Able Amigos- Multiplayer Puzzle Project Proposal

Maddox P, Jasmine C, Tami S

Game Design 2

8/25/21

Overview

The two Able Amigos are trapped in a perpetual puzzle world and need your help to escape! Working together, the Amigos must reach the escape door by pushing heavy blocks that must be moved by two people at once, absorbing power ups that give the Amigos new powers like super jumps and projectiles, and dodging enemies that patrol the puzzle world. At the end of each level, the two Amigos are awarded a star that gets them closer and closer to powering up their escape ship. Together, the two of you will face many challenges, but with teamwork you can overcome them and go home!

Game Concept Art

Genre

Our game is a 2D puzzle platformer that focuses on teamwork between two players. It will have multiple levels, with a few “main" worlds that are the entry points for 2-3 levels with a specific gimmick such as a timer or an enemy that moves when the player moves.

Goal

The overall goal of the game is to complete various levels with the help of another player. There will be various puzzles such as a gate that requires a button to be pushed by each player, or one player holding a door open for the other, so teamwork is essential to complete the game.

Theme & Visual Aesthetics

The game will have pixel art graphics similar to the art in Pico Park. The levels will also take inspiration from the game Fireboy and Watergirl, following the same platformer puzzler mechanics, with moving items (such as blocks or small balls) and goal door that the players are trying to reach.

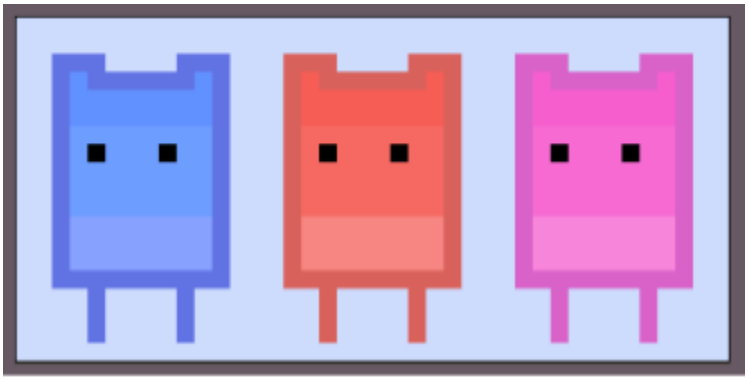
Sample Game Aesthetics and Designs from Pico Park (2016) and Fireboy and Watergirl

For the UI, we will have a simple start screen with options to play, fix settings, or open a previously saved world. In settings, the player can change the volume for sound effects and background music. We will also have a level selector that the player can choose levels from (levels will not be restricted if the player hasn’t completed levels earlier in the world). Upon completion of a level, the player will earn a star.

UI example from Pico Park (2016)

To create the art in our game, we will use tilesets, since they allow for efficient level creation and quick testing of our puzzle design. We will use the program Aseprite to create tilesets and animated sprites.

Sprite Concepts



Sample Sprite Designs

Level Design

Puzzle Mechanics

Level design will be one of the main focuses of our game. In each level, there will be various cooperative puzzles that the players can only complete if they work together. For example, the players may have to press buttons simultaneously or move boxes together. Completing these puzzles will allow the players to advance throughout the level to reach the end.

Mechanic	Description
Buttons	Require players to co-operate by pressing buttons simultaneously or in a certain order. Buttons may be separated between players, causing them to work together to press them in the correct order/ at the same time.
Platforms	Levels feature platforms that move depending on whether the player is on the platform (or how many players are there). The players would have to move these platforms into places where they can jump from one larger platform
Boxes	moving around boxes to reach higher places or platforms with gaps in-between. At some places, the boxes will be unreachable if the players jump on top of each other to get them, so these levels require cooperation from the player to reach the boxes and push/pull the boxes.

Power-Ups

The game will feature a few different power-ups that will give the player extra abilities or boosts over the course of the level. Without the power ups, completing some levels will be impossible, so it's up to the player to use their resources wisely and use them to escape. It may be a ledge that is too high to reach normally, or an enemy that must be defeated with a projectile, but no matter what the situation is, the power-ups will come in handy in any cases they are available.

Power-Up	Description
Super-Jump	Increases player's jump height by 2 to help them reach new areas.
Dash	Gives the player a boost in any direction to help them boost to areas they couldn't previously reach.
Super-Speed	Increases player's speed by a set amount to help them jump over gaps or beat timed challenges.

Hazards & Enemies

There will be various hazards and a patrolling enemy in the game that (when hit) causes the players to have to restart a level. If one player dies (pops), then both die (pop). When the player has to restart there will be no death screen, but instead, all players will respawn at the beginning of the level.

Hazard	Description
Moving Enemy	If the enemy touches the player, they will pop.
Spike	Spikes pop the player if they fall/step on it.
Projectile	A moving hazard causes the player to pop when hit.
Pit	The player will pop if they fall into a pit/void.

Mechanics/Controls

To start our game will just support a keyboard for each player. Each player will have the same basic movement options, but other controls/mechanics based on power-ups will be added throughout the level. The game will be operated by one keyboard and one controller (one player using the keyboard and the other using the controller).

Mechanic	Description	Binding (Controller/ Keyboard)
Jump	Gives the player a vertical boost.	Button 0 / Space
Movement	Moves the player horizontally.	Axis 0/Button 14/15 / WASD
Interact	Push button or other interactables.	Button 2 / E
Power-Up	Use whatever power-up is currently enabled.	Button 1 / Q

Local Multiplayer Management

The game will be a local 2-player multiplayer game. The players will use one machine, but use separate controllers/keyboards to navigate the same world. To accomplish this, raw input will be gathered from any source, allowing two separate input controllers to be used.

Sound Design

Our game will have retro/8-bit type music and sounds for any background music or sound effects we might have. For specific blocks or spring surfaces, we will have a sound cue for the players to help enhance gameplay. We will either make the music/sound effects ourselves with programs like Soundtrap or using free online libraries.

Mechanic	Sound Description
Jump	Springy 8-bit (like mario's jump)
Interact	An 8-bit bell ding
Power-Up	A 8-bit chime

Technical References

Article / Video Name	Link
Photon Multiplayer Library/API	https://www.photonengine.com/en-US/Pho
BlackthornProd - 9 EASY Steps to create a multiplayer game with Unity & Photon - Tutorial	https://www.youtube.com/watch?v=93SkbMpWCGo
Board To Bits Games **Better Jumping with 4 Lines of Code**	https://www.youtube.com/watch?v=7KiK0Aqtmzc
Board To Bits Games **Better Jumping in Unity: Optimizations**	https://www.youtube.com/watch?v=acBCegN60kw
Choosing the right netcode for your game	https://blog.unity.com/technology/choosing-the-right-netcode-for-your-game