



TÉCNICO
LISBOA

DESIGN DOCUMENT

Cow Stealer

Group 15

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In this report we present the design document for our game, *Cow Stealer*.

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Core Experience

The main goals of our game experience we want to achieve are:



First “tweet”

Aboard your UFO, capture as many cows as you can to save the planet while angry farmers throw vicious hay block attacks against you. Experience a twist of events as each farm takes on a completely different scenery. A single-player or versus mode casual game!

Base References

The base references that present similarities to our game are the following:

- Moon Patrol: This game relates to ours as it's a side-scrolling arcade game whose strengths are mainly being a casual game that, despite having rather stimulating gameplay, has an accessible difficulty to most players. Also, the design of this game is a characteristic 2D pixel art from the 80s that was rather modern at the time. However, one downside of this game is that it is very long, and each time you pass a level you don't see much difference in the game design and overall gameplay.



Figure 1. Moon Patrol level gameplay

- Cuphead: This run and gun action game relates to our game since in each level the player must deal with challenging new difficulties, adapt the gameplay to each boss enemy they face, and constantly avoid and dash attacks from enemies. In addition, each level features a completely new design and environment, has an interesting story to motivate the player, and allows the player to choose which level he wishes to play next. One drawback of this game is that the gameplay has a high difficulty and can lead players to abandon the game and not complete it.



Figure 2. Cuphead level gameplay

- 1941 - Counter Attack: The relation between our game and this up-scroller game is that throughout the game the player can catch “power-ups” that increase the player’s power temporarily, and the player must be constantly dodging the obstacles and enemies that appear in the environment. This game also features a 2D pixel-art design that was common in 80’s arcade games. The main problem with this game is that it is too repetitive and highly challenging, and players can become annoyed and bored while playing it.



Figure 3. Counter-Attack gameplay

- Bombljack: The strengths of this platform game are that the gameplay is extremely fun, and the player must collect all bombs while avoiding colliding with the monsters that fly around the environment. These features relate very strongly with our game. Despite this, this game also suffers from being too repetitive and the environment design, and gameplay do not change a lot from level to level.



Figure 4. Bombljack gameplay

- Outside references and activities: Inspiration is also taken by daily activities such as trips to the supermarket, where we wish to collect all the products we need while facing the difficulty of not knowing where the products are, dodging all the people and shopping carts during peak hours and wanting to complete this process as fast as possible. “Powerups” in this situation come from finding a supermarket clerk that helps us find the products we need faster, finding a supermarket checkout with no one in it, and being in the possession of a car or bicycle to carry the groceries home faster. Additionally, activities like playing darts relate to the notion of practicing your aim, and playing dodgeball mimics the experience of trying to avoid being hit by the ball that is thrown against you.



Figure 5. Shopping at a supermarket



Figure 6. Darts



Figure 7. Dodgeball

In our game we intend to capture the qualities of each one of these games and create a fun gameplay, that does not get too repetitive but still features familiar mechanics and controls for the player not to feel “lost” during the game.

Also given our alien theme, our game story can relate to extraterrestrial documentaries, from the “Discovery Channel”, where people claim to have seen UFOs, to have been abducted and studied by aliens, and old monuments like the pyramids being built by beings from outer space.

Player Personas



Ferdinand Persona

Gender: Male

Age: 47

Background: Born in Lisbon, plays with his friend group since childhood.

Profession: Poet

Favorite Games: Moon Patrol, Space Invaders

Currently Playing: Flappy Bird

Player Type: Achiever, Conqueror,

Interests: Spaceships, Illuminati, Astrology

Context of Play: Plays alone in the evening and plays against his friends when they stop by.

Goals: Plays to relax and to pass the time

Activities: Defeats aliens, writes poems, makes new friends

Knowledge: Knows some games, not a hardcore gamer.

Skills: Methodical, organized, never gives up

Limitations: Bad at competition games, friends always completely take over



Christine Blacksmith

Gender: Female

Age: 44

Background: Born in Malveira, started playing in college. Known as *JLo from Malveira*.

Profession: Entertainer

Favorite Games: Pacman, Guitar Hero, Pictionary, Monopoly

Currently Playing: Singstar

Player Type: Socializer, Achiever, Survivor

Interests: Business Management, Talking Loudly, Making TV Shows

Context of Play: Plays alone but streaming to audiences. Collaborates with other streamers.

Goals: Plays to earn money.

Activities: Screaming at screens, Getting High Scores

Knowledge: Has good knowledge of games.

Skills: Persistent, High Achiever, Good Vocal Range

Limitations: Bad at fast pacing games.

Imane Poki



Gender: Female

Age: 26

Background: Born in Morocco. Twitch Streamer.

Profession: Streamer

Favorite Games: Fortnite, League of Legends

Currently Playing: Among Us

Player Type: Socializer, Conqueror,

Interests: Playing games, Streaming, Pokémon

Context of Play: Plays alone most of the time but enjoys playing with friends

Goals: Plays to have fun and pass the time.

Activities: Streaming, playing games, Getting headshots 360 no-scope

Knowledge: Expert gamer

Skills: Good reflexes, good eye to hand coordination

Limitations: Bad at puzzle games.

Play Scenarios

First Scenario

Ferdinand is waiting for his friend, Richard Kings, to come over for dinner. He has his computer on to search for a recipe but gets bored and just orders food. While he waits he decides to play the new game that his other friends told him about – a casual 2D side scroller game called Cow Stealer.

Because he's alone, Ferdinand chooses the single-player mode, astonished at the beautiful pixel art of the game. He is taken through a little cutscene displaying the basic premise of the game. He finds it very exciting to take part in the otherworldly cow-stealing conspiracy. The first level begins. An angry-looking farmer steps in and starts throwing hay blocks at the UFO Ferdinand controls. He quickly understands the game mechanics and steals more than the necessary number of cows, earning the maximum rank of three stars. He is very pleased with the result. It was a fun level, but now he has to choose which level to do next. Unfortunately, his friend arrives and he has to put the game on hold.

Second Scenario

Christine Blacksmith made a mean comment about Imane Poki on a stream. Imane decided to settle the score by challenging her to a gaming battle. They couldn't agree on a game where both of them would have a similar level of skill or experience, so they took a suggestion from the fans – Cow Stealer, a fun 2D scroller game with a versus mode. They met in person for the competition. Some provocations were exchanged but they tried to keep it PG. As the game started, Imane complained that Christine was talking loudly and preventing her from enjoying the background music. They used the very reliable system of rock-paper-scissors to decide who would be who. For the first level, Christine would play as the UFO and Imane as the farmer. They both quickly understood the mechanics of each playable character, but Imane was so good at throwing hay blocks that Christine barely scored any points. She complained it was luck, that it was easier to play the role of the farmer. So, for the second level, they switched roles. Christine still got destroyed by Imane, proving that the playable characters were well balanced. With a 2-0-win streak against Christine, Imane was crowned the winner by the audience watching the stream.

Third Scenario

Christine was very upset that she wasn't particularly good at fast-paced games, so she decided to beat all levels of Cow Stealer with the highest scores possible (to show Imane Poki who's boss). Unfortunately, she didn't have much time because of her busy work schedule. She played the first level. It took some tries to get the 3 stars rank and she ran out of time for the day. Fortunately, Cow Stealer is a casual game that doesn't need to be completed in one sitting. Christine ended up playing and replaying the levels until she achieved her goal of being the best Cow Stealer player in existence. At the end of the game, Christine felt very proud of her playing abilities and decided to challenge Imane Poki for round two.

Conceptual Models

- Capturing a cow and dodging farmer attacks example (Sequence Diagram):

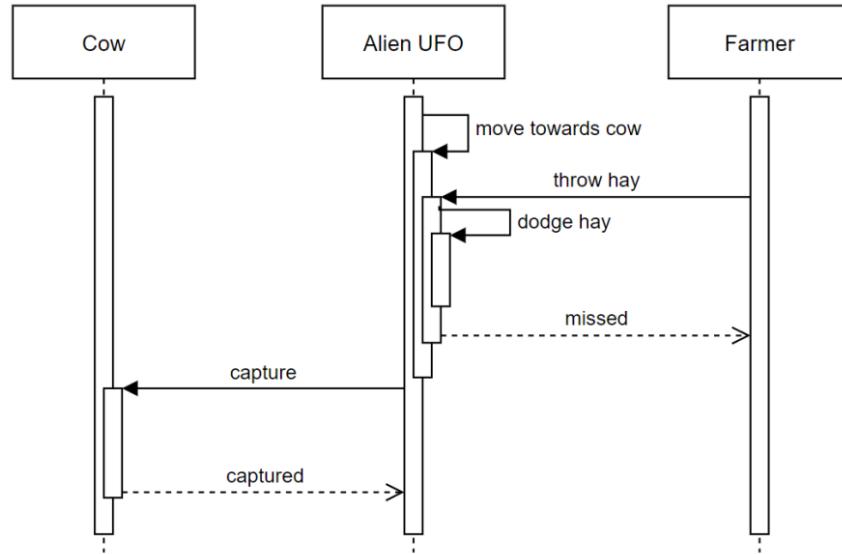


Diagram 1. Sequence Diagram for Capturing a cow

- Entity relations: (Note: not all instances are specified. For example, there might be more animals or special attacks)

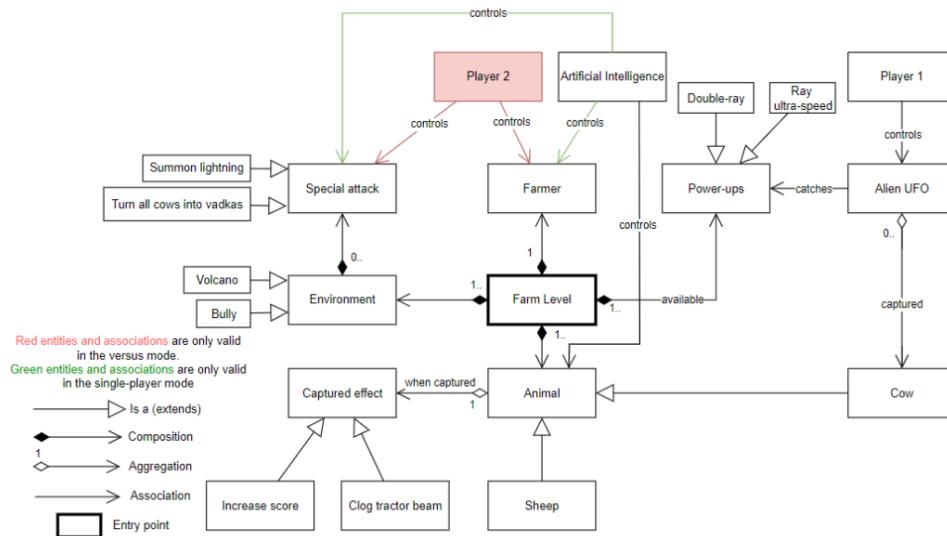


Diagram 2. Entity-relation diagram

- Simple Gameplay State Diagram (single player): In the following diagram, we show what happens from the point where a player selects a level to the point where the level ends. This is “Simple” because we’re not considering more complex gameplay aspects such as catching power-ups that change the state of the UFO, as that would create a very complex and hard-to-read diagram.

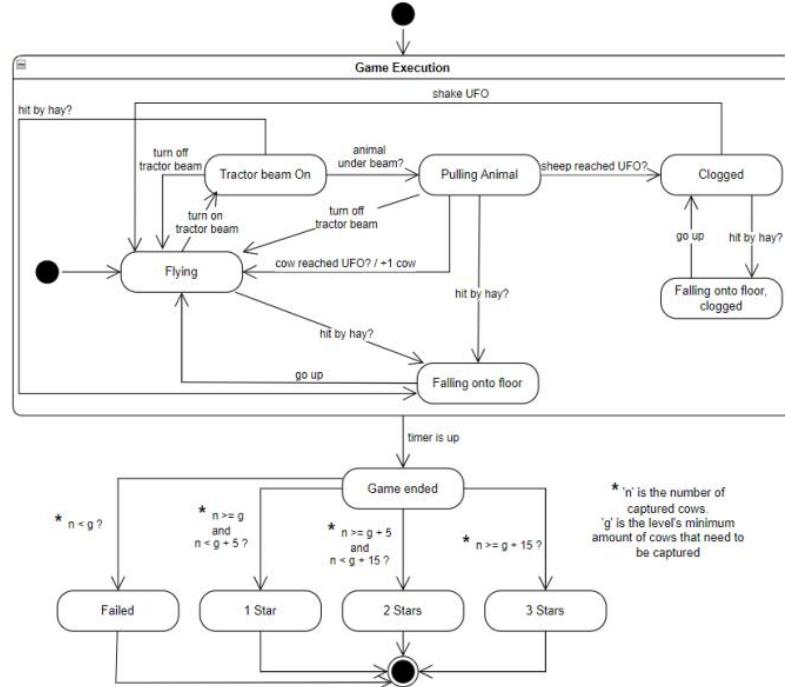


Diagram 3. Gameplay State Machine

- Going Through the Levels State Diagram:

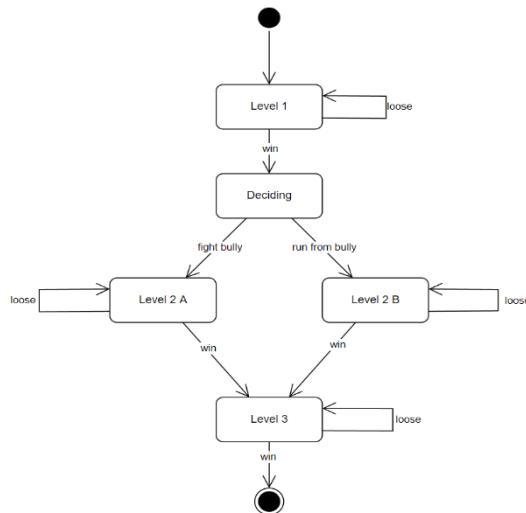


Diagram 4. Levels State Machine

Core Gameplay Loops

- Level selection and surpassing:

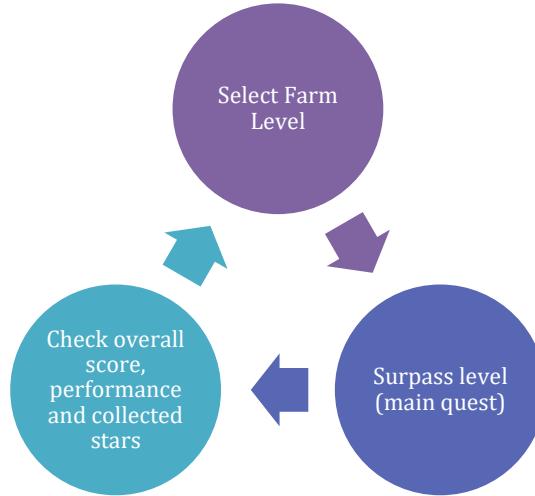


Diagram 5. Basic Gameplay Loop

Level selection is one of the main loops of our game. The players select the farm level that they wish to play, then after surpassing this level a game board will appear with a review of the player's performance during the game with the number of gathered cows and the amount of earned stars. After this the player can choose to either continue playing and select another level or exit the game.

- Main Quest - Pass Levels (Obstacles, Events): Single Player

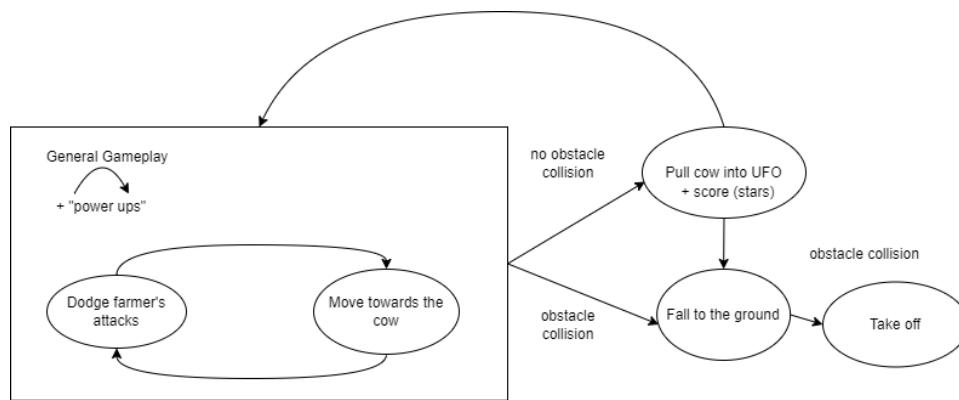


Diagram 6. Single Player Main Loop

The main quest includes a general gameplay where the player must try to move towards the cow, while dodging the attacks thrown by the farmer. Throughout the game, the player can pick up “power ups” that increase the player’s power temporarily. If the player is pulling a cow and gets by a block of hay, he drops the cow and falls to the ground and must take off to air again. Otherwise, the player collects the cow and increments the cow counter. By the end of the level the amount of collected cows will reflect the player’s score and the number of earned stars.

Core Gameplay Modes:

Versus Mode:

Table 1. Actions for both game modes 1

Player 1 (UFO)	Player 2 (Farmer)
Moves towards cows	Selects attacks direction
Dodges attacks	Launches attacks
Gets hit	Fills up special attack meter in each hit
Pulls cows	Launches special attacks
Picks up power ups	Gets hit by block and hay (Player 1 has “Ultra UFO powerup”)
Repeat	Repeat

In the versus mode, player 1 maintains the same gameplay as described above but player 2 has now the ability to control the farmer. As a farmer, player 2 can select in which direction he wishes to throw the hay block and launch the attack. Every time player 2 hits player 1, a bar meter will fill up, and when it is full, player 2 can launch the farmer’s special attack. If player 2 hits player 1 with a hay block but player 1 has the “Ultra UFO powerup”, player 1 will launch back the hay block against the farmer and the farmer stays stunned temporarily.