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TP Analysis

Description

This project is a one tap rhythm-puzzle game called Jump.

How it Works

The premise of the game is that the player must collect all the coins to complete the puzzle. Each puzzle is a map of 2D planetoid, with added awards for completing in the briefest time and with the fewest possible taps. Different geometries and colors in the puzzle give the player different abilities. With a simple one tap controls, player can launch, dash, and glide the square to solve the puzzles. Beside different levels of puzzles generated by the computer, the player can also create their own puzzles using the built-in editor.

Competitive Analysis

Evaluate competitions

- Kubrix
  - Kubrix is a puzzle game that requires the player to rotate bricks to complete a path. It is very unique in its graphical design with vibrant colors and handcrafted puzzles.
- Geometry Dash
  - Geometry Dash is a one-tap rhythm game that requires the player to jump through spiky obstacles with unique soundtracks. It has different play modes such as fly rockets and gravity flip.
- Give it Up
  - Give it Up is a one tap control game in which the user controls the Blob while feeling the rhythm of the music. The map changes as the Blob move towards the end.

Identify Comparison Dimensions

- Interaction and Control

effective and clear controls enhance the experience so the players can properly interact with the game

- Solid Level and Continuous Challenge

a game should provide its players continuous challenges to keep them engaged

- Visual Styles

Graphics are what the players see most of the time, hence has to match the world style

- Audio and Music

Since the genre of Jump is a rhythmic game, sound effects are vital in heightening the experience

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- Balance of Difficulty and Reward

A game needs to have a good balance of challenge and reward to keep the players interested

Comparison Table

	Interaction and Control	Solid Level and Continuous Challenge	Visual Styles	Audio and Music	Balance of Difficulty and Reward
Kubrix	OK	OK	Good	No	No
Geometry Dash	Good	OK	OK	Good	OK
Give it Up	Good	Good	OK	OK	Good

Summary

Jump has many similar features as these games. It has a one-touch control that allows the player to jump over obstacles and gaps, and to collect rewards. Similar to Geometry and Give it Up, Jump is a rhythmic puzzle game that implements audio-visual design that complements the solving process. It has a 2D map that moves while the player stays at the center of the screen. Also, just like Give it Up, Jump will record the number of taps the player made and provide a score accordingly.

Different to the games, Jump will have audio tracks that are partly conducted by the player's actions. Each jump and hop will add to the soundscape. Also, the puzzle in Jump rotates around the screen instead of a linear movement like in the other games, giving the players view to the whole puzzle. In addition, most of the puzzle games are made of pre-designed levels, while in Jump, players can create and play their own puzzles with the built-in editor. A graphical design difference between Jump and the games listed is the trailing path left by different actions by the player. With this feature, each puzzle graphic is unique for each player.

Structural Planning

also see folder for project file structure

- Map Maker
  attributes colors – green: dash, yellow: launch, red: lose life
  attribute shapes – canvas.create_arc

- Computer Generated Maps – inherits from map maker

- User Generated Maps – inherits from map maker
  attribute paint – green, yellow, red
  method – click and drag

- Object Square
  attribute – position
  attribute – score

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attribute -numberOfTaps
method – keyPressed
method – checkCollision
method – Jump
method - AssignProperties

Algorithmic Planning

Algorithmic Plan for Making the Map

First: generate a list of base geometry
- draw each fan shapes separately
- angle and radius change accordingly

Second: fill the base geometry with different colors
- different colors result in different properties

Third: make the map move
- rotate the map each time timerFired is called

Algorithmic Plan for Making the Square Player

First: generate basic geometry and physics
- jump method that gets called each time space is pressed
- move along the map

Second: different properties of the square
- check collision with elements in map
- launch: change jump properties
- dash: change velocity

Third: earn rewards
- record number of taps and time
- check collision with coins
- check game complete

Timeline Plan

Aug 3 - square created with ability to move along the geometry, physics for jumping
Aug 4 - user generated puzzles
Aug 5 - computer generated puzzles
Aug 6 - additional graphics and visual design
Aug 7 - audio and music

Version Control Plan

I will be saving all the work in Google Drive.
(Photo on next page)

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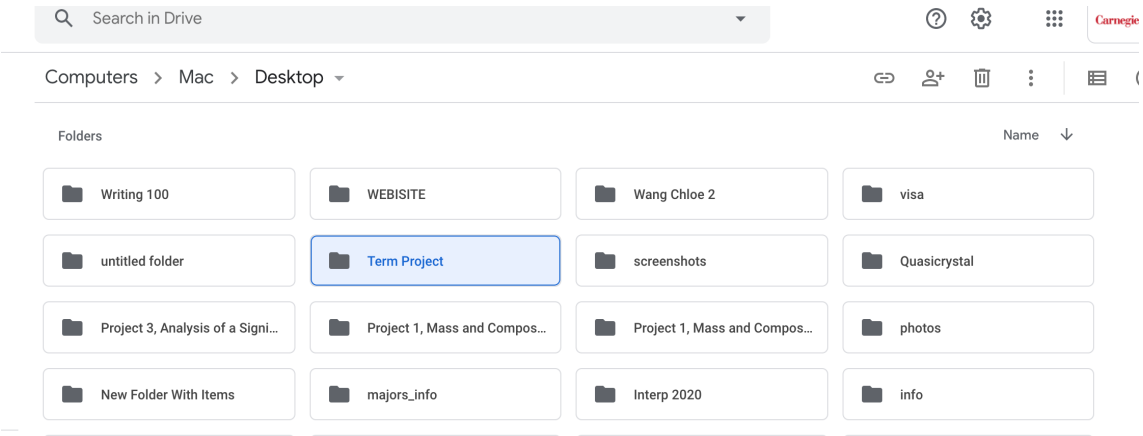
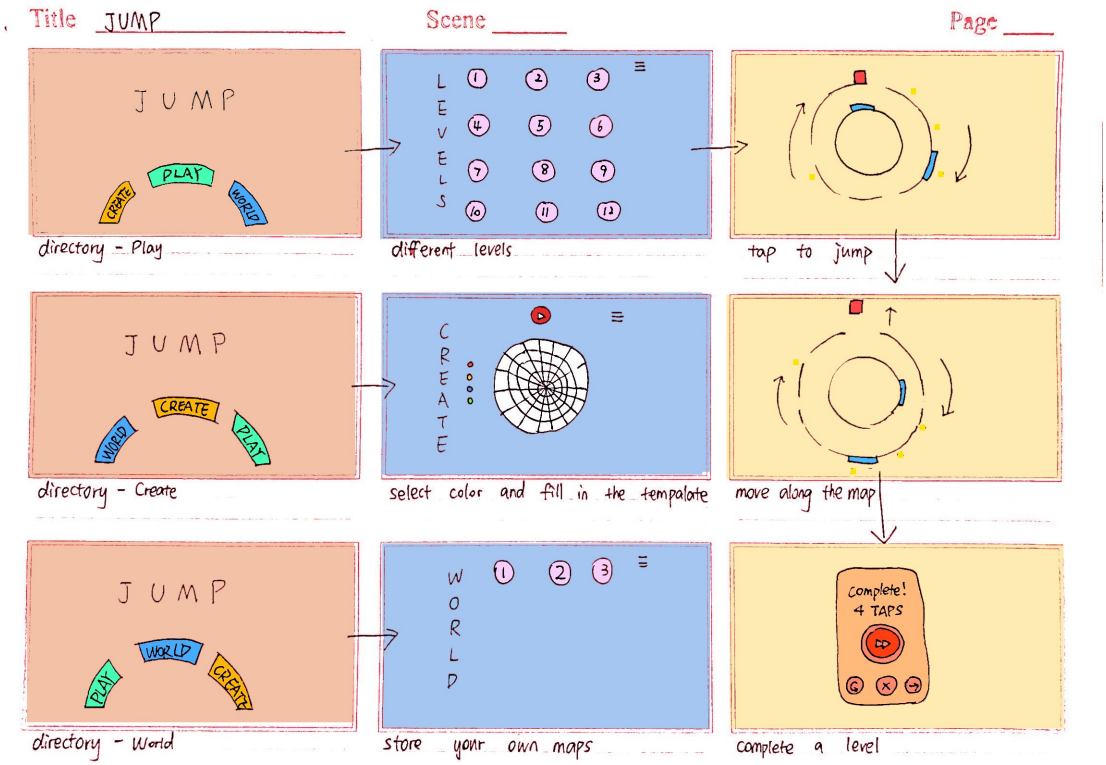


Story Board



TP3 Update:

- Added rectangular mazes and circular mazes for the player to move around.
- Instead of the smart enemies, used the same algorithm to create solutions and hints for the mazes.
- Green color in the map gives the player the ability to jump higher