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| Technical Design Document |
| Coffee Mania |
| By William Tjang and Pasqual Fletcher |

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# Revision History Version

|  |  |  |
| --- | --- | --- |
| **Version** | **Date** | **Description** |
| 1.0 | 14 Oct 2019 | Initial Document |
| 1.1 | 16 Oct 2019 | Added some pickup item mechanics |
|  |  |  |

# Development Environment

## Game Engine

Unity v2018.3.8f1

## IDE

Windows Visual Studios 2017

## Source Control procedures

GitKraken, Unity Collab

## Third Party Libraries

## Other Software

# Game Overview

## Technical Goals

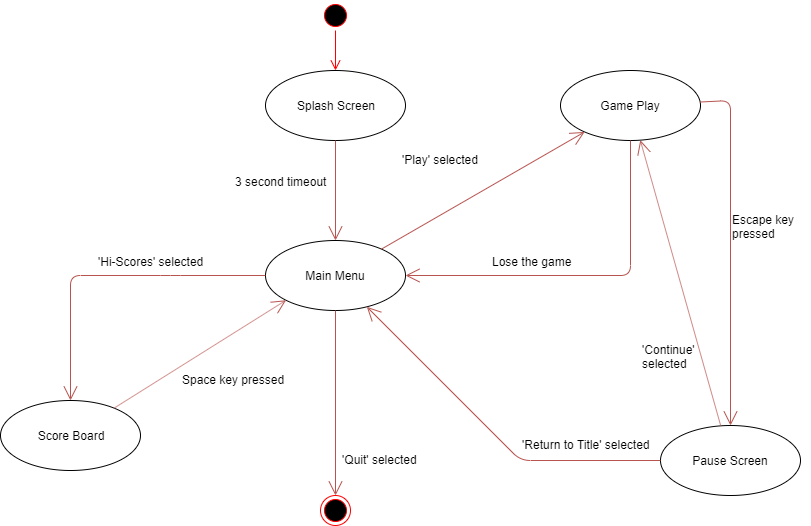
<3d graphics, 60fps, Challenging AI etc.>

// fill in

## Game Objects and Logic

|  |  |
| --- | --- |
| **Game Object** | **Description** |
| Player | Represents the controllable player character |
| Tile Set(s) | The tile sets randomly generated for each level |
| Obstacle(s) | Will cause the player to lose upon frontal collision |
| Pickup(s) | Grants a buff or debuff on the player (refer to section 8) |

## Game Flow



# Mechanics

Moving

* Side to side controls
* Strafe: The player switches to an adjacent lane either left or right using the A or D keys
* Turns: The player turns 90 degrees to the left or right using the arrow keys <- or ->
* Jump: The player jumps a certain altitude using the SPACE key
* Slide: The player slides a certain distance using the S key

Currency

* Beans: The player can spend the bean currency for various benefits in game

# Graphics

3D environment, stylized art

# Artificial Intelligence

<Describe how AI works, i.e. state machine, fuzzy logic, GOAP. Describe the various behaviours and how they change behaviour, how do the ‘creatures’ in the game evaluate the world>  
<include diagrams/flowcharts showing decision making processes>

# Physics

<if needed>  
<What engine are you using, what features from it (spring? Colliders?) how will physics be handled for objects? (box or sphere collider for objects, capsule for player) need to record specific locations for any reason? Potential slowdowns and how to mitigate.>

# Items

|  |  |
| --- | --- |
| **Item** | **Description** |
| Coffee Bean | Adds 1 currency to the player’s overall account |
| Sugar | Speeds up the player character and grants invincibility for 5 seconds |
| Ice Cubes | Slows down the level speed for 10 seconds (may be subject to future changes) |
| Net | Allows the player to catch all nearby coffee beans in an AoE |
| Barista Knife | Allows player to ignore the next obstacle they crash into and destroy it |
| Milk | Grants a score multiplier buff |
| Tea | Inverts the player’s control for 10-15 seconds |

# Game Flow

## ‘Mission’ / ‘Level’ structure

<Are all levels stored in memory? what data is saved across levels, are levels loaded synchronously to prevent pauses?>

## Objectives

<What does the player try to accomplish on each level/mission? How is the players progress evaluated?>

// fill in

# Levels

<If any of the Levels require specific behaviours, describe those here>

# Interface

## Menu

|  |  |
| --- | --- |
| **Option** | **Description** |
| Play | Starts the main gameplay |
| Hi-Score | Displays the leaderboard |
| Quit | Closes the game window |

## Camera

* + 3rd person perspective
  + Positioned slightly higher than player
  + Angled slightly downwards
  + Centered at the middle lane

## Controls

|  |  |  |
| --- | --- | --- |
| **KEYBOARD** | | |
| **Action** | **Command** | |
| Strafe | A (left) | D (right) |
| Turn | <- (left) | -> (right) |
| Jump | ‘Space’ | |
| Slide | ‘S’ | |

# Asset List

<List all files needed, along with known attributes >

# Technical Risks

<if you want your game to be a 1000 player pvp battle royale with 4k 120fps graphics, you need to say if this is doable and how you intend to do it>