

Project Fragarach

Game Design Document

By: Cody Archambault & Traveen Weerasooriya

V1.2

Changelog:

28/04/2024 - V1.0 - Completed the first iteration of the GDD. (Cody A.)

01/05/2024 - V1.1 - Rewrote mechanics to remove card cost in favour for a combo system. (Cody & Traveen)

14/05/2024 - V1.2- Added Menu flowchart (Traveen)

Table of Contents:

Overview	3
Elevator Pitch	3
Pillars	3
Gameplay	4
Basic Mechanics	4
Cards & Combat	5
Enemies & AI	7
Enemy Types	8
Game Progression	9
Player Controls	10
UI	11
Visuals & Game Feel	12
Artstyle/Aesthetics	12
Player Feedback	13
Sound Design	14
Characters & Themes	15
Player Character	15
Marketing	16
Client Requirements	16
Market Research	17
Major Selling Points & Target Audience	17
Principle Competitors	17
Bibliography	18
Appendix	18

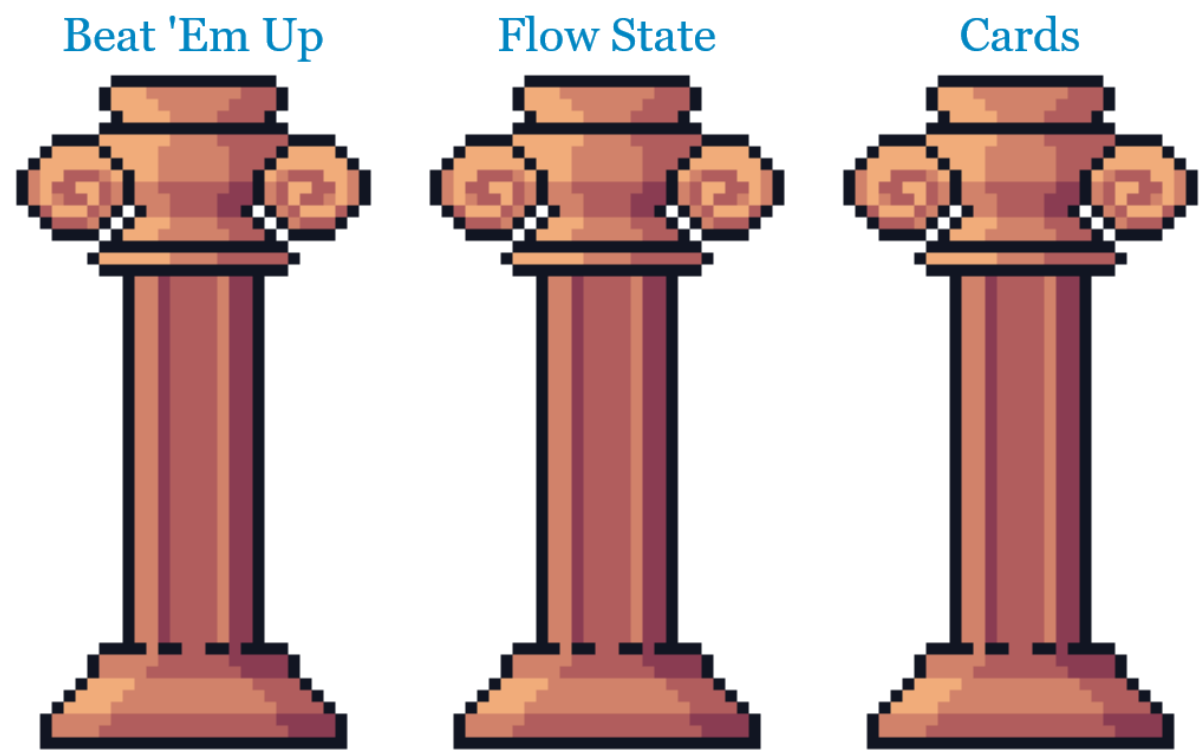
Overview

Genre	Beat 'Em Up
Platform	PC
Point Of View	Side-On
Theme/Mood	Sci-Fi, Pixel Art
Target Audience	Casual Fighting Game Players, Arcade Game Players, Co-op Game Players

Elevator Pitch

Project Fragarach is a Beat 'Em Up game where you prepare attacks using a series of card combos. Players must build a deck and tactically play cards quickly in the midst of battle, which influence the attacks they deal to enemies.

Pillars



Gameplay

Basic Mechanics

Movement

The player is able to move in all 4 cardinal directions. When moving horizontally, the player will flip to match the current direction of movement.

Wall Collisions

Collisions are usually placed on walls in the top half of scenes, preventing the player and enemies from moving into them and walking off screen. These collisions will usually also be used on the right and left edges of the screen when a combat wave occurs (elaborated in the Cards & Combat Section).

Camera

The camera will be centred on the player shifting towards the direction of their movement to show objects ahead of them. In combat waves, the camera will be locked until the player completes the wave elaborated in the Cards & Combat Section).

Menus/Settings

Basic menus for the title screen and settings section. These are used as a landing page for the game. The settings menu will be used primarily for accessibility, graphics, and sound options.

Level Select

Players are able to replay past levels through the "Level Select Menu". In this menu, all levels are shown in a list, with unplayed levels being locked and inaccessible.

Player Health

Player health determines the number of hits from enemies a player can take, before they enter the "Death" state. Health is tracked with a UI element representing the percentage of health the player has remaining.

Player Death

When the player's health hits 0% or less, the "Death" state is initiated. When this occurs, an animation will play showing the player dying, then the player is prompted to either replay the level or return to the main menu.

Dialogue

During sequences between combats, some cases will progress the story and initiate dialogue sections. This system will temporarily pause gameplay in favour of a cutscene.

Hotboxing & Hurtboxing

Every entity has a set of hitboxes & hurtboxes that correspond to different states of animation that character is currently in. When an entity's hitbox enters the hurtbox of an opposing entity, that entity will have been considered hit, which then triggers the appropriate responses (lowered hp, knockbacks, etc).

Cards & Combat

Deck Building

In between game chapters, players are able to create a deck of a set of cards that each correspond to different attacks the player can do, this allows them to pick and choose cards based on their playstyle. It also allows us to create a sense of progression through new cards and combos.

Card Actions/Attacks

During gameplay, a hand of cards will be present on the bottom of the screen. Each card corresponds to a different attack/action. Players choose cards from their hand in the order of when they will occur. Once they have chosen their hand, each card attack will play out until all attacks are complete. Then, new cards will be drawn from the deck and the old cards will be removed until all have been used, in which case, the deck will be reshuffled.

When an entity is hit by an attack, they are either pushed backwards slightly, or enter the "Knockdown" (See further below) state, depending on the type of attack they are hit with.

Card Combos

When two or more attacks of the same type are used in succession, this will activate a "combo". A combo plays similarly to a regular set of attacks, but will progressively increase in damage, ultimately in a particularly powerful final attack.

Knockdowns & Forced Card Reshuffling

Whenever an enemy or the player is hit by a particularly powerful attack, they will enter the "Knockdown State". When in this state, the entity is unable to move or attack. Furthermore, the entity is launched backwards and into the air as they are playing a falling animation until they hit the ground. Once this occurs, the entity will play a standup animation, which when complete, will restore control to that entity's actions.

If a player is hit by a weak attack, half of their cards will be forcibly reshuffled. If a player is instead knocked down, their entire hand will be reshuffled.

Guarding

Independent of the cards system, players are able to guard. Guarding allows the player to avoid being knocked down while also mitigating damage. Furthermore, when the player guards against a weak attack, they do not lose cards. If a player guards a strong attack, only half of their cards are reshuffled.

Combat Waves & Stage Progression

As the player progresses through stages, occasionally they will encounter a combat wave, when this occurs, the camera is locked in position and the player is unable to move outside its bounds. While this is happening, enemies will spawn in waves until all waves are complete, once that occurs, the camera unlocks and the player is able to progress once more.

Damage Indicators

When an enemy is hit by an attack, a number will float above their point of impact, this number represents the amount of damage an enemy has taken from that hit.

Enemies & AI

Enemy Spawning

Enemies will usually be hand placed across the map as level design demands it, activating and fighting the player as the camera brings them into frame.

Waves will require a set of enemy spawners, as players fight against them the wave spawner will count the number of defeated enemies before spawning in the next wave.

AI Pathfinding

AI Pathfinding will be rather simple for the most part, each enemy will be aware of their allies positions along with the position of the player. This will be used to avoid having enemies walk into each other and to help them navigate towards the player. Since levels have lots of free space to leave room for combat, object avoidance can be kept simple.

Enemy Speedlag

The game will tag an enemy as the main target, who approaches the player at a normal speed. Every other enemy will approach the player and attack at a greatly reduced speed. This should balance the fact that player's attacks are single target focused, and would alleviate frustration.

Enemy Attack AI

Enemies act through a state machine, allowing them to seamlessly swap between different complex behaviours. These states will usually consist of an inactive state, a moving state, a hurt state, and any number of attacking states.

Enemy Health/Death

Enemies have health bars that appear as they take damage before fading out. These bars represent the amount of health an enemy has at any current moment. When an enemy's health has fully depleted, that enemy will be defeated. On death, the enemy will play a short death animation before rapidly fading out through a shader effect.

Enemy Types

Thug Enemy

The basic street thug enemy consists of two different sprites for a Male & Female variant. They carry a baseball bat and focus on slow yet powerful swinging attacks.

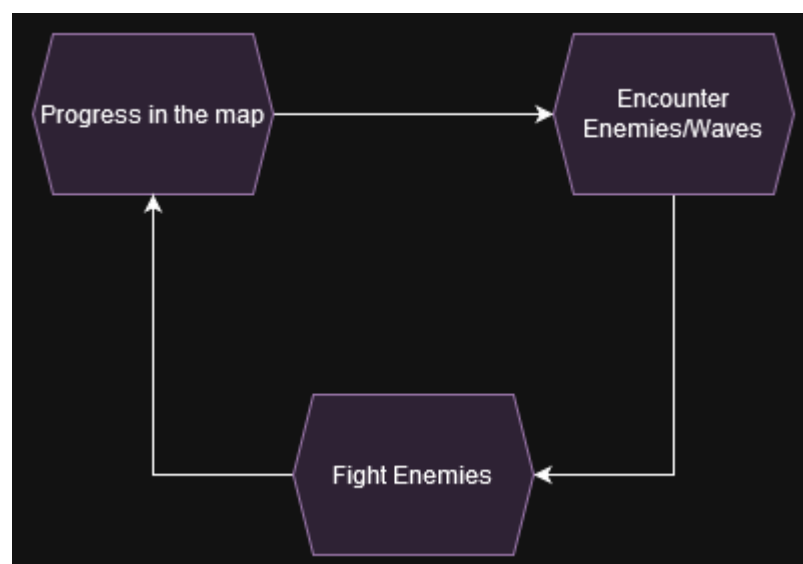
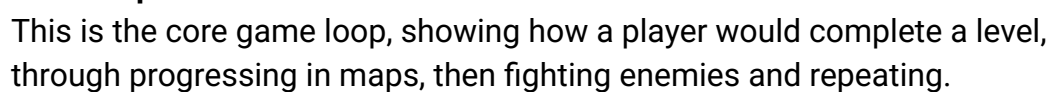
Quick Swing

The left swing is the Thug's weak attack, consisting of a short anticipation followed by a rapid swing of their bat. This attack is not capable of knockdowns.

Head Bash

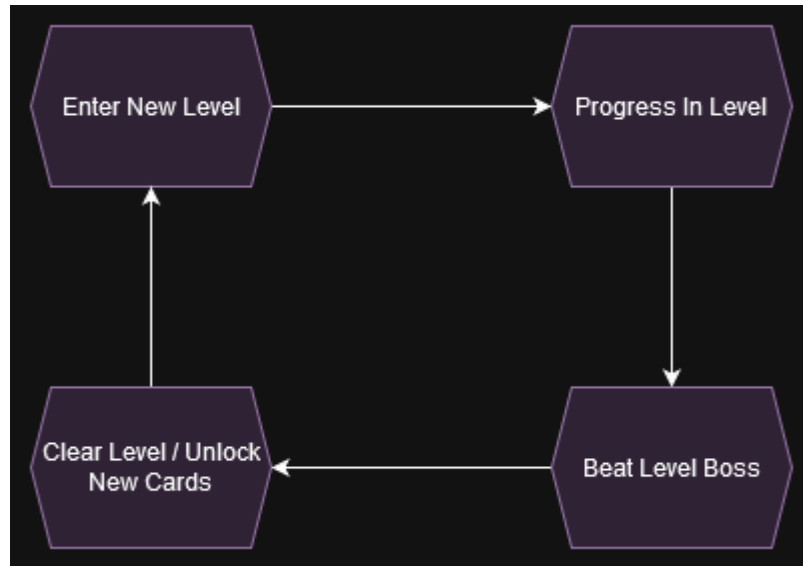
This attack sees the thug preparing a large anticipation for an overhead swing. After the release of the attack, the Thug will remain partially stunned for a few frames, leaving them open to counter attacks. This attack is powerful enough to cause knockdowns.

This diagram represents the basic progression from menus to gameplay throughout the game. As can be seen, the main menu provides access to the options menu and the play menus, from the play menu, the player will access the level select and will be able to change their deck. Once they choose a level, they play through it until either completion or until they leave.



Level Progression Loop

The Meta Game Loops showcases player progression throughout the game. The loop sees the player enter a level, progress and complete the level, unlock new cards, then progress into the next level onward. This loop continues until the player beats all levels and finishes the game.



Player Controls

Keyboard & Mouse

Keyboard & Mouse controls will consist of two different presets, with the ability to rebind controls being present as necessary.

Preset 1

- WASD - Movement
- UIOP- Cards
- E/Enter - Use Cards
- Q - Block
- Esc/P - Pause

Preset 2

- WASD - Movement
- Mouse 1/2/3/4 - Cards
- E/Enter - Use Cards
- Q - Block

Esc/P - Pause

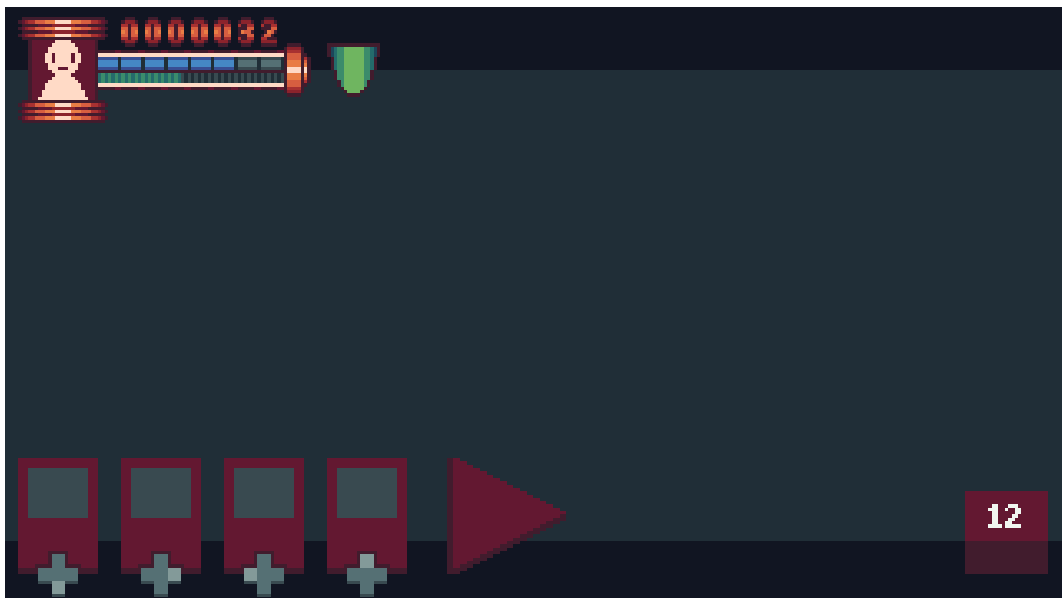
Controller

When a player uses a controller, Shoulder buttons such as L/R/ZL/ZR will be used for cards, while blocking and accepting will be on face buttons and movement will use the left stick. Controls will also be rebindable if the player is inclined to do so.

UI

Game UI

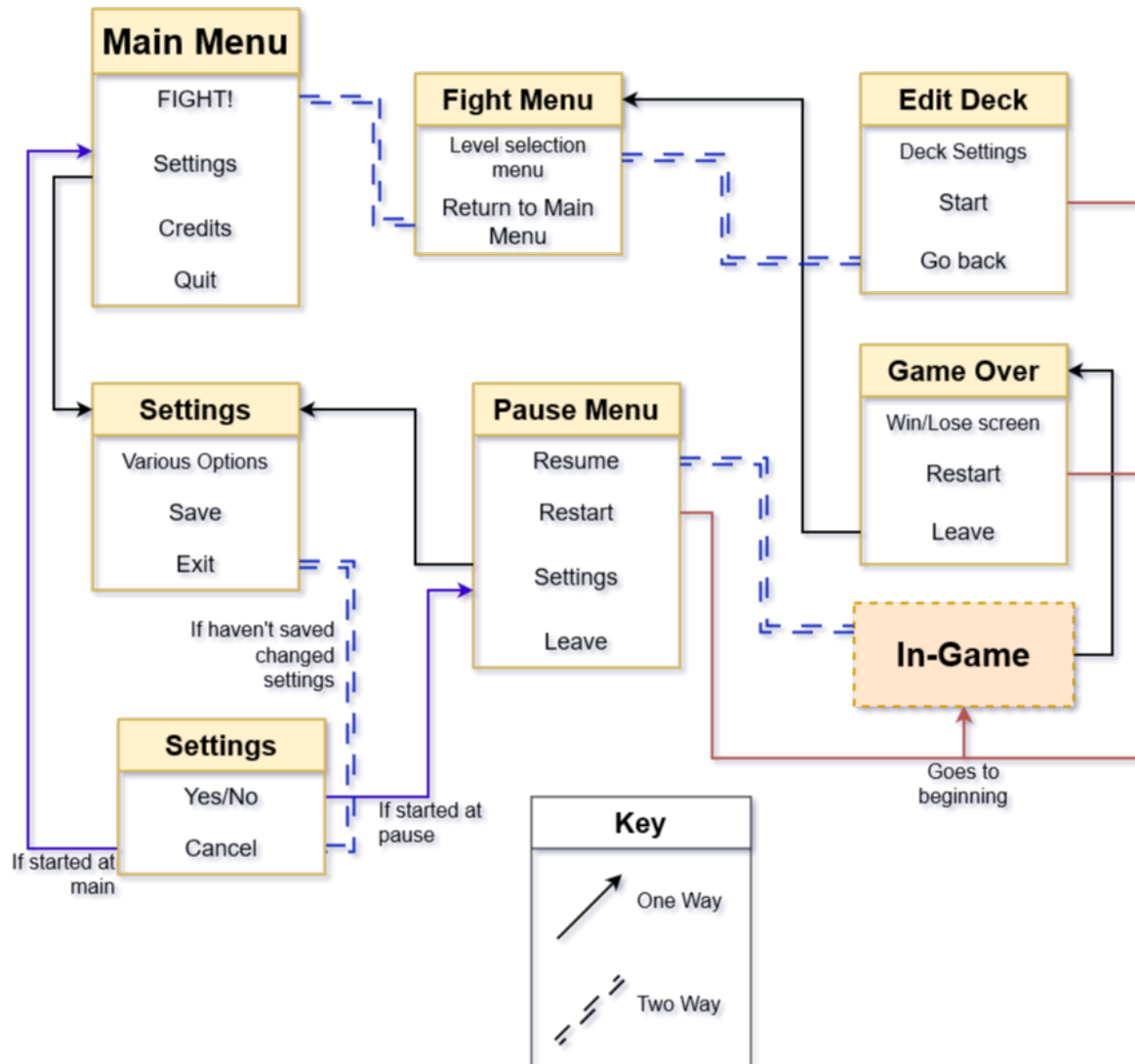
Assuming that the game is in a 16:9 aspect ratio, the view of the action is set in a cinematic 2.35:1 aspect ratio, with black bars above and below. The UI will mostly be within those black bars. The card-related UI elements being the main exception, overlapping with the action view while being low enough to not entirely cover characters at the bottom.



Menus

The menu UI will be kept simple, in the main menu, and will be a basic darkening effect for a pause menu.

Menu Flow



Visuals & Game Feel

Artstyle/Aesthetics

Artstyle

The artstyle will be heavy in pixel art, using lots of dark and grungy metallic colours in combination with high contrast “Neon” style colours. Characters will be drawn at a 64-80 pixel scale as a basis, with environmental art being designed to support clarity and character visibility.

Influences

Streets Of Rage 4



Streets of Rage 4 is a modern outlook on the classic “Beat ‘Em Up” game genre. The game is relatively similar to pre-existing games in the genre, instead standing out as the return of a strong household name revamped with current modern tech. This gives us the opportunity to stand out by creating a spin on the “Beat ‘Em Up” genre using modern techniques.

Aesthetically, Streets of Rage 4 differs from our own visual style through the colour scheme, VFX, and UI all strongly match our planned artstyle. In Terms of Audio, we plan to use a similar style of SFX, however the music differs from what we want.

River City Girls 1 & 2



River City Girls is a strong take on a modern take on “Beat ‘Em Up” games. Standing out through its uniquely humorous narrative, creative boss design, and striking visual style. Despite all these strong points, River City Girls fails to differentiate its gameplay from others in the genre. This provides us with a powerful Unique Selling Point to stand out.

The Artstyle is very similar to ours in the sense that it uses zero outline pixel art at a 64-pixel scale. However, the bright and striking colours are similar to the “neon” style we seek. The entire palette in “River City Girls” makes use of this vibrancy, while we instead want to create a contrasting dichotomy through darker colours. In terms of Audio, SFX fits our style, but music does not.

Player Feedback

Visual Juice

Strong use of VFX and particles are a requirement to sell the player on the feel of their attacks and actions and to increase the overall spectacle and fun of the game.

Audio Juice

Audio Should be crunchy and well timed, in order to line up and support the VFX.

Sound Design

Actionable SFX

Actionable SFX consists of sounds that activate on input. This includes attacks, button presses, menu prompts, etc. For our game, these sound effects should be crunchy and high impact. Leaving a strong impression after the player hears them.

Thematic SFX

Thematic SFX include ambient noise, dialogue and other similar sounds. For our game, these sounds should be volume controlled and carefully placed to support the current level or story beat in the game.

Music

Music should be thematic and action packed. Expect use of band instruments such as drums, bass, guitar, etc. There should also be a few slow tracks to play in between fights and to allow the player to rest and recover.

Characters & Themes

Player Character

Background Info

[CHAR] was originally a scientist and engineer working within **[LAB]**. When her machines gained sentience and began to attack people, she cowered and hid from them, waiting for a saviour. When a machine broke into her room, she was forced to fight it alone. Realising that the way to beat her robots was to use her fists to beat the crap out of each one.

Visuals

[CHAR] wears a grey leather jacket that they swapped into from their lab coat, a black business suit under their jacket with a red tie. Black gloves and brown shoes complete their outfit. They have somewhat masculine features with short brown hair.

Marketing

Client Requirements

Requirements: Met? How?

Strips away elements that distract from the flow state	Yes	Aside from required elements such as menus and the occasional resting point such as deckbuilding, players will be in a constant state of focused gameplay.
Skill Based Gameplay	Yes	Players must attempt to rapidly use cards in combos while simultaneously attempting to attack and avoid enemies. This allows for a large skill ceiling.
Balanced Difficulty	Yes	Difficulty can be balanced through the cards a player has access to in combination with level design.
Strong Player Feedback	Yes	By nature as a Beat 'Em Up game, we are naturally inclined to make strong use of particles and strong sound effects for player feedback.
Promotes a state of high concentration	Yes	In order to prevent players from exiting a state of flow, we plan to keep gameplay sections long and intense. This is done to ensure the player can reach a state of strong concentration, before we break it up and allow them to take a break.

Our Strengths & Risks

Traveen is a strong programmer experienced in working with Godot. They are also good systems designer, and have experience in working in different game genres.

Cody has a background as a pixel artist, and project manager. They have strong time management skills and can work well within a timeline.

As the game concept requires a focus on animation and artwork, we run a risk focusing on a game so clearly focused on a wide variety of animations.

Used Software

- Aseprite (Pixel Art program, costs \$25, already owned by Cody)
- Godot 4.2.2 (Open source/Free game engine)
- Audacity (Free audio editor)
- FL Studio (Digital Audio Workstation, \$100, owned by Traveen)

Market Research

According to Gamalytic, the revenue distribution for the “Beat ‘Em Up” genre as a whole is in a strong position, with over 40% of steam games in the genre having a total revenue of over \$1.000,000 USD for games over \$20 in price. Further information shows that games which include the adventure genre have a share of 46%, while games including the Fighting genre instead have a share of 75%.

Interestingly, Beat ‘Em Ups that include the Card Game Tag do not exist on the database, showing a clear gap in the market we can make use of.

Major Selling Points & Target Audience

The Beat ‘Em Up genre is in an interesting position due to its target audience. This is due to the audience being split into two distinct demographics. The older audience who grew up with the original Beat ‘Em Up games during the arcade era, and a new audience who have been drawn into the genre from recent games or through the “Fighting Game” genre.

We can make use of the newer demographic by innovating on the genre and introducing mechanics seen in other games. Hence our Unique selling point in being a blend of card based deck building combined with a Beat ‘Em Up title.

Principle Competitors

Name: Streets of Rage

Genre: Beat ‘Em Up, Fighting, Arcade

Sales: Estimated Steam Revenue of 5.86 Million USD

Player Reception: 92% Very Positive after 14,800 Steam Reviews

Summary:

Streets of Rage is a long lasting and popular title in the Beat ‘Em Up genre.

Given its large name and the timing between the previous game and its return, Streets of Rage opened up a gateway for old fans of the genre to re-experience a classic title in a new light.

Name: River City Girls 2

Genre: Beat ‘Em Up, Adventure, RPG

Sales: Estimated Steam Revenue of \$928K USD

Player Reception: 85% Very Positive after 1,200 Steam Reviews

Summary:

River City Girls opens up a new gateway for newer fans of the genre to experience its style of gameplay, while having some familiarity given from its integration of the ever prominent “Adventure” genre.

Bibliography

(Gamealytic filtered for Beat ‘Em Ups, Gamealytic, 23/04/2024)

https://gamalytic.com/steam-analytics?price_min=20&genres=Action&sub_genres=Fighting&tags=Beat%20%27em%20up

(Streets of Rage 4, Steam, 01/05/2020)

https://store.steampowered.com/app/985890/Streets_of_Rage_4/

(River City Girls 2, Steam, 15/12/2022)

https://store.steampowered.com/app/1920480/River_City_Girls_2/