1. Introduction

- **Game Name**: Meta Brawl

- **Team**: Yashas H Majmudar, Advait Parmar, Karthikeya Jatoth, Paul Parker

- **Date of Last Update**: December 13, 2024

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2. Executive Summary

Our game is a single player versus world (PvE) fighting game. Meta Brawl draws inspiration from Super Smash Bros and Mortal Kombat, with the fantastical and unique attacks, while embracing the power based combat of Naruto and Avatar the Last Airbender. In the game, players try to destroy stone towers using special powers. The desired aesthetic is for the game to be animated with interesting effects. The target audience for our game is anyone who enjoys fantasy movies, shows/anime, or games, and would like to experience it for themselves. That is, the purpose of Meta Brawl is to provide users with a fun and immersive fantastical fighting experience.

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3. Gameplay

The objective of Meta Brawl is to defeat the other player using attacks. The player use hand gestures to activate attacks, all of which can deal damage to the towers (if the other tower is hit with the attack). The win condition is to destroy every tower, and there is no lose condition - losing means the player simply failed to destroy the towers. Similar to Super Smash Bros and

Mortal Kombat, the game progresses at the rate that the player deals damage. That is, the flow of the game is based solely on the player's ability to destroy the stone towers..

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4. Mechanics

In the Meta Brawl arena, the explicit rules are: there are no rules - deplete the towers' health by any means necessary. However, there are implicit rules. Regarding combat, the towers start at 100 health. Health will only be depleted through attacks activated by a player. Concerning the virtual environment, the Arena is a fixed and closed fighting space - players may not leave the boundary. The game ends once all towers are destroyed.

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5. User Interface

Meta Brawl uses both 1:1 locomotion for player movement, and hand tracking for immersive combat - meaning there is no controller intermediate, but the player's body itself is the controller. This allows players to move, dodge, and activate powers through natural body movements. Each player has a HUD that displays their health in the bottom of their screen, with color cues to provide quick feedback (i.e. if health is low, then the health bar is red). The reason we added the HUD was with hopes of having the game being a PvP based fighting game, but after pivoting, we decided to keep the HUD. To accommodate for players in smaller rooms where 1:1 locomotion is not ideal, there is also a power for teleportations.

Here are the potential powers that can be used:

1. Rasengan

2. Thors Hammer

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6. Assets and Audio

- Arena: The arena itself, including the towers and all other children objects was used from the following source:
  - https://sketchfab.com/3d-models/geonosis-arena-797d475ee192467399c0ee6ee15b41ed
- Broken Towers: If a tower takes a certain amount of damage, then it breaks into pieces. Using the Tower from the Arena 3-D model above, we exported it into Blender and made a Broken Tower. When a tower breaks, a sound effect is made:
  - https://pixabay.com/sound-effects/search/rock%20break/
- Spatial Audio:
  - https://pixabay.com/sound-effects/search/wind/
- HUD images source:
  - Heart image:

    https://github.com/Brackeys/Health-Bar/tree/master/Health%20Bar/Assets/Sprites
  - Lightning Image:

    https://www.pngfind.com/download/ixmoxh_lightning-bolt-lightning-bolt-pixel-hd-png-download/#google_vignette

7. Development

- Github Repo:
    - https://github.com/yashas-hm-unc/meta-brawl
- Demo video:
    - https://docs.google.com/document/d/18BD5z6O7USGfWoKBrH4Vb222beRk9ZokNhIfIXR7dMo/edit?usp=sharing

7. Closing Remarks

- **Look back over your initial planning notes and preliminary presentation - did you achieve your "minimum necessary for success"?**
    - We were able to achieve our "bare minimum goals": our game is multiplayer with several fantastical attacks, and players have the ability to win, with the setting of an arena. However, we did pivot from our initial vision.
- **What were some unexpected challenges that arose?**
    - One unexpected challenge was to get multiplayer working correctly - objects needed to become Networked Objects so each player could see them. Furthermore, collisions with attacks was quite a problem, as well as seeing Avatars (in multiplayer).
- **Are you happy/satisfied with your project?**
    - We are happy with our project, but naturally, would love to add more.
- **What would you add if you had more time? What is your "future work"?**
    - We would like to add more powers, as well as an Augmented Reality training mode, where players can practice using the powers. It would also be a nice addition to have spectator mode, where other players can spectate another

player; allowing for 1v1 PvP fights would be a nice addition, completing our initial vision; having several arenas to choose from;

- **Do you think your game is fun? Why or why not?**

  - We think that the game is fun, because it makes us feel as though we're characters in Naruto of Avatar the Last Airbender, which is fun in itself as we're all fans of those shows.

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8. Pictures