Computer Science Final Project

Game Development - Arcade Game Template

The Eight Consciousness

Arcade Game Template

What is it about?

The final product will be an easily understandable game that is challenging but compelling and replayable.

Game Design characteristics:

- Easy to pick up and start playing.

- Instantly fun and gratifying.

- Encourages multiple attempts.

- Very short initial gameplay sessions due to high difficulty.

Elevator pitch
The Eighth Consciousness
Get ready to test your skills in this adrenaline-fueled bullet hell space shooter inspired by iconic games like 1942 and DonPachi.

What are "bullet hell" games?

"Bullet hell" or "bullet curtain" games are a subgenre of shoot'em up games, and are characterized for having a multitude of bullets being fired at the player, in complex and visually impactful patterns, such as helixes, spirals, circles, hexagons and clouds. To balance the difficulty, the player's hitbox is smaller than in other shoot'em up games, often being a small part of the aircraft sprite.

Some of the most important titles in this genre are: Batsugun, DonPachi, Ikaruga and Jamestown.

Motivations to choose this template

The main reason I have chosen this template is due to my own personal interest in game development and in this particular game genre. I grew up in the 90s and have many fond memories of playing video games as a young kid. At that time a career in game development seemed impossible, but now the technology and know how are widely available.

Limitations and gameplay mechanics.

These kind of games have mechanics that can accommodate the requirements of the project.
The input is reduced, so only a small set of actions is available.
The game must be easy to pickup.
To overcome this limitation I am leveraging the familiarity of a known genre.
Bullet hell games are inherently difficult, due to the number of moving elements on the screen.

Technical Challenges

Bullet patterns. How to make it configurable, extendable and visually appealing.

Interaction of multiple elements.

GUI and graphical aspect.

Adding a novel mechanic to make the game interesting and engaging.

Market Opportunity

The genre is still considered niche and is not very popular outside of Japan, but there has been an increase in indie titles released due to the availability of game engines like Unity and Unreal, and distribution platforms like Steam and Itch.io.

Also, there has been an increasing interest in difficult games. Testament of this are the Dark Souls games.

Space Invaders (Taito, 1978)
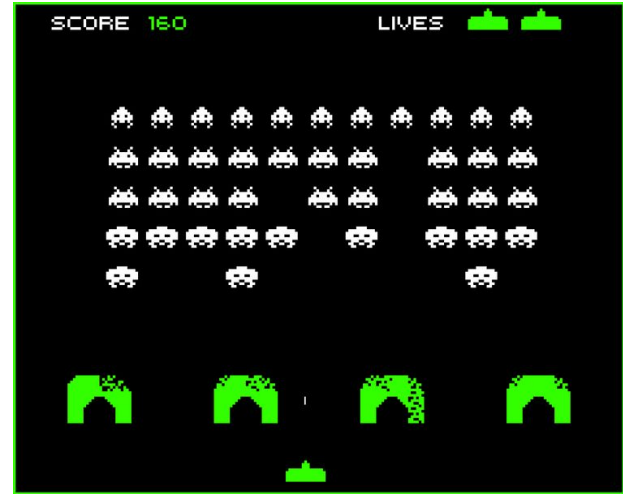# The game that started the Golden Age

Strengths:
- Easy to learn.
- Evolving stage (bunkers, increasing speed).

Weaknesses:
- Limited mechanics.
- Repetitive.

Gameplay Improvements:
- Multiple lives, increasing difficulty.

While it's a very important game from a historical point of view, it might not be very appealing to new players.

1942 (Capcom, 1984)
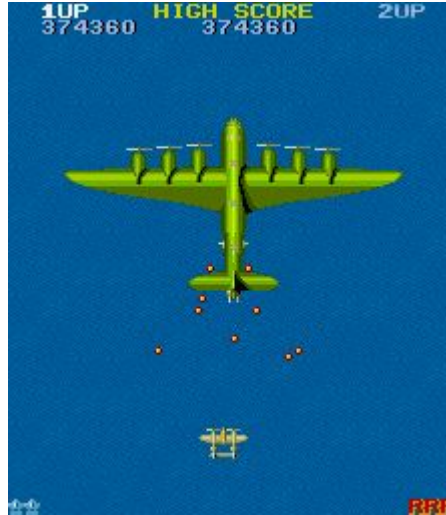# A classic vertical scrolling shoot'em up

Strengths:
- Freedom of movement in 2D.
- Fast paced, dynamic.
- Different kinds of enemies.

Weaknesses:
- Harder to learn.

Gameplay Improvements:
- High Score, performance.
- End of stage enemy bosses.
- Special movement.

DonPachi (CAVE, 1994)
One of the "Bullet Hell" genre definers

Strengths:
- Intensely challenging.
- Fosters competition.
- Fast paced.

Weaknesses:
- Can become frustrating quickly.

Gameplay Improvements:
- Complex shot patterns.
- Combo systems.
- Small hitbox for the player.

The Eighth Consciousness

- **Concept: Dodge and fire.**
- **Genre: "Bullet Hell" shoot'em up.**
- **Description: Destroy the waves of enemies and survive.**
- **Key Features:**
  - **Single player and 2 players local co-op modes.**
  - **Wide variety of enemies with different movement and shot patterns.**
  - **Visually striking slow motion effect to tackle the hardest situations.**
  - **Increasingly challenging levels.**