these platforms give their impressions of the game, with the rest being spent on traditional marketing through social media ads. By doing this, we hope to get other creators interested in getting in on the trend and creating content about our game without us having to pay.