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## **User Manual for Automatic Slicing and Distribution of 3D Models For Puzzles Using Anamorphosis**

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## I. Introduction

**Anamorph Puzzle** is the puzzle application that is the subject of the thesis **Automatic Slicing and Distribution of 3D Models For Puzzles Using Anamorphosis** by **Jessamyn Kristi Lapan** and **Hans Dylan Lao**. It involves the user choosing a solving mode and a model to solve. The solving modes are based on how the selected model will be sliced and distributed.

## II. System Requirements and Specification

The application operates on a Windows-operated personal computer. It was developed in Unity Engine using the C# language.

## III. Installation Guide

1. Click on the Google Drive link provided:  
[https://drive.google.com/drive/folders/1QaYy-SKNvhFxNSrBXMH7rque4I\\_qqR2U?usp=sharing](https://drive.google.com/drive/folders/1QaYy-SKNvhFxNSrBXMH7rque4I_qqR2U?usp=sharing)
2. Download the ZIP file **Anamorph Puzzle** in the link. Save to a directory of your choice.
3. Once download is finished, find and unzip the file in the selected directory.
4. Go inside the folder from the unzipped file, and click on **Anamorph Puzzle** to run the application.

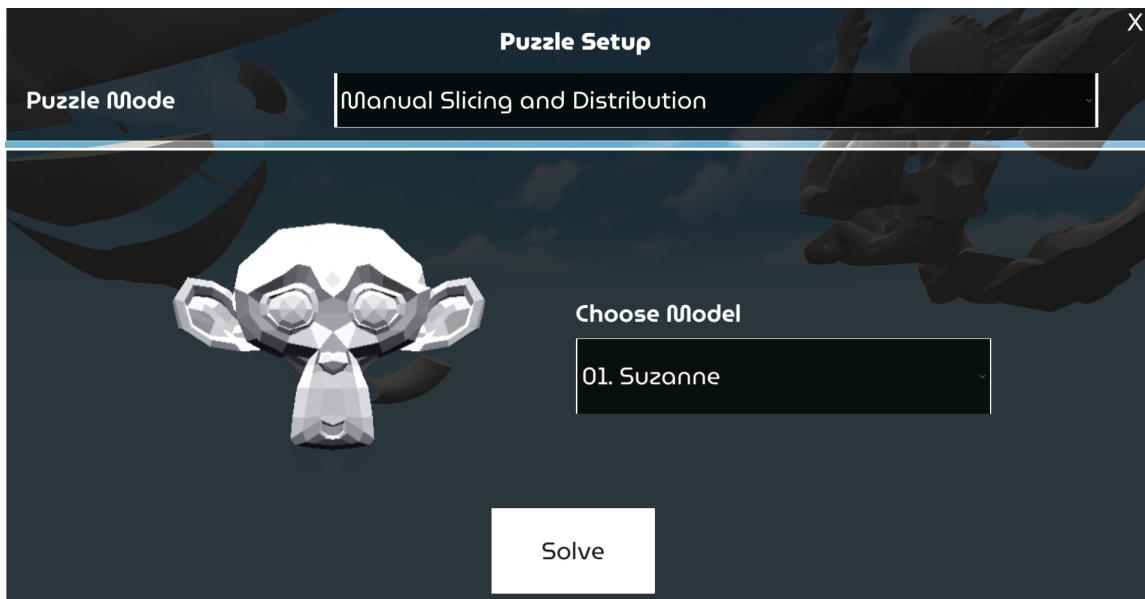
## IV. Using the Application

### A. Starting the Puzzle Setup



To start setting up the puzzle you want to solve, select **Start**. Select **Quit** to quit the entire app.

### B. Puzzle Setup



The model is chosen as the 3D puzzle to be solved. The puzzle mode is how the model will be sliced and distributed. There are 3 modes:

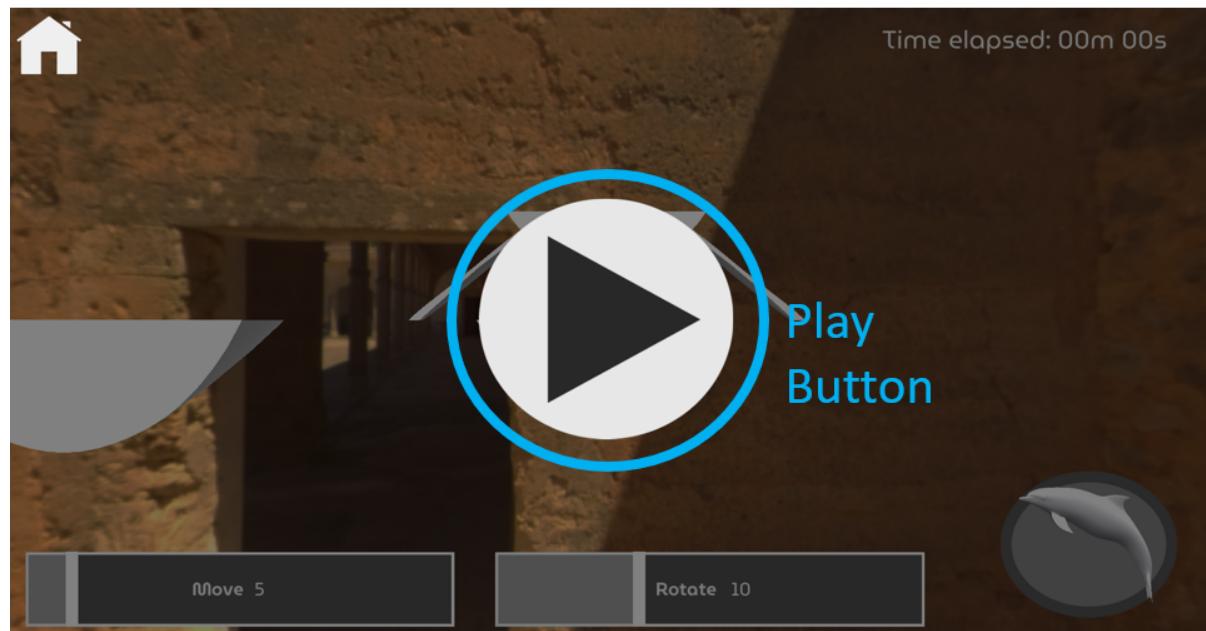
- **Manual Slicing and Distribution** - the models are already pre-sliced and pre-distributed.

- **Manual Slicing, Auto Distribution** - the models are already pre-sliced, but, for each model, the puzzle's is automatically and randomly distributed by an algorithm every game.
- **Auto Slicing and Distribution** - each model is automatically and randomly sliced and distributed, both by algorithms, every game.

Select the **puzzle mode** and the **model**, each of which are in dropdown boxes. Once satisfied with the choices for the puzzle you want to solve, press **Solve**. You will be led to the **Solving Proper**.

## C. Solving Proper

### 1. Accessing the Solving Proper



The **Solving Proper** is where all of the puzzles are solved and all of the automated algorithms are used, depending on the mode chosen.

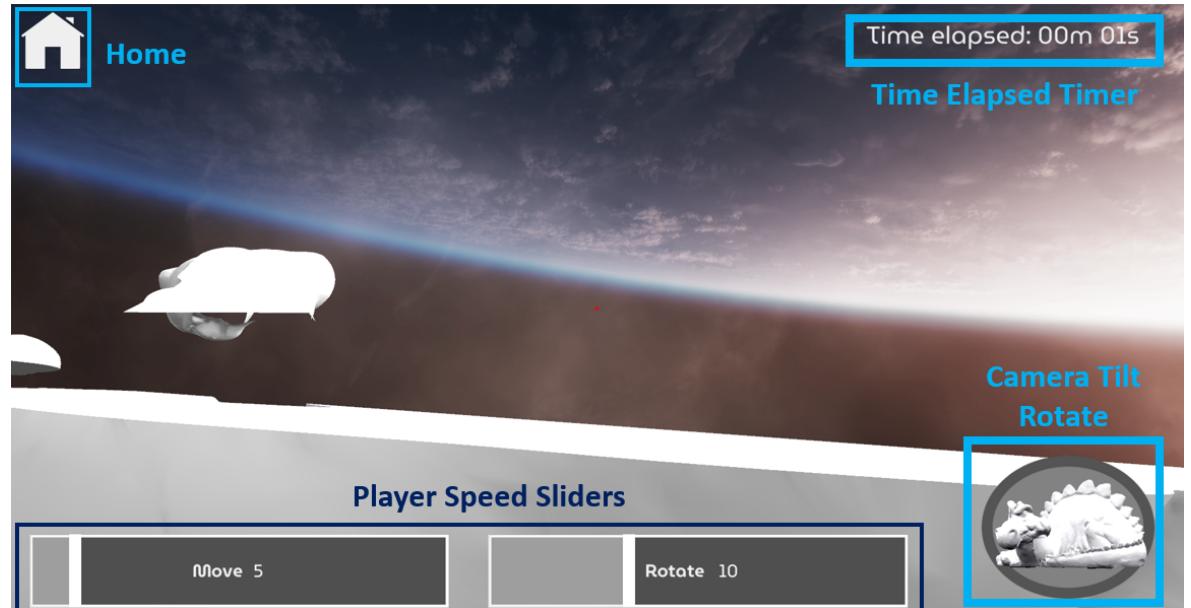
Before pressing **Play**, the screen is blackened and the **Solving Proper** is paused. If you are finally ready to solve the puzzle, press **Play** in the middle of the screen. This enables you to finally unpause the game, and thus, finally solve the puzzle

## 2. Solving the Puzzle



The Key Controls for Puzzle Navigation are:

- **W, A, S, and D** to move
- **Q** and **E** to float up and down, respectively
- Click and drag **Right Mouse Button** to rotate the camera horizontally and vertically
- Click and drag the **Rotate Camera View** to flip the camera upside down or the reverse



Move around the puzzle environment to find the best view of the model and rotate the camera to find the best viewing angle to win the puzzle. While you solve the puzzle, the **Time Elapsed** timer is used to record your total solving time. This is for thesis research purposes.

To help the player solving the puzzles, three sliders are provided:

- The **Move** slider, which adjusts the player's move speed
- The **Rotate** slider, which adjusts the player's rotate speed
- The **Camera Tilt Rotation** slider, which rotates the player's rotation from 0 to 180 degrees. In 180 degrees, the player has an upside down view of the solving proper. While rotating the slider, an image of the selected model rotates along.

If you want to return to the main menu the puzzle before completion, press **Home**.



Once you win the puzzle, you are greeted with a congratulatory prompt. If you want to solve another puzzle or quit the application, press **Main Menu**. Follow the **Starting the App** instructions to do so.