FINAL REPORT

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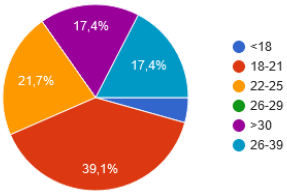
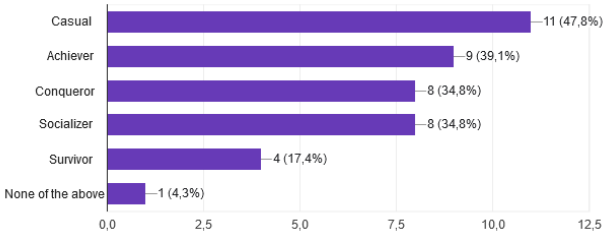
Playtesting Report

We registered data concerning the interaction of users with our game of 23 players with ages mainly around 18 and 30, except for one player under 18 and four over 30 (see graph 1). A big majority of the analyzed players described themselves as casual players and achievers. These types of players were under our target audience (see graph 2).

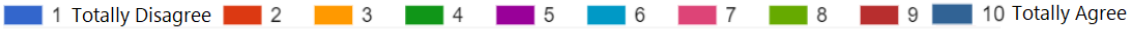


Graph 1 - Player's age distribution



Graph 2 – Player's types distribution

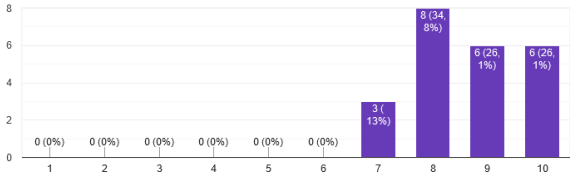
Questionnaire scale:



Results: *Experience Goals*

1. Game and levels' scenery and design

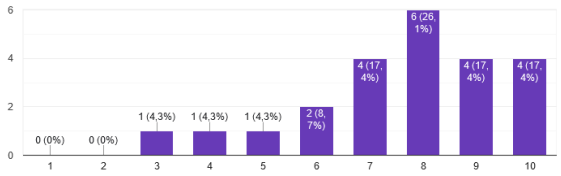
In general, most players enjoyed the game's levels' design and scenery, as can be seen in graph 3, which met our goal of leaving player's impressed with our game's presentation.



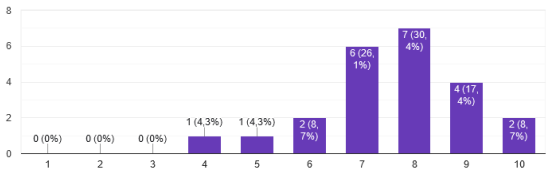
Graph 3 - The game's levels had a good design and appealing scenery.

2. Different gameplays and difficulty in each specific level, overall difficulty of the game

Overall players agreed that each level of the game encompassed a different type of gameplay they had to adapt to, except for a couple of players (see graph 4). Additionally, there was an overall agreement the game was challenging, but not to the point of its difficulty being overwhelming, as the majority "agreed" but with only a smaller percentage "totally agreeing" and the smallest percentage "not agreeing" (see graph 5).



Graph 4 - Each level was unpredictable regarding its obstacles and I had to adapt.



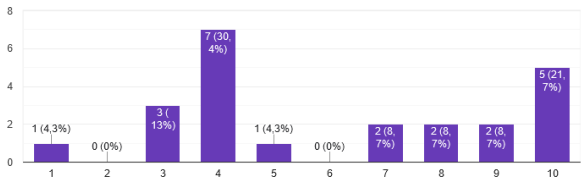
Graph 5 - I felt challenged by the game's difficulty.

3. Players' motivation to gather all 3 stars and freedom to develop their own strategy

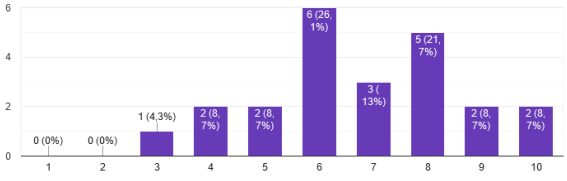
As it's possible to see on graph 6, in terms of player's motivation to gather all 3 stars the answers were split with roughly half of the players feeling compelled to collect the maximum number of stars and the other half not so worried about it. This meets the

goal of our game, which was to target not only conquerors and achievers but also casual players and help them feel more motivated while playing the game.

From graph 7 we can conclude that most players felt they had the opportunity to develop their own strategy to surpass each level with a small percentage agreeing completely on this matter and on the other hand, a smaller number of players not feeling they could develop their own strategy at all.



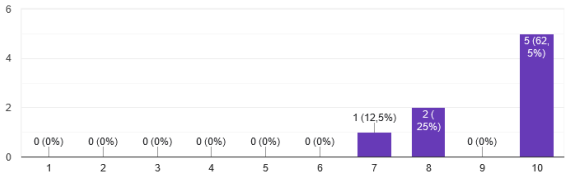
Graph 6 - I felt the need to collect all 3 stars of each level.



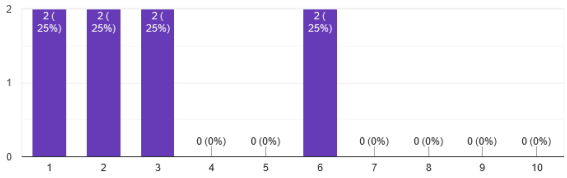
Graph 7 - I had the opportunity to develop my own strategies to surpass each level.

4. Players enjoyed playing against each other

From the questions asked to the players, as it's possible to see in graph 8 and 9 that most players enjoyed playing against another person and had no specific preference to play alone. This information is valuable since we conclude that social players can feel more compelled to play our game.



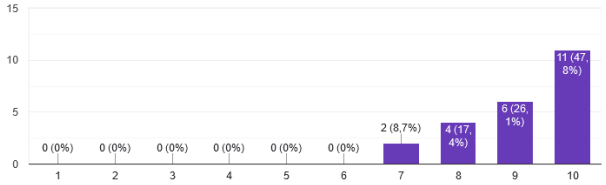
Graph 8 – I enjoyed playing against another person.



Graph 9 - I would rather to play this level alone.

5. Players had fun while playing the game

It's possible to observe in graph 10 that all players had fun playing the game, even though it was a challenging game as we concluded in section 2, which met our game of developing and entertaining game.



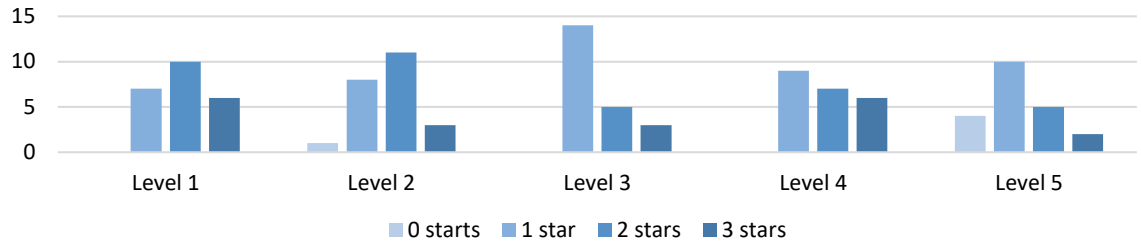
Graph 10 - I enjoyed playing this game.

Results: *Level Star System – Single Player Mode*

1.Number of stars collected per level

By looking at graph 11, we can conclude that the difficulty of the levels increases from level 1 to 3, with players collecting mostly 2 stars in level 1 and 2 and 1 star in level 3. The performance in level 4 increased, which means that this level was not challenging enough and as such, should not be the level that unlocks the boss level. We could change this by demoting it to a lower level or to increase the annoyance that the bully causes.

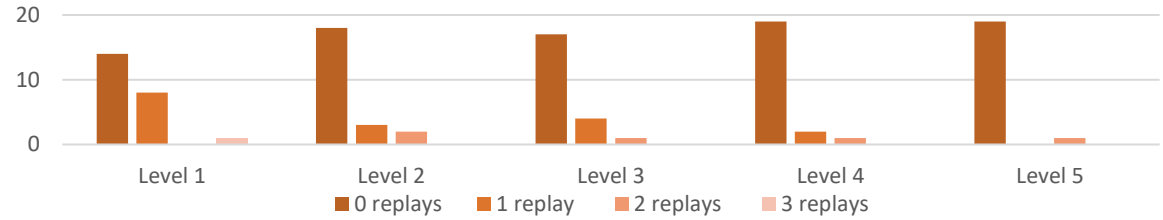
As expected, level 5 was the hardest one. Most players managed to pass it on their first try, although with a non-optimal score.



Graph 11 – Number of stars collected by level from all players

2. Number of player replays per level

According to graph 12, most players did not replay each level, especially as levels grew more difficult. This shows that each level is easy enough to pass, but harder to collect all 3 stars, which is consistent with the previous graph (graph 11), since most players only collect 1 or 2 stars at each level. Since most players identified themselves as casual players (graph 2), these results are according to the fact that most players just wanted to surpass the level and did not want to collect all 3 stars of each level.



Graph 12 – Number of replays by level from all players

Results: *Versus mode*

1. Gameplay balance between players 1 and 2

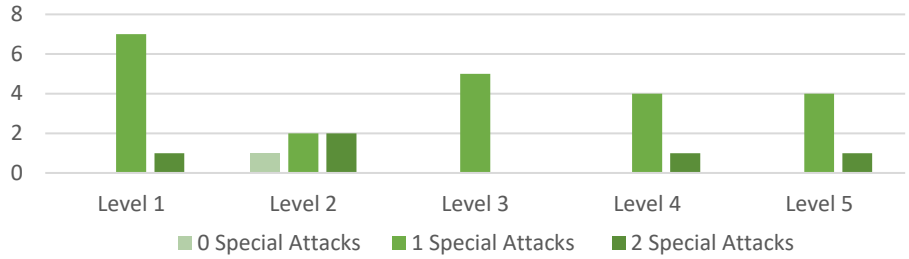
In terms of the gameplay being balanced between both players in the Versus mode, by looking at graph 13, we can conclude that in level 1 and 2 there's an imbalance that benefits Player 2, i.e., the player that plays in the role of the farmer. This imbalance is even more accentuated in level 4. Taking this in consideration the gameplay between both players in the versus mode should be reviewed.

Graph 13 – Total number of stars collected by all players either in the role of player 1 or 2

2. Number of times the special attack was used by players:

By observing the following graph, we can conclude that the vast majority of the players only used player's 2 (the farmer's) special attack once per level, and only a few used it more than once per level. Given this, the mechanic of the special attack should

be revisited and improved by making the special attack meter easier to fill. This would it make it possible for the player to use the special attack more frequently, especially since most players agreed with the fact, they felt more powerful when using the special attack

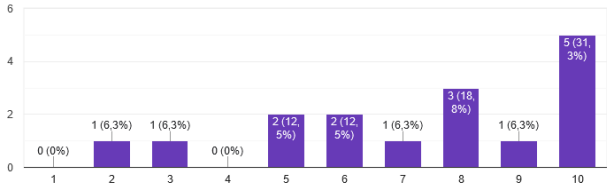


Graph 14 – Number of players in the role of farmer that used the special attack zero, once or more than once per level

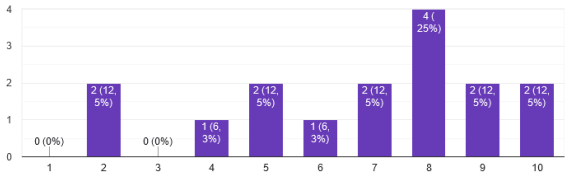
Results: *Powerups*

1. Powerups in making players feel more powerful and helping to improve their performance

By looking at the graphs underneath, we conclude that most players felt more powerful when they picked up a powerup, with a smaller percentage not agreeing with this statement (graph 15), while the majority also agreed the powerups made it easier to pass the level and a minority disagree. The fact that some players didn't feel powerups helped them that much, might have been due to the need to implement a system in which players might store the powerups for later use, since the moment when powerups appear might need be the exact moment when they are most needed.



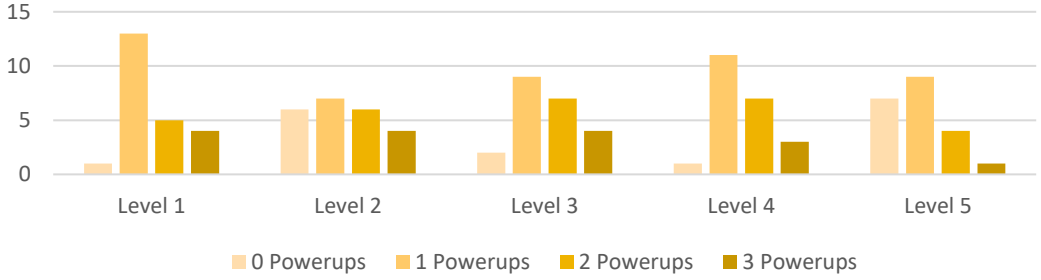
Graph 15 - When I picked up powerups, I felt more powerful.



Graph 16 - The powerups made it easier to surpass the level

2. Number of times a player picked up a powerup

By observing graph 17, we can reach the conclusion that most players picked up 1 powerup per level and sometimes 2. Per level 4 powerups always appeared. This lack of collected powerups may also have been worsened by the fact that some of the tested players associated powerups to obstacles when they appeared on the screen or did not understand the powerup was not part of the scenery. This according to the users' feedback.



Graph 17 – Number of players that have picked up a zero, once, twice, or more powerups per level

Development and Exploitation Plan

Planning and schedule of the main tasks until a future release:

The following plan assumes that the same team that started developing the game at the beginning of the trimester (4 programmers), will remain and finalize the game. In order to complete the development of Cow Stealer, we have to complete the following tasks (these tasks are sorted by priority):

1. **Correct negative aspects of the game prototype according to the received feedback in the MOJO event (12.5 weeks):**

Negative Aspects	Controls	Gameplay (Single Mode)	UI	Player 2 Controls	Gameplay (Versus Mode)
Development Time	0.5 weeks	4 weeks	2 weeks	3 weeks	3 weeks

   - **Controls**: To be possible for a player to customize their own control preferences.
   - **Gameplay (Single Mode)**: Change the way the objective is displayed, change powerup mechanics and had visual/auditory hints when the farmer is going to attack.
   - **UI**: Add a pause screen that allows the player to pause the game, restart the level, exit to the Main Menu screen, or return to the level selection map.
   - **Player 2 Controls**: Define speed and distance of farmer attacks, fill special attack bar faster in some levels.
   - **Versus Mode Gameplay**: Change levels to rounds, declare winner of each round and by the end of the game, the player with more rounds wins the game.
2. **Extension of the current gameplay:**
   - **More Levels**: Extend the game to feature more levels and come up with creative elements for each of them. We would divide the levels into countries composed of 4 regular levels and 1 boss level.
     - **Estimated Time per Level**: 1 week.
   - **Model the Level-Selection**: Model the level selection map as a map of planet Earth and its countries (2 weeks).
3. **Get artists, song composers and story writers involved with the game.**
   - **Artists** would improve our current sprites and make new sprites for the new levels and their features.
   - **Song composers** would compose different soundtracks for each level, whose theme depends on the level's country. This way, the game would have its own custom soundtrack.
   - **Story writers** would come up with a more immersive and coherent story line, with some comedic aspects as well. Since levels don't really have a connection with each other, writers would come up with interesting ideas to connect each level transition with the game story's progression.

Development Costs

- We would like to develop at least 9 more countries, with 5 farm levels each. Assuming a 40h work week and excluding weekends:
  - **Game Developer/Programmer**
    - Pay Rate: 7.5€/hour
    - Work: 60 weeks
    - Cost: 18 000€/developer
  - **Artists:** 25€ per sprite
  - **Musicians:** 100€ per soundtrack
  - **Writers:** 15€ per level's story. 100€ for the entire story
  - **Launch the game on Steam platform**: 95.89€ (roughly 100$)
  - **Total estimated cost**: 76 000€

Revenue Sources

- Before the release of the game:
  - **Friends, Family and Fools**: we would ask family and friends for financial support.
  - **Crowdfunding:** we would ask players to help us fund the project, and it would have the double benefit of helping us understand our target audience.
  - **Sponsorships**: we would attempt to get sponsorships by showcasing our game like we did in MOJO.
- After the release of the game:
  - Our game would have a **fixed price of 4.99€**.
  - Another revenue source would be through merchandise sales (of mugs, shirts, etc). This revenue would be **donated to environmentalist organizations**.

Distribuition Channels

- As mentioned in the Development Costs section, we would distribute our game through the **Steam platform**.
- We would still maintain the game in **itch.io** and update the price and files accordingly.

Partnerships

- Our game has climate change and global warming as central themes. As such, we'd like to partner with **environmentalist organizations** to promote the game and the message.
- We would also consider partnerships with **influencers/celebrities** who share our concern for the planet and would like to help raise awareness for the problem.

Postmortem Report

This project was developed over the course of approximately 7 weeks. During this time, we grew a lot as developers, going from never having created a game to developing a full demo with two game modes in less than a trimester.

The group met in the first lab class, unaware of the work that awaited us. The first brainstorming session, to figure out the theme and concept of the game, proved to be very helpful and fun. We had ideas ranging from visual novels to multiplayer games. We were a bit concerned with finding unique features to add to the concept, but after we started throwing ideas about farting cows, aliens and "vadkas", we had a pretty good initial idea of what to do. Right away, we decided we'd use 2D Pixel art, to give it an 80s arcade vibe. Although we don't regret this choice, it was complicated to find free assets we could use, as we had no artists to help us with the art.

For the editor, we considered using GameMaker, but quickly realized it would constrain our creativity, so we installed Unity. It proved to be a good decision, as one of our developers already had experience in making games and applications in Unity and was able to help the rest of us with fixing bugs and navigating the quirks of this tool.

One of the first things we decided was for each of us to take some time to watch tutorials and learn the basics of Unity, which delayed the development of the game. This turned out to be a good decision, as the few days we lost to get acquainted with the tool prevented future delays and made it easier for us to work independently, without constantly asking for support.

Because we made a great effort in adding animations to our concept pitch showing the main features and controls of the game, it was easier for us to all be in the same page about looks and feel of Cow Stealer. It had a downside, however. The animations made the presentation heavy and lengthy, which we could've easily avoided and should take it into account for future pitches.

Although we had never worked all together before, we quickly realized that our individual skills were complimentary and useful for the project. While some of us were better AI programmers, some were better at devising sound effects, storylines or gameplay mechanics, or more experienced writing project report deliverables, we found it easy to distribute the tasks among the group. We had no major problems or bugs creating the first prototypes (apart from the fact that we were not able to push the prototypes into the Gitea repository).

By the time of the second development cycle, we were drowning in work, be it this project, other classes. It seemed impossible to finish all that we had envisioned in the design document, but we ended up pulling through it. We had a fully developed game to show at the MOJO event.

The MOJO, however, was a bit of a desperate time. We had a meeting the night before to get all the preparations in order when we realized that the game would run flawlessly in the editor but on the executable some levels would not run properly. After a debug session that lasted until around 2 AM, the issues were all resolved. We realize now that we should've built and tested the game much sooner. We were lucky to have fixed it before MOJO, but we understand that we should've been more careful and mitigate the problem.

For MOJO, we had (a lot) of posters, bragging rights cards, and cheese from "*A Vaca Que Ri"* (which we thought was fitting for the theme). One of the group members even brought a cow-pattern blanket to help with the visual aesthetics of our booth.

The user study was a demanding process but fun experience. While some of us were taking notes and interacting with the play testers, others were correcting bugs or playtesting other groups' games. During the players' testing of Cow Stealer, several bugs and issues were found, and they would not be discovered outside the MOJO event with the players different interactions within our game. Given this, it was very beneficial for us to be part of this event to discover more problems with our game and get constructive feedback regarding possible improvements to Cow Stealer, as well as, to get a taste of the gaming industry and development.

In summary, and like one of our play testers cleverly stated: "**Isto é um cows**". It was hard, challenging, sometimes frustrating, but fun, nonetheless. We were able to develop an enjoyable experience for players and for us, as developers, as well as to deliver a complete game with all we've proposed in our game design document and pitch.