"Bulge" Megathread

v0.2.0 by Lieu Zheng Hong

This document first goes through the core rules, then fleshes out the worldbuilding, lore, aesthetic, and then finally scopes out what needs to be done for the game jam

Core Rules

"Bulge" is a 1v1 competitive card game about airship combat.

Base rules

Each player has a deck of 18 cards. The decks contain the following suits of cards:

- 3 x Flame (Red)
- 3 x Cross (White)
- 3 x Sapling (Green)
- 3 x Skull (Black)
- 3 x Radar (Blue)
- 3 x Diamond (Purple)

Games are played best three out of five. At the beginning of a round, each player draws seven cards.

Players take alternating turns. On your turn you can perform one of the following actions: *Load, Seek, Strike,* or *Surface.*

You win the round with a successful *Strike.*

The loser of a round goes first in the next round.

Load

To *Load*, draw a card.

You cannot have more than seven cards in hand. If you already have seven cards when you *Load,* you discard a card after you draw.

Seek

To *Seek*, discard a card. Your opponent must either *a)* discard a card of the same suit from their hand; or *b)* discard two cards.

Strike

To *Strike*, play any two cards from your hand. Your opponent must dodge your *Strike* by playing a card from their hand of the same suit as one of the cards you played for your *Strike.*

If your *Strike* is successful, you win the round. Otherwise, the cards you and your opponent played are discarded.

Surface

If there are no cards left in your draw pile, you are *Suffocating* and you ignore any effect that would cause you to draw cards. You must *Surface* to refresh your draw pile.

To *Surface*, shuffle your discard pile into your draw pile.

Optional Rule: Commander Cards

You may choose to play with commander cards to add an additional layer of strategy to the game. Each commander adds a special ability to one or more suits.

Fortune (Red)

No stranger to skirmishes, $RED_HERO has mastered the art of wearing down the enemy while never once overextending themselves.

- *Guerilla Tactics:* When you *Seek* with a *Red,* your opponent discards the top card of their draw pile if able.
- *Symmetric Losses:* When you *Seek* with a *Red,* you may discard an additional card. If you do, your opponent discards an additional card if able.
- *"Faithless Looting":* As an action, you may discard a *Red*. If you do, *Load* three times, then discard two cards.
- *Kamikaze*: You cannot *Surface*. At the start of your turn, *Load,* then discard a card.

White Hero

Like all would-be captains of $WHITE_FACTION's settler ships, $WHITE_HERO possesses strong conflict resolution skills and the ability to stay cool under overwhelming pressure.

- *Defensive Posture:* You can discard any *White* to dodge any *Strike*. However, you may not *Strike* with two *White*s.

Mika "Bolts" Tanaka (Green)

A mechanical savant, $GREEN_HERO can tune any ship to purring perfection.

- *Kalman Filter:* As an action, you may discard a *Green*. If you do, look at the top three cards of your draw pile. Discard one and put the rest into your hand.

Cpt. Susan Bates (Black)

Highly decorated pilot who exemplifies the $BLACK_FACTION's "shock-and-awe" fleet doctrine.

- *Overwhelming Force:* If your opponent dodges a *Strike* that uses two *Skull*s, they discard a card if able.

Gennady Mitrichev (Blue)

Builder of advanced AI drones excellent for exploration and reconnaissance.

- *Reconnaissance Drone:* As an action, you may discard a *Blue*. If you do, *Load*. If your opponent has more than two cards in hand, they reveal a number of cards from their hand equal to the difference.

Prince Wangxian (Purple)

Cutthroat palace politics has honed an unparalleled strategic mind who slowly outmaneuvers the opponent, cutting off any escape.

- *Flank:* As an action, you may discard a *Purple*. If you do, your opponent discards the top three cards of their draw pile.

Optional Rule: Ship Cards

You may choose to play with ship cards to add an additional layer of strategy to the game.

Each ship card has a unique ability. A Passive Ability is always in effect. An Active Ability can be used in place of your action for the turn. A Reactive Ability can be used in response to a preset trigger before it happens.

Active and Reactive Abilities can only be used once per round.

The command cards are as follows:

Defiant

A small but powerful airship that can steal victory from the jaws of death.

- **Trench Run** (Active): If you have no cards in hand, *Strike* with two different suits of your choice.

Mirage

This airship can create false images to distract and confuse the enemy.

- **Mirror Image** (Reactive): Before responding to your opponent's *Strike, Load.*

Orpheus

A deep-diving stealth airship that ambushes its enemies from below the clouds.

- **From the Abyss** (Active): Discard a card. If you do, return two cards from your discard pile to your hand.

Oppenheimer

This airship's experimental nuclear reactor allows it to operate for extended periods of time.

- **Fusion Cycle** (Active): *Surface*, then *Load*.

Gungnir

A deadly destroyer that can blow even the toughest hull plating to kingdom come.

- **Ragnarok Missiles** (Active): *Strike*, then if you miss, return a card from the *Strike* to your hand.

Black Ship 2

- **Coup de Grace** (Passive): If there are at least two *Skulls* in your opponent's discard pile, your *Strikes* that use two *Skulls* cannot be dodged.

Lorelei

A spy airship with advanced sonar that makes a distinctive and eerie ringing sound.

- **Siren Song** (Active): Your opponent discards the top two cards of their draw pile.

Faucheuse

This airship casts out a deadly minefield that closes around its prey.

- **Memento Mori** (Passive): If at the end of any turn your opponent has three Skulls in their discard pile, you win the round.

Worldbuilding

Postapocalyptic but light-hearted, saturated colours. Anime style. Waifus (and men waifus) very important. Mix of high and low tech (futuristic space ships face off against wooden flying galleys).

It is $FUTURE_DATE in a planet far far away. The surface of the planet is completely uninhabitable, flooded with dense toxic gases/nuclear fallout/water.

- toxic gases below a certain altitude block out the sun, so in order to survive, people have to live in airships and fly above the clouds, living their entire lives in giant flying airships (which are kind of like submarines except air is water, wow, so cool)

- denser atmosphere + lower gravity makes flight + going to LEO significantly easier, and makes flying megastructures possible

> What planetary conditions would make flight easiest for both lighter than air and heavier than air craft?
> begingroup$ High atmospheric density As pointed out in the comments by @M l ech, gravity and gas mixing has little to do with it. Heavier than air craft, as in airplanes and helicopters, rely on lift to get off the ground and stay aloft.
> https://worldbuilding.stackexchange.com/questions/93435/what-planetary-conditions-would-make-flight-easiest-for-both-lighter-than-air-an
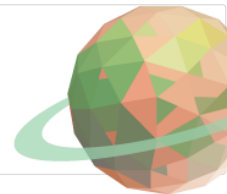
  - "When it comes to flying, Titan might be better than Earth. Its atmosphere is thick but its gravity is light, giving it a surface pressure only 50% higher than Earth's with air four times as dense. Its gravity-lower than that of the Moon-means that flying is easy.

  - "Flight on Titan **IS** easy. A human could theoretically achieve flight with a wingsuit and mere muscle power."

  - Humans can survive high atmospheric pressures: "In 1992, professional diver Theo Mavrostomos spent two hours in a hyperbaric chamber pressurized to 70 atmospheres. He was breathing a mixture of 99.5% hydrogen, 0.5% oxygen, to keep oxygen partial pressure no higher than 0.35 atm (oxygen/hydrogen mixtures are not explosive is O2 fraction is under 4%). Curiously, the biggest engineering problem turned out to be keeping the chamber at constant 27 C; at 70 atmospheres hydrogen conducts heat so well, more than 1 degree deviation in either direction would have caused either hypothermia or overheating."

- everything should be a bit grungy, no super slick sci-fi stuff allowed

- organic material/food and stuff can be grown on deck since there's sunshine, can collect water also

- to get nonorganic material/scavenge lost knowledge we need to dive down into the toxic gases e.g. to mine ore and what not, very dangerous

  - visibility is basically zero

  - probably you wouldn't bring the entire colony ship down (too big, too buoyant, not airtight), you'd construct special submersibles and train special crack pilots, these are what the players are controlling and fighting

  - the surface is relatively peaceful but underneath the clouds... no holds barred. lots of ships go down below the surface and never return—enemy action, or just very hazardous environment?

- different factions with different philosophies
- Game with the same idea: Windforge https://store.steampowered.com/app/266170/Windforge/

Factions

What are the different factions? There are a lot, each faction wants different things. What do they want? What would you want?

- Some want to ascend to the stars and leave this shithole behind
- Some want to find a way to rehabilitate the dead world
- Some just want to have fun, raiding, raping, whatever
- Some want to restore law and order to the world
- One-uber-rich-guy-living-in-a-floating-golden-palace faction

Outcasts (Red)

Low Tech

Reject modernity, embrace piracy.

Not so much a "faction" per se: just a bunch of guys who are outcasts of their home faction/have struck out to do their own thing. Unlike the other factions, they don't have a large "home ship" since all of them are basically free agents.

Not all of them are pirates/raiders: many are smugglers, runners, traders, etc. But all are fiercely individualistic and anarchist, with little regard for convention. There is a loose collection of leaders but is a bit of a *primus inter pares* thing.

By necessity, their ships tend to be low-tech/low-maintenance (although outcasts from high-tech factions may have high-tech ships), small, self-sufficient (as opposed to dedicated strike vessels from other factions that can resupply from home ships), and very fast (to quickly get in and out of trouble).

Why would someone like/want to join the Outcasts? Either you chafed at the rules of your home faction, didn't fit in, or ust wanted to strike it out on your own. People who have an independent streak tend to find the Outcasts compelling, since apart from being a loose band of ships that occasionally come together, you're free to do your own thing.

Why would someone hate the Outcasts? No law and order, no centralised authority. A lot of it might be somewhat Hobbesian — nasty brutish and short. Depends on what you do. if you join an existing ship, that ship might be great, or it might be really shitty. If you have your own ship, sure you are your own sovereign entity, obviously lots of maintenance burden, might get extorted by bigger crime bosses, nobody is there to save you from that, you might get shot out of the sky.

Fundamental conflict: The Outcasts try to live up to an anarchist libertarian ideal, yet the strong are able to centralise and dominate. One group led by a strongman is growing and centralising, which is a worrying development, but the nature of the Outcasts means that it's difficult for people to band together and stop it.
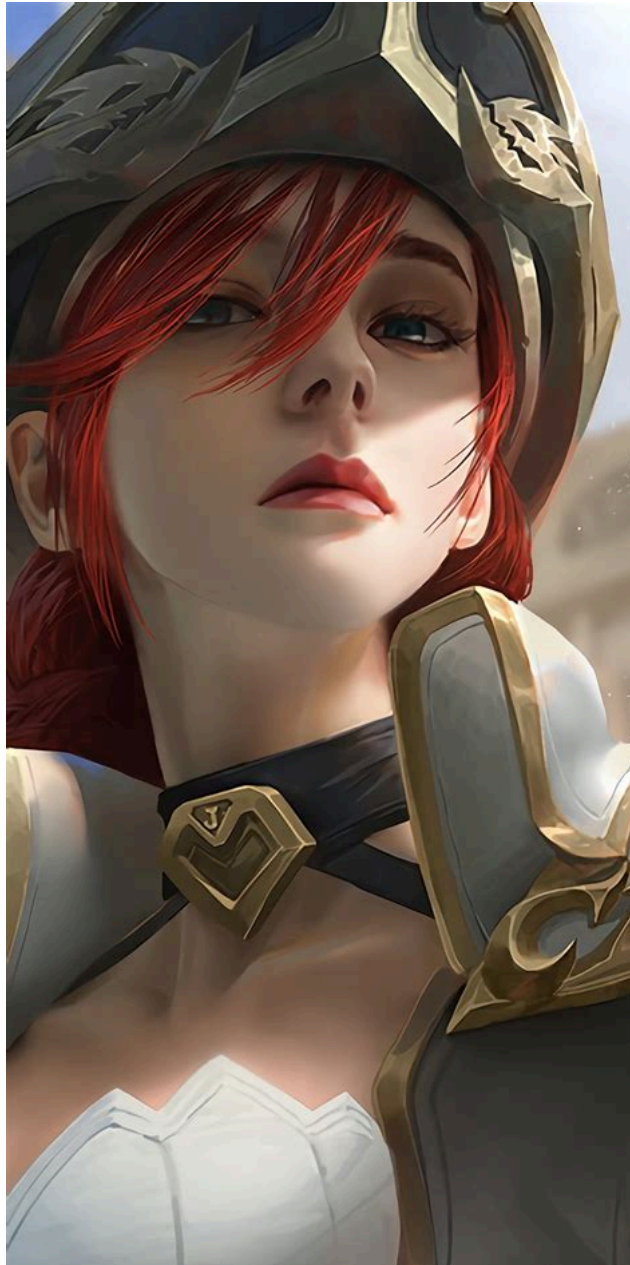
Fleet doctrine: no overarching "doctrine" (since these guys are a ragtag bunch), but the fact that they are mostly small, fast, maneuverable ships tends to favour skirmish/guerilla/hit-and-run tactics.

this design is a bit too on-the-nose, this is still sci-fi, not fantasy

Miss Fortune from LoL

Chad Faction (White)

Low Tech

The Whites want to resettle the earth. While no amount of genetic engineering or physical training will allow a human to breathe sulfuric acid, a group of superhumanly tough and resilient settlers clad in enviro-suits might be able to start establishing a permanent settlement...

They have an unparalleled understanding of the human body and place a great emphasis on self-improvement and physical activity. Running, sparring, and wingsuiting (jumping off the ship in nothing but a wingsuit and trusting the currents to carry one back home) are popular hobbies. Whites are excellent doctors, doulas, and physical trainers.

Somewhat anachronistically, their home ships are buoyed by enormous white and red sails (perhaps a throwback to their medical roots?) Their architecture tends to favour tents, awnings, flags and other flappy shit.

Why would someone like/want to join the Whites? Relatively peaceful and focused on self-improvement, people who like working on themselves rather than accumulating wealth.

Why would someone hate the Whites? The whites are quite intolerant of other worldviews. In order to maintain social harmony, the Whites make use of techniques that discourage dissent, e.g. shunning unbelievers. They venerate

physical and mental perfection, and treat those who fall short with disdain. As a result, they can be quite condescending towards people of other factions.

Both positive and negative eugenics are common: selective breeding is practiced together with forced sterilisation. They regard the sanctity of the human body as paramount and view body modification as heretical.

Fundamental conflict: Two main "hypocrisies" (might not actually be hypocrisies): first, while they profess to belief in the sanctity of the human body, they don't have any issue with forced sterilisation and genetic engineering. second, while they try to cultivate their mind, they're intolerant to alternative views.

Fleet doctrine: 走爲上計.
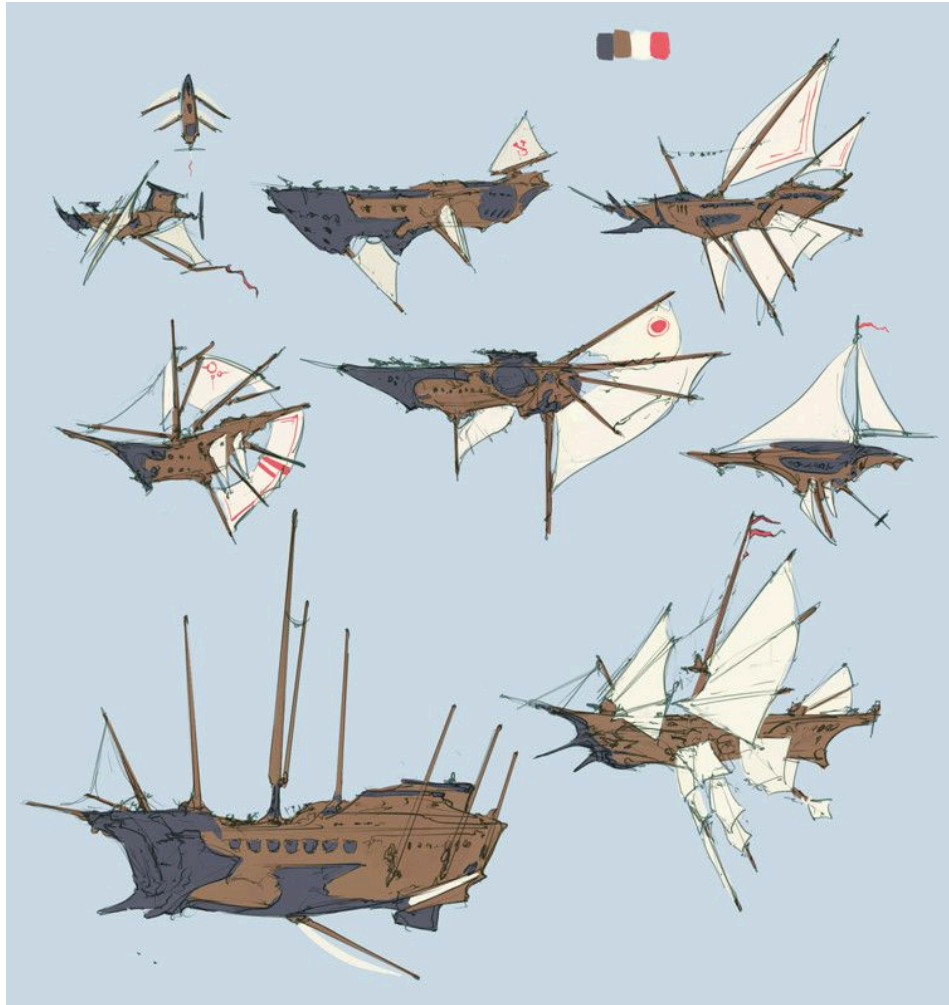
Please try to make this look sexy

"Settler capsule" that the whites are planning to send down to the surface

Growers (Green)

Mid Tech

The Greens are looking for ways to purify the toxic gases so that people can live terrestrially again. They are most similar to the Blues, splitting off from the Blues early on because of their differences in direction. The Blues want to refine space technology and escape this world: the Greens want to find a way to terraform this world.

They place the most emphasis on growing stuff and are the breadbasket of the world. (of course every faction has to have its own way of growing/procuring food).

These guys may be a bit spiritual (the psychedelics they routinely ingest may contribute to this), but they are definitely not low-tech/Amish. They are breeding some sort of algae/extremophiles to try to get them to survive/metabolise the toxic gases.
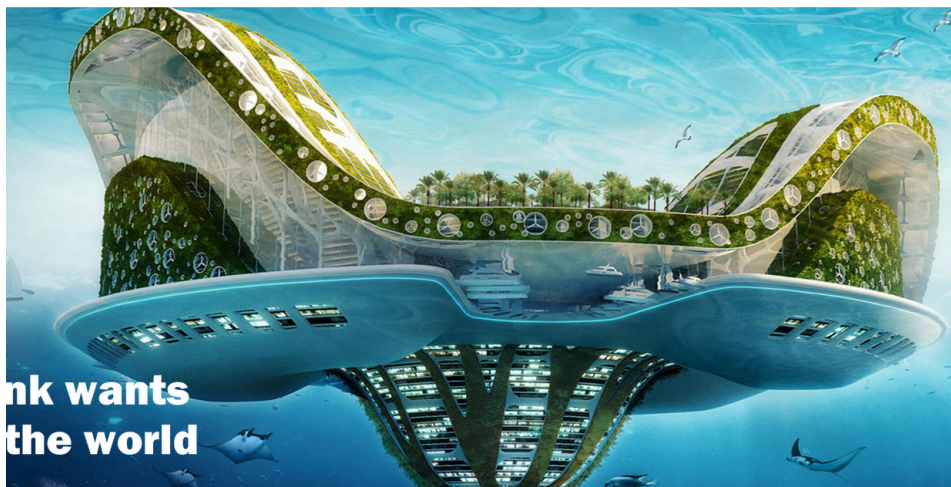
Why would someone like/want to join the Greens?

Why would someone hate the Greens?

Fundamental conflict:

Fleet doctrine: stay passive, grow and improve your own position

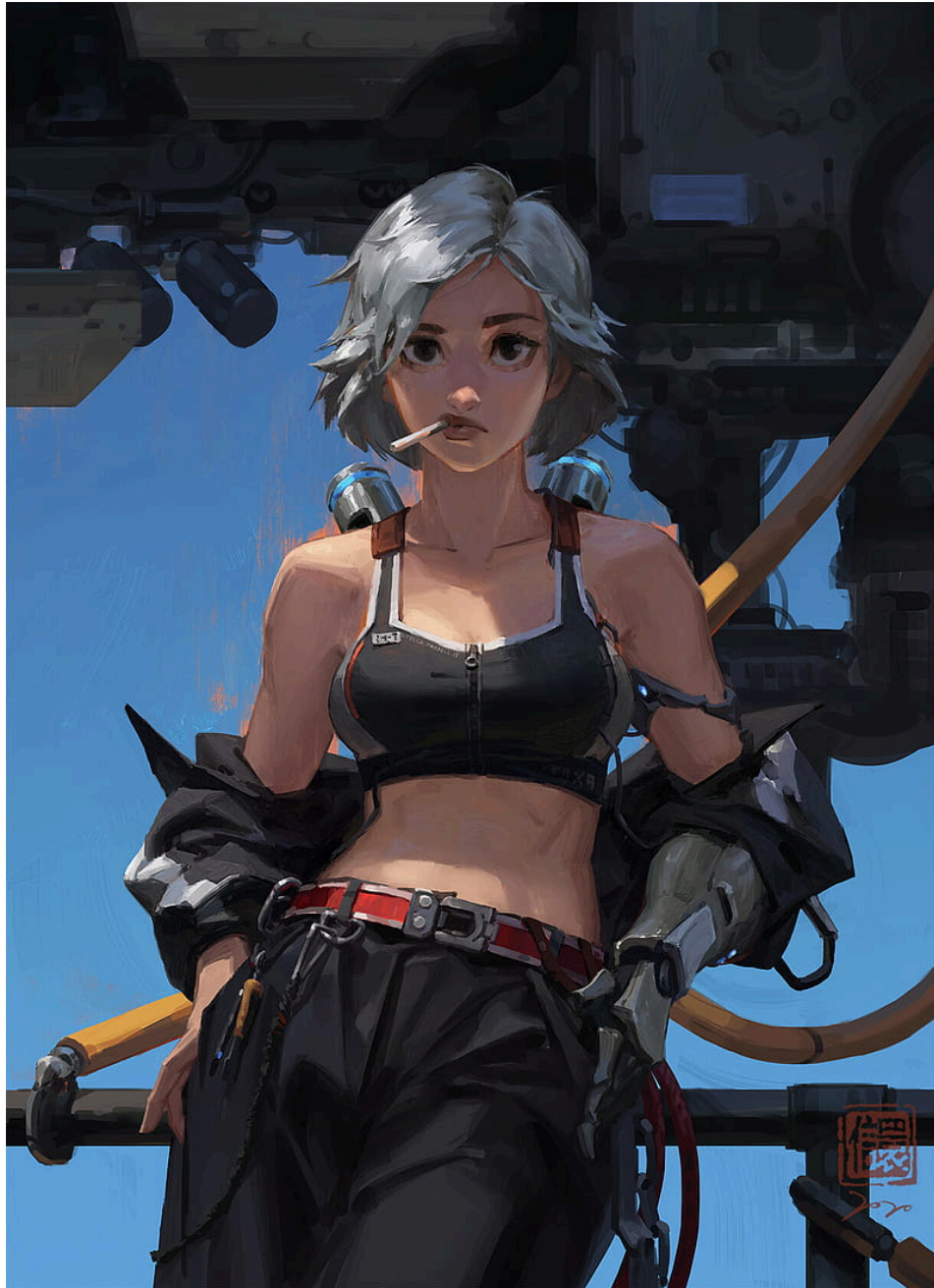This is too clean, too sci-fi, needs to be a little bit more grungy

The Greens probably don't wear these skintight metal armor pieces (or maybe they do—cross pollination with the militaristic faction), but I like the goggles

obviously not everyone is a farmer, but i quite like the idea that the fashion tends to gravitate towards the utilitarian

short sleeves, practical outfit

Militaristic Faction (Black)

Mid Tech

The remains of a pre-Collapse state. Their mandate is to restore law and order (read: a monopoly of power) in this new power vacuum.

They have by far the most powerful ships, and can bring incredible firepower to bear, but are in slow decline due to their relative inability to maintain these pre-Collapse behemoths and their reliance on a robust resupply chain that is no longer present.

Run like the military, basically: hierarchical, regimented, uniform.

Why would someone like the Blacks?

Why would someone hate the Blacks?

Fundamental conflict: one, their ships are slowly falling apart, and they don't have a good solution... seems like the way to go is eventually having to abandon the ship, but others think that finding some lost manual, or improving their

manufacturing precision, can be a viable alternative... nobody can agree, but if they abandon their ship, it's a huge shock to their current way of life

second fundamental conflict is, what are they protecting? are they trying to impose law and order... to what end? for who? pre-Collapse states no longer exist, is it time to let go?
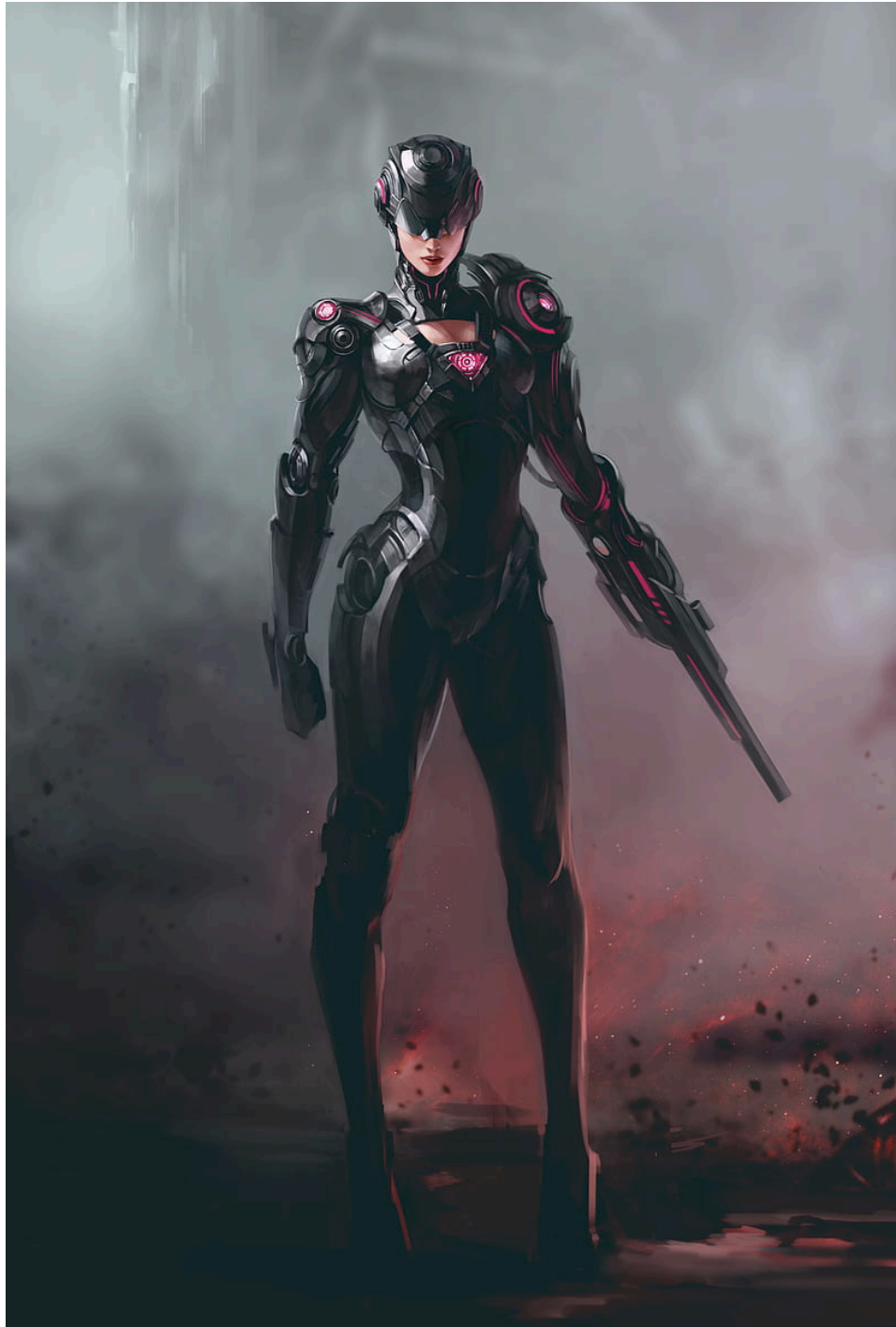
Fleet doctrine: use overwhelming firepower to shock and awe the enemy. If you hit hard enough, they can't hit back.
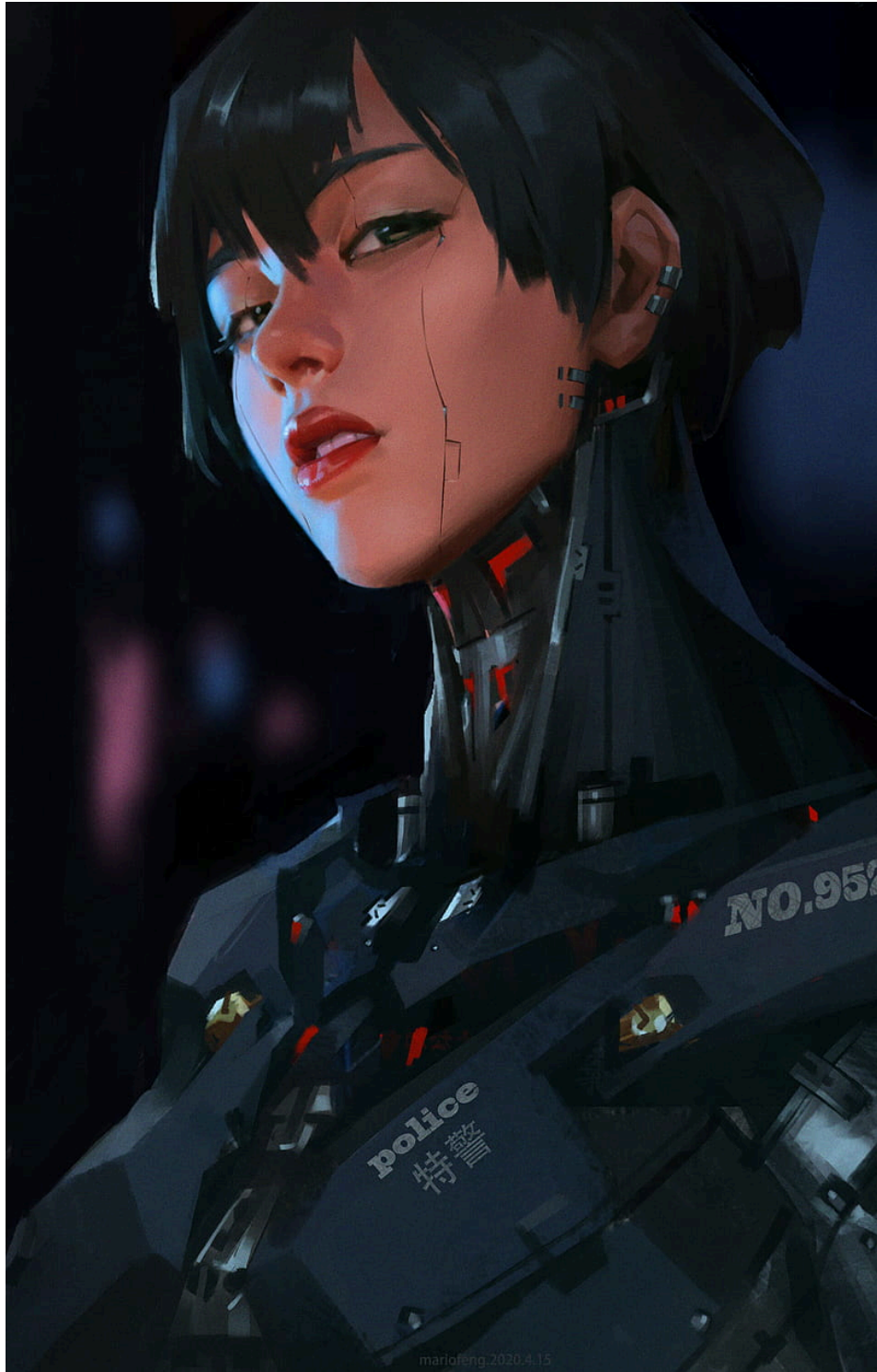
Knowledge faction (Blue)

High Tech

The Blues are trying to salvage lost knowledge / develop new technologies in order to escape to another planet. They are the only faction with a significant space presence (asteroid mining?)

Motto: *Per aspera ad astra* or something similar ("through hardships to the stars").

Egalitarian, very utilitarian. Grey Tribe. Very very densely populated. This necessarily leads to many tradeoffs: folks live in tiny little pods, eat Huel and fungi grown on recycled sewage, etc.

Very open borders, all are welcome, but their way of life is unattractive to most people: they attract only the autist weirdos who don't mind sleeping in capsules and eating reconstituted fungi.

Why would someone like the Blues?

Why would someone hate the Blues?

Fundamental conflict:

Fleet doctrine: Knowledge is power. Know your enemy and the battle is won.

I imagine these guys basically wearing techwear onesies

This is a real outfit you can buy in 2022

Mercantile faction (Purple)

High Tech

Once upon a time, an obscenely rich guy built a massive pleasure palace in the sky pre-Collapse and would regularly ferry women in. He is now the long-dead ancestor of basically everyone on the ship. Very hierarchical, monarchic system — think Imperial China/Japan or Ottoman. The ship itself is divided into many layers: inner sanctum, outer wing, etc.

Everyone is nominally related by blood (their concept of *noblesse oblige* is closely tied with this familial relation), but there's a brutal dynastic battle that gets more and more brutal as you get closer and closer to the throne. Outer princes eke out a living, usually as merchants; inner princes live lives of decadent luxury but always have to watch their back. The most beautiful daughters are rounded up and shipped to the inner palace, never to be seen again.

The richest, most mercantile faction. Very high tech too, since all of this stuff was the latest and greatest pre-Collapse, plus the trillionaire was able to watch everything from above as the whole world went to shit.

A bustling trade hub, but otherwise isolationist and xenophobic (everyone not of royal blood == barbarian). Men are allowed in only as *Gastarbeiter* (working blue-collar jobs like smiths, laborers, guards), while women are often taken as wives by the lower-caste outer princes. Borders are porous at the outer fringes, but getting into the inner sanctum is almost impossible.

Fundamental conflict: Not all immigrants are here of their own free will.
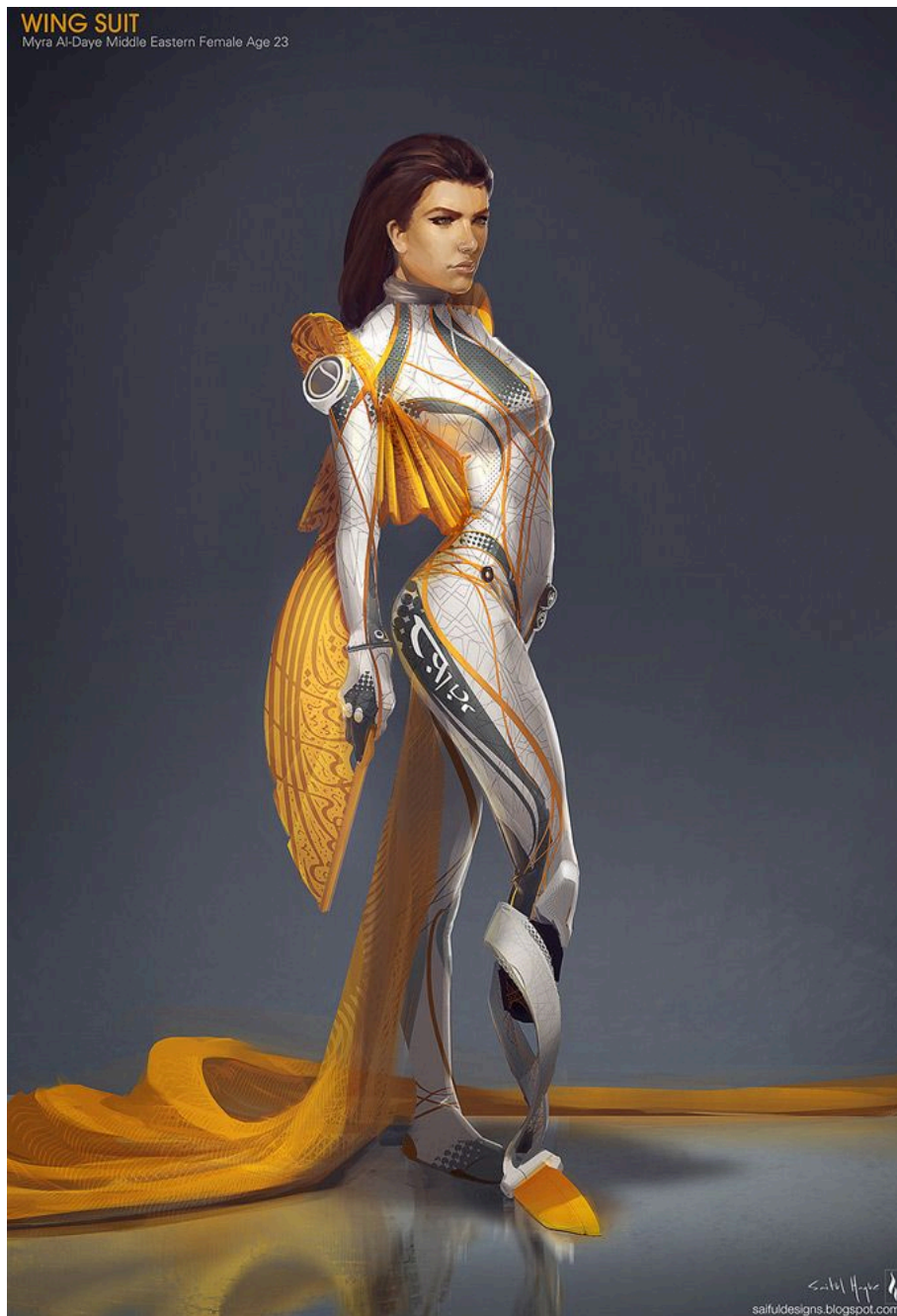
Fleet doctrine: Grind down your enemy—favorable trade by favorable trade—until you have an overwhelming advantage.

Bright livery, white and purple colour scheme.

One of many pleasure yachts

WING SUIT
Myra Al-Daye Middle Eastern Female Age 23

saifuldesigns.blogspot.com

Opulence is very important. This is the richest faction and they want everyone to know it.

Relationships between the factions

- Red hates Black and Purple
    - Black is authoritarian, law and order: Red hates that
    - Purple's tendency to abduct outcasts and press them into service does not endear itself to Red
- White hates Red and Black
    - White sees Red as a bunch of misshapen misfits
    - White sees Black's penchant for replacing their own body parts with cybernetic components as heretical

- Green hates Blue and White
  - Green thinks of Blue as a bunch of spineless cowards trying to flee instead of fixing the problems
  -
- Black hates Red and Green
  - Black sees Red as a bunch of lawless outlaws
  - Black doesn't like Green's use of mind-altering drugs
- Blue hates Green and Purple
  - Blue sees a lot of wasted potential on the Green side pursuing what they see as a lost cause. Plus Green's tendency to spiritual thinking is at odds with Blue's rationalist mindset
  - Blue is very egalitarian—they hate that where you are born in Purple (inner sanctum/outer walls) determines your destiny and they hate that women in Purple are second-class citizens.
- Purple looks down on everybody, but especially dislikes Blue and White
  - Purple is disgusted by the appalling squalor in which Blue citizens live
  - Purple isn't very moralistic, but forced sterilisation is beyond the pale: spreading their seed is very important to them.

Random moodboard

This one's pretty interesting, has feathers

Scope and timeline for Game Jam

Dates: 15-17 July

The game will be in vertical screen aspect ratio, suitable for mobile. Don't bother designing or building for other aspect ratios.

2D graphics, minimal animation, minimalistic graphics

M		ETA	Status
1	Export game with title	Jun 28	✅
2	Internal game state represented	Jul 1	✅
3	Player able to see game state (with loaded items)	Jul 3	✅
4	Player able to Load once	Jul 10	❓
5	Player able to play game in single-player with AI on mobile (iOS + Android) and web	Jul 17	❌
6	Player able to play game with another person	?	❌

Must-have

- Playable basic game on browser with a single AI-controlled opponent without any optional rules
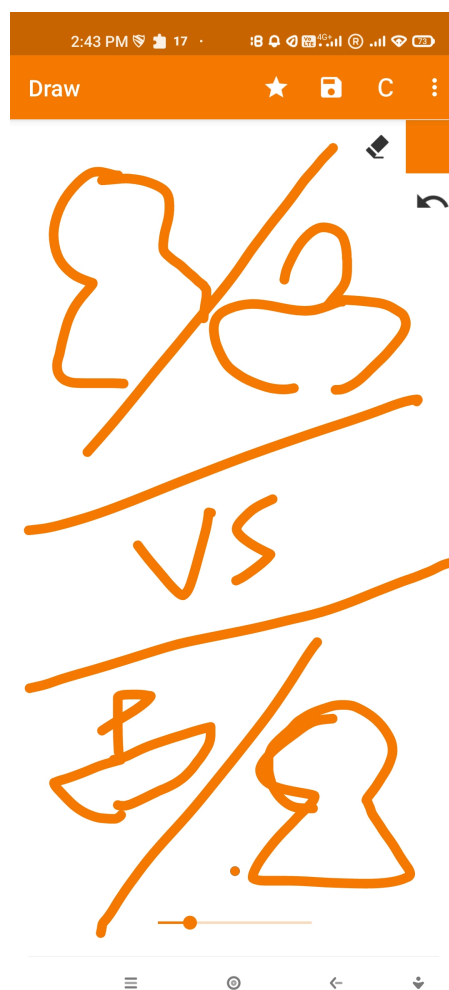
Nice-to-have

- A tutorial teaching the rules
- A gauntlet of bosses (maybe 3 stages, each with a different hero and ship)
- Hero selection
- Ship selection
- iOS and Android apps

What we're building

Pre-battle screen (nice to have)

When the match starts, show this splash screen, each player's hero and airship. See screenshot for an example:

Open to other ways, maybe we show each player separately so they all get the full screen real estate.

Battle screen (must have)

The UI should display the following info:

- What cards (gems?) you have in hand
- How many cards are left in each draw pile
- What cards were discarded

When someone successfully lands a strike, there should be a cut-in animation, for budget reasons, probably best to keep this as minimal as possible
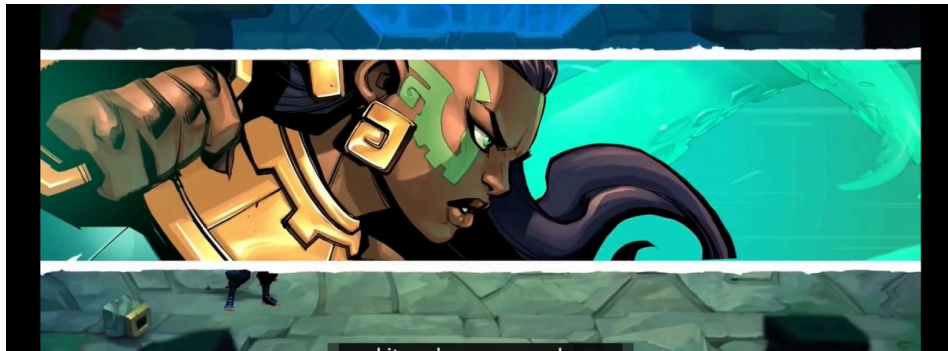
My Favorite Game Animation of 2021

Here's a (slightly belated) list of 2021 games that had amazing animation! ---- (More Below)Support New Frame Plus on Patreon!http://www.patreon.com/newf...

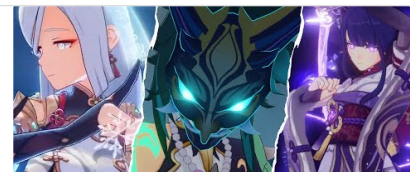https://youtu.be/wH1MqyC5JR0?t=947

3D version (Genshin impact):

Genshin Impact All Characters Ultimates (Elemental Burst 2022 Updated)

Genshin Impact (PC / PS4 Pro) All Characters Elemental Burst & Ultimate Skill Animations Updated 2.4#GenshinImpact #AllCharacters #ShenheGameplay Raw footage...

https://youtu.be/HgE61NtKiqE

Guilty Gear are really good at doing these insane animations but those must be very expensive

https://www.youtube.com/watch?v=IIvUS8zpufs
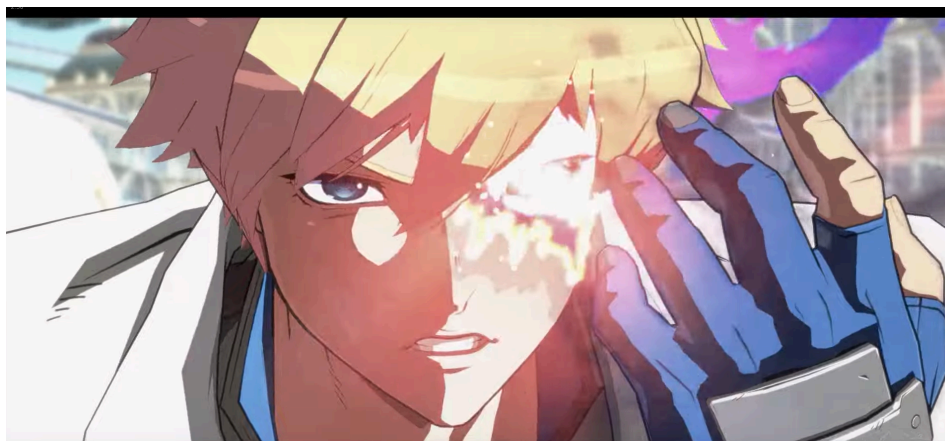
UI/UX Dump

Skill icon examples

Actions:

Load, Seek, Strike, Surface, $CommanderSkill, $ShipSkill

To be decided:

Frame shape, color theme (monochrome, 2 color highlight, full color, etc), content (what do these icons illustrate?)

- Preferred (these are mostly okay, but certain elements like color palette, framing, etc need to be tweaked)
  - o

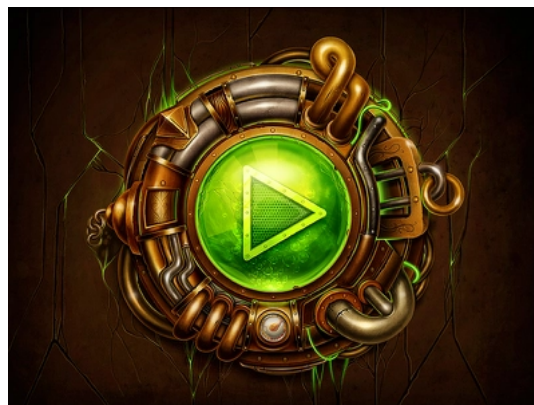Player Skills Icons for Gearbox Software's "Borderlands 2", *Photoshop*

- Ideas (these are generally inappropriate for the 'style' of game we're going for- too detailed, too cartoony, etc, but there might be some good ideas we can draw from)
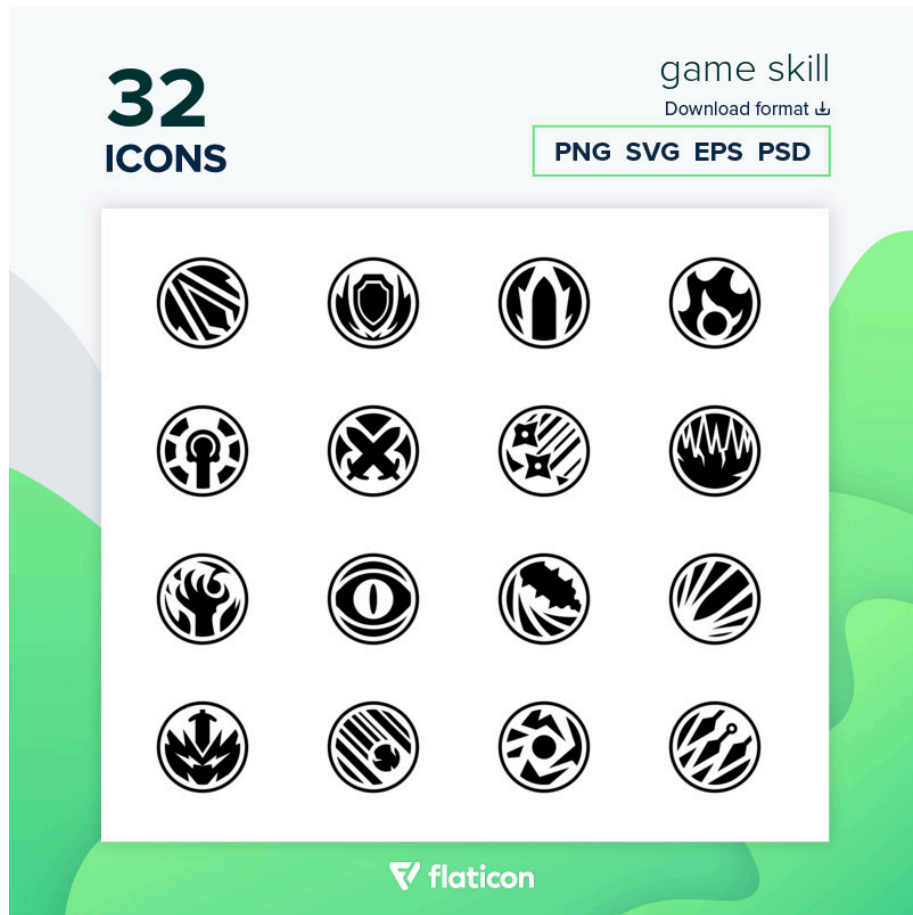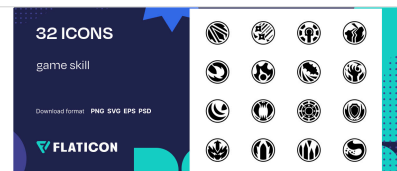
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32 kostenlos „Game skill"-Icons von Ken111

Lade jetzt Game skill Kostenlos-Icons herunter - Pack: Glyph | Verfügbare Dateiformate: SVG, EPS, PSD, PNG. Private und gewerbliche Nutzung.

https://www.flaticon.com/de/packs/game-skill

How do players choose actions?

- Select a gem first
  - Depending on the gem selected, list of actions pop up
- Finite state machine
  - No gems selected:
    - *Load*
    - *Surface*
    - Special ability
  - One gem selected:
   - Seek
    - Special ability

- Two gems selected (how to select the same colour twice?)
    - Strike
    - Special ability

Artist brief

We're looking for an artist (or team!) to help produce 2D character and environmental assets for a game we're working on, tentatively called *Bulge*. These assets should be consistent with the overall thematic direction of the game as described below- alternatively, you can refer to the *Worldbuilding* section for more details.

Scope of work:

- 6x half body (TBD) hero Portraits for each of the factions- White, Black, Red, Blue, Green, and Purple.
    - Detail level- colored, front-facing character concept art with no background. Something that would fit in a Hearthstone or Shadowverse portrait frame, but with way less detail and polish
    - Detail level example:
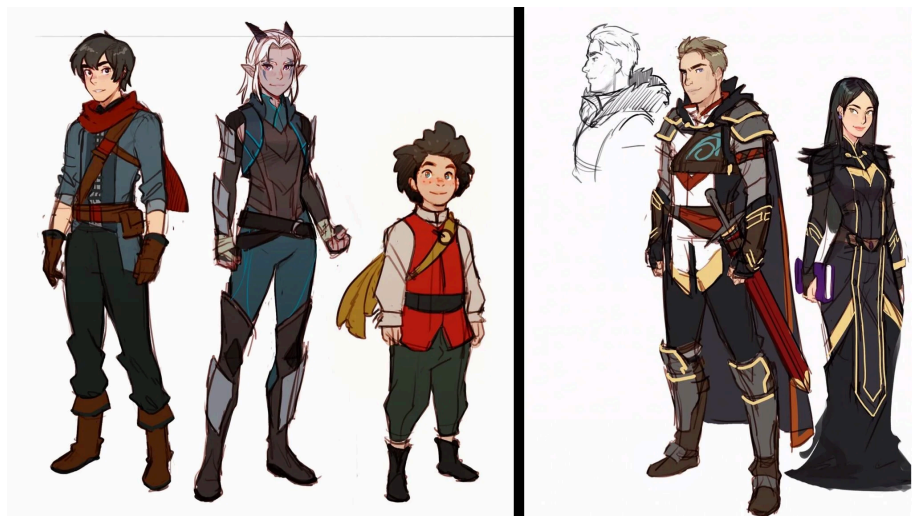
    - Deliverables- .png file, or whatever has a transparent background. Psd format would be best

- (descriptions of each faction's hero)
- 6x airships for each faction- White, Black, Red, Blue, Green, and Purple.
  - Detail level- colored perspective view, concept art with no background
  - Detail level example:

Private work | Ork Zeppelin Dropship
Aaron Firem

The Steadfast   The Ascending   The Fleeting

edarneor.deviantart.com
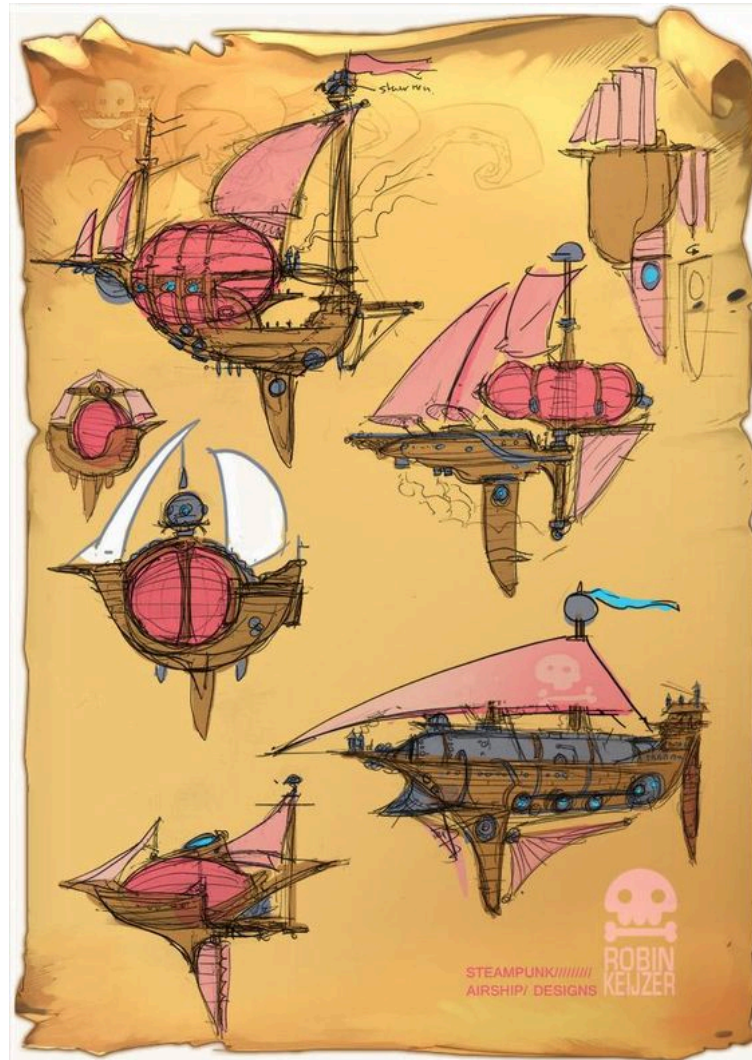
- - (insert ship descriptions here)
- Environments (?)
- Action/event cut-ins
  - TBD

Thematic direction:

The world of Bulge should feel like a cross between steampunk and bubblegum pop- postapocalyptic but light hearted, with pastel, saturated colors. Call it kawaii-punk or whatever idk. The world itself is kinda bleak and a little desolate, but the art shouldn't feel that way.

Mood board:

Sample images for color palette/vibe- obviously we can't get this kind of detail with the time frame we're working with
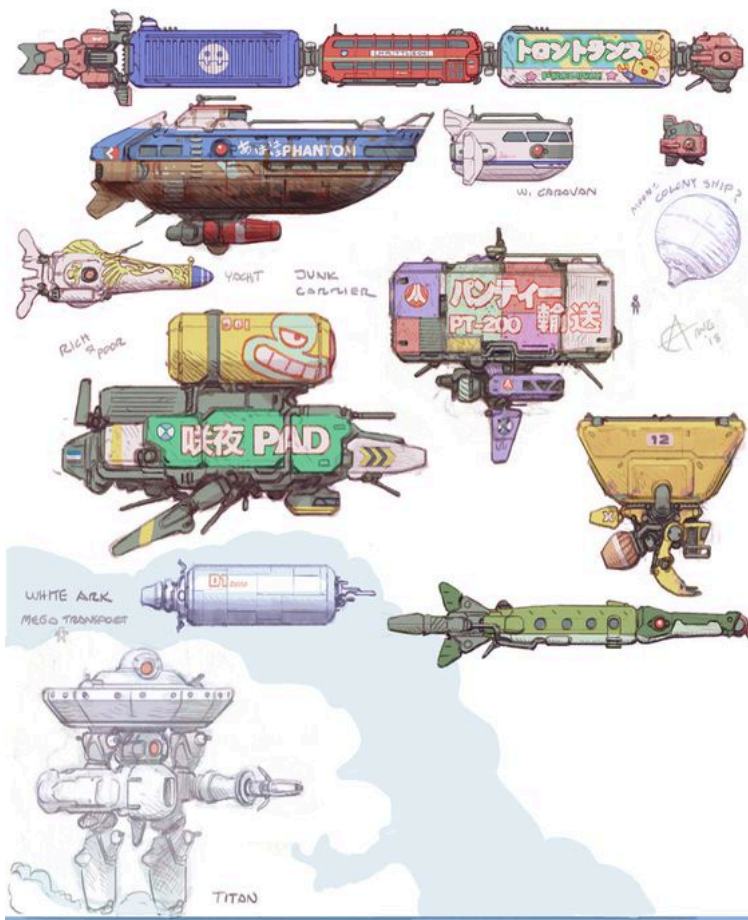
Please get back to us if you're interested, and we can work out the payment details and any amendments to the scope of work from there.

Future plans

In descending order of priority:

- Add multiplayer
- All six heroes and six ships
- Print it as a board game
- New heroes and abilities
- Think about monetisation (cosmetics)...
- Set up esports league
- Take over the world

Networking

How to Make a 2D Multiplayer Tabletop Card Game in Unity - Part 0 (Project Overview)
Check out my books, games and more: https://www.nightpathpub.com/Join our Discord: https://discord.gg/RF6k3nBVisit our merch store: https://www.redbubble.com...
▶ https://www.youtube.com/watch?v=Agw2kPINMdU&list=PLCbP9KGntfcFTL19eDZsWSkVMfXANF7-U

Possible new heroes

- *Fact or Fiction*: discard a *Green* and draw up to 3 cards. Split it into two piles. Your opponent picks which one goes to discard and which one goes to draw.
- If you have *Surfaced* 3 or more times, you can use only one card to *Strike*.

Changelog

v0.2.0

- Ship cards no longer start face down and hidden
  - *I made this change because I don't think this adds too much strategic depth to the game. It was very thematic for submarine combat, but I think Rule of Cool (also ease of implementation): better to show both*
- flavour: Change dark submarine theming to airship theming

- nit: Change "Shift" to "Load"
    - *It's unfortunate to lose the S alliteration, but Shift is unintuitive*
- Add some worldbuilding/theming
- Add some additional draft heroes/ship

v0.1.8

- Hunter Killer v0.1.8
- The overall goal of this version is to reduce the initial complexity of the game while increasing depth and design space.
- The key change here is removing "default" card abilities and parking them under a newly introduced "Hero" card, which passively modifies one or more (let's stick with one for now) card abilities.
- A player picks a hero **and** a submarine as a loadout. This reduces the complexity because you don't have to memorise all the variant rules at once. It also increases the design space because introducing a hero type allows us to tweak and introduce variant rules.

v0.1.7

- (see earlier version v0.1.7 here)

Credits

Hunter Killer was originally designed by Chin Kee Yong.

Technical stuff

CARDINALITY

Nodes, scenes, the scene tree, and signals are four core concepts in Godot that you will manipulate all the time.

Nodes are your game's smallest building blocks. You combine them to create scenes that you then combine and nest into the scene tree. You can then use signals to make nodes react to events in other nodes or different scene tree branches.

After this short breakdown, you probably have many questions. Bear with us as you will get many answers throughout the getting started series.

1 Main
 - 2 Players

1 Player
 - 1 Deck, 1 Hand, 1 DiscardPile

Pile
 - 6 x counters of mana
 - helper functions

1 Deck < Pile
 - initialized with 18 Cards

- Load: Transfer 1 Card from Deck → Hand
- Surface: Transfer all cards from Discard Pile → Deck

Game loop mechanics

Turn

- StartPhase
- MainPhase
- EndPhase

Phase

-

Stack and priority system

- Active player — changes every turn
- There is an active player, but also a player with priority (this changes multiple times a turn)
- A turn is divided into three phases:
  - Start of turn phase
  - Main phase
  - End of turn phase
- "Stack" is a programming abstraction, it does not exist in the game, and nothing should reference the stack.
  - As a rule, card effects should not know or care about things that are below them in the stack.
  - However, many game/UI elements should care about when things are placed on the stack.
- Load
  - Put a "Load" trigger on the stack
  - When a "Load" trigger resolves, move a card from the player's library to his hand
    - There needs to be a state-based trigger here: when a player has more than 7 cards in hand, he must discard down to 7.
      - Some "global enchantment" is checking for PlayerLoad signal. and hand size, and if hand size > 7, put a "Discard" trigger on the stack
- Seek
  - Put a "Seek" trigger on the stack
    - The other player must be passed priority.
    - But what if there's a card like "When you *Seek*, *Load*"?
      - You need to resolve that load first before the other player can be passed priority.
    - When a "Seek" resolves:
      - opposing player discards either one card of the correct suit, or two cards, or their whole hand (if they have less than two cards)
- Surface
  - Put a "Surface" trigger on the stack
  - When a "Surface" trigger resolves:

- - Put your discard pile into your library
  - Shuffle your library
- Strike
  - Put a `strike(colourA, colourB)` trigger on the stack
  -
  - When a "Strike" trigger resolves:
    - Check for the presence of a Dodge token that is the correct colour
    - Remove all Dodge tokens from the other player
    - If we have a correct dodge token then ok end the phase
    - if we don't then active player wins

Devlog

@Z Lieu @July 9, 2022 2:26 AM
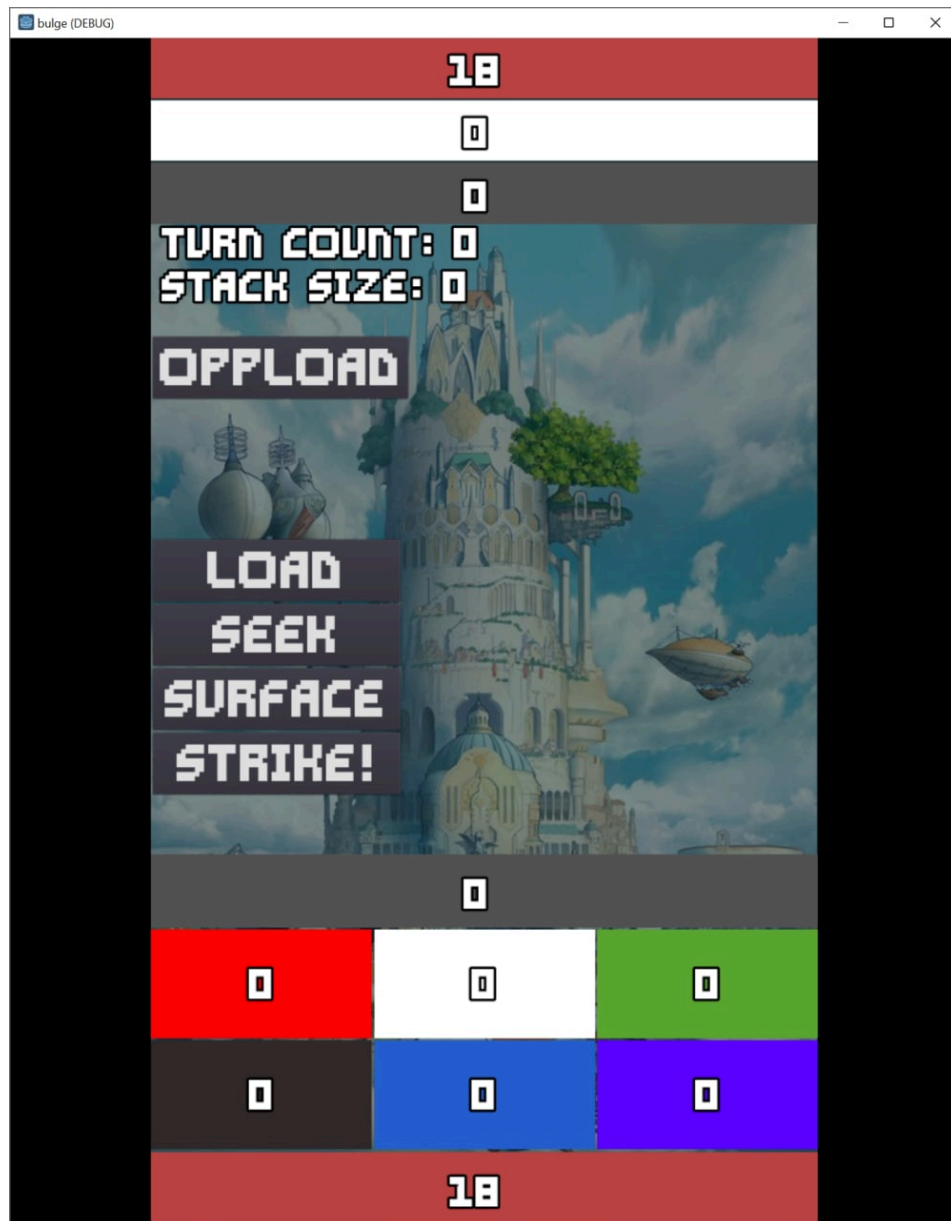
@Z Lieu @July 8, 2022 1:37 AM

Implemented a turn system by cutting some corners (see https://github.com/lieuzhenghong/bulge/pull/3) for an explanation of the tradeoffs).

Next immediate steps is to implement the base actions.

1. Reimplement Load

2. Implement Seek (to test out the priority/stack system)

3. Implement Strike

4. Implement Surface (should be easy)

Then we should implement start/end turn phases: try out a trigger like "At the end of the turn if you have 3 skulls you lose the game" kind of thing.

@d 's job is to find us a place to sleep for 3 nights bro

@Zhong Yang Tan keep us updated on the art and stuff

Well done team

@Z Lieu @July 7, 2022

Implemented a stack system. Stacks hold triggers and have two functions, `push` and `pop` . When they push or pop, they broadcast a signal saying that a new trigger was either added or resolved, and anyone can listen to the `Stack` and decide what to do with that signal.

Stack.gd

```
extends Node

signal trigger_resolved(type, actor, target)

var stack = []

func push(trigger: Trigger):
    stack.append(trigger)

func pop():
    var trigger = stack.pop_back()
    if trigger == null:
        pass
    else:
        emit_signal("trigger_resolved",
            trigger.type,
            trigger.actor,
            trigger.target
        )
```

`Game.gd` is responsible for

Game.gd

```
func _on_LoadButton_pressed():
    # Push a LoadTrigger for player one onto the stack
    Stack.push(LoadTrigger.new(
        Globals.PLAYER_ONE_ID,
        Globals.PLAYER_ONE_ID)
    )

func _on_ResolveStack_pressed():
    Stack.pop()

func _process(_delta):
    $StackSizeLabel.text = "Stack Size: %s" % Stack.stack.size()
```

Piles.gd

```
func _on_Trigger_resolved(type, actor, target):
    print("Trigger of type %s from actor %s targeting %s resolved!" %
    [type, actor, target])
    if type == "Load" and target == relevant_player:
        var loaded = load_card()
        if loaded != Globals.DECKPILE_EMPTY:
            emit_signal("load_successful", relevant_player, relevant_player)
```
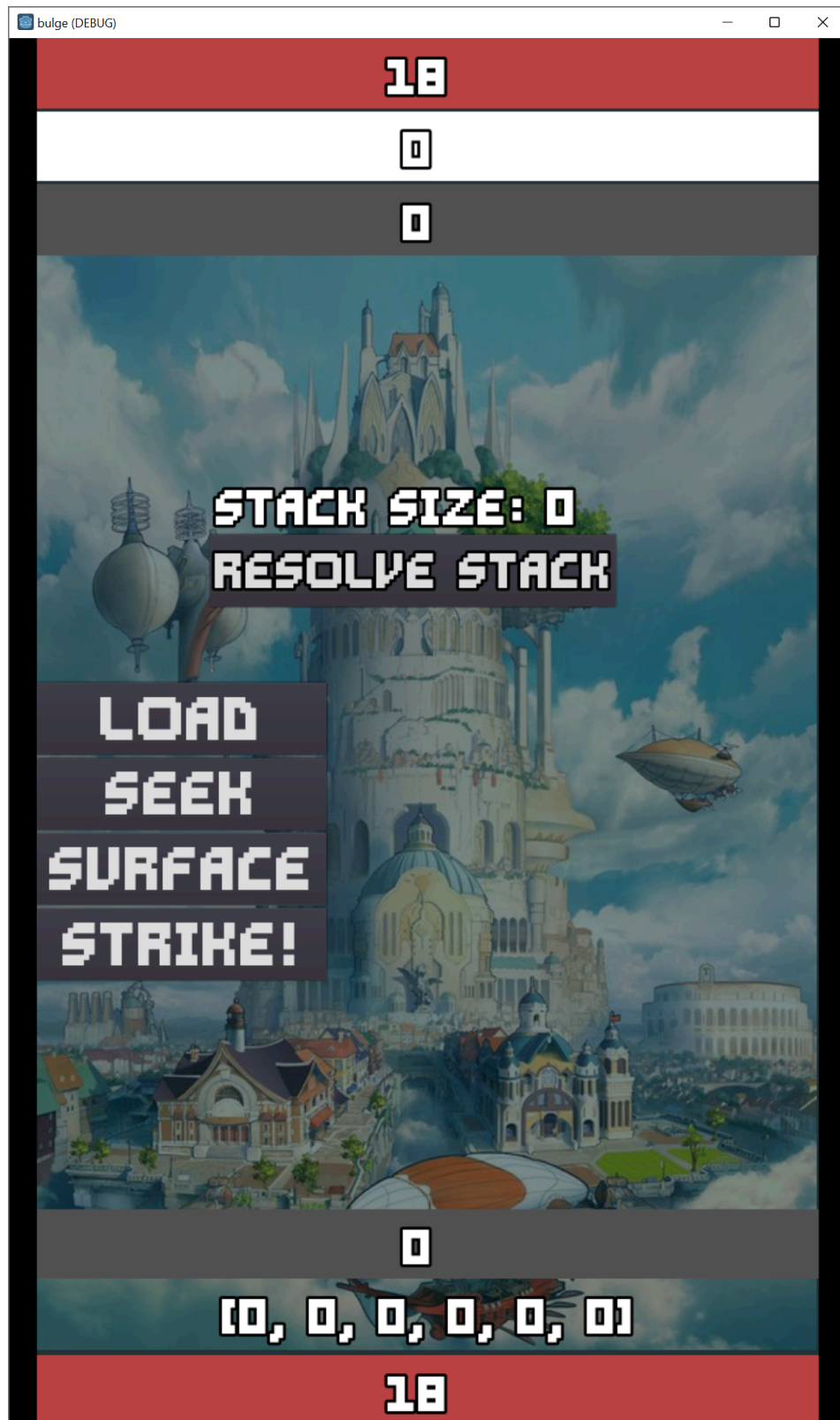
@Z Lieu @July 5, 2022 2:25 AM

Both the active player and the opponent player want to have a `Piles` object. The issue is that we want to render (display) the player's hand but we don't want to display the opponent's hand.

We can't have a single `Piles.tscn` scene that displays the library, hand, and discard pile. This is because any scene which shows the player's hand will also show the opponent's hand. But at the same time. How can we reuse the same `Piles` object (have two different instances of the same `Piles` class) but display it in two different ways? How to decouple the rendering from the logic?

The solution I came up with is to let Piles be parameterisable, with `deck_path`, `hand_path`, and `discard_pile_path`. These point to any `Node` and we can see that the function `load_card` is able to use the node references to `deck` and `hand`.

Note that it doesn't matter what kind of node `deck`, `hand`, or `discard` is: they can be `ColorRect`, `HBoxContainer`, etc. as long as they inherit from `Node`. But this means that you can display them any way you like (as a ColorRect, as a HBox, or not at all) — thus successfully decoupling display from function.

```
class_name Piles extends Node

export(NodePath) var deck_path
export(NodePath) var hand_path
export(NodePath) var discard_pile_path

onready var deck = get_node(deck_path)
onready var hand = get_node(hand_path)
onready var discard_pile = get_node(discard_pile_path)
onready var globals = "/root/Globals"

func _ready():
    pass

func load_card():
    var loaded = deck.load()
    if loaded == globals.DECKPILE_EMPTY:
        print("out of cards!")
        return
    hand.add(loaded)
    print("Deck:" + deck.str())

func _on_Button_pressed():
    load_card()
```
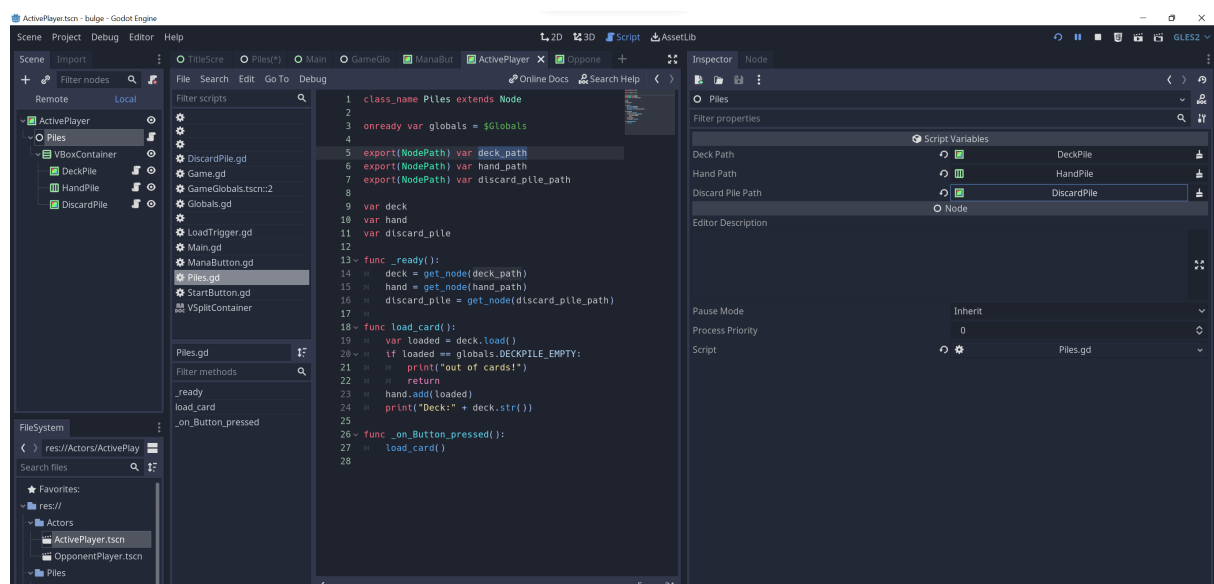
In the Scene Editor we see that `Piles` allows us to specify the "Deck Path", "Hand Path", and "Discard Pile Path" inside the "Script Variables" section.

Huge difficulties figuring out the class system, inheritance, OOP, all that stuff.

```
class_name Player extends Node

export(NodePath) var library_path
export(NodePath) var hand_path
export(NodePath) var discard_pile_path

var library
var hand
var discard_pile

func _ready():
    library = get_node(library_path)
    hand = get_node(hand_path)
    discard_pile = get_node(discard_pile_path)
```

Idea for abilities:

I want to encapsulate this idea of the player being able to do something: called an ability. Abilities are PLAYER INITIATED. Things that should be abilities:

 - being able to load a card #(load a SPECIFIC card)

 - being able to strike with X and Y colors

 - being able to seek with X color

 - being able to surface

e.g. player has 3 cards: Red, White, White and a non-empty draw pile. Then he has

 - 1 Load ability

 - 3 Seek abilities: { R, W, W }

 - 1 Strike ability with R W (no W W if they're playing white hero)

How do we know what abilities a player has?

 - derive from player's hand cards + hero + ship

   - having a red card gives 1 Seek Red ability

 - game derived abilities

   - having a non-empty draw pile gives 1 Load ability

When to we calculate what abilities a player has?

 - at the start of game AND

 - at the start of each turn

   - for each player hand card: card.get_abilities(): [Ability]

   - append to game.get_turn_abilities(): [Ability]

How to use ability?

Abilities API

class Ability

 - self.constructor: whatever args are needed → self

 - type:

   - just for organization

 - hash(): self → string

   - acts as idempotency key, will be checked before adding into player's unattempted abilities

 - state(): self → State

 - execute(): self → void

Ability.State = { Unattempted, Attempting, Succeeded, Failed}

Sample use

```
class LoadAbility < Ability
  type, state
  def initialize()
     self.type = "Load"
   self.state = Unattempted
   end
 def attempt()
   self.state = Attempting
    Handpile.push(drawpile.pop())
   self.state = Succeeded
   end
   def hash()
     self.type.hash()
   end
end

class SeekAbility < Ability
  def initialize()
    self.type = "Seek"
   self.seek_card = seek_card
   end
 def attempt()

   end
 def hash()
     # this should dedup within one turn.
   # e.g. player has THREE cards R W W: they should have TWO abilities ONLY
   # Seek R and Seek W.
   (self.type + self.seek_card).hash()
   end
end
class StriekAbility
  self.card1, card2
  def execute()
   Game.strike(card1, card2)



 # At the start of player's turn...
 player.unattempted_abilities
  = (cards.map(|c| c.get_abilities())
```

```
    + piles.map(|p| p.get_abliities())
    + game.get_turn_abilities())
    .uniq(&.hash()) # dedup based on hash


# Interface: Represents a thing that can grant ability
# Game, each indivudal card, a pile, a ship, a hero
module AbilityProducer
    abstract!
  def get_abilities(): [Abiltiy]
end

DrawPile

def get_abilities():

  if > 0 cards:
    return LoadAnilltiy()


class Handpile
  def getabi
  a = []
  # geenreate seek abilities
      for each card
          a += SeekAbility(card.color)
  # generate Strike abilities
  for each card
    for each card2
      a += StrikeAbility(c1, c2)
```

Then each player at any point in time has a set of abilities.

An ability is a logical action that a player performs. An active ability is a player-initiated ability. A passive ability is a game-initiated ability. All abilities are either player-initiated or game-initiated.

Abitities should map closely to game instructions. A sign that something should be an active ability is when its description starts with "The player CAN X ...". Conversely, a sign that something should be a passive ability is when its description starts with "[When Y] the player should/will X".

```
Abilities API

class Ability

 - self.constructor: whatever args are needed → self

 - type:
```

- just for organization

- hash(): self → string

  - acts as idempotency key, will be checked before adding into player's unattempted abilities

- state(): self → State

- execute(): self → void

class ActiveAbility < Ability

class PassiveAbility < Ability
  phase

class DiscardIfMoreThanSeven < PassiveAbility
   self.phase = EndPhase
      func _init():
         connect("PhaseChange", _onPhaseChange)

      func _onPhaseChange(currentphase):
         if phase == currentphase:
            # do the thing
            # pop up the UI

            # trigger the discard
         var discarded_cards = yield("DiscardUIPrompt", "DiscardConfirmed")
      for card in discarded_cards:
         discard(card)

in game
func gotophase(phase):
   if current_phase = EndPhase:
      pass
   else:
      current_phase = phase
      emit_signal("PhaseChange", current_phase)

func discard()
  emit("discard start")
  yield ('discrd done')

class DiscardIfMoreThanSeven < PassiveAbility

```
class DiscardIfMoreThanSeven < PassiveAbility
  def execute
```

```
Game.gd

func _ready()
  self.player1 = player
  self.player2 = AIPlayer() if ai else humanPlayer()

func _onSeekConfirmButtonPressed(colour):
   # Assume that this action is legal
```

```
    # Execute the seek ability
    SeekAbility.execute()



  func _onSeekRequest(colour):
   player2.seekRequest()
   --
   if human:
     P2SeekResponseUI.show()
   else:
     # do the ai logic
    emit("SeekResponseConfirmed", cards)

  func _onSeekResponseConfirmButtonPressed(cards):
   # check if the cards are valid
   # then emit SeekResponseConfirmed(cards) where cards is an array of cards
    emit("SeekResponseConfirmed", cards)

  SeekAbility.gd

  ...
  func execute():
   # First discard the player card
   # Then pop up a UI asking the opponent player to discard cards
   # Then discard the cards
   discard(player, colour)
   emit("SeekRequest", colour)
   var cards = yield("Game", "SeekResponseConfirmed")
   for card in cards:
     discard(card)
```

UX/design Dump

Picrew

https://picrew.me/image_maker/1637084

https://picrew.me/image_maker/207297

https://picrew.me/image_maker/268253

Fonts

https://www.fontspace.com/fha-condensed-french-font-f15426

https://www.fontspace.com/fty-skorzhen-ncv-font-f16319

https://www.fontspace.com/steamwreck-font-f18132

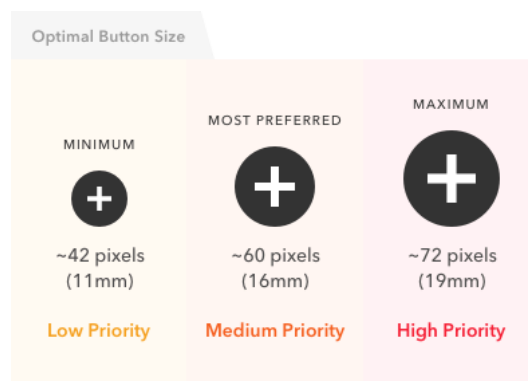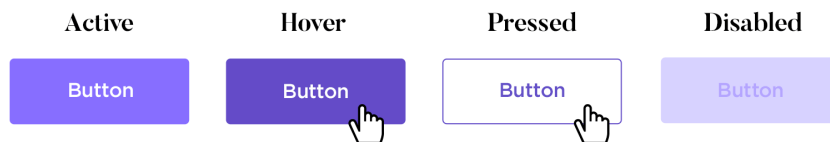https://www.fontspace.com/fha-modernized-ideal-classicnc-font-f12053

Reso- 1080×1920

Rounded corners + drop shadow

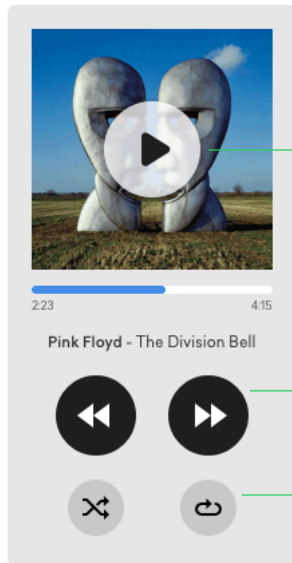Pressed: Opacity 70%/invert color, no drop shadow

Button states

Active	Hover	Pressed	Disabled

All buttons the same size
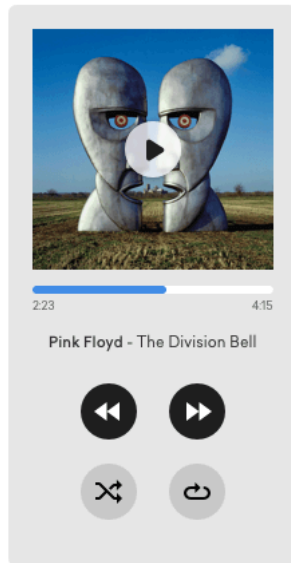
Buttons sized by priority

high priority
72 pixels (19mm)

2:23   4:15

Pink Floyd - The Division Bell

medium priority
60 pixels (16mm)

low priority
42 pixels (11mm)