

# PANDORA'S BOX

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A 3D INTERACTIVE GAME CUBE, UTILIZING LEAPMOTION AND UNITY 3D, THAT ENCOURAGES COLLABORATIVE GAMEPLAY

## ABSTRACT

Leap Motion is a computer sensor that sits in front of your computer monitor. It affords interactivity with computers using your hands without touching the screen or using a mouse. This has encouraged digital media developers to find creative ways to use this technology. We present *Pandora's Box*, an interactive Leap Motion game built within the Unity3D game engine. In *Pandora's Box*, Pandora has tricked you into unleashing the Seven Deadly Sins on your village. Using Leap Motion, two players must collaborate together to solve puzzles in order to capture the Seven Deadly Sins

## RESEARCH QUESTION

Does collaborative puzzle solving affect the overall user experience of the game?

## METHODOLOGY

We used the Greek myth of Pandora's Box and the seven deadly sins to base our game on. We used each sin as a different level, each with their own puzzle. This afforded a unique level of game play and interactivity that we could study.

Each player has their own different interactivity with the game objects. This affords the players unique ways to have to work together to solve each puzzle. We wanted to measure not only time, but more importantly how the players feel about working together and whether it helped or hurt them.

## HOW TO PLAY OUR GAME

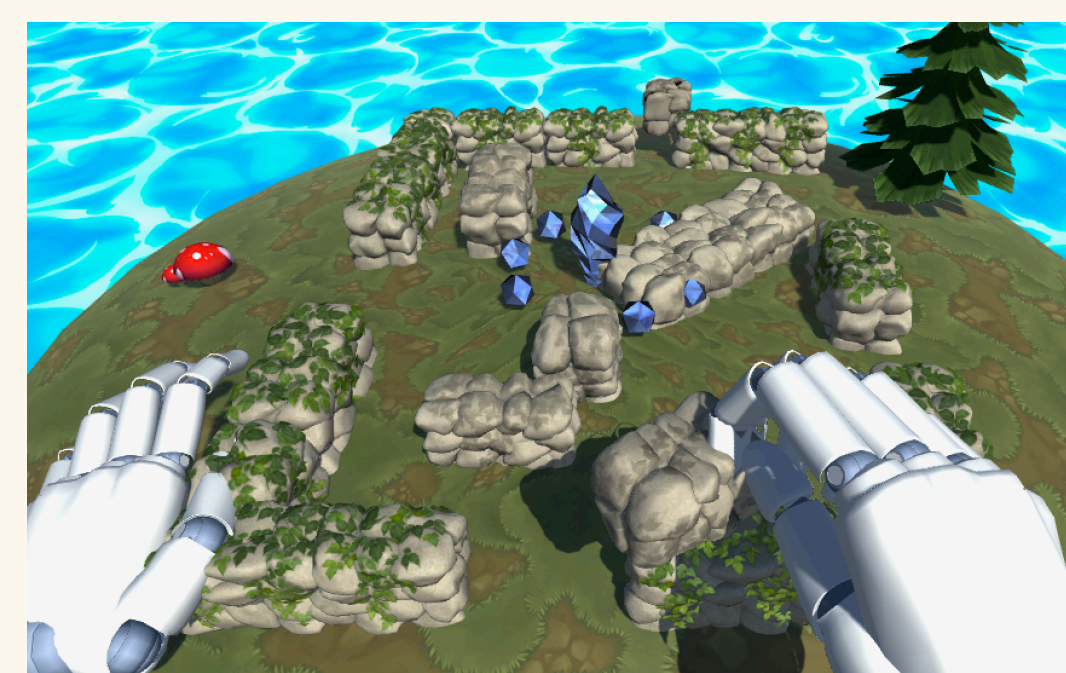


*Pandora's Box* is played around a set of four monitors in the shape of a cube. Each monitor displays a different angle of the game environment. Players can interact with the two provided Leap Motion devices on opposite sides or just watch from any side.

## WHAT ARE THE GAME TYPES



**MATCHING** – Players move objects and attempt to match them. One player can pick objects up to move them, while the other player can only push them. We are looking at creative ways that players will collect all the objects. Corresponding sin level - Gluttony and Greed.



**TARGETING** – Players work together to place pieces in specific "targets". One player can place the objects in the targets, while the other player moves the objects towards their teammate, so they can reach them. Each correct piece earn you a jewel. Corresponding sin level – Sloth, Envy.



**BLOCKING** – Players work together to block objects from hitting them. Both players can place objects in the way of objects trying to hit them. These games are designed to encourage working together to defend yourself. Corresponding sin level – Lust, Wrath and Pride.

## GAMEPLAY

We wanted to give each level a theme, that was related to the sin for that level. After defeating the sin, you gain a new ability or open up another area of the game.

- Gluttony – Matching game
  - Power gained – More levels open
- Lust – Blocking game
  - Power gained – Pull objects to you
- Envy – Targeting game
  - Power gained – Duplicate objects
- Greed – Matching game
  - Power Gained – Throw objects
- Sloth – Targeting game
  - Power Gained – Slow the timer
- Wrath – Blocking game
  - Power Gained – Throw two objects
- Pride – Blocking & Targeting games
  - Power Gained – You Win!

## DISCOVERIES

We have not yet completed our user study. Initial thoughts are that players will enjoy and find the game fun to play. But results might also show frustration and confusion between players.

Both verbal and non-verbal communication between players is the key to successfully solving each level. If both players can collaborate well, then we can expect positive results.