Maze Racer

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Game Overview

Executive Summary

Maze Racer is a problem-solving game which learns the player's problem-solving skills and is able to procedurally generate levels that challenge the player. The AI will be able to decide if the player has mastered the current tier, they're in and raise it so it becomes more challenging. This concept is based on the analysis that I did on *Call of Duty* and *Apex Legends* and how they each use different types of matchmaking, skill-based, and player-engagement based. Maze Racer will give a rank to the player depending on their difficulty tier and give them a level that is based on play time puzzles solved. If the player keeps on getting progressively worse at the puzzles, their rank will be affected and as a result will start getting lowered tiered puzzles.

Game Concept

Problem solving puzzle game, where levels get more difficult as the player's skill increases. Game is meant to learn how the player plays and problem solves and gives the player harder puzzles to challenge the player. Players will have a rank and a level. Ranks will be based on the difficulty tier they're on and levels will be based on how many puzzles they solve.

Genre

Maze Racer is a puzzle and problem-solving game.

Target Audience

Maze Racer is for puzzle enthusiasts.

Game Flow Summary

The puzzles will get increasingly harder while the player is on a win streak, but easier if the player seems to be struggling. As players are able to solve harder puzzles faster,

the player is given harder puzzles as a challenge. While the player's rank increases, they won't get the easier puzzles that they first started with. Easier puzzles will be based on puzzles from the player's previous rank.

Look and Feel

Colorful, simple UI. 3D environment with simple puzzles, each with varying difficulties (easy, medium, and hard). Audio will vary between levels. Easier levels will have mellow music while harder levels will have more intense and higher rhythm songs.

Gameplay and Mechanics

Game progression

Game will consist of different difficulty puzzles and have a script that will determine the player's playstyle and current win streak in order to determine what puzzle the player gets next. This script will be able to make levels that are harder than the previous if the player improves its problem-solving skills. As players get faster at solving puzzles more difficult puzzles will be procedurally made. If the players start struggling at higher level puzzles, the game will lower the difficulty within that tier. If the player keeps getting worse, the difficulty will keep going down, but the player's rank will be affected negatively.

Mission/Challenge Structure

Variety of 3D puzzles with three different difficulties. Easy, Medium, and hard. Game will be able to determine what puzzle is easy, medium, and hard for each specific player. The puzzles will be made by an AI that is able to create a level based on the difficulty tier that the player is on. Puzzles will not get easier than the player's previous tier. If the player is considered a high tier player, they won't be able to get lower tiered

levels; unless the player starts struggling at higher tiered levels, their rank will be lowered and have lower tiered levels.

Puzzle Structure

Puzzles will be played by sliding different “blocks” in order to be solved. Each difficulty category will have its own color and style, so the player knows if they are getting better or worse. There will be a UI that also, lets the player know if they are getting better by a rank system that considers the time the player solves the puzzles and ranks depending on the tier of the difficulty. Puzzles will get more difficult as players improve and will be easier if players start struggling. Players will increase their tier and rank when they are on a streak of completing levels. Ranks will be based on the difficulty they’re on; bronze will consist of easy levels, silver medium levels, and gold will consist of hard levels. Players can keep increasing their rank to diamond and platinum by keeping their streak and solving the harder puzzles.

Objectives

Solve each puzzle to progress through the different levels while, having a score and rank at the top of the players screen to show progression. If the player gets better, the puzzles will get more challenging, and if the player seems to struggle, the game will know to make the puzzles less challenging. The score of the player will keep increasing but each time the difficulty is lowered, the player’s rank will be affected.

Party Flow

Gameplay will mostly be player dependent since the flow will depend on how good the player gets. Ranks will be based on the difficulty tier the player is on. Ranks will consist of Bronze, Silver, and Gold, there will also be a diamond and platinum.

Ranks will be numbered from 1 to 5. Players will start at Bronze 5 and as they solve puzzles within a certain time their tier will increase to Bronze 4 and so on. If the player takes longer than expected they will remain in the same tier and puzzles won't get harder.

Mechanics

Physics

Game will be played on a 3D plane. The player will move on the x and z axis, so no gravity is needed.

Movement in the game

Movement in the game will mostly consist of the x, and z axis. The player will be able to move one block to be able solve each puzzle. There will be barriers that stop the player from going through certain points. The player will solve each puzzle by traversing through the obstacles and reach the end point which is marked by a green barrier.

Objects

Different color blocks that symbolize each difficulty. Options menu that lets the player pause the game, change the volume of the game.

Actions

Main action will be sliding objects by moving each block. Players can move the blocks by using W, A, S, D or using the mouse.

Game Options

Options will consist of a sound volume slider that lets the player choose their desired volume. Play and pause button which will be at the top left of the screen. Players will also have the choice if they want to use the mouse or W, A, S, D keys to move the player.

Levels

Three difficulties: Easy puzzles will be puzzles that will be simple enough for the player to complete in a short span of time. Main focus is to keep player engagement if the puzzles get too hard.

Medium Puzzles will get more difficult. Should be the "normal" difficulty for the player.

Hard puzzles will be implemented if the player can easily pass the medium puzzle and be used to sort of "reset" the player or make it more difficult for them.

Training Level

There will be a "test" level to show the player how the game works. It will consist of an easy puzzle and a hard puzzle, to show the player how the game's system works.

Interface

Hud includes:

Player's score will be displayed at the top center of the screen and the rank will be displayed as an icon on the top right corner of the screen. Score consist of how long it took the player to complete the level. It will also have an options button at the top left of the screen.

Control System

Move each individual block with a mouse or W, A, S, D.

Pause the game by pressing escape or the options menu in the UI.

Audio, music, sound effects

Background music depending on what level the player is on and sound effects when moving the blocks and colliding with walls.

Technical

Target Hardware

Mac, and Windows

Development hardware and software, including Game Engine

MacBook Pro 16 inch

Unity version 2019.4.13f1

Network requirements

No internet connection needed

Game Art – Key assets, how they are being developed. Intended style.

Concept Art (not my work)

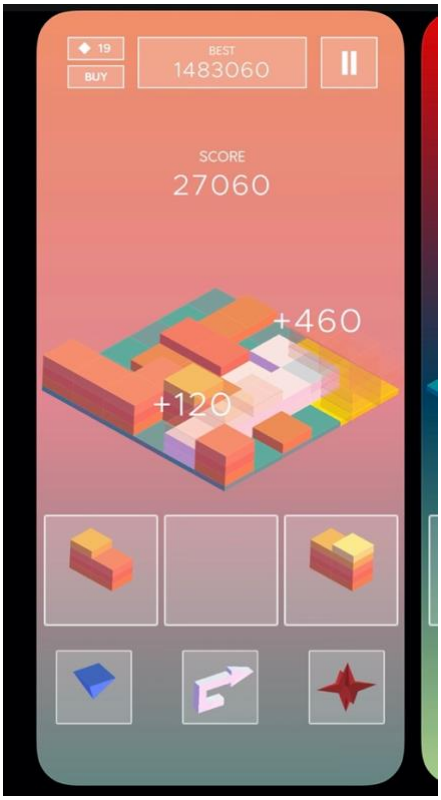

Figure 1 Zentris

Figure 2 Color Roll 3D

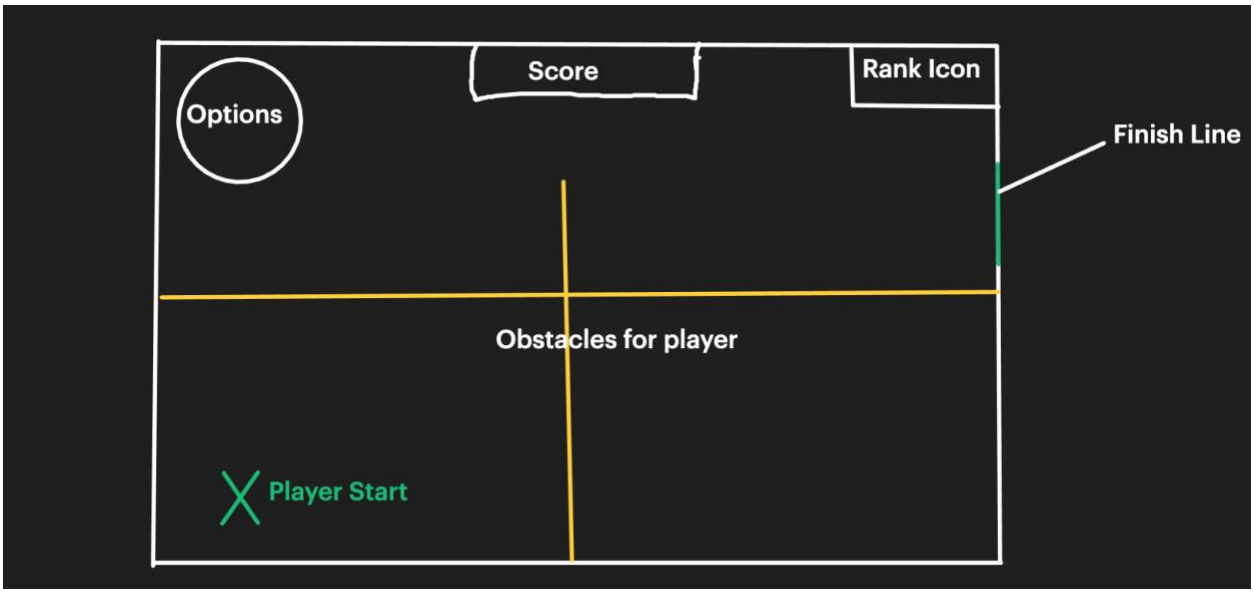

Figure 3 Concept Level for the whole game