SandPerSand

"Survival of the Fittest"

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Interim Report

3.1 Progress

We were able to create a simple multiplayer jump and run game. We have a Level where players have to race to the top, while sand is falling down and raising from below. When the first player enters the goal a count down of 10 seconds starts. The rest of the players have to reach the goal within time otherwise the level will finish and a leader board will appear. The players also have an inventory that contains coins and two items. Coins and items are not yet part of the level.

Progress was made on the previously floaty and broken player controller. Unfortunately, there are still issues with micro-collisions with tile edges, and thus we are looking to rework the controller not to use a rigid body, and avoid force-based collisions which push the player upwards when they shouldn't. We no longer clip with the floor and don't float midair when walking off platform edges. We not have the ability to perform variable height jump with different gravity strengths applied to the player depending on the jump phase resulting in a snapping return to earth while a more floaty climb giving the player more control. We give the player coyote time

(a) *(b)*

Figure 3.1: *Player Controller Development Screenshots*

to be move forgiving on long jumps, as well as give them the ability to buffer a jump for a quarter of a second before they land to not give the impression that the game did not recognize the input. We plan to add faster falling option (e.g., by pulling the analogue stick down while airborne) for more control options.

In regards to horizontal movement, the current version feels a little slippery for the model does not include linear drag when slowing down or changing direction, however we still have enough control to play our first level through.

We created simple player animations to give our aliens life. We plan to expand these for the other actions they can perform.

We can say that we met most of our goals planned for the low target. However there are some deficits and improvements we want to include as soon as we can. We were able to implement a good looking sand simulation. However the player does not yet interact with the sand, but the API for said interaction exists. Also something that we planned to have for the low target was adding some kind of sound and music which is not part of the game yet. Also visuals are something that we want to improve and add upon.

3.2 Challenges

The biggest challenge to our team was the uncertainty and interruption that the corona virus has brought to our team. At the very beginning of the project two of our team members fell ill which has bit quite a chunk from our development time and structure. The unfortunate thing about this situation was that the members affected were also responsible (and therefore most familiar) with the development of the core engine components including the base rigid body physics, collision detection, and input handling. There was hope of a quick recovery, however the teammate remained unable to contribute until the release of this demo.

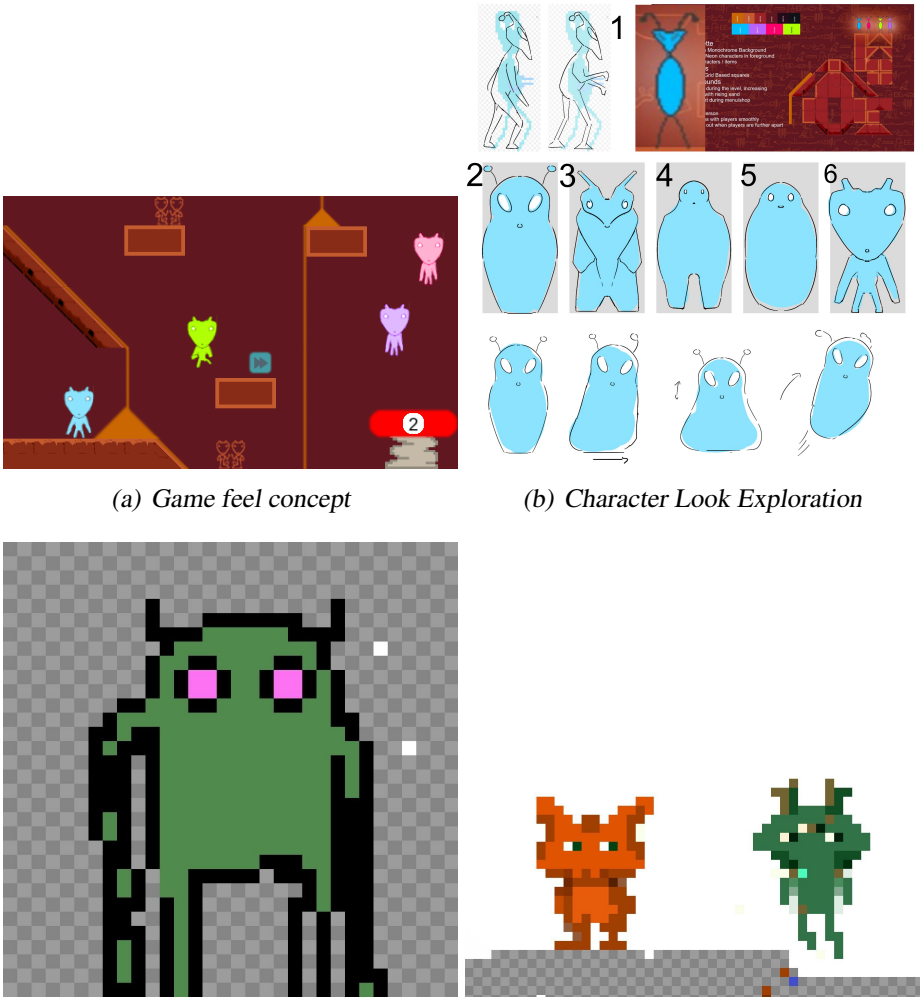
To make the best of the situation, we decided to focus on infrastructure and research during this time.

Otherwise, we could note that the team may have spent more time than needed in design and not on the hands on development, which of course proved to be more involved than expected.

3.3 Future Work

For future work we have a clear vision. We are planning improve on the following aspects of the game concurrently.

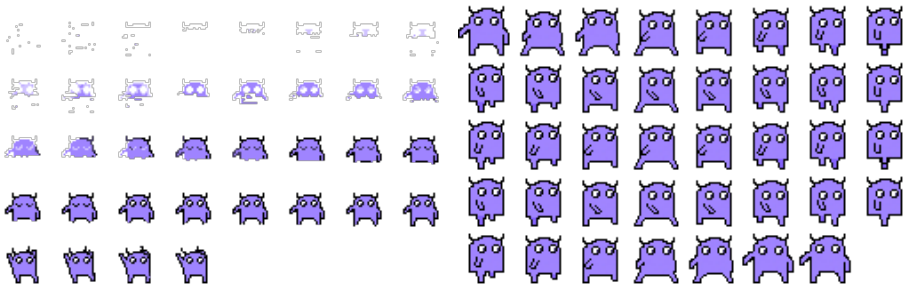
1. The core mechanics: Here we must implement core sand-player interaction, however before this can be done, we also must improve the robustness of our collision system and player controller especially when it comes to slopes and micro-collisions. It seems that our physics engine of choice does not play nice with our tile system. Item, coins, and shop had to take a backseat during development because the challenges that we faced during the past development, but now should take precedence.



(a) Game feel concept (b) Character Look Exploration

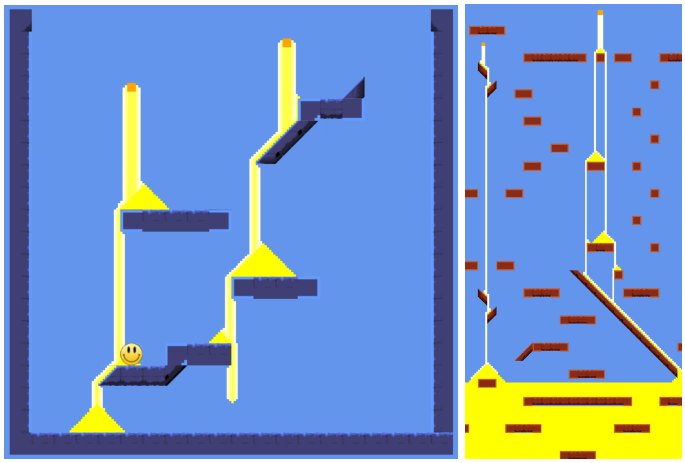
(c) Character Concept (d) Character Concept

Figure 3.2: *Concept Art*



(a) Spawn and Falling Animations (b) Walking and Running Animations

Figure 3.3: *Player Controller Development Screenshots*



(a) Development *(b) Current*

Figure 3.4: *Sand Simulation Development Screenshots*

2. Game Presentation: Through we got some of the core visuals for the game working, we do lack a comprehensive asset collection save the main platform tile set and basic character animations. We are thinking of how to best use our resources on this aspect of the game. Improvement to the HUD/GUI are planned as well, in addition to better designed game-entry and game-exit screens
3. Sound. If we are honest: The team has not considered sound whatsoever so far in the development in favour of core development and prototyping. We are working on placeholder sound effects at the moment.

All in all, the first priority is to iron out the kinks, then bring our gameplay vision to life, then to make it pretty.