Rings

Game Design Document (GDD)

'Just Keep Flying' - Nathan Schwedock

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Game Development Team Members

PRODUCER

Jonathan Schaffroth, Matthew Silber, Nathan Schwedock

PRODUCTION COORDINATOR

Jonathan Schaffroth, Matthew Silber, Nathan Schwedock

GAME DESIGNERS

Jonathan Schaffroth, Matthew Silber, Nathan Schwedock

SYSTEMS/IT COORDINATOR

Jonathan Schaffroth, Matthew Silber, Nathan Schwedock

PROGRAMMERS

Jonathan Schaffroth, Matthew Silber, Nathan Schwedock

TECHNICAL ARTISTS

Jonathan Schaffroth, Matthew Silber, Nathan Schwedock

AUDIO ENGINEERS

Jonathan Schaffroth

1 Game Overview

Title: Rings

Platform: PC Standalone + iOS & Android, VR, XBox, Switch,

Genre: High score game

Rating: (10+) ESRB

Target: Casual gamer (aging from 12 - 30)

Casual games

Release date: December, 2020

Publisher: Blatherskites

Description: *Rings* is an endless, two-dimensional, obstacle dodging and maneuvering arcade game where the player (a spaceship pilot) must fly through golden rings that move across the screen for points. The goal is to score as many points as possible before time runs out or the player hits one of the many obstacles that present themselves.

2 High Concept

Rings sets the player (a spaceship pilot) in outer space. Although the pilot doesn't know why, they must fly through many golden rings set before him while dodging incoming obstacles.

3 Unique Selling Points

It's a simple, yet fun game. It compels the player to pay attention to the direction that the rings are moving in as well as keeping an eye out for any obstacles that are heading your way. Personally, I loved playing Toontown as a kid, and I loved getting this game in the trolley game rotation, so I think it would bring back good memories for anyone else that also played Toontown.

4 Platform Minimum Requirements

OS: Windows XP SP2+

Graphics Card: DX9 (shader model 2.0) capabilities; essentially anything since 2004 should work

5 Competitors / Similar Titles

- Disney's Toontown's ring game
- Phone games such as Temple Run, where you navigate forward through seemingly endless terrain

6 Synopsis

Genre - Survival / High Score

The most direct basis for this game comes from a minigame within the critically and commercially acclaimed MMORPG, Toontown Online. More flexible examples from a similar genre would be games like Frogger or Pac-man.

7 Game Objectives

The primary objective of the game is to fly through as many rings as possible, with a secondary objective to avoid the many obstacles that come the player's way.

8 Game Rules

The goal of the user is to maneuver their in-game character using specified keys: up, down, left, and right to swim through rings and dodge obstacles. Alternatively, the player can use W,A,S,D to move as well. Once an item is in your inventory, press the corresponding number on your hotbar to activate it. Fly through the rings to score points and avoid taking damage from oncoming obstacles.

9 Game Structure

During the game, the player is encouraged to stay en route, as there are boundaries that prevent the player from going elsewhere. We added scaling difficulty to keep the gameplay from becoming too bland. We accomplished this by adding more obstacles as time progresses during the player's run

10 Game Play

10.1 Game Controls

The goal of the user is to maneuver their in-game character using specified keys: up, down, left, and right to swim through rings and dodge obstacles. Alternatively, the player can use W,A,S,D to move as well. Once an item is in your inventory, press the corresponding number on your hotbar to activate it. For example, if you pick up a shield item as your first item, it will be assigned to the number 1 on your keyboard. Press that key to use that item.

10.2 Game Camera

In order to achieve the illusion of the ship moving, we instead decided to move the ship's surroundings towards it. This way, the camera can stay entirely stationary and the ship doesn't move on the z axis at all.

10.2.1 HUD

The bottom of the screen includes the player's score and current inventory.

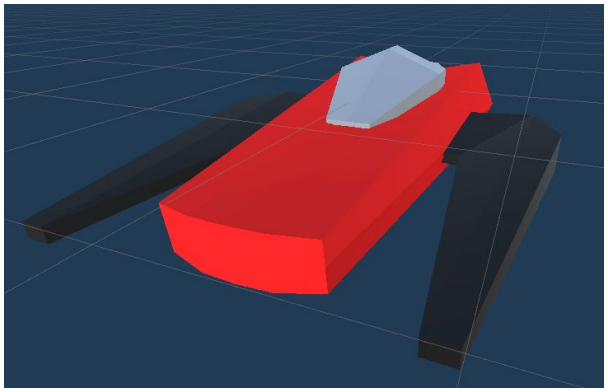
10.2.2 Maps

There is one main map where the game takes place; in outer space along the side of a giant asteroid.

11 Players

11.1 Characters

The pilot is the main character and only character in the game.

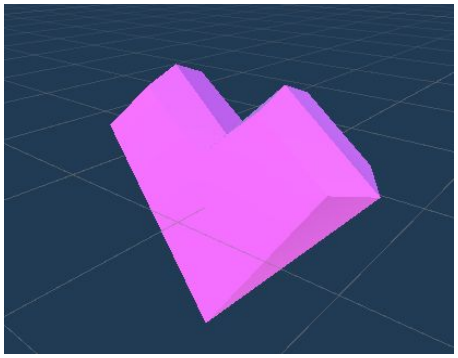


11.2 Metrics

The ship's size is a standard 1 Unity unit long. The rest of the game objects have been adjusted to compensate for the size of the ship.

11.3 States

Upon collecting the heart item, it gives the ship an extra life. The maximum amount of lives the ship can have is 3. Upon being hit by an asteroid, the ship loses a life.



11.4 Weapons

Unfortunately for the ship, it has no weapons on board. Use evasive maneuvering instead of brute force to survive.

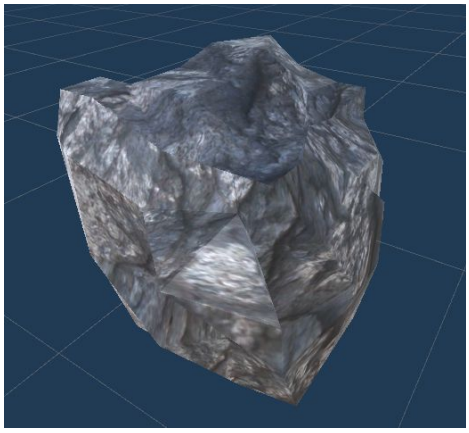
12 Player Line-up

Rings is a single-player game, where the player plays a pilot in control of a ship. Multiplayer is still in development.

13 NPC

13.1 Enemies

The obstacle that may come in the player's path is the asteroid. Avoid these at all costs!



13.1.1 Enemy States

The asteroids rotate as they fly towards the player. Once the hitbox of the asteroid meets the hitbox of the ship, heavy damage is taken and the player loses a life!

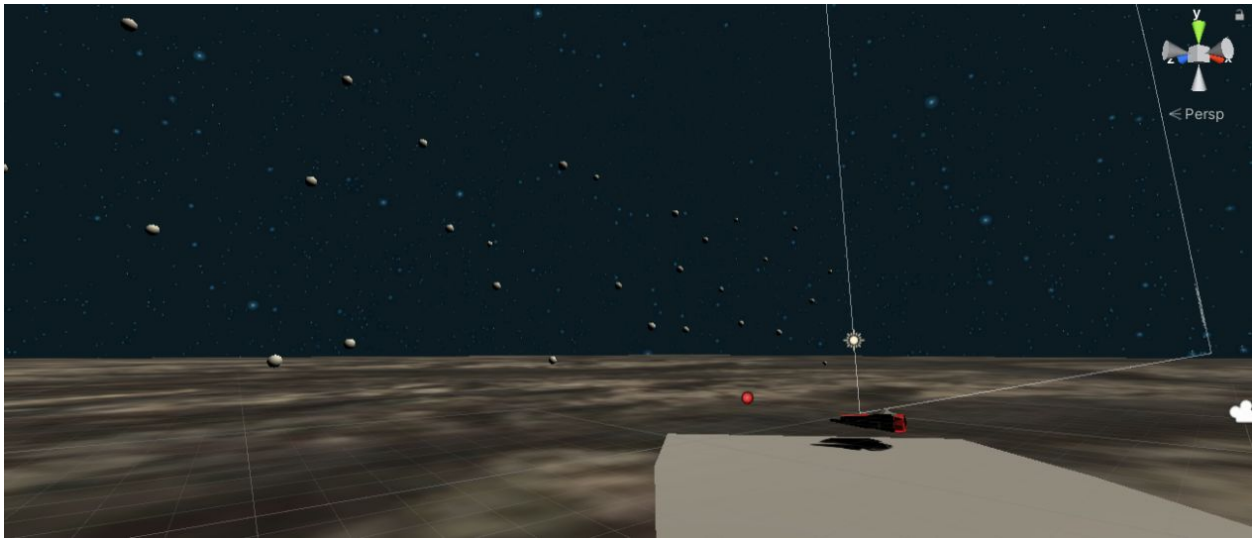
13.1.2 Enemy Spawn Points

The asteroids, unlike the rings, spawn along the sides of the player instead of in front of the player. You must remain ever vigilant if you wish to survive.

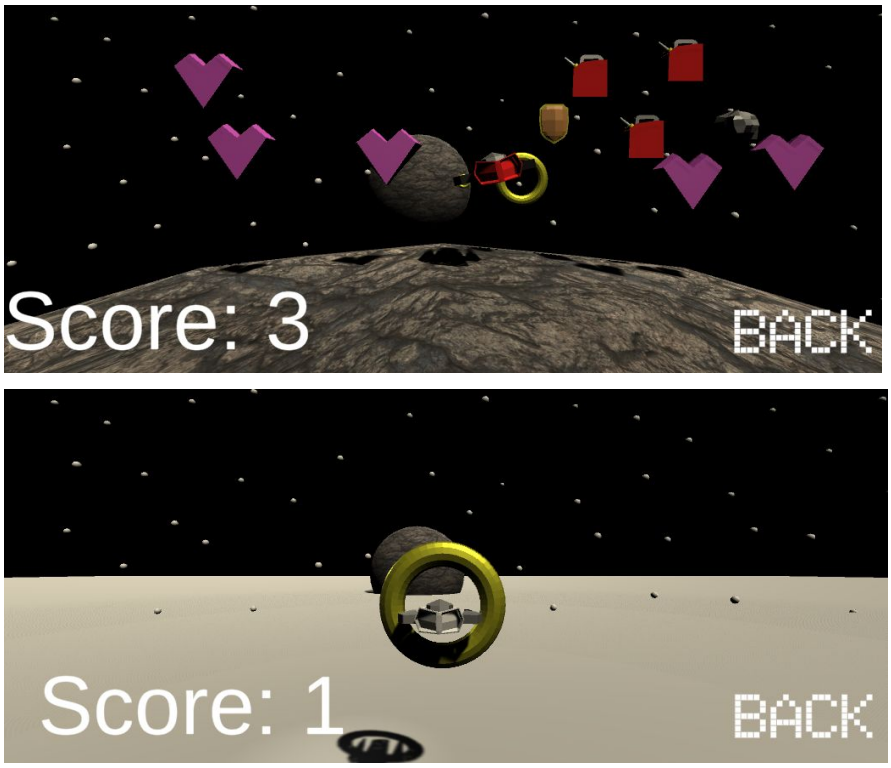
14 Art

Below, we include some screenshots that show off the artstyle we achieved in our game.

14.1 Setting



14.2 Level Design



14.3 Audio

The song that plays during the game was composed and created entirely by me, Jonathan Schaffroth. I used a free, open source program called Linux Multimedia Studio (LMMS) to create my song from scratch using free VSTs and soundbites from classic SNES games such as Super Metroid. As for the other sound effects, the sound that plays when flying through a ring was as simple as pressing two keys on a keyboard, and the gameover sound was simply Nathan Schwedock saying “game over.”

15 Procedurally Generated Content

15.1 Environment

Our friend (listed in the bibliography below) created a 3D model of an asteroid. We then altered it to make it larger while still keeping its spherical shape. We then gave the illusion of procedurally generated terrain by rotating the large model underneath the ship.

15.2 Levels

As the rings spawn, they use a random number generator to determine the location of their spawn as well as their behavior. They could spawn stationary, only moving along the z-axis, or they could be moving back and forth, making it harder for the pilot to fly through.

16 Wish List

If we had more time, we would love to implement even more power-ups for our inventory system. In addition, a level system would be an exceptionally fun addition to our game. In different levels, the ship could be flying through entirely different and unique environments. A multiplayer vs mode would also be very cool.

17 Bibliography

Special thanks to our friend Valeria Solorza for creating the 3D models that we used in our game.

We used knowledge from the popular Unity YouTube channel, Brackeys.

Although there will be more research, preemptive thanks for instructions on coding the game goes to several different people including these youtubers, friends, and even helpful game design veterans on a discord server dedicated to helping new game designers: Brackeys, ChromeFXFilms, SpeedTutor, Alexander Zotov, CodeMonkey, UnityBeginner, and Professor Price.