BOWIE
STATE UNIVERSITY
1865

C++ ARITHMETIC DDR!:
Final Project Presentation

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SECTION 1

PROJECT OVERVIEW

Goals & Objectives

- From our experience, many students have had an issue learning and implementing different rules for C++.
- One particular concept that students struggle with is understanding the C++ arithmetic precedence rules.
- This project will focus on developing a Unity application.
- The purpose of the application is to teach students how to apply the C++ arithmetic precedence rule with the use of an arcade-style Dance Dance Revolution (DDR) game template.

Group Member roles

Ibeawuchi Anokam	Ike Akujobi	Uchenna Ndolo
▪ Illustrator / Sprite Artist ▪ Scene Programmer: ○ Gameplay scripting ○ Input processing scripting ○ Mathematics mechanics scripting ○ UI scripting ▪ Lead, Sound Engineer	▪ Model designer ▪ Scene, Level Designer ▪ Scene / Model Animator ▪ Sound Engineer ▪ technical tester	▪ Scene, Level Scripting ▪ Lead, Quality assurance tester ▪ Lead, technical tester

MODELING

Environment:

The game environment will be set up as a Karaoke bar where the main player will be placed on stage to perform a dance routine.

Models:

The player and other agent models were imported with the use of the **Unity Asset Store** and **SketchFab.com**

SECTION 2

PROJECT SCOPE

Avatars and Animations

- For animations, all avatars will be dancing as the player dances in front of them.
- Music will be playing in the background as the avatars are dancing.

Sound / Music

All music that was utilized in the game was imported from YouTube as an mp3 file. The two songs playing are listed below:

- The Title scene music of choice was:
  - ***Justice - Genesis***

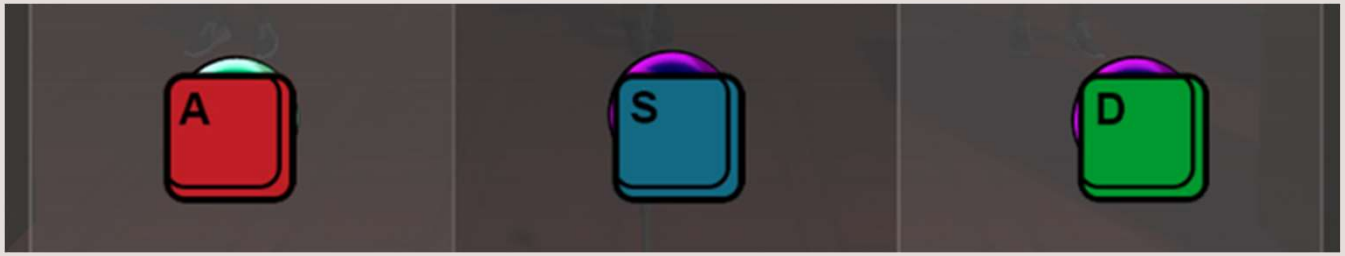
- The gameplay music of choice was:
  - ***The Mama's and Papa's - California Dreaming***

Gameplay and Inputs

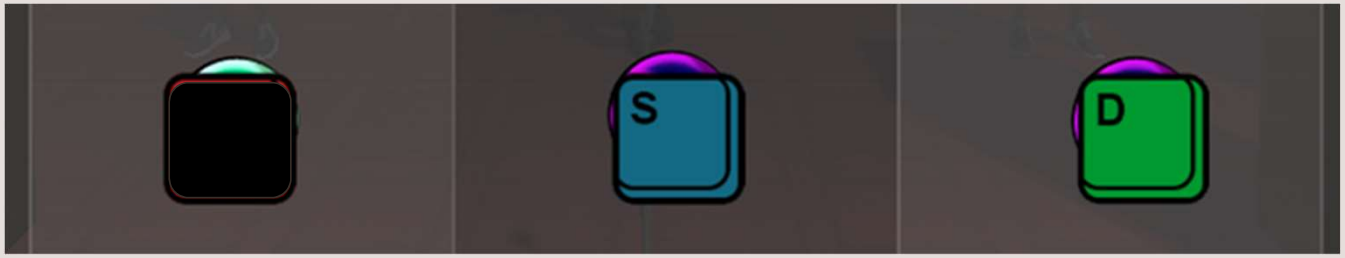
- The gameplay will be very similar to that of a **Project Diva and a Guitar Hero game**, in which, by using the A, S, D keys on the keyboard, the player must press the corresponding keys in time to the correct one out of three multiple choices given.
- If the player loses enough points, they lose the game and if they do well, then they beat the game!

Sensors

Proximity sensors :



These on-screen keys correspond to your keyboard keys **A**, **S**, and **D**



When a keyboard key is pressed, the on-screen key turns black, returning some form of feedback to the user so that they know their key press was registered by the game.

Impediments

- Time constraint
- Implementation of the multiple choice algorithm that displays each step of the precedence rules was not accomplished
- The next slide shows the algorithm that was not implemented

Impediments

Example

- Given: **(((5+2)*2)%7) / 3 + (5-2)**
- Then using the precedence rules, the Steps would be:
  - **S0 = (((5+2)*2) % 7) / 3 + (5-2)** ; Step 0
  - **S1 = ((7 * 2) % 7) / 3 + (5-2)** ; Step 1
  - **S2 = (14 % 7) / 3 + (5-2)** ; Step 2
  - **S3 = 0 / 3 + (5-2)** ; Step 3
  - **S4 = 0 / 3 + 3** ; Step 4
  - **S5 = 0 + 3** ; Step 5
  - **S6 = 3** ; Step 6 – Final Answer

PRESS THE SPACEBAR TO CONTINUE . . .

SECTION 3

DEMO

Picture of the Environment

Picture of the Environment

life points

gameplay / song timer

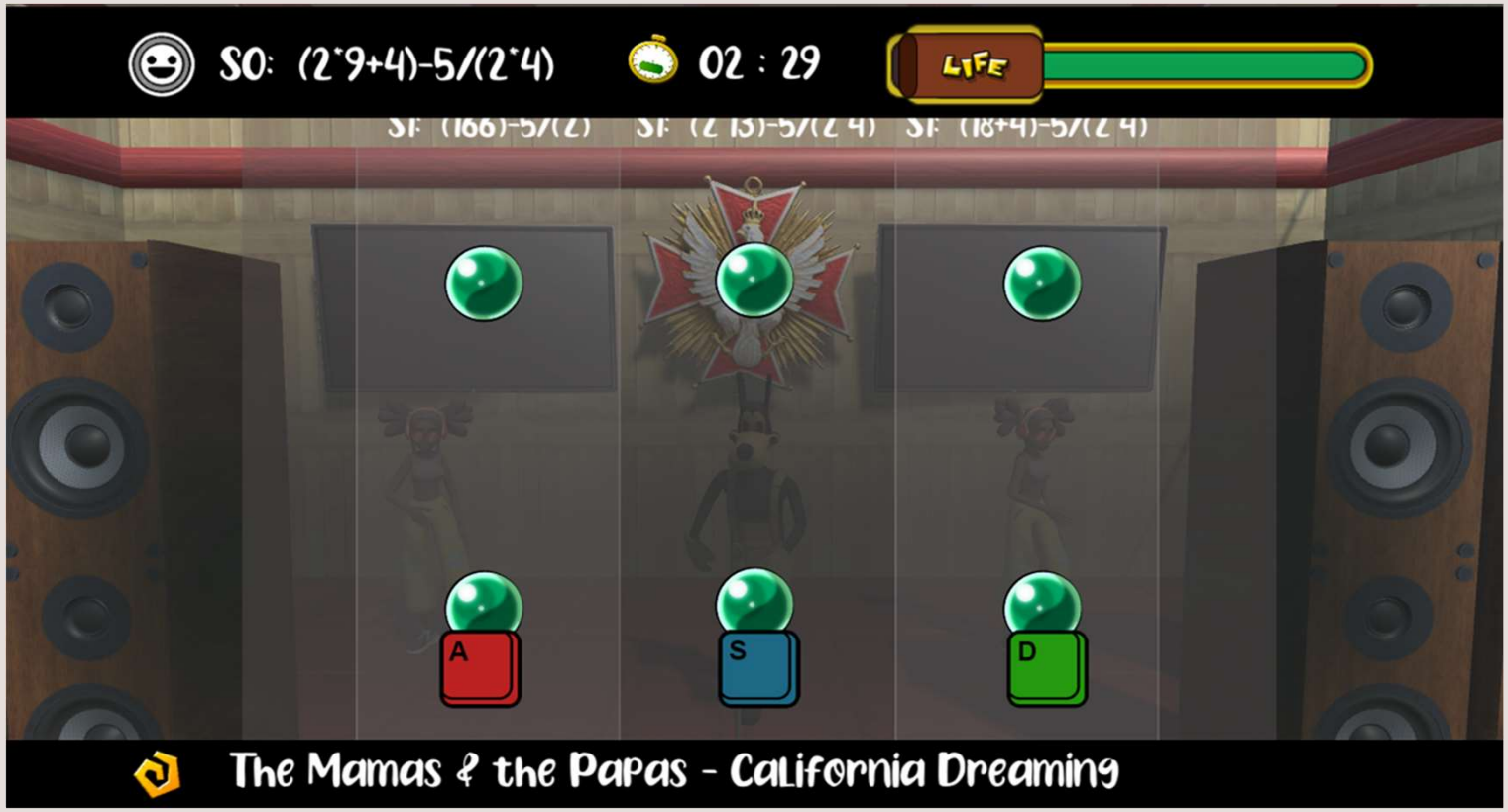
The problem you will be solving

3 multiple choices answers

Player keyboard button choices

current song playing

Picture of the Environment: Camera Angle 1



Picture of the Environment: Camera Angle 2

DEMO!

SECTION 4

Future Recommendations

WHAT'S NEXT?

References

guitarheroROXS. (2019, September 3). *Guitar Hero World Tour- "Crazy Train" Expert Guitar 100% FC (458,274)*. YouTube. https://www.youtube.com/watch?v=1170U1_qdGE&ab_channel=guitarheroROXS

Sketchfab. (2021). *Log in to your Sketchfab account*. https://sketchfab.com/login?next=/feed

ANY QUESTIONS?

THANK YOU!