

Project: *Polar Flux*

Engine: Godot

Platform: PC (browser)

Genre: Top-Down Action



Summary: This started at the month-long Game Off 2025 jam. Working with folks on 3 different continents, we turned the theme of “waves” into a top-down combat game about a protagonist with magnetic superpowers. My team submitted a rough demo for the deadline, and have continued work since then.

**Game Design:** I was the sole game designer. To match our artists' abilities, we took inspiration from *Cult of the Lamb* and classic beat 'em ups. This gave the programmers a basis while I fleshed out mechanics in our game design document.

**Narrative Design:** I was the sole writer, with major input from our 2D artist. I wrote a script and made character spreadsheets for the game's narrative.

**Programming:** I also stepped in to help program UI and implement graphics where needed.

/title: Polar Breach (wordplay between cold polar and magnetic polar?)

Jam Theme: "Waves"

**Summary:**

- **Genre:** Action with beat 'em up elements.
- **Vibes:** Cool, intense, fast-paced, with a dark sense of humor.
- **Elevator Pitch:** Action game fighting aliens in an Antarctic lab with magnetic powers.
- **Scope:** Single level or vertical slice.
- **Engine:** Godot
- **Inspirations:**
  - = Tone: *BioShock*, *Half-Life*, *The Thing*, *Doom*, *Metroid Dread*
  - = Gameplay: *Cult of the Lamb*, *Kingdom Hearts II*, *Mega Man Zero*, *Devil May Cry*, *Metal Gear Rising*

**Narrative:**

- **Synopsis:** Gauss is a junior researcher who wakes up in a ransacked lab in Antarctica, overrun by monsters. He is contacted by an old colleague named Dr. Duminica. He was invited there by Duminica to study her mysterious new discovery: interdimensional (ID) waves. However, Gauss was involved in an ID wave accident that summoned the monsters (Cellots) and granted him wave powers. She orders him to save her from her hiding place. Along the way, he rescues other scientists, who reflect Gauss' complicated feelings about his past with his mentor. The last person he saves is Duminica's daughter, whom she brought with her to experience ID waves on purpose. Gauss confronts Duminica, who rants about her precious ID waves, while Gauss resolves to save her from herself. However, once he frees her, she defies him by dashing into the ID rift and disappearing. Gauss tries to pull her with his powers, but only grabs her necklace. He returns it to her daughter as they leave the station.
- **Themes:** This story is about the ambitions of one person and how they affect the people around her. The ID waves ('[ID](#)') represent Duminica's endless ambition and need to push boundaries; they got Gauss interested in the lab and even gave him powers, but they also brought monsters and ruined people's lives. Duminica is such a big personality that she has her own 'gravity' that gets people interested in her ideas. Gauss is one of these people, wrestling with his feelings of attraction to her and her ambition. By talking to others, he realizes that his own heart and values are more important than Duminica's metaphysical laws of gravity, and decides to save her from herself. She rejects this, succumbing to her own gravity while Gauss escapes it.
- **Lore & Script:** Story GameOff2025
- **Presentation:** Dialogue scenes with text boxes interspersed throughout the game, specifically whenever you save a scientist and at the beginning of specific rooms.

**Characters:**

- **Gauss:** Main character. Junior researcher who can manipulate waves and wields an ice axe, using them to fight the alien forces invading the laboratory.

*First page of the game design document.*

# Diagrams (player)

**MOVES**

- ATTACK**
  - Swing the axe/crowbar/pipe/wrench. Damages enemies and objects.
  - Can be swung twice in a row, back and forth. Deals no knockback, but restores Wave meter.
- MAGNET PUSH**
  - Can push enemies away, breaking their defenses to leave them open. Great as a combo ender.
  - Can push obstacles for puzzles or combat (e.g. push box onto button).
- MAGNET PULL**
  - Can pull enemies into range.
  - Can pull objects for puzzles or combat (e.g. pull a box onto a button).
- MICROWAVE BEAM**
  - Long-range attack (lights enemies on fire so they take burn damage?)
  - Can melt ice and snow obstacles.
- X-RAY VISION**
  - Can locate scientists hiding inside/below objects; they give lore and a gameplay reward (stat boost? heals?)
  - NOT a combat ability.

**COMBO EXAMPLES**

The diagram illustrates several move sequences:

- ATTACK**: Sequence: ATTACK → ATTACK
- MAGNET PUSH**: Sequence: ATTACK → ATTACK → PUSH
- MAGNET PULL**: Sequence: PULL → ATTACK → ATTACK → PUSH
- MICROWAVE BEAM**: Sequence: MICROWAVE → PULL → ATTACK → ATTACK → PUSH
- X-RAY VISION**: Sequence: ATTACK → MICROWAVE → ATTACK → PUSH → PULL → PUSH

PLAYER PUSH:  
PLAYER PULL:  
PLAYER BEAM:  
X-RAY

## MORE MOVE NOTES

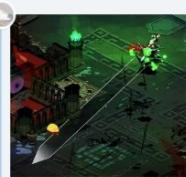
- ATTACK:** Two basic melee swings. Functions like the sword slash in *Cult of the Lamb*. Both project an oval-shaped hitbox to deal damage directly in front of the player, but also above and below them slightly; second swing has weak knockback.



- MICROWAVE BEAM:** Laser that fires straight horizontally once. Projects a long hitbox that does no knockback but lights stuff on fire. Uses up Waves.
- Not a priority. If there's trouble elsewhere, this can be cut.



- X-RAY VISION:** Toggles on and off an X-ray effect. Can just be a blue filter over the screen that shows the hidden scientists as static skeletons. Using another move disables it. Could use up Waves, lols if it's worth it.
- Not a priority. If there's trouble, this is one of the first features to be cut.



Augmented vision in Metal Gear Rising colors the world blue, as an example.

## KEYBOARD:

- W/A/S/D - Move
- Space - Interact?
- Mouse1 - Attack
- Mouse2 - Beam
- E (hold) - Activate magnet
- Mouse1 - Push
- Mouse2 - Pull
- Enter - Pause
- Tab - X-Ray

## GAMEPAD :

- Left Stick - Move
- Right Button - Interact?
- Bottom Button - Attack
- Left Button - Beam
- Right Bumper/Trigger - Activate magnet
- Bottom Button - Push
  - Left Button - Pull
- Pause - Pause
- Top Button - X-Ray

- PULL:** Holds the player in place with a reaching animation and projects a triangular/conical AOE hitbox directly in front of player (longer than Attack, shorter than Beam). Enemies or small metal boxes caught in the AOE are pulled towards the player, gathering in a small area in front of them (maybe limit the # of objects to avoid performance issues). Large boxes only slide a little towards the player. Has no end tag. Uses up Waves.



- PUSH:** Functions like Pull, but everything caught in the AOE is pushed away instead. The closer you are, the stronger it is. If there's trouble elsewhere, this can be cut.



*Player ability descriptions and combo table.*

*Notes on each player ability, with inspiration images and sketches.*

# Diagrams (enemies)

## ENEMIES

### IN GENERAL

- Freaky faces inspired by monkeys.
- Black with red and blue (magnet colors).
  - Movement animated weirdly.
- No contact damage: only can damage the player with attacks.
- Take certain numbers of hits to die - when they die, they vanish into plasma.
- Programmed to only attack one at a time (after one attacks, a timer starts that prevents others from attacking) so as to not overwhelm the player



A Nobody from Kingdom  
Hearts II. Moves weirdly.



An Ing from Metroid Prime 2. Moddy  
black palette with bright colors.

### WEAK ENEMY

- Average size, mostly black colors.
- Slowly approaches the player, and has a slow wind-up for a physical swipe attack. Takes maybe four hits to defeat.
- Not meant to be very intimidating, just fodder to get beat up.



Celebes crested macaque

### COCOON

- Scientist characters are trapped within cocoons.
- Hit it four times to open it.
- Made of worm-like tendrils wrapped around each other.



Ingoform Cache from  
Metroid Prime 2.

### DEFENSE ENEMY

- Average height, bulky body.
- Hangs back before beginning to approach the player. Has a dash punch attack with a bit of wind-up.
- Has a shield that has to be burned through or pushed through before it can take damage. Takes maybe six hits.



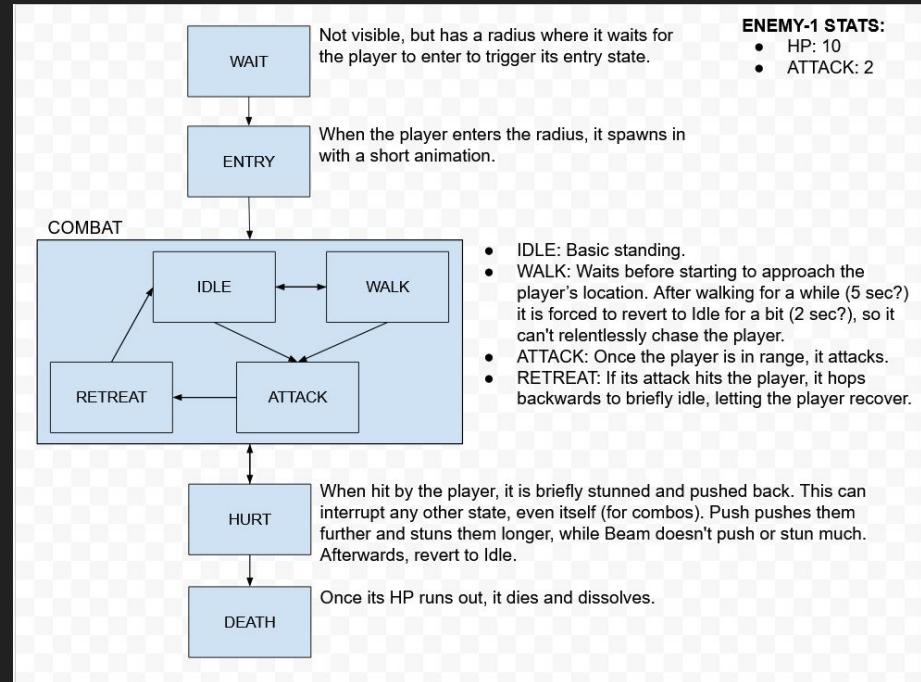
Orangutan monkey

### AGGRESSIVE ENEMY

- Most humanoid of the bunch.
- Hangs back before beginning to approach the player. Has quick physical attacks with claws, and can break out of hitstun to interrupt the player's combos.
- After escaping from a combo, it instantly moves back in to attack again from another angle.
- Takes ten hits? Takes no hitstun usually, but will sometimes just stand around to let the player get hits in. Maybe if they push him, he starts taking hitstun.



Mandrill



*Enemy descriptions and inspirations.*

*Finite state machine diagram for enemy behavior.*

# Spreadsheets (narrative)

CHARACTER	BACKSTORY	PERSONALITY	SPOILERS
• GAUSS • 	Gauss is a 27-year-old who recently completed a PhD in physics. While struggling to find work, he was contacted by a former mentor, Dr. Duminica, to offer him a position at a private research facility in Antarctica called SIRIUS. Shortly after arriving, he participated in an experiment on the mysterious new ID waves, but it went wrong and knocked him unconscious. When he awakens, he finds himself with superpowers, and surrounded by interdimensional monsters. He is then contacted by Duminica, who orders him to rescue her so they can escape.	Gauss is an intrepid soul with endless curiosity. He is brave in the face of the unknown, and always seeks the truth. However, he is also deeply insecure about interpersonal relationships, and craves the approval of others. His obsession with science is a way to find fulfillment besides those connections. Despite his rocky history with Duminica, he feels compelled to help her out of a desire for approval. Unfortunately, she has impossibly high standards that he can never meet. Will he be able to escape from Duminica? Or will he succumb and become her slave? The other scientists at SIRIUS may be his only hope for freedom.	At first, Gauss cautiously follows Duminica's orders. As Gauss rescues survivors, he hears varying opinions on Duminica that remind him of why they fell out in the first place. He reckons with their relationship. Despite this, he still chooses to save her on his own terms; not as a loyal peon, but to rescue her from the danger of her own ambitions. His ending is bittersweet, as he succeeded to save the innocent, but failed to save the guilty.
• DR. DUMINICA • 	Dr. Duminica is controversial a 50-year-old physicist. She is highly respected for her extraordinary genius, but equally feared for her demanding work ethic. She was on Gauss' PhD committee, but was dismissed from the university before he graduated. She found work with DoMega LLC at the SIRIUS facility in Antarctica, where she led the team into dangerous new experiments with ID waves. After offering Gauss a job at the lab, she involved him in an experiment that brought interdimensional monsters to the Earth. Excited that the ID waves gave Gauss powers, she urges him to rescue her.	Dr. Duminica is an undeniable genius, and her work is highly esteemed. However, she has a reputation for being overbearing and demanding, even abusive. She is incredibly pretentious and has a big ego. She can also be quite sarcastic and witty, which gives her a twisted charisma. She has a fascination with Gauss, and was especially hard on him during his PhD in an effort to push him to greatness. She has no remorse for this, instead continuing to prey on his insecurities. She knows when to praise him and when to berate him. She sees potential in Gauss, hoping to find a kindred spirit. However, her methods are inexcusable, and the true goal of her research is a dark one...	It is revealed that Duminica invited Gauss to the lab because she knew he wouldn't be able to resist her approval and her discovery of the ID waves. She was secretly aware that the experiment would likely go wrong, but didn't care because she wanted to show him the fruits of her research. She feels no remorse for letting in the Cellots and shedding so much blood, believing it to be a natural consequence of testing the laws of reality. She is driven by ambition above all else, and when Gauss threatens to stop her, she flees into another dimension.
• CELLOTS • 	The Cellots are interdimensional monsters that crossed over	The Cellots do not speak any human language, so their	It is revealed that while Dr. Duminica is endangered by the

*Character sheet, describing the backstories and personalities of each character.*

# Spreadsheets (narrative)

CHARACTER	LINE
<b>TUTORIAL ROOM 1: ENTRY</b>	
???	You poor sop. At this rate, you'll never make it.
	I said wake up!
GAUSS	Ugh...
???	Finally. Are you ready?
GAUSS	Give me a second... Dr. Duminica...
	I think my body was radiated by that explosion...
DUMINICA	Well once your atoms settle, do me the honor and stand up.
	The experiment was a failure, and ruined the entire lab. These halls are no longer safe.
	Take that METAL WEAPON.
<b>TUTORIAL ROOM 1: ITEM GRABBED</b>	
GAUSS	Gah... My whole body is tingling.
DUMINICA	That's because your nervous system is still catching up.
GAUSS	Duminica. What happened to me?
DUMINICA	To dumb it down...
	The ID waves triggered a quantum entanglement between your neural bioelectricity and the equipment's EM field.
GAUSS	So... I can make magnetic fields with my nervous system?
DUMINICA	And maybe more. Glad your brain still works. Activate your magnetism by holding SPACE...
	Then LEFT-CLICK to push, or RIGHT-CLICK to pull.
	Give it a try with these boxes, then hurry along.
<b>TUTORIAL ROOM 2: ENTRY</b>	
CELLOT	Guorhhh...

*Game script sheet, featuring approximately 200 lines of dialogue.*

## Screenshots (UI and design)



*Main menu screen I programmed.*



*Test UI and level graphics I implemented.*