



Popgo!

Game Design Document

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TALBAT
STUDIOS.





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Game Analysis

What is *Pogo*?

Pogo is a jump-centric 2D platformer developed in Unity in a team of six over a three month period. You control Po, a dimwitted human, and Dox, a sentient world-travelling pogo stick, as they adventure through whimsical worlds searching for portals to extend your journey and eventually make it home. The unlikely duo must work together to overcome challenging landscapes and quirky enemies through the use of rhythmically timed bouncing.

The core mechanic of *Pogo* is bouncing. Unlike other platformers, Po and Dox are constantly bouncing and are unable to stop. The key to traversing the world is to rhythmically time your jumps. Consecutively timed bounces increase the overall height of your jumps and allow you to clear both vertical and horizontal distances that would be otherwise impossible. You can also perform mini bounces and reduce your jump height to avoid overhead hazards and hammer stubborn enemies into the ground.

We aimed to design *Pogo* to reward players willing to master its mechanics with a challenging experience with a strong balance between difficulty and fairness. Po and Dox die in a single hit so precision is crucial to clear the game's levels. To balance this, we ensured lives are easy to obtain and hazards are visible and apparent. Points are gained by collecting junk food and defeating enemies, and you earn a life for every 50 points you obtain. There are also alternate paths in each level that offer greater rewards in exchange for higher difficulty, and there are plenty of easter eggs to be discovered throughout the worlds.

Mission Statement

Pogo is a 2D platformer where rhythmic pogo bouncing is key towards success. Bounce through whimsical worlds collecting junk food and clearing dangerous challenges as you journey to find the portals and adventure even further.

Platforms

PC

Genre

2D Platformer





No. of Players

Single-player

Game Engine

Unity (version 4.5.1f3)

Target Audience

Pogo is aimed towards gamers experienced with the 2D platforming genre who are looking for a quirky but challenging experience. The game is relatively light-hearted in its humour and character design but requires precision to succeed, so it is best suited for players who enjoy games like *Crash Bandicoot* and *Donkey Kong Country* as opposed to less experienced players.

Development Team Members

Talbat Studios

Thien Thai Tu - Lead Programmer, VFX Artist, Composer

Anthony Iob - Creative Lead, 2D Artist, Animator

Laura Voss - Level Designer, Writer

Bel Turnbull - 2D Artist

Adam Venuto - Game Designer, 2D Artist

Tyson Brown - Sound Designer, Composer

Additional Team Members

Jeremy Burns - Composer



The Story

On one unremarkable day a young and unintelligent kid named Po was at home alone lazing about. Half-asleep and bored out of their brain, a sudden boom from their garage jolted Po awake. They immediately checked out the garage to see what had happened and to their surprise they saw a dark swirling vortex near the garage door and a pogo stick conspicuously lying a few meters away. Po, uncaring of the potential dangers, moved towards the vortex when suddenly they heard a stern voice.

"Step away from that portal, you fool!"

Po turned to face the direction of the sound and saw it had come from the pogo stick. Not only that but the pogo stick had a face and moustache, and it did not look happy. The pogo stick introduced itself as Dox, a world-travelling being in charge of overseeing all of the worlds of the dimensional portals. Dox explained that he had been in a freak accident in another world and had flung himself through a portal to safety. Unfortunately he landed on his side and, being a sentient pogo stick without arms, was unable to get back up.

Dox needed to resume his task and asked Po to place him upright so he could bounce himself back through the portal. However Po didn't listen to a single word Dox said and excitedly jumped onto him and bounced through the portal in search of fun and adventure, despite Dox's best protests.

It soon became clear that these worlds were not a safe place for a child, especially one as dangerously impulsive as Po. However getting home would not be so easy as the portal they came through had closed behind them. Forming an unlikely duo, Po and Dox must travel through multiple wacky worlds searching for portals to get Po back home and let Dox get back to his work!



The Characters of Pogo



Po and Dox

Po is an bored and unintelligent kid hungry for adventure and junk food. Dox is a dignified and sentient world-travelling pogo stick perpetually annoyed at Po's antics. Together they must team up to get Po back to their home and Dox back to his job overseeing the portal worlds.

Po is designed to be androgynous in appearance so the player is able to project themselves onto them. Po and Dox also have contrasting colour schemes and fashion sense to further highlight just how opposite the pair are from each other.



Robots

Recurring enemies of ambiguous origin. They aimlessly patrol worlds walking back and forth while humming to themselves. Despite their relatively innocent appearance they are dangerous and will hurt Po and Dox if run into. Thankfully their poor design has left their weak spot on their heads uncovered, and a single bounce will dispose of them. You will find them in the Dark Jungle and Penguin Heights.



Time Kitty

A mysterious race of cats that like to position themselves in precarious locations in the worlds. They meow nonchalantly as they bounce in place, seemingly unaware of the danger around them. Rescuing a Time Kitty will reward Po and Dox with an extra life. They can be found in every level, see if you can find them all!



Penguins

These shy penguins from Penguin Heights avoid contact with Po and Dox, preferring to stick their heads out from behind rocks from time to time. They are also highly immersed in meme culture and love to emulate poses from some of their favourites.



Polarboarder

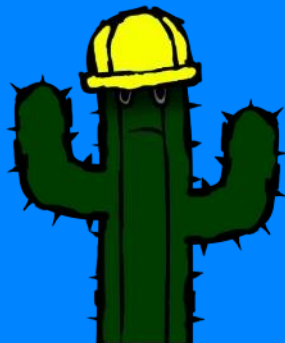
A notorious tyrant of Penguin Heights with a penchant for iceboarding in front of the entrance to the Avian Ruins. The Polarboarder has claimed this location as his turf and refuses to let anyone past, even wearing a spiky helmet to prevent a certain pair from bouncing over the top of him.

However the Polarboarder has terrible depth perception and only turns around once he's hit a wall. Use this to your advantage to gain access to the Avian Ruins!



Cleocacta

The leader of the cacti living in the Avian Ruins. She stands tall and firm in front of the various chambers, unwilling to stand aside from Po and Dox. She is by far the tallest enemy in *Pogo* and requires a lot of height to reach her head. A few swift mini bounces will knock her back underground with an astonished "DAYUM!"



Cacti

Enemies which live exclusively in the Avian Ruins. Their spikes damage Po and Dox on contact, with only their constructions helmets being safe to touch. However, merely bouncing on their head is not enough to defeat them. You must mini bounce on their heads to force these stubborn minions back underground.



Ruin Birds

These birds make their nests above the Avian Ruins, though some tend to get lost within the chambers themselves. These confused specimens fly in place, which makes them excellent platforms for Po and Dox to reach alternate pathways with.

Cameo Elements

As part of the alternate dimension theme of *Pogo*, we were able to collaborate with other development teams and include characters and other elements from their titles as cameos in the worlds. See if you can find them!

Characters

Gummy Knight



One of the titular characters from *Gummy Knights*. It stands guard in a hidden chamber at the Avian Ruins with its trusty lollipop weapon. Why it is holding the grandma from *The People's Inferno* prisoner is unknown, but it makes for a tasty snack for Po!

Gummy Knights developed by: John Arbrew, Patrick Biedrzycki, Amanda Quinless, Darcy Sandall, Alison Turnbull and Wen Zhi Alison Yeo

Granny & Child



A duo from *The People's Inferno* with a penchant for getting into trouble. Her imprisonment by a Gummy Knight is certainly different from being trapped in a burning apartment, but the grandma takes it in stride and has plenty to say to Po and Dox. Unfortunately they do not speak the same language as her so the meaning behind her words remains unknown.

The People's Inferno developed by: Dylan Blum, Lachlan Bouckley, Simon Greene, Brendan Keesing and Michael Loorham

Level Elements



People's Inferno Poster

A poster depicting the logo of *The People's Inferno* hidden away at the very start of the game just outside the garage.

The People's Inferno developed by: Dylan Blum, Lachlan Bouckley, Simon Greene, Brendan Keesing and Michael Loorham



Pugnacious Spaceship

In *Pugnacious*, there is a cat that fires weapons from its spaceship in an attack to take down a dog. While that cat itself is not present, a Time Kitty has stolen its spaceship and is flying around in *Pogo's* credits.

Pugnacious developed by : Jeremy Burns, Thomas Fortune, Elliot Harvey and Aaron Richards



System Rift Ships

Within *Pogo's* credits there is an abstract view of the ships from *System Rift* with the implication that they are doing battle far, far away in outer space.

System Rift developed by: Daniel Duquemin, Lachlan Goodear, Thomas Murnane, Jason Stubberfield and Joshua Wojcicki



Gameplay

Overview

Pogo is developed in Unity for PC and is controlled via the keyboard. As a single-player 2D platformer players will primarily be using either the arrow or WASD keys to move left to right and the spacebar to jump higher. Pressing the spacebar during the descent of a jump will activate the power bounce, and performing this action three times in a row will maximise its height. You can also press S or the down arrow key to perform mini bounces which drastically reduce your height and hasten your descent time, which can be used for various different purposes. To differentiate *Pogo* from other platformers, the character constantly bounces so precise landing and perfecting the timing of power bounce are crucial to mastering the game's platforming.

The game includes three full levels complete with alternate paths and easter eggs to discover, as well as a brief introductory level and a playable credits level. The primary mode is the Adventure mode in which players play through each level in order with limited lives while being timed. Players are also able to select which level they would prefer to start from using the Level Select, after which the game will continue as normal.

Po and Dox are not invulnerable and will die in a single hit if they fall into a bottomless pit or they are attacked by an enemy. The player begins with 9 lives and can earn more by collecting the junk food scattered across the worlds and defeating enemies. These actions will earn the player points of varying quantities, and collecting 50 will earn them an extra life. They can also rescue the hidden Time Kitties which count as an extra life. There are also checkpoints in each level where players will respawn when they die so long as they still have lives. Running out of lives will cause a Game Over where the player has the option to restart the level from the very beginning or quit back to the main menu.



Player Experience



The Title Screen

Pogo begins with an interactive title screen where the player has complete control over Po and Dox and can start the game by moving towards the portal. This is so the player can intuitively learn the general movement and objective of the game while also breaking the norm of standard "Press this key to continue" title screens.



The menu screens of Pogo

The main menu has four core options, each triggered using the spacebar. The spacebar was chosen as the confirmation key to reinforce its association with positive actions within the game, being the key used for power bouncing in gameplay. Adventure mode is the core experience of the game and sets the player on a journey through every level sequentially, while Level Select allows the player to choose their starting point instead. The Credits option loads the playable credits level without having to play the full game to get to it, while Quit Game closes the overall application.



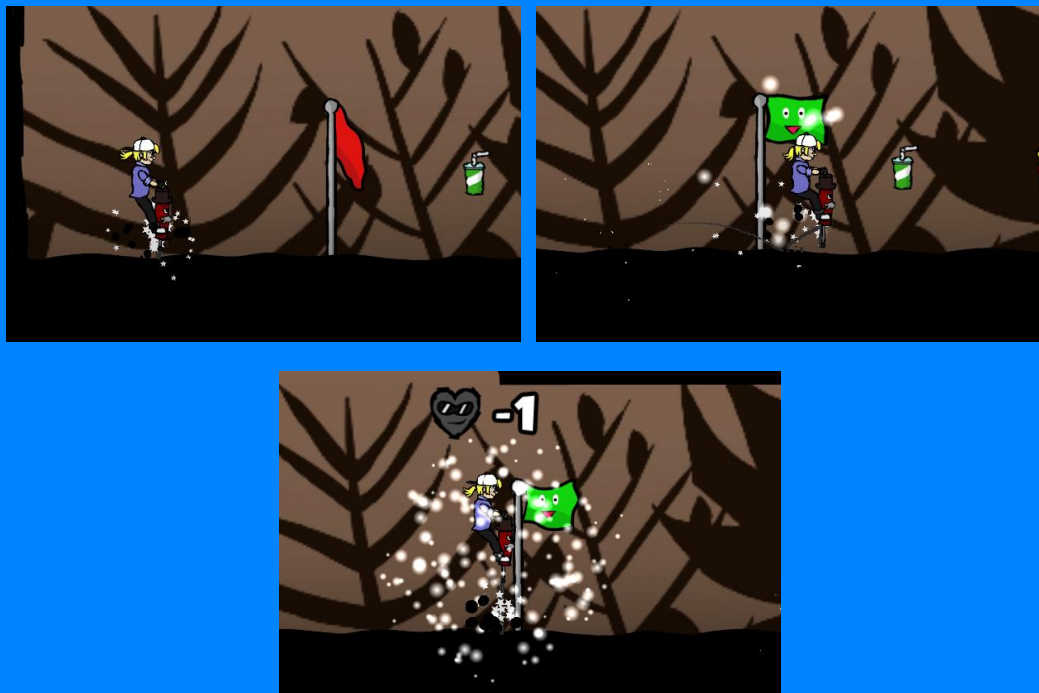
The pause menu

Adventure mode will start you off at The Garage, where the pause menu can first be accessed by pressing the P key. indicator for when you can perform the power bounce mechanic.



Power bounce indicator toggled on/off

The power bounce can be triggered by pressing the spacebar during the descent of any of Po and Dox's jumps. By default this is indicated by a speech bubble with an exclamation mark appearing to the side of the characters, as well as a star burst particle that appears the moment the technique is possible. As this may be considering immersion-breaking for some players, we included the option to remove the speech bubble by pressing the spacebar from within the pause menu.



Checkpoints become active once touched and become respawn points

Checkpoints appear periodically throughout levels and will become active as soon as they are touched by Po and Dox. By default your original spawn point is at the spot where you initially arrive in the level through a portal. Your most recently activated checkpoint will replace the default as your spawn point. We made an effort to include multiple checkpoints per level, particularly nearby particularly dangerous sections, to reward players for overcoming challenges and to avoid unwanted backtracking if a player accidentally dies carelessly.



The initial section of Dark Jungle

The initial sections of the game involve teaching the player the basic movement mechanics of *Pogo*. The first area in Dark Jungle, the first full level in the game, do not require any timed jumps and can be cleared simply by moving forward. This teaches the player the capabilities of Po and Dox's regular jumping.



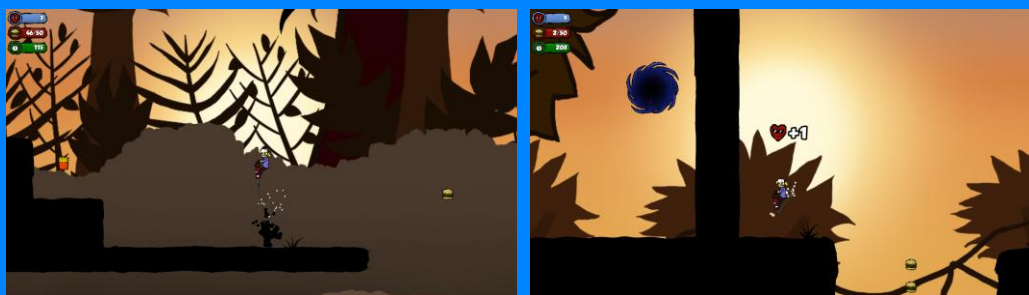
Mini bounce is best used when smaller bounces are required

Soon after the player arrives at a section with a low ceiling and some spikes. The player will bump their heads moving past the checkpoint flag and discover their regular jump is too high to clear the spikes without dying. Through this section the player is taught about the practicality of mini-bouncing and situations where it is best applicable.



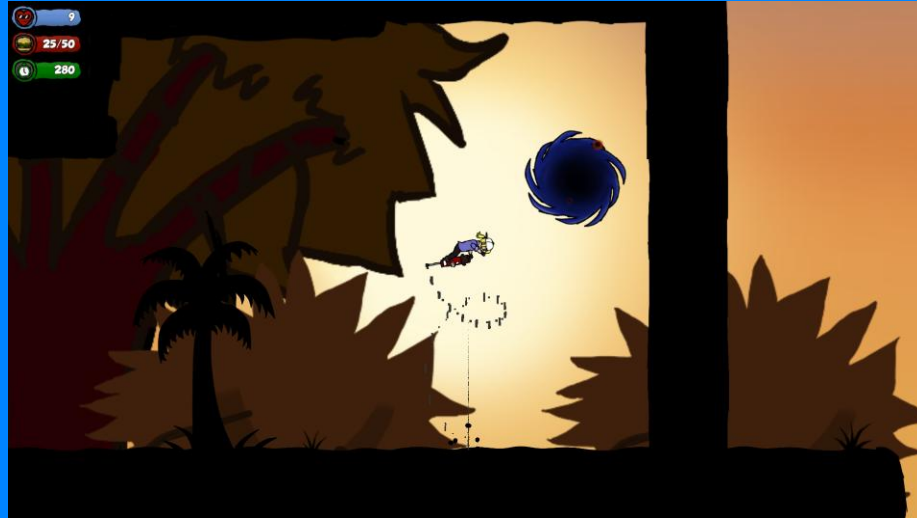
Consecutively power bounces greatly improve bouncing height

Later sections introduce the necessity of the power bounce mechanic, which is triggered by pressing the spacebar during the descent of any jump. Performing this technique consecutively will increase the height gained up to three times. This is taught through lining up increasingly taller cliffs so the incremental gain in height feels natural and the platforming sections maintain flow.



Defeating enemies and collecting food earns extra lives

Players start with nine lives and earn more by defeating enemies and collecting food. These actions will earn the player points, and once 50 points are collected an extra life is obtained. Certain feats earn a greater amount of points, such as defeating a boss enemy or eating larger junk food, and rescuing a Time Kitty will immediately earn a life regardless of points. Food is grouped together in each level to encourage players to follow their direction and progress through levels.



Portals are the end goal of most levels

The player's goal in each level is to find the exit point, typically a portal as seen in the above image, and jump through it to finish the level. The only exception to this is in the Penguin Heights level in which the exit is through a dark corridor leading to the Avian Ruins. Players are encouraged to interact with portals from the very beginning of the game at the title screen, so their usage as the end goal feels natural to players and doesn't need to be overstated.



The two potential end state screens

Upon completion of every level the player is shown a congratulations screen alluding to secrets within each level. The secrets are hinted towards through the arrow signs which when hit will point in the direction of alternative pathways. We included this screen to encourage players to replay the game and see how many secrets they can discover in each level. Alternatively, if the player runs out of lives they are treated to the Game Over screen. From there they can retry the level they died on, though their time will not be reset, or they can return to the title screen should they no longer want to continue the game.



Development Guidelines

Pogo was designed with humour in mind and the alternative dimension worlds theme we utilised allows us to be flexible in our design of the game. So long as the assets matched the art style of the game we were fine with including contrasting elements within the levels, such as the Gummy Knight cameo in Avian Ruins and a bloodthirsty polar bear riding on an ice-board at Penguin Heights. We wanted players to expect the unexpected within the worlds so we threw logic out the window when designing these elements to create a whimsical and wacky experience.

One restriction we did adhere to was to do with the design of the protagonists. We designed Po, one half of the protagonist duo, to have a vague back-story and to be androgynous and deliberately gender-ambiguous. Po was in effect a parody of the stereotypical gamer looking for adventure and giving little thought towards the in-game consequences of their actions. As such we wanted the player to be able to project themselves onto Po so we kept their past and gender up to the player's interpretation to encourage further player immersion. Dox on the other hand has an established role within the lore of the world so we gave him an established personality and characteristics to contrast with Po.



Game Objectives & Rewards



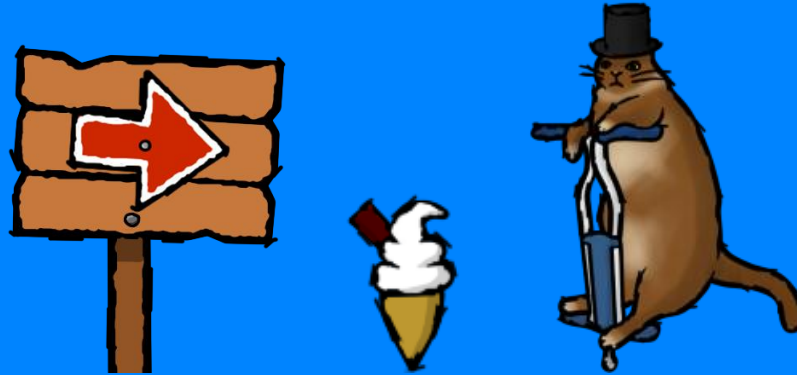
Locating portals is the main objective of Pogo

The main objective of *Pogo* is to discover and travel through the portal at the end of each level (barring Penguin Heights in which the end goal is a dark corridor). To do this the player must overcome platforming challenges and defeat quirky enemies using various bouncing skills and precise timing.



Collect enough junk food to earn additional lives

Junk food is scattered throughout each level in paths to indicate the intended level path for players to follow, as well as hinting towards hidden paths. They also provide points to players upon collection that go towards earning additional lives. It is in the player's best interest to collect as much food as possible on their journey to avoid running out of lives.



Bonus objectives within levels

Every level has multiple routes: the standard path intended for newcomer players and hidden paths that offer greater rewards in exchange for increase difficulty. These paths are usually indicated by signs pointing in the direction of the standard path. Bouncing on a sign will cause the arrow to swivel in the direction of the bonus path temporarily, giving players a hint as to where to go in search of secrets. Food is found in far greater quantities in secret paths, with exclusive food like ice cream being worth much more than regular junk food, though hazards are much more plentiful so these paths are a matter of risk vs. reward. There are also Time Kitties on these paths that are worth an extra life, so players confident in their platforming skills will reap the most rewards taking on these challenges.



Take caution of both enemies and environmental hazards

Hazards take form in both enemies and environmental objects, and failure to overcome them will result in lost lives. Enemies such as the robot and the cacti can be cleared using bouncing techniques and will reward points for their defeat. Environmental hazards however can work to both the benefit and detriment of players. For example, icicles are dangerous to Po and Dox but they can also be dropped onto enemies to defeat them. Clever platforming on breakable platforms will reward players with new paths, while sloppy jumps will only lead to their demise. The determining factors between completing *Pogo* and getting a game over are the player's platforming skills and usage of hazards and enemies.



Character and Enemy Properties

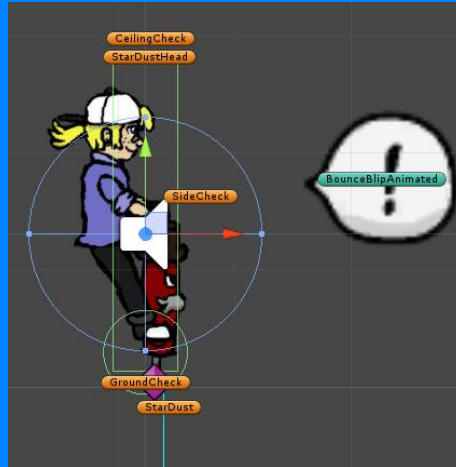
Every object within the game is centered around Po and Dox and how they interact with them based on height and vicinity.

Po and Dox Attributes	
Movement Speed	10
Standard Bounce Force	700
Power Bounce Force (Tier 1)	850
Power Bounce Force (Tier 2)	975
Power Bounce Force (Tier 3)	1100
Mini Bounce Force	350

The movement properties of Po and Dox

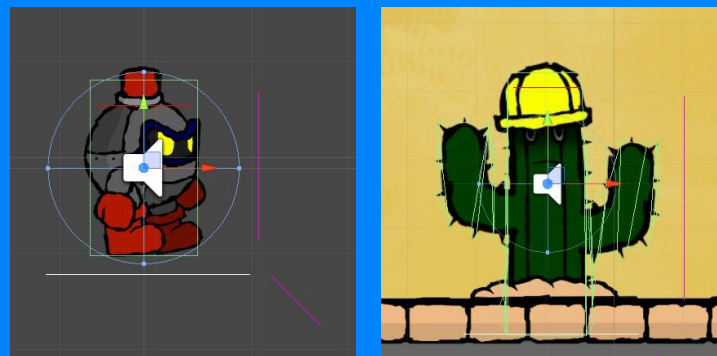
All of Po and Dox's movement is force based and the placement of objects within the world is designed to accommodate this. Their standard jump is measured to reach approximately the full body height of the two characters while each Power Bounce tier adds roughly half their height incrementally to the jump. The Mini Bounce height on the other hand is measured to reach just under half the body height of the protagonists. We created assets, levels and enemies in relation to these jump heights so every aspect of the game felt tailored towards the capabilities of the player and therefore was more intuitive to play.





The collisions of the protagonists and their relevant particles and detectors

Within Unity, Po and Dox are made up of two colliders. The rectangle collider is used for ceiling and horizontal based collisions and is thinner than the sprite to accommodate trick animations. The circle collider is used for landing and is circular to allow for more flexible terrain collisions that prevent the player from getting stuck in corners. There are also detectors for the ceiling, sides and the ground that are used to emit particles for specific collision-based events such as landing and Po hitting their head on the ceiling.

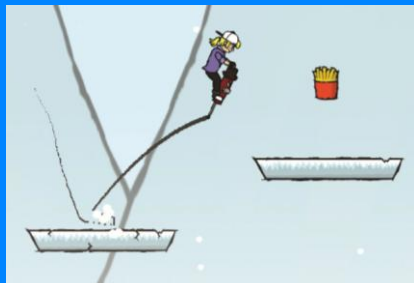


The collisions and detectors of enemies

Each enemy has a collider combined with a height checker that determines what happens when the player collides with them. If the player is higher, the enemy will be damaged and the player will bounce off them, but if the player is lower they will lose a life instead and respawn at the nearest checkpoint. In most cases this defeats the enemy, but some like the Cacti are stunned and must be mini bounced in rapid succession to finish the job. Additionally, moving enemies like the robots have vertical and horizontal detectors to determine if there is ground in front of them. If they detect a wall or cliff the enemy will turn around and walk the other way as opposed to walking off the ledge or endlessly into walls.

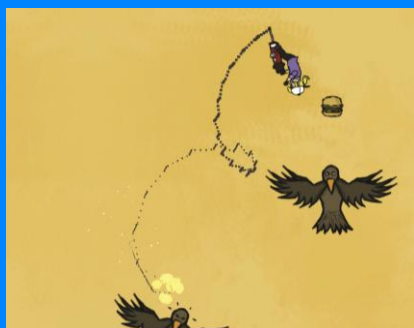
Gameplay Mechanics

The core gameplay of *Pogo* revolves around bouncing mechanics and their interactivity with objects and enemies.



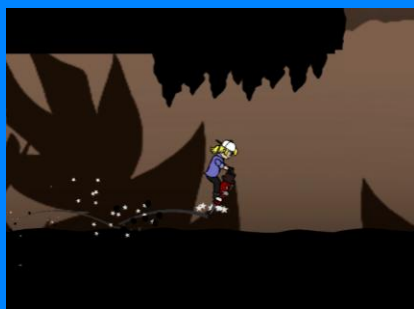
Bouncing and Landing

If there is one thing that Po and Dox do best, it's bouncing. The duo are constantly bouncing, never taking a break to simply stand still. The characters effect whatever they land on, from enemies to breakable platforms, so precise bouncing and landing is incredibly important.



Power Bouncing

Hitting the spacebar during the descent of a jump triggers a power bounce: a higher bounce than the standard. Sequential power bounces in a row will incrementally increase Po and Dox's bounce height up to three times. They also perform tricks during the second and third bounce to show off their expertise.



Mini Bouncing

By holding S or the down arrow, Po and Dox will perform significantly smaller bounces. This can be used to clear ceiling hazards, defeat stubborn enemies and destroy breakable terrain much faster than with regular bouncing.

Scoring Mechanics (Points)

Players begin *Pogo* with nine lives and are able to earn points through performing various actions in gameplay. These points are carried over as you play each level sequentially, and for every 50 points you earn you will gain an extra life. Below are the various actions you can perform to earn points and what quantity you will be rewarded:



Consume Junk Food - 1 Point

Junk food is scattered across all of the worlds, and for every piece of food players collect they will earn a single point.



Defeat Common Enemies - 10 Points

Defeating enemies through various memes will not only clear the level of further hazards, but also earn players a significant amount of points to go towards an extra life.



Consume Rare Junk Food - Varying Points

By discovering hidden paths or accomplishing difficult feats, you will run into rarer junk food. Ice cream earns players 30 points, while the sole Gummy Knight in the game earns an extra life.



Rescue a Time Kitty - 1 Life

Time Kitties like to bounce in distant and dangerous locations, and by reaching those areas and rescuing them you will be generously rewarded with an extra life.



Defeat a Boss Enemy - 1 or 2 Lives

There are unique boss enemies in each level, and defeating them will reward players far greater than regular enemies. Bosses based on common enemies, such as Cleocacta and the Giant Robot, reward an extra life. Unique bosses like the Polarboarder reward two lives at once.



Control Scheme

Action	Control Input
Movement/Select Option	WASD or Arrow Keys
Power Bounce/Confirm Option	Spacebar
Mini Bounce	S or Down Arrow Key
Pause	P Key
Cancel Option	R Key
Spin/Rotate Character	C Key (Y-Axis) F Key (Z-Axis)

Pogo's keyboard controls

Pogo is controlled using a keyboard and does not require any additional accessories or devices to play. Players can choose whether they would prefer to use the WASD or Arrow keys for movement and Mini Bouncing, and the spacebar is used for Power Bouncing as well as confirming options within the menus. These are the core inputs used within the game so the controls are kept to a minimum to reduce cognitive load. The player can press the P button at any time during gameplay to pause or unpause their game. Within this menu they can also press the spacebar to toggle the Power Bounce Indicator to their preference.

On menu screens the movement keys are used to select options, while the spacebar is used to confirm the player's choice. We chose to use these keys specifically as they are used to control the player characters, so we wanted to emphasize their importance and positive impact to the player. The R button is used exclusively in menus to cancel a selection and return back to the previous menu screen.

Lastly, as a hidden easter egg players can press the C and F keys in gameplay to make Po and Dox flip around during their current jump. These inputs were originally used to test animations for the characters but we decided to keep them in so players who discovered the inputs could have fun messing around with their animations. These flips have no impact on gameplay as they do not affect the collisions of the characters.



The Levels

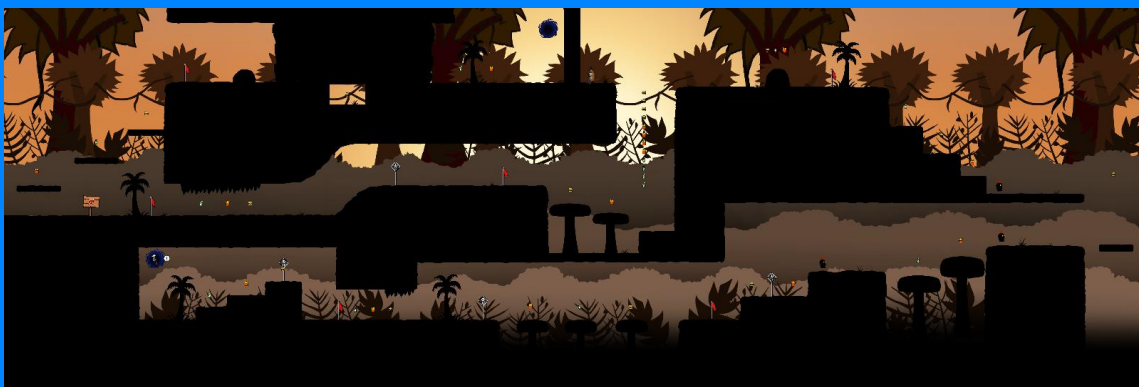
Not including the brief interactive title screen, *Pogo* has five different levels of varying lengths, themes and difficulties. Three of these levels are full-length levels with multiple paths and enemies, the first level serves as a brief story introduction to the game and the final level is an interactive credits sequence.



An overview of the first level

The very first level of *Pogo* is The Garage. This level has absolutely no hazards or enemies and is made up of a few platforms so the player can practice platforming without any worries. The ceiling is just high enough for Po to bump their head during a maximised Power Bounce to give players an indication of how high that can go. There are a few pieces of junk food lying around to indicate to players what their function is, and the potted plants have attached particles to showcase their interactivity. The portal is placed just high enough so regular bounces won't reach it, forcing players to learn about Power Bouncing to progress to the next level.

From a story perspective this level takes place right after Po has picked up Dox and is heading towards the portal despite the pogo stick's best protests. As the game itself is not story-driven we wanted to include this level briefly to embed the narrative within the gameplay and give context as to why Po and Dox find themselves in quirky worlds.



An overview of the standard path

The first true platforming level in *Pogo* is the Dark Jungle. This level introduces the basic bouncing mechanics of the game within the context of danger as opposed to The Garage, with the first deadly obstacle requiring Mini Bouncing to overcome. This level requires the mastery of Mini Bouncing and Power Bouncing to progress, while also introducing the basic Robot enemies for the first time. The standard path of the level is shaped like a zigzag and has the player forge their way upwards through the jungle to meet the sunrise.



An overview of the hidden path

The Dark Jungle also introduces the more difficult hidden paths, and Dark Jungle deviates towards the end of the level. By hitting the sign post players are alluded to the existence of a second path and by waiting at the edge of the pit of fly traps they will notice a moving platform come into view. By following this path players will hit a checkpoint and be able to progress through the hard path. This path is treacherous and requires perfect Power Bouncing to collect all of the food and eventually defeat the giant Robot at the top of the level. Defeating this enemy will earn the player a life unlock a path down to the original level ending.

This level began development as a testing ground for the game's mechanics using grey boxing for the world. However as we began expanding the level we found we liked the silhouette aesthetic, so using *Donkey Kong Country* as an inspiration we added a jungle theme to the silhouette assets and expanded upon the test level's concept. Once we completed all the standard path we decided to add the hidden path to improve replayability of the level and to reward players looking for a tougher challenge within the level. This path is longer than the standard path and is not advisable for players trying to get the best level clear time, so the reward is in the lives gained and the pride in overcoming the challenge instead.



PENGUIN HEIGHTS



The beginning of Penguin Heights

Penguin Heights introduces breakable objects as both a hazard and a method of advancing through levels. Contrasting with Dark Jungle, this level's path is entirely diagonal and involves climbing up snowy cliffs to reach the ruins at the top. The level begins with ice platforms in easily accessible locations to ensure players jump on them and notice their fragility, though curious players who choose to go left will find a Time Kitty across multiple fragile platforms under a precariously shaky icicle.



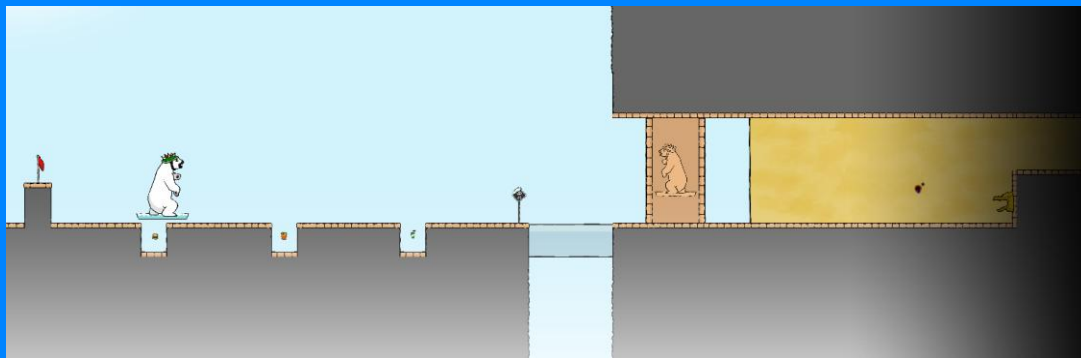
The split paths of Penguin Heights

After clearing a chain of ice platforms players reach a split path in which they can either shatter the ice below to follow the standard path, or they can jump across multiple ice platforms to reach the hidden path in the ruins above. The standard path is much simpler, featuring a short cave section and a large frozen lake with spikes below. The hidden path has checkpoints at the start and near the end, and is filled with spikes and junk food. Alternatively, the beginning of the hidden path can be used as a shortcut to avoid the cavern section and hasten level clear times.



The ends of the split paths of Penguin Heights

The standard path ends with a chain of ice platforms requiring Power Bouncing to clear, while the hidden path has a large frozen platform with Robots and icicles blocking a Time Kitty. Clever maneuvering around the icicles will drop them onto the Robots to clear the way. Both paths converge at the top of Penguin Heights at a set of pillars that can be bounced across for more junk food.



The end section of Penguin Heights

The end of Penguin Heights is different from the other levels in that it is the entrance to the Avian Ruins as opposed to being a portal. This entrance is guarded by the Polarboarder who cannot be defeated by conventional means. The player must use the gaps in the floor to get past the Polarboarder and break the ice near the entrance so it falls to its doom. Once this is done the player must dodge dark energy projectiles emitted by a golden duck head to reach the corridor to the Avian Ruins.

We knew from the beginning of *Pogo's* development that we wanted to create an ice level so we developed assets for it as part of our art style testing. These assets formed the beginning of the level and we worked forward from there. We wanted to introduce environmental hazards and less conventional enemies to surprise players and add versatility to the game's platforming without introducing additional bouncing mechanics. We also connected the Penguin Heights and Avian Ruins levels as we wanted to justify the reuse of the ruin assets and thought connecting the two levels would make for an interesting transition between them.



The first section of Avian Ruins

Avian Ruins begins where Penguin Heights left off at the end of the dark corridor and consists primarily of two ruin chambers and the outdoor sections between them. Players start at a small exterior area before entering the first chamber of the ruins, taking care to avoid the fire of the torches. The first section introduces new breakable objects with items inside, as well as blocks that will fall as soon as the player moves over the top of them. There is a chamber slightly off the standard path with a large breakable vase containing a Time Kitty.



The second exterior area of Avian Ruins

Towards the end of a chamber is the first Cacti enemy of *Pogo* which must be defeated using Mini Bouncing. It has a small ceiling above it so cannot perform higher jumps and learn that frequently hitting the Cacti with Dox will eventually defeat it. The next section involves a zigzag path in order to get above Cleocacta to defeat her. The player must get on top of the pillars and then travel across vanishing platforms to reach Cleocacta's head, after which the player must Mini Bounce to defeat her and clear the way forward.



The second chamber of the Avian Ruins

After defeating Cleocacta the second chamber begins with a falling platform section which splits off into three paths. Failure to clear this section causes the player to fall into the bottom path, which will remain relatively simple so long as players don't press the raised tile. Pressing this will cause spikes to pop up across the floor and greatly increase the challenge of the section. Successfully clearing the first falling platform section will lead to a second, and this doubles as an obstacle on the bottom path as they will fall and crush any slow players. At the end of the second falling platform section are a line of Ruin Birds which if bounced on will lead to the top path, otherwise the player will progress through to the middle path.

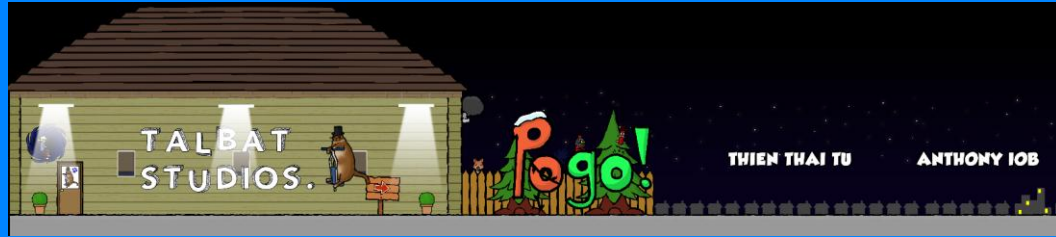


The three split paths of Avian Ruins

Successfully reaching the top path and clearing another row of Ruin Birds will lead players to another vase with a Time Kitty and one last zigzag outdoor section. Players must dodge the energy projectiles and use the Ruin Birds and vanishing platforms to reach the top of a second Cleocacta and defeat her.

Alternatively the middle and bottom paths lead to two different routes. Jumping on a special elevator block will cause it to rise and lead to the middle route which has another raised tile with a similar trap to the earlier one. From here the player must jump across a large gap using clay projectiles fired by two golden duck heads. Alternatively the player can jump off the elevator block and go down to a secret route filled with evil mummy hands. Getting past these will lead them to a special chamber with cameo appearances from the Gummy Knight and the Granny from *Gummy Knights* and *The People's Inferno* respectfully. Either way both of these sections lead to a narrow chamber where players must navigate upwards using moving platforms. All three paths converge after this and the player must use the pillars to Power Bounce over the flaming torches and reach the portal.

Avian Ruins was the final level developed for *Pogo*, so we wanted it to be particularly challenging so we included more stubborn enemies and a greater number of hazards than any other level. As the level takes place in ruins, we also wanted it to have a far greater number of split paths and secrets than the other levels so we included traps, hidden chambers and cameo characters to enhance the feeling of discovery when playing this level. As such this level has the greatest variance in ways to clear it and is the most replayable of the three platforming levels.



The unofficial final level of Pogo

The credits are unofficially the final level of *Pogo*. It takes place at The Garage once again, but this time it is at night with fireworks in the background. The garage door is open, allowing players to explore Po's world. The level is completely hazardless and consists primarily of the floating names of the Talbat Studios team and other people in the Special Thanks section. These names can be bounced on which will make Po briefly speak about the relevant people. There are also some minor cameos from *System Rift* and *Pugnacious*, though these cannot be interacted with.



The final portal in Pogo

After passing every name Po thanks the player for playing *Pogo* while Dox admonishes Po for their constant chatter. At the end of the level is a portal with an impassable forest blocking further progress. There is also a rocket silhouette alluding to space travel, which was a plan for a future level of the game. Passing through the portal will lead to a congratulations screen and end Adventure mode.

We wanted the credits of the game to be playable to reinforce the wacky humour aspect of the game with the interactive names, as well as to end the game off where it started. It also allowed us to reuse existing assets in the creation of the credits, which made it much faster to implement than if we had created more traditional credits.

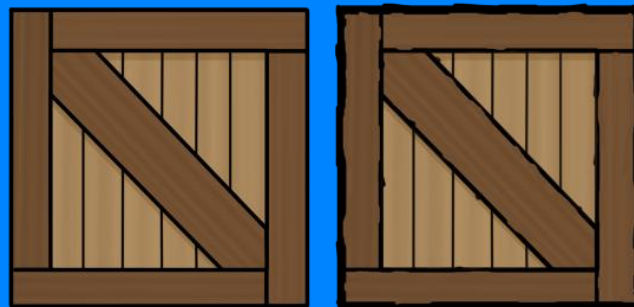
Game Aesthetic

Character Design and Art Style/Animation



The initial Pogo art style test using a placeholder character asset

Pogo's art style is vibrant and utilises dark sketchy outlines for every character and middle ground asset. We wanted the art style to convey the quirky and humorous nature of the game hence why we decided early on to use bright colours in the aesthetic. We originally used neat outlines but found they made the assets look generic so we soon switched to sketchy outlines. These were used to make assets pop more within the world while also adding further personality to the art style. The intentional imperfections in the outlines are also reminiscent of graffiti lines to complement Po's youthful and somewhat rebellious nature.



The crate asset before and after the sketchy outlines were implemented



Early concept art of Po and Dox

We decided very early on that we wanted the designs of Po and Dox to contrast with each other much like their personalities. Dox was always meant to evoke the distinguished yet irritable mentor stereotype so annoyed expressions and moustaches were consistently in his concept designs. Po on the other hand was meant to be gender ambiguous so they went through various iterations and colour schemes. We wanted them to look laidback and innocent so the cap and large blue eyes were present in every design.



The final designs of the main characters

We ultimately decided upon a light and cool colour scheme for Po and a dark colour scheme for Dox to further contrast their designs. Po was given a ponytail to add more ambiguity to their gender. Dox on the other hand gained a thicker design to stand out more in gameplay and his head became a top hat to further play into the distinguished mentor stereotype mentioned earlier.



Components from various characters used in the animations

The game was animated using Adobe Animate, known at the time as Adobe Flash Professional, through component based animation. Characters were split into various components to be used as bones in the animations, which were developed in the program. Once we were happy with the animations we exported them as png key frames and implemented them through Unity's own animator. We found at the time Unity did not have great support for moving an image's pivot point so we were not able to achieve the precision in animations we were hoping for. As such we found Animate to be a great alternative to Unity's animator and we used it to create expressive animations through specific movement of each component.

User Interface



An in-game screenshot displaying the HUD

The UI elements in *Pogo* are minimal, consisting of three frames for the player's lives, points and time in seconds.



A close-up of the UI icons

Lives are symbolised with a heart wearing shades to evoke the stereotype of hearts being related to health and make it immediately clear to players what it represents. We also injected elements of Po's personality such as the smug smile and blue frame coloured like Po's shirt to strengthen the link. Points are represented by junk food as this is player's main source of points. The points needed to earn a life are half of the typical amount in other platformers, which usually require 100, for balancing purposes. As such, we made this amount visible in the HUD so it is apparent to the player what the points are for. Lastly, time is denoted in seconds as it was a late addition to the game so we decided to stick with rounded metrics for easier implementation. We used a stopwatch for its symbol for simple representation of the field's purpose.



Schedule & Tasks

Pogo was developed over the course of 13 weeks with the end goal of a fully playable game prototype ready for public showcase at the Swinburne Games Lab Showcase. Tasks were divided into multiple phases with specific milestones at the end of each one necessary for continuation of the project.

Tasks	Task Members	Task Duration
Conceptualisation/Project Set-Up Phase (Week 1 - Week 2)		
Design		
Workshop game concepts and decide upon	All	Week 1
Develop a master list of potential mechanics and level themes	Adam, Anthony, Laura, Tyson	Week 1
Write up the project pitch	All	Week 1 - Week 2
Create a test level for the bouncing mechanics	Anthony, Laura, Tyson	Week 2
Art		
Design concept art for characters and environments	Adam, Anthony, Bel	Week 1 - Week 2
Implement art assets into the project for style tests	Adam, Anthony, Bel	Week 2
Implement art assets into the project pitch	Adam, Anthony, Bel	Week 2
Narrative		
Write the narrative hook for the story	Laura	Week 2
Programming		
Create the Unity project	Thien	Week 1
Program the core movement and bouncing mechanics for testing	Thien	Week 2
Implement checkpoint and respawn functionality	Thien	Week 2
Research potential implementations of enemies and scoring mechanics	Thien	Week 2
Production		
Formulate a team and exchange contact details	All	Day 1
Assign tasks for the next milestone based on skill sets and project requirements	Anthony, Laura	Week 1
Set up a Google Drive for sharing of assets and builds	Anthony	Week 1
Assign who reads what for the project pitch	All	Week 2
Phase Milestone: Deliver a successful project pitch explaining what the game concept is and how you intend to develop it within the allotted timeframe		To be presented end of Week 2





Tasks	Task Members	Task Duration
Alpha Development Phase (Week 3 - Week 6)		
Design		
Narrow down the master list of mechanics and retain only the core	Adam, Anthony, Laura, Tyson	Week 3
Playtest and refine the existing mechanics	Anthony, Laura	Week 3 - Week 4
Design the first level through grey boxing	Anthony	Week 3 - Week 4
Create a master list of assets required for the first two levels	All	Week 4 - Week 5
Design the second level through grey boxing	Anthony	Week 5 - Week 6
Create the title screen demo level	Anthony	Week 6
Build and run the playtest build	Tyson	Week 6
Art		
Design and implement assets to be used for the interactable terrain/objects	Anthony	Week 3 - Week 6
Design and implement background assets	Bel	Week 3 - Week 6
Design and implement character models for Po and Dox	Adam	Week 3 - Week 4
Develop a logo for the game	Bel	Week 5 - Week 6
Design and implement character art and animation for the Robot enemy	Anthony	Week 6
Create a How To Play printout for playtest	Thien	Week 6
Programming		
Refine existing bouncing mechanics and implement Mini Bouncing	Thien	Week 3
Implement basic enemies and scoring objects	Thien	Week 3 - Week 4
Add support for level transitions	Thien	Week 4
Create basic HUD support for time and score displays	Thien	Week 4
Create basic enemy AI for the Robots	Thien	Week 5 - Week 6
Audio		
Create and implement sound effects for every bounce mechanic	Thien, Tyson	Week 3 - Week 4
Create the game's main theme	Tyson	Week 5
Create and implement the themes for level 1 and 2	Thien, Tyson	Week 5 - Week 6
Production		
Organise weekly check-in meeting to assess progress and assign tasks required for the next milestone	Anthony, Laura	Week 3 - Week 6
Create and monitor a suggestions document so each team member has an opportunity to contribute to the game design	Anthony, Thien	Week 3 -Week 5
Phase Milestone: The game is alpha complete with a functional build for public playtesting		To be complete by end of Week 6





Tasks	Task Members	Task Duration
Beta Development Phase (Week 7 - Week 10)		
Design		
Analyse playtest feedback and finalise the scope and mechanics	All	Week 7
Refine existing levels and implement alternate routes	Anthony, Laura	Week 7 - Week 8
Implement the Polarboarder at the end of the second level	Anthony	Week 8
Design the third level through grey boxing	Anthony	Week 8 - Week 10
Design credits level	Anthony, Laura	Week 10
Build and run the second playtest build	Tyson	Week 10
Art		
Refine existing environmental art assets	Adam, Anthony, Bel	Week 7 - Week 8
Implement art and animations for various enemies and interactable objects	Anthony	Week 8 - Week 10
Design background assets for third level	Bel, Thien	Week 8 - Week 10
Refine character concept and implement animations for tricks	Anthony	Week 9 - Week 10
Implement assets and animations into the menus and end screen	Anthony	1:30pm - 2:00pm
Programming		
Fix any bugs discovered from the last playtest	Thien	Week 7 - Week 8
Code functionality for lives and the game over screen	Thien, Anthony	Week 7 - Week 8
Implement support for the Polarboarder	Thien	Week 8
Implement enemies requiring Mini Bounce to defeat	Thien	Week 9
Add support for particles on collision with object and trail for the characters	Thien	Week 10
Audio		
Refine existing music and sound effects	Tyson	Week 7 - Week 9
Create a theme for the third level and credits	Tyson, Jeremy	Week 9 - Week 10
Production		
Organise weekly check-in meeting to assess progress and assign tasks required for the next milestone	Anthony, Laura	Week 6 - Week 10
Finalise task priority for the final submission	All	Week 7
Phase Milestone: The game is in a beta state and is ready to be playtested again		To be complete by end of Week 10





Tasks	Task Members	Task Duration
Polish Phase (Week 11 - Week 12)		
Design		
Analyse playtest feedback and fix all level design issues discovered	Anthony, Laura	Week 11
Refine all existing levels and playtest to ensure best playability	Anthony, Laura	Week 11 - Week 12
Continually test and refine bouncing mechanics to ensure	Laura	Week 11 - Week 12
Implement main menu and pause menu into game	Anthony, Thien	Week 11- Week 12
Implement cameo characters into the levels	Anthony	Week 12
Create and test the final build of the game	Tyson	Week 12
Art		
Create assets for the cameo characters	Anthony	Week 11
Implement particle assets onto various objects and characters	Anthony, Bel, Thien	Week 11- Week 12
Create and implement assets for the main menu, pause menu and HUD	Anthony, Thien	Week 11 - Week 12
Refine existing art and animations	Bel	Week 11 - Week 12
Design box art for the final submission	Anthony, Bel	Week 12
Programming		
Program the pause menu with a bounce blip toggle	Thien	Week 11
Program main menu functionality and set up relevant scene transitions	Thien	Week 11
Add support for voice lines on characters and events	Thien	Week 11 - Week 12
Fix any bugs discovered from the last playtest	Thien	Week 11 - Week 12
Audio		
Write up scripts for voice acting	Anthony, Laura	Week 11
Record voices for various characters	Adam, Anthony, Laura, Tyson	Week 11
Edit and implement voices into the game	Thien, Tyson	Week 11 - Week 12
Production		
Organise weekly check-in meeting to assess progress and assign tasks required for the next milestone	Anthony, Laura	Week 11- Week 12
Liaise with other teams to organise game cameos and share relevant assets	Anthony	Week 11 - Week 12
Organise burning discs, submitting the project and sharing copies among the team	Anthony, Laura	Week 12
Phase Milestone: The game is built, functions as intended and is ready for submission		To be complete by end of Week 12





Tasks	Task Members	Task Duration
Swinburne Games Lab Showcase Refinement Phase (Week 13)		
Design		
Make minor adjustments to existing levels and collisions to improve playability	Anthony, Laura	Early - Mid Week 13
Build and test Showcase build	Tyson	Mid Week 13
Art		
Refine existing art assets to remove bleeding colours and shading	Anthony, Bel	Early - Mid Week 13
Adjust particles to be more impactful	Thien	Early - Mid Week 13
Programming		
Fix any bugs that were unable to be fixed before submission	Thien	Early - Mid Week 13
Audio		
Refine existing sound effects for improved clarity	Tyson	Early - Mid Week 13
Production		
Discuss as a team what elements need refinement and designate tasks accordingly	All	Early Week 13
Prepare final build for upload to Showcase computers	Tyson	Late Week 13
Phase Milestone: The game is built, improved and ready to be showcased at the Swinburne Games Jam Showcase.		To be complete by end of Week 13





Glossary

- Adobe Animate* - An animation program we used to export animation key frame images
- Avian Ruins* - A desert world and the final full level in *Pogo*
- Bounce* - The method of movement Po and Dox use to get around
- Cacti* - The minions of Cleocacta living in the Avian Ruins
- Cleocacta* - The leader of the cacti living in the Avian Ruins
- Crash Bandicoot* - A platformer game developed by Naughty Dog and published by Sony Computer Entertainment
- Donkey Kong Country* - A platformer game developed by Rare and published by Nintendo
- Dox* - A sentient world-travelling pogo stick and one of *Pogo's* pair of protagonists
- Fenry The Fox* - A platformer game developed around the same time as *Pogo*
- Food* - Items used to gain points put towards earning lives
- Game Over* - A state which occurs once the player loses all their lives, forcing them to restart the level or quit back to the main menu
- Grey Boxing* - Designing a base level using placeholder assets to test playability of design
- Gummy Knights* - A melee party game developed around the same time as *Pogo*
- Lives* - The number of times Po and Dox can die before triggering a Game Over
- Mini Bounce* - Smaller bounces in relation to the normal bounce height
- Penguin Heights* - An snowy world and the second full level in *Pogo*
- Po* - A pre-teen of ambiguous gender and one of *Pogo's* pair of protagonists
- Points* - Collected through various methods, 50 points earns the player an extra life
- Polarboarder* - An iceboarding tyrant from Penguin Heights
- Portal* - An entrance to new worlds and the end goal of each level
- Power Bounce* - Much higher bounces performed by rhythmically timing jumps
- Pugnacious* - A shooter vs. platformer game developed around the same time as *Pogo*
- Respawn* - When a character returns to the level and is playable again after dying
- Robot* - A recurring enemy species of Po and Dox
- Dark Jungle* - A dark, tropical world and the first full level in *Pogo*
- System Rift* - A co-operative virtual reality game developed around the same time as *Pogo*
- Talbat Studios* - The development team of *Pogo* (Thien, Anthony, Laura, Bel, Adam, Tyson)
- The People's Inferno* - A platformer game developed around the same time as *Pogo*
- Time Kitty* - A cat bouncing on a pogo stick that rewards an extra life when rescued
- Unity* - The game engine in which *Pogo* was developed

