

ENSE 400/477

Final Presentation



Super Capstone Bros
Jeremy Cross 200319513
Taylen Jones 200354271
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Introduction

- This presentation will cover the following topics:
 - Our project and goal
 - Technologies used for the Project
 - Gameplay
 - Story
 - Characters
 - Character Animations
 - Music
 - Knowledge used from our education
 - Demo of our project

Our Project and Goal

- For the ENSE 400/477 terms we were aiming to build a platform fighting game with interesting characters, stages and interactive combat between two players. With a backstory for the characters and world as well as music all within a presentable user interface.
- For this project we are ultimately trying to learn and expand our knowledge of game design, and the software behind it, rather than solve a specific problem. By the end we have gained the knowledge to be able to potentially continue with this project or be able to delve into other projects involving game design.

Technologies used for the Project

Unreal Engine 4 - main game engine, versions 4.23 and 4.24

Adobe Fuse - character models

Mixamo - character animations

FL Studio - game music

Balsamiq Mockups 3 - low fidelity mockups of our User Interface

Github - source control

Milanote - Character storyboarding

Why did we choose these technologies?

Unreal Engine 4

- Being that it was our first time building a game blueprint scripting was easier for us to understand and use
- Epic Games has a large marketplace of game assets
- There was generally a large amount of resources available online
 - Discord
 - Unreal Forums

Adobe Fuse and Mixamo

- Both work really well with unreal
- Characters can be made in Fuse, then be moved into Mixamo where animations are applied and then dropped into unreal quite easily

Disadvantages of the Software

Unreal Engine 4

- Finding the right code blocks that you are looking for can be hard

Adobe Fuse

- The software becomes buggy when importing assets
- There's not much support for the software
- The application is difficult to open
- Lack of available assets to choose from

FL Studios

- Very complicated software, we only scratched the surface level

Gameplay

- The gameplay takes inspiration from the more successful titles in the platform fighter genre.
- It implements a stock system to track lives along with a damage/knockback percentage that increases when attacks are landed to allow one player to gain advantage over the other
- The first player to eliminate their opponents stocks is the winner of the round



Stock Count

Percentage/ Health

Story

- Our storyline for the game takes place in a futuristic setting, involving a number of parallel universes.
- By taking this approach to the story, it allowed us to be more open with the theme rather than restrict us.
- This also allows for more diversity among future character and stage implementation

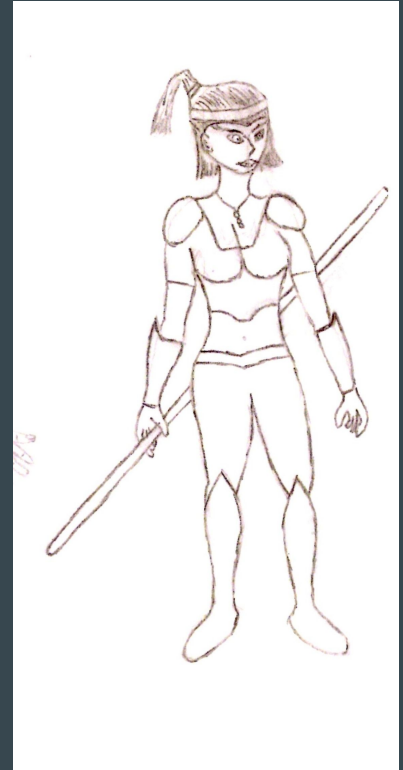
Original Character Designs

Characters

- Benjamin Leon - brawler
- Kelly Kyle - weapons user



Benjamin Leon



Kelly Kyle

Gameplay

Using strong, brute force melee combat, along with his ancient demonic powers, Ben Leon is best suited to close combat.

Profile

Name: Benjamin "Rakesh" Leon
Race: Human/Demon, Male
Occupation: Head of the Tuichi Clan
Date of Birth: 02/02/1502
Birthplace: Earth 17

Physical description

Hair: Long, Brunette
Eye Color: Blue
Height: 6'2"
Weight: 205 lbs
Build: Average, Muscular

Background

Benjamin "Rakesh" Leon was the child of the Rakshasha, a demon lord, and a female human, Ren. He lived with his mother, along with the rest of the her clan, where she hoped to forever hide his demonic half under the name "Ben". Life was peaceful, until an unprovoked attack by Ben's father, looking for his heir, wiped out most of the clan, along with his mother, giving her life to hide her son from the evil. Years later Ben was adopted by the Tuichi clan, where they helped him realize his potential and harness his demonic powers. Eventually, cursed with the demon longevity of life, Ben rose to be the head of the Tuichi clan and would lead them for the foreseeable future. After centuries of peace, visions of Ben's father come back to haunt him, foreshadowing his return. Seeking higher powers to defend his clan, Ben enters the Stride tournament to hopefully learn the secret to defeating his father, and end his nightmares.

Sketches



Final Character Designs

- With the final design of the characters, we used the assets that we had access to in order to build them as close to the original designs as possible.
- Kelly Kyle was originally suppose have a staff, however due to the additional time that we needed for the collisions, her final design is without a staff



Benjamin Leon



Kelly Kyle

Character Animations

- Each character has their own unique attack animations
- Each character has three different attacks
- We chose to stick with just three attack options because of the keyboard controls
- Each attack animation has a hit sound and visual particle effect

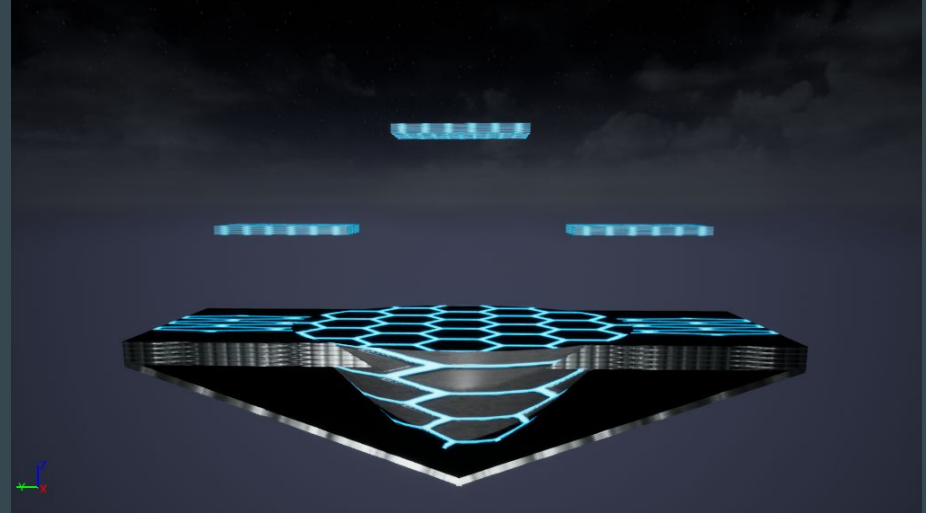
The three attacking options available are:

- Standing Punch - can only be used on the ground
- Standing Kick - can only be used on the ground
- Aerial Kick - can only be used in the air while jumping

Stages

Due to the flexibility of our story settings we were able to explore different themes with our stage design

- Coliseum - the stage on the left
- Cosmic rift - stage on the right



Music

- We created two original pieces of music for the game
- Each stage has a music piece that place during the match
- The music was designed around the themes of each stage

Clash of Warriors -



Galactic Rumble -



Knowledge used from our Education

ENSE 470 - Software Design Systems

- Design processes for building our game
- Documentation and Code
- Product management/roadmap tools (USM, Kanban board)

ENSE 471 - User Interface Programming

- Building the widgets of our user interface

ENSE 475 - Software Testing and Validation

- Testing our game

Challenges with development

Shared camera

- We tried several different methods of implementing this and we had difficulties getting any of these methods to work

Attack collisions

- The logic was very unpredictable which made them difficult to implement correctly

Double Jumping

Player Spawning

Using variables across different blueprint classes

Future Implementation

Shared Camera

- Finding a solution to the shared camera functionality so that works correctly

Adding more characters and stages

Adding controller support

- More attacks for each character could be added since each player has their own controller

Adding ledges to the stages

Single player mode, with a focus on a story driven narrative

Demo