Breakout GDD

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1. Game Overview

1.1 Game Title

Breakout

1.2 Concept Statement

Breakout is a classic arcade game where you control a paddle to bounce a ball and break bricks. It's endlessly satisfying to strategize your shots and clear levels, with power-ups like multi-ball and wider paddles adding extra fun!

1.3 Game Genre

Arcade Action Game

1.4 Platform(s)

PC

1.5 Target Audience

No defined audience. This is a small tutorial game for me.
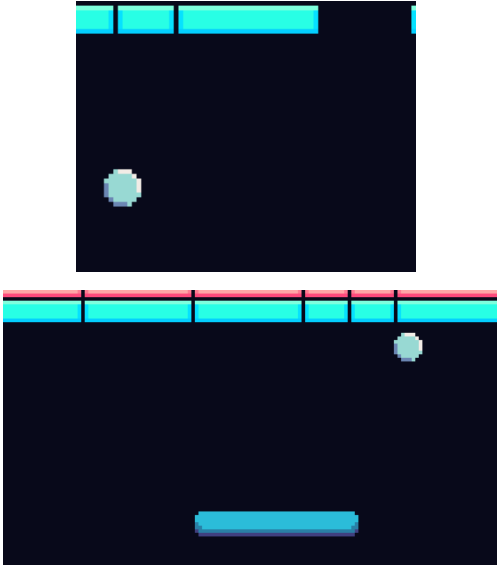

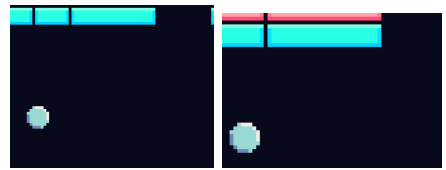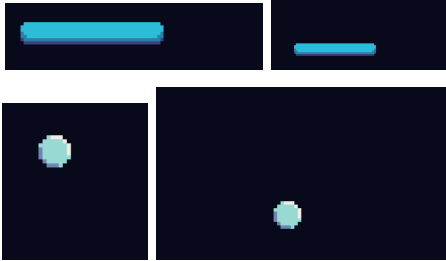# 2. Gameplay Mechanics

2.1 Core Gameplay Loop

1. *Launch the Ball: Start each level by launching the ball using the paddle.*

2. *Break Bricks: Aim to hit and break bricks while keeping the ball in play.*
3. *Collect Power-ups: Grab power-ups that enhance gameplay,*
   a. *Positive Effects*
      i. *Increase Paddle Size*
      ii. *Split Ball into 3*
   b. *Negative Effects*
      i. *Decrease Paddle Size*
      ii. *Decrease Ball Size*
4. *Clear Levels: Continue breaking bricks until all are cleared to advance to the next level.*
5. *Repeat: Each level increases in difficulty, encouraging players to refine their skills and strategies.*

Primary Mechanic

Mechanic	Art Mockup (Art not necessarily final)
Ball Physics The ball bounces off the paddle and bricks, with angles determining its trajectory.	
Paddle Control Players move the paddle left and right to bounce the ball and prevent it from falling.	

Secondary Mechanic

Mechanic	Art Mockup (Art not necessarily final)
<ins>Brick Types</ins> Different bricks may require multiple hits to break or a single hit brick.	

<ins>Power-Ups</ins>
 	
Collectible items that enhance gameplay, such as multi-ball, paddle size, and ball size.
  -   Increase Paddle Size
  -   Decrease Paddle Size
  -   Decrease Ball Size
  - Split Ball into 3	

2.2 Controls

Keyboard Exclusive currently.
- *WS - movement, up and down*
- *Arrow Keys - movement, up and down*

3. Art and Aesthetics

3.1 Visual Style

*Breakout features a **2D art style** characterized by simple, colorful graphics. The game uses **pixel art** elements, reflecting its classic arcade roots. The visuals are straightforward yet vibrant, focusing on the paddle, ball, power-ups, and bricks, creating a nostalgic and visually appealing experience that emphasizes gameplay over realism.*
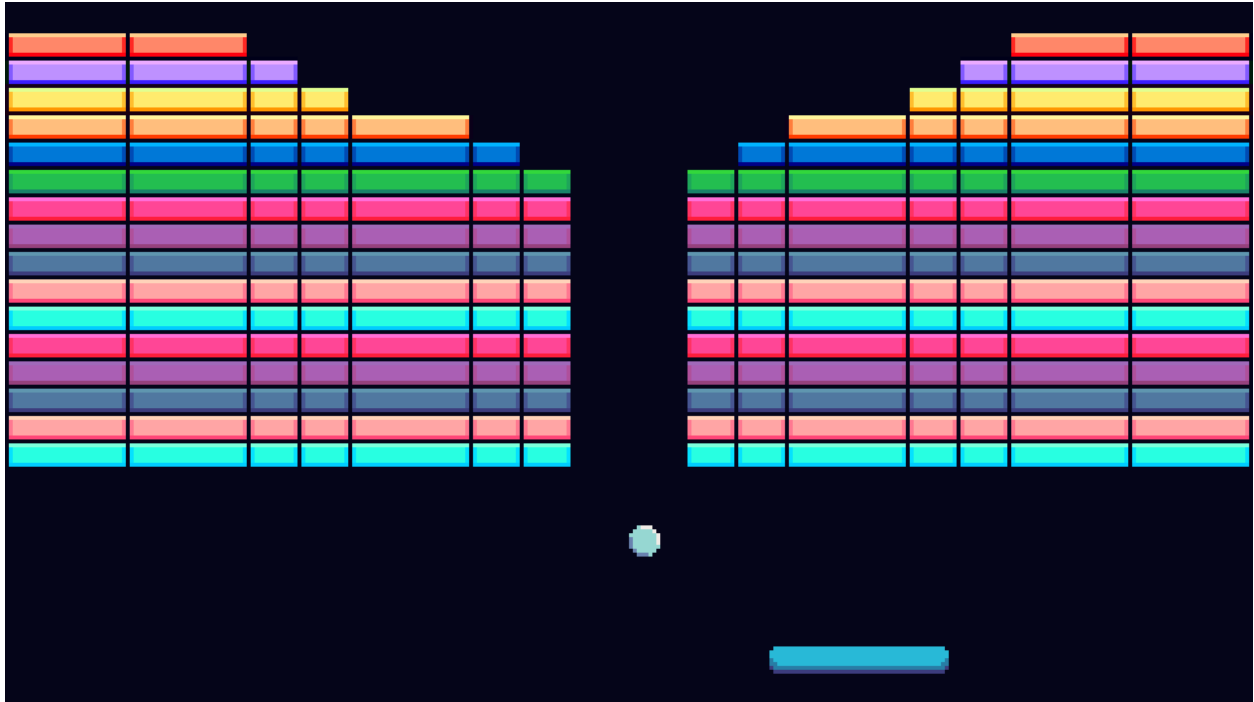
3.2 Color Palette

Jehkoba16 palette used. It tries to replicate the retro classic-NES colors, allowing you to keep the retro style.

#000000	#98d9d3	#2bbcd9	#2980a6
#21a65d	#97bf30	#f0cd30	#f2ece6
#ff9959	#bf6060	#ffa6a6	#ff3366
#99457d	#404080	#6b86b3	#08091a

3.3 Character and Environment Design

- ***Characters***
  - ***Paddle and Ball****: The paddle is a simple rectangular shape, while the ball is a uniform circle. This simplicity keeps the focus on gameplay rather than character detail, enhancing clarity and ease of control.*
- ***Environments***
  - ***Bricks****: Bricks are brightly colored and arranged in various patterns, creating visually interesting layouts that challenge players. Their design is straightforward, allowing for quick recognition and reaction.*
  - ***Power-up Circles****: When certain bricks are destroyed, power-up circles appear. These circles are usually adorned with distinct colors and symbols, making them easily identifiable and visually appealing. Collecting them enhances gameplay, adding another layer of strategy.*
  - ***Background****: The background is typically a solid dark color, ensuring that the vibrant gameplay elements stand out.*

Overall, the design prioritizes clarity and immediate engagement, fostering a smooth gaming experience without unnecessary distractions.

Note: Not an actual level, merely a full example of the art style

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4. Audio Design

4.1 Music

The music in Breakout features catchy, upbeat chiptune melodies that enhance the retro arcade vibe.

Source

4.2 Sound Effects

Source

There is one sound effect from the pong game that I don't recall where I got it. For future games, source EVERY sound

All sounds are in a retro arcade style to sell the retro aesthetic.

- Power-Up: 2 sounds to be switched between for different powerups
- Brick and Wall: A pop sound that will be used for hitting any brick or hitting the wall.
- Die: Every time you drop a ball this sound indicates that you dropped the ball

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5. Technical Specifications

5.1 Development Software

In Breakout, the following tools and software can be utilized:

- **Game Engine**: Godot - for developing the game and managing gameplay mechanics.
- **Graphics Software**: Aseprite - for creating pixel art assets like the paddle, ball, bricks, and power-up circles.
- **Sound Effects**: OpenGameArt - for sourcing chiptune music and sound effects to enhance the gaming experience.

These tools together facilitate a streamlined development process, from visual design to gameplay implementation.

5.2 System Requirements

- **Linux:** x86_32 CPU with SSE2 instructions, x86_64 CPU, ARMv7 or ARMv8 CPU
- Integrated graphics with full Vulkan 1.0 support
- 4 GB Ram
- Storage: 200 MB (used for the executable, project files and cache)

5.3 Development Timeline

Provide a high-level timeline for development phases.

Development Timeline

6. Additional Notes

I'm trying to finish this by mid-november

Powerups I could add incase I return to this:
- *Increase Ball Size*
- *Increase Paddle Speed*
- *Decrease Paddle Speed*
- *Increase Ball Speed*
- *Decrease Ball Speed*
- *Ghost Ball (it goes right through the bricks)*

Could optimize game in future versions. Due to particle effects it can be slow, and every