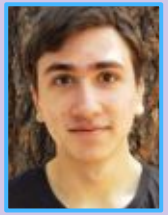
Vaccine Games For Teens

MEDICAL GAMING SOLUTIONS

Our Team

Lenin Valdivia

Team Lead



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Team Mentor

Ashish Amresh

Client

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PROBLEM & SOLUTION

What is broken and how are we going to fix it?

THE PROBLEM

Sponsor and Organization

- *Dr. Ashish Amresh*, with expertise in video game development and a passion for addressing health issues.
- *MGS* is dedicated to creating engaging solutions for healthcare challenges.
- *Dr. Amresh* aims to bridge the gap in adolescent vaccination rates through interactive video game interventions.

Client's Business Area

- Our client operates in games research, focusing on adolescent vaccination awareness.
- Vaccination plays a crucial role in preventing hospitalizations and deaths among adolescents.

Existing Issues

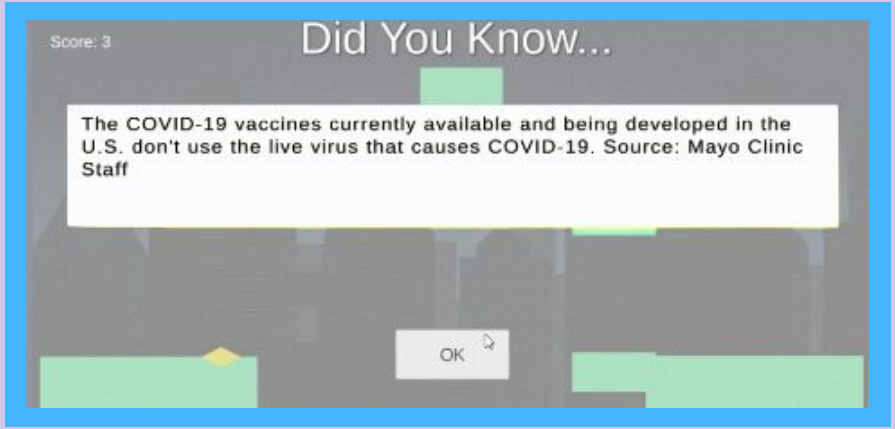
- Vaccination campaigns lack engagement among adolescents, leading to low uptake rates.

Specific Problems

- Poor vaccination rates among adolescents
- Limited studies for improving vaccination rates.
- Lack of platforms within clinical settings to promote vaccination awareness.

THE SOLUTION

- Combine Awareness Through Gaming
  - Modifiable components for creating game mechanics
  - Simple, modular architecture
  - Knowledge drops to help players learn
  - Game environment can fit any domain



02

REQUIREMENT SPECIFICATIONS

Our requirements.

REQUIREMENTS OVERVIEW

MAJOR REQUIREMENTS

Burst Style Genres

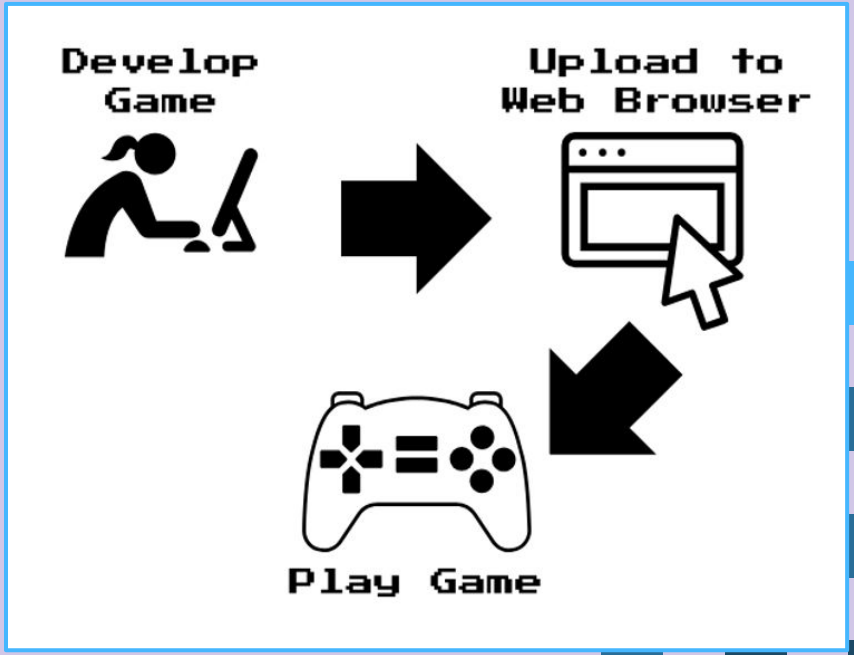
- Players have a limited time to play while waiting for their appointment

Behavior Change/Educating

- Knowledge Drop components

Customization

- Components can be easily modified to suit the users preferences

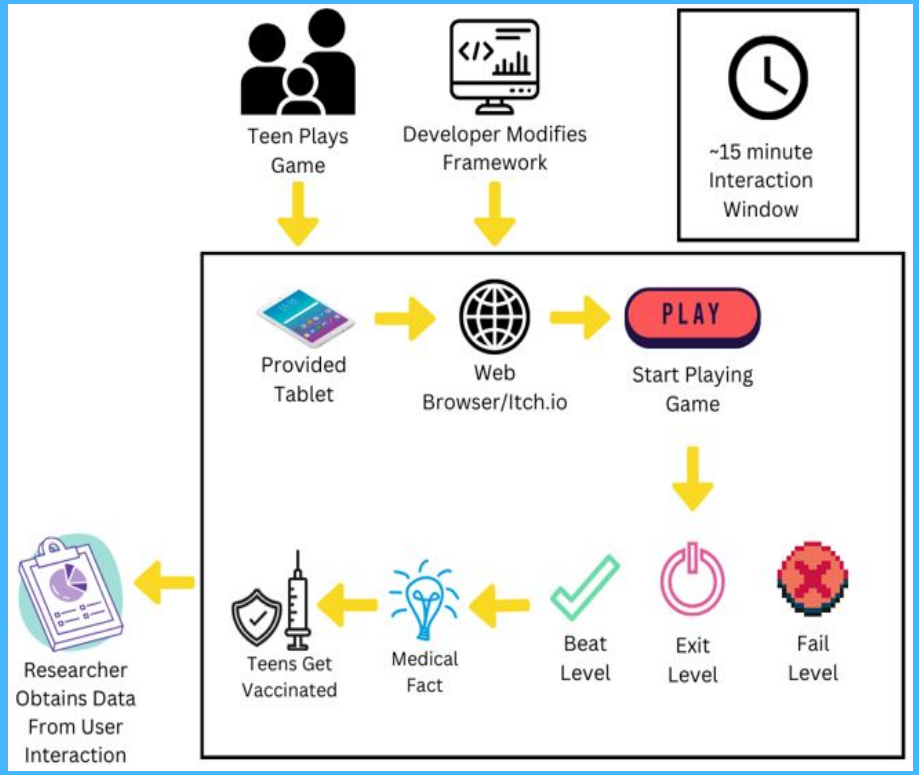


03

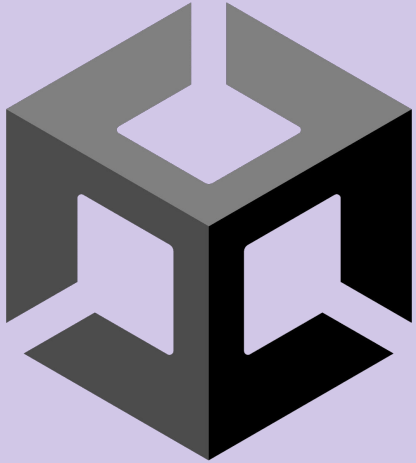
ARCHITECTURE & IMPLEMENTATION

Logical architecture
and tools used.

ARCHITECTURAL OVERVIEW



Game Engine



- Unity
  - HTML5 and WebGL development support
  - Compatible with a wide range of platforms

Web Browser

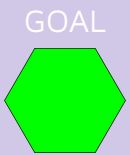
- Itch.io
  - Easy to upload and find games
  - Mobile device compatibility
  - HTML5 and WebGL platform support

IMPLEMENTATION REVIEW

- Character Component
  - Movement and interaction
  - Player controller
  - Autonomy

- Environment Module
  - Platform component
  - Obstacle component

- Knowledge Drop Module
  - Knowledge drop canvas
  - Conditional activation



- Level Manager Component
  - Character respawn
  - Scene management

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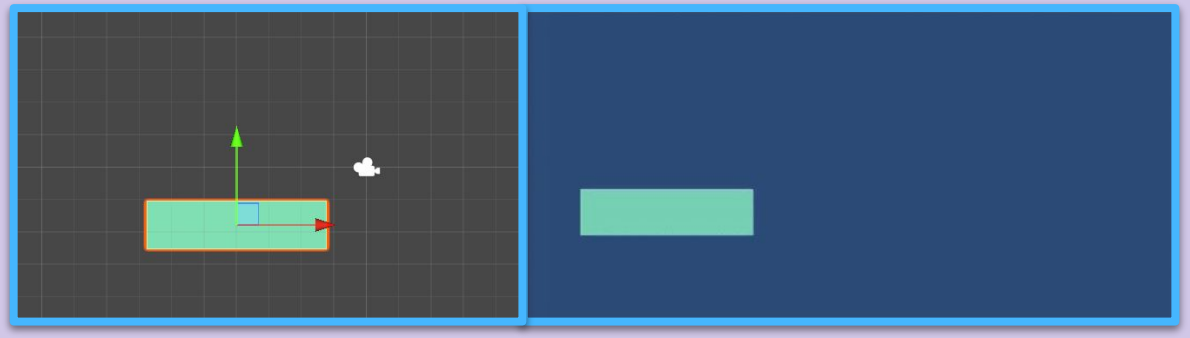
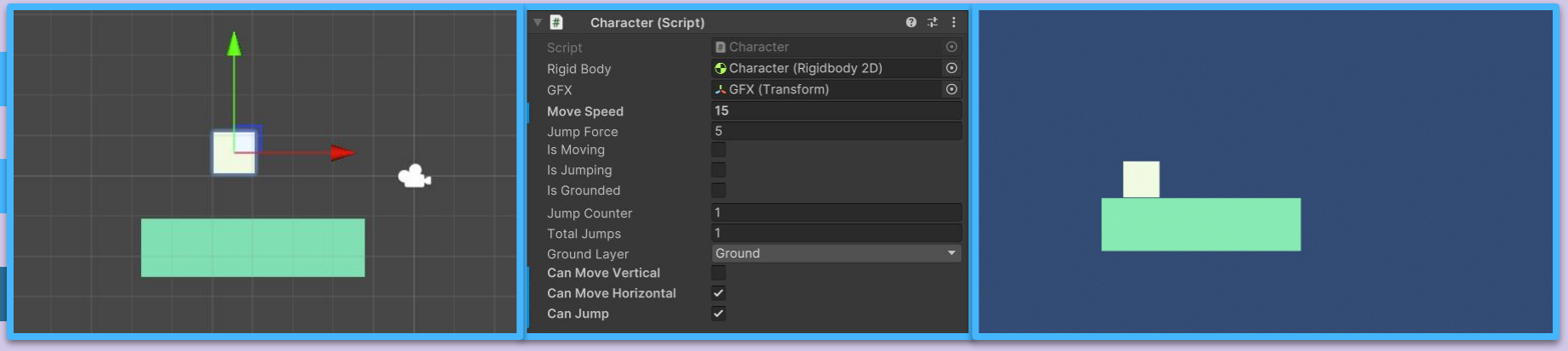
PROTOTYPE REVIEW

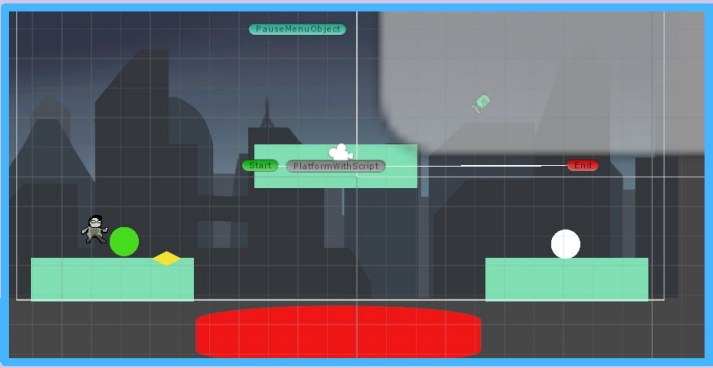
What we have so far!

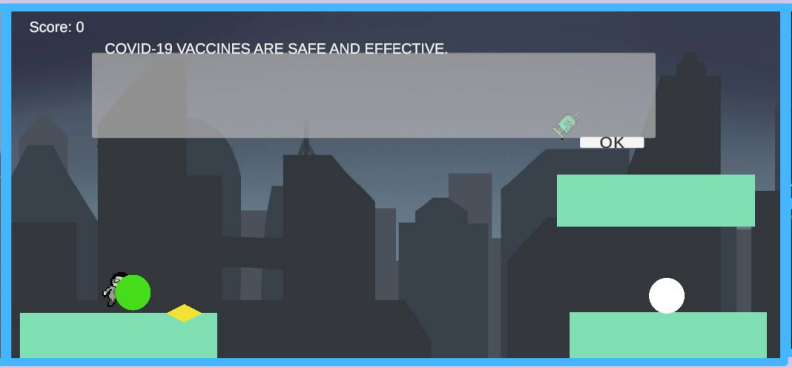
STARTING UP

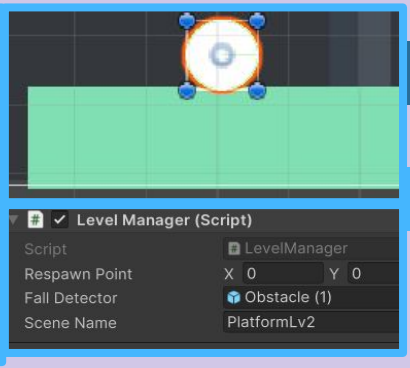



Character (Script)
Script
Character
Rigid Body
Character (Rigidbody 2D)
GFX
GFX (Transform)
Move Speed
15
Jump Force
5
Is Moving
Is Jumping
Is Grounded
Jump Counter
1
Total Jumps
1
Ground Layer
Ground
Can Move Vertical
Can Move Horizontal
Can Jump

GAMEPLAY LOOP







05

CHALLENGES & RESOLUTIONS

How did we tackle our problems?

TECHNICAL CHALLENGES

GITHUB AND UNITY COMPATIBILITY

- Amount of files when importing packages range around 15,000 to 20,000
- GitHub has a file size limit of 100 MB per file

SOFTWARE REUSABILITY

- Our framework requires maximum reusability
- Difficult to determine what developers would like to implement in their medical-focused games

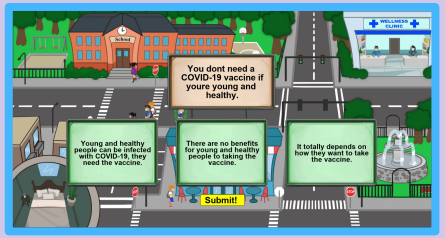
SOLUTIONS

GITHUB AND UNITY COMPATIBILITY

- Currently importing as packages into GitHub, with different components as their own package.
- Included a GitIgnore for Unity to avoid any unnecessary commits such as metadata files

SOFTWARE REUSABILITY

- Referring to example games from our client developed in GameMaker
- Making sure all components are in a singleton design, meaning they are not dependent on another component.



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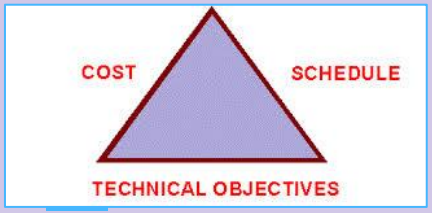
TESTING PLAN & SCHEDULE

Moving forward.

PROJECT SCHEDULE



February 23, 2024

Start of Implementation

End of Implementation

March 15, 2024

April 01, 2024

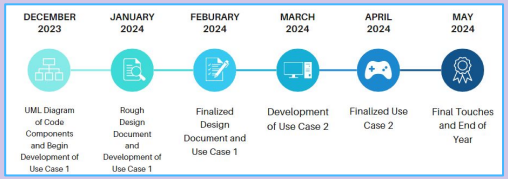
Start of Unit Testing

End of Unit Testing

April 12, 2024

April 26, 2024

Final use Case



TESTING PLAN

Unit Testing

Ensure the most essential components are fully functional and work in a singleton design.

Integration Testing

Merge components into an environment to create a functional use case.

Usability Testing

Certify that the target users for our framework, being beginner game developers, are able to use our product with ease.

Performance Testing

Compatibility, optimization, and maintainability.

CONCLUSION

Importance of the Project

- preventing hospitalizations and deaths among adolescents.
- address the gap in vaccination rates among adolescents.

Commitment to Software Reusability and Scalability

- Maximizing software reusability to benefit future developers.
- Scalability of the framework to accommodate different game genres and medical subjects.

Project Vision and Goals

- video game framework to promote vaccination awareness among adolescents.
- Create games within clinical settings to maximize impact during short interaction times.

Implementation Overview

- Technologies used: C# scripts in Unity game engine.
- Games accessible via web browsers, particularly on mobile devices.
- Overall client is happy with our product:)

THANKS

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