# eyesym

USER HANDBOOK

VERSION 1.0

Possible Technology
unlocking human potential

# Table of Contents

# Introduction

## What is Eye Sym?

Eye Sym assesses and trains the simultaneous use of both eyes and helps reduce symptoms of Amblyopia. The child will wear a pair of color glasses (one side red and the other side green/blue) while playing the training games. Through the red filter, the child can only see what's red on the screen; and through the green/blue filter, the child can only see what's green/blue on the screen. So, in order to play the games, the child must use both eyes at the same time.

The software comes with 3 assessment tools and 5 training games.

## What is Amblyopia?

Amblyopia is a kind of vision disorder that results because the eye and brain are not working well together. Even with prescription eyeglasses, the eye may fail to achieve normal visual acuity. Traditional intervention strategy is to force the child to use the weaker eye by covering the normal eye with a patch, which could be very uncomfortable to the child.

## What is Binocular Vision?

Binocular vision is the ability to use two eyes to create a stable 3-dimensional visual image. If the two eyes cannot work together as a team, it will adversely affect reading, sports, depth perception, eye contact, etc.

Amblyopia is a common cause of binocular vision dysfunction.

# Installation

**Step 1**
Download Eye Sym from this link (select the latest version)
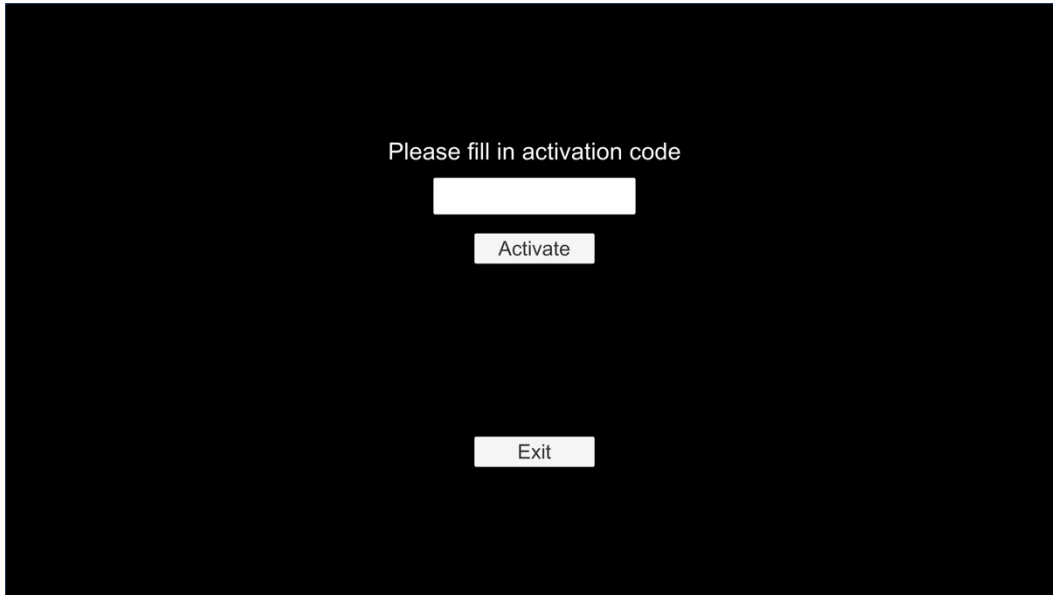http://www.possibletechnology.com/downloads-page

**Step 2**
Unzip the downloaded zip file to the location that you want to run the software (e.g. Desktop)

**Step 3**
Double click Eye Sym to run the software

# Activation

If this is the first time you run Eye Sym, you will need to activate the software. Enter the activation code provided when you purchased Eye Sym.



The activation code can only be used on **one** computer. If you need to use Eye Cue on another computer, you must deactivate the software from the computer that it is currently installed on first.
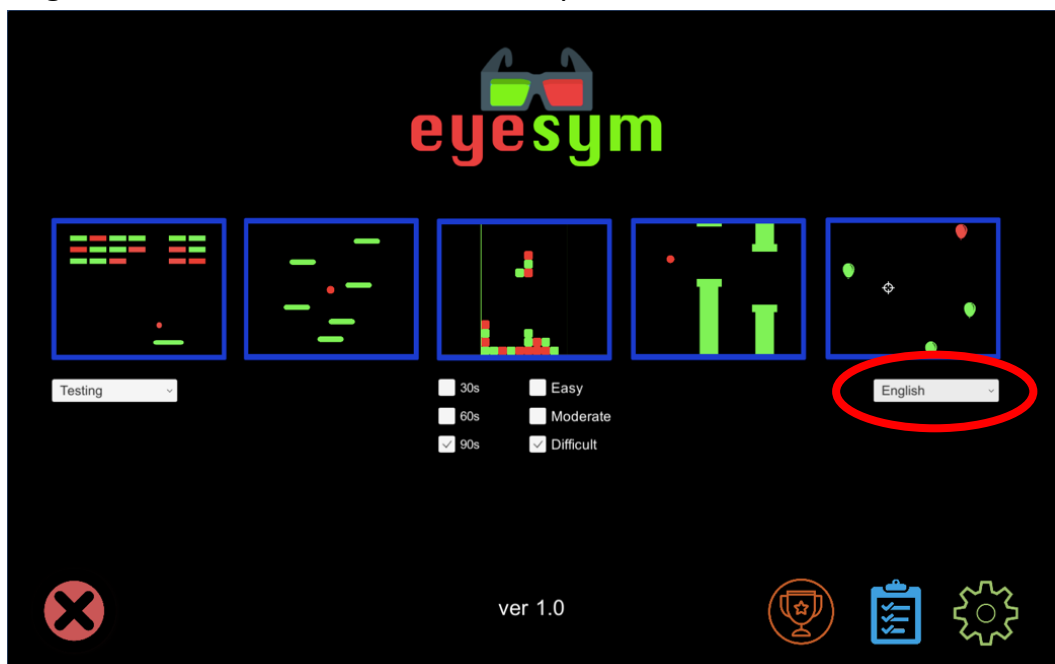
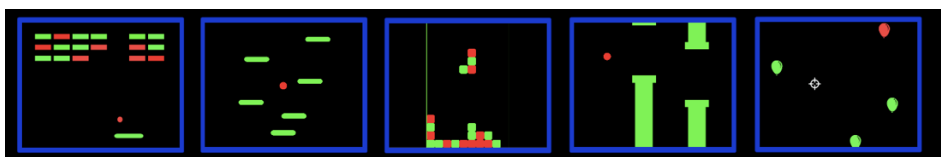To deactivate the software, please see the Settings section.

# Main Menu

Click **Testing** to choose the child that you want to assess. If no child is selected, the assessment result cannot be saved.
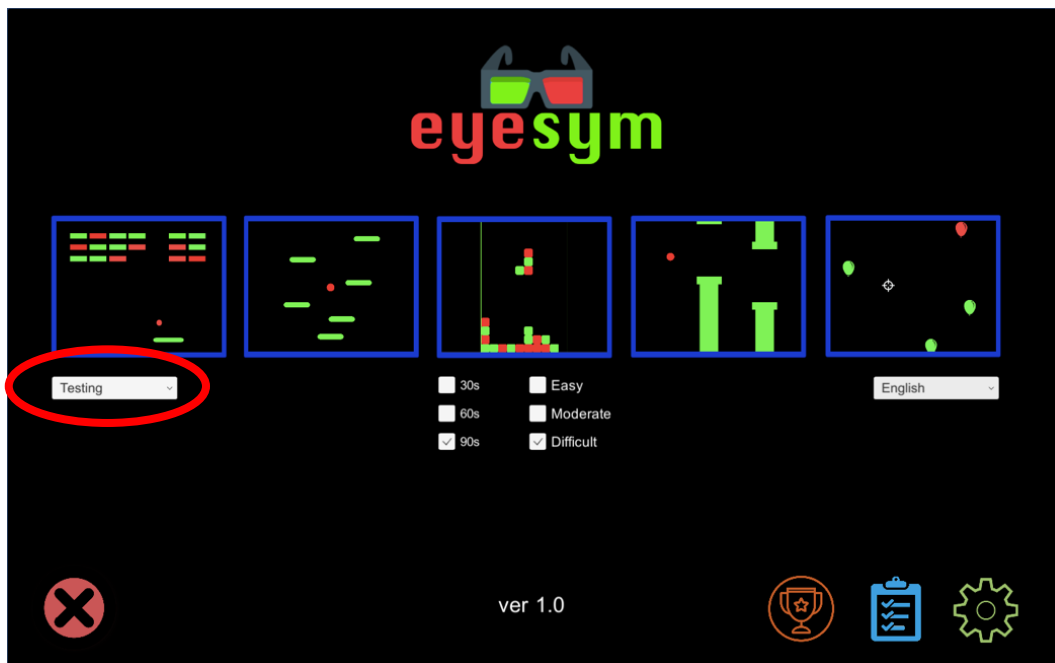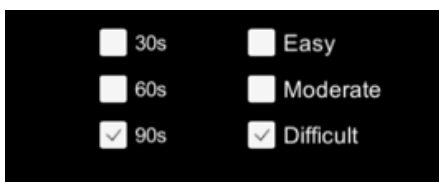


Click **English** to choose the language you want to use. The available choices are English, Traditional Chinese, and Simplified Chinese.

 The five training games

 Game duration and difficulty level
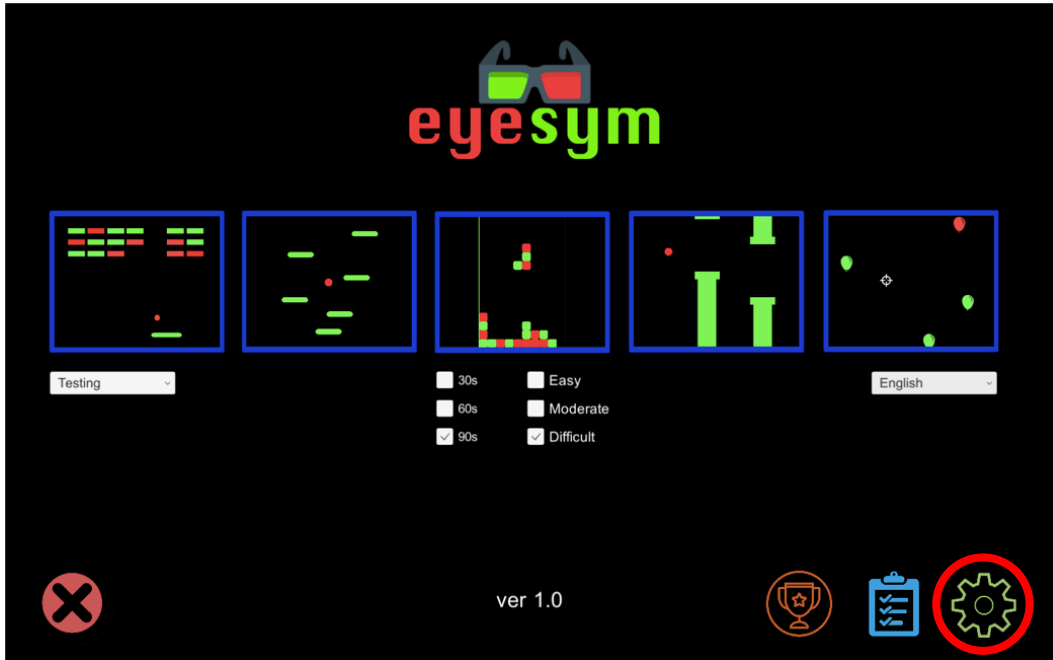
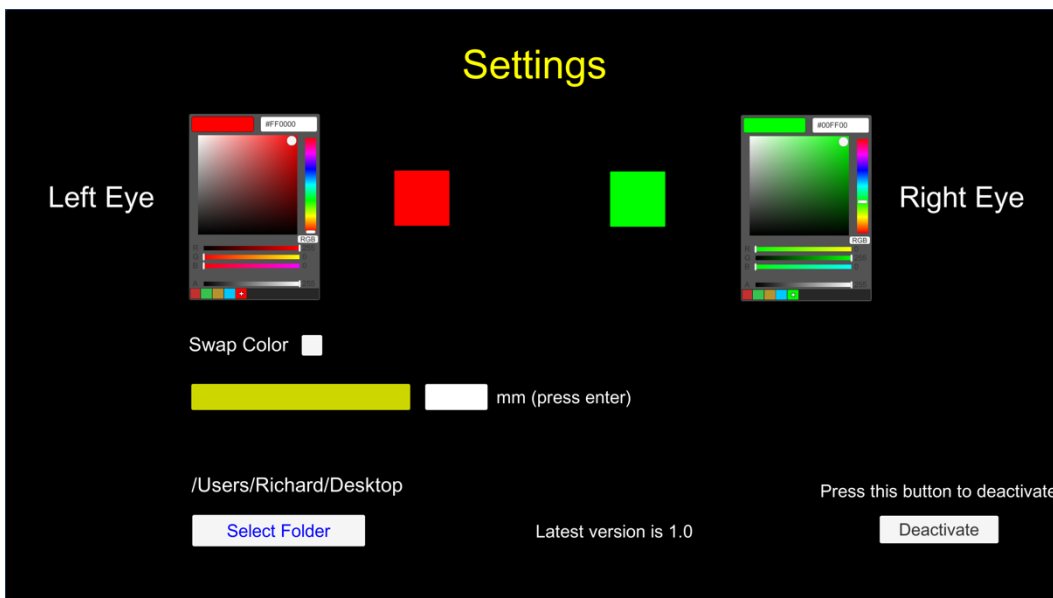 Assessment result

 Assessment tools

 Settings

* The software version that you are currently using is displayed at the bottom.
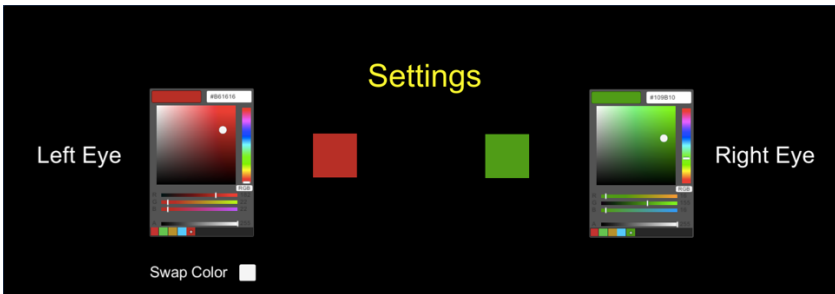
# Settings

Click ⚙ to enter the Settings screen.



Settings screen

Adjust these 2 patches of color. With the color glasses on, adjust the color patches such that your left eye should only see the color patch on the left and not the color patch on the right. Likewise, your right eye should only see the color patch on the right and not the color patch on the left.
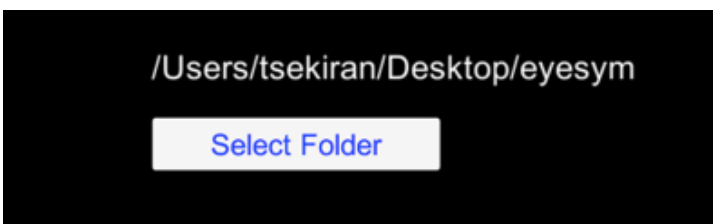
You only need to do it once unless you switch to another computer or use a different pair of color glasses.



This is to swap the colors in the training games. I.E. what can be seen only with the left eye can now be seen only with the right eye, and vice versa.



Measure the length of this color bar in mm.



Click  to set the folder location for storing the assessment results. A new folder called "Eye Sym Users" will be created at that location. You must perform this step before you can enter the Results screen.

Latest version is 1.0

The latest version available for download, and this information will only be updated when the computer is connected to the Internet.
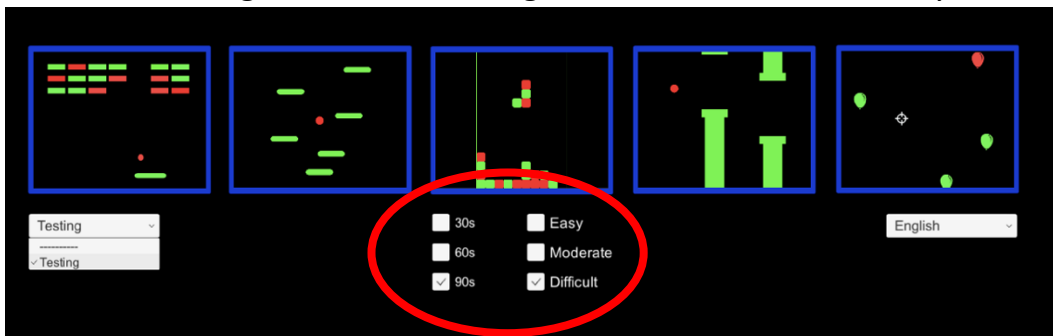
Press this button to deactivate

Deactivate

Click  Deactivate  if you want to deactivate the software from your computer.

# Training Games

Wear the color glasses. Select the game duration and difficulty level.



**Duration**
The game be played for 30 seconds, 60 seconds or 90 seconds.

**Difficulty Level**
The higher the difficulty level, the more difficult it is to distinguish the 2 colors.

**Games**
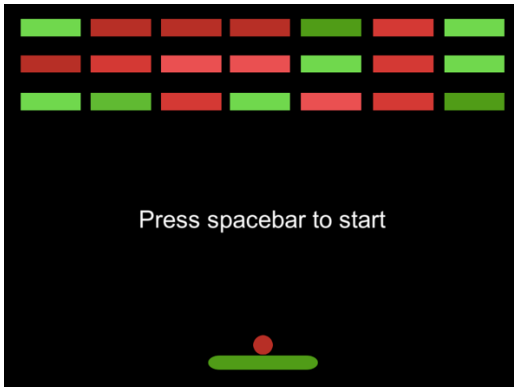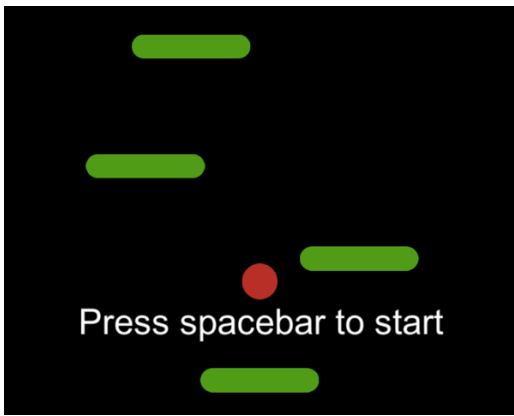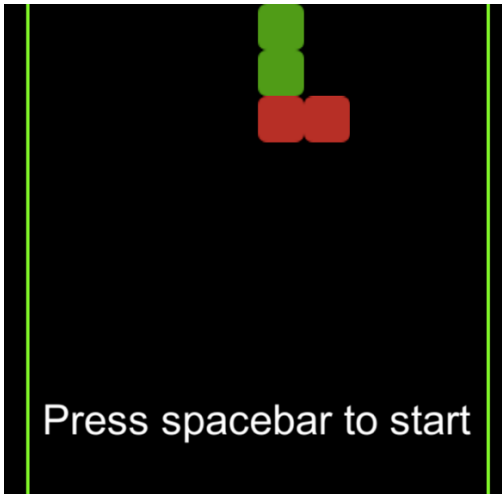Breakout – Try to break as many bricks as possible

Doodle Jump – Try to keep afloat as long as possible

Tetris – The classic Tetris game

Flappy Bird – Try fly up and down and avoid hitting the pipes

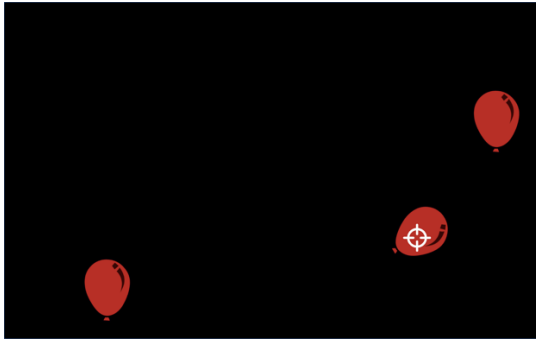Pop the balloons – Pop the balloons with your gaze

# How to play?

| Breakout | Use the left and right cursor keys to control the paddle and bounce the ball back to hit the bricks. |
|---|---|
| Doodle Jump | Use the left and right cursor keys to control the jump direction of the ball. Land on the paddle so that you can bounce upwards. |
| Tetris | Cursor keys<br>Up – rotate the piece falling from the top<br>Left/Right – move the piece sideways<br>Down – drop the piece down |

| | |
|---|---|
| Flappy Bird<br> | Press the spacebar repeatedly to lift the bird up. Objective is to avoid hitting the pipes and stay up in the air as long as possible. |
| Pop the balloon<br> | This game requires the use of an eyetracker.<br><br> is where the child is looking at the screen. Look at the balloon and pop it. |

Note that the result of the training games will be stored in the system. Use the games to encourage the child to use both eyes at the same time.

# Assessment Tools
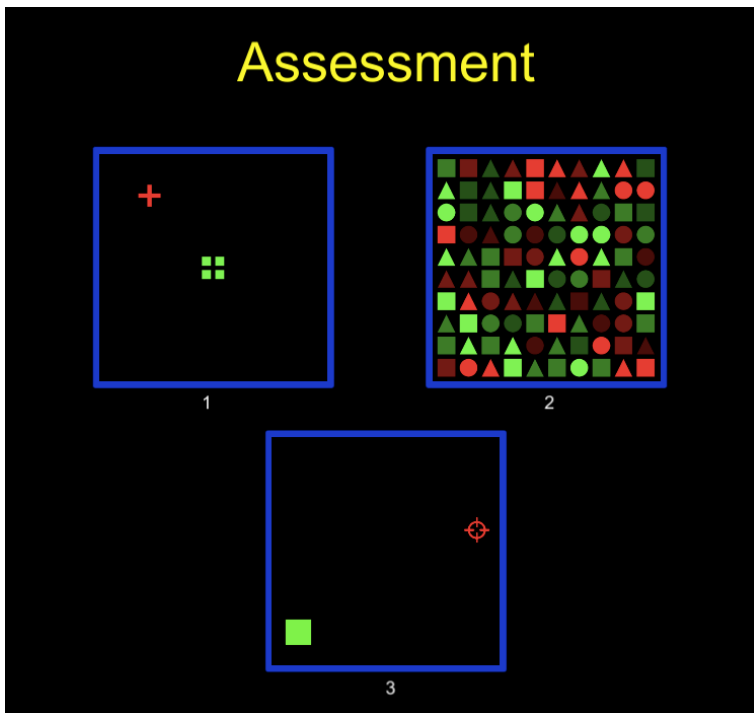


There are 3 types of assessment.

# Assessment 1
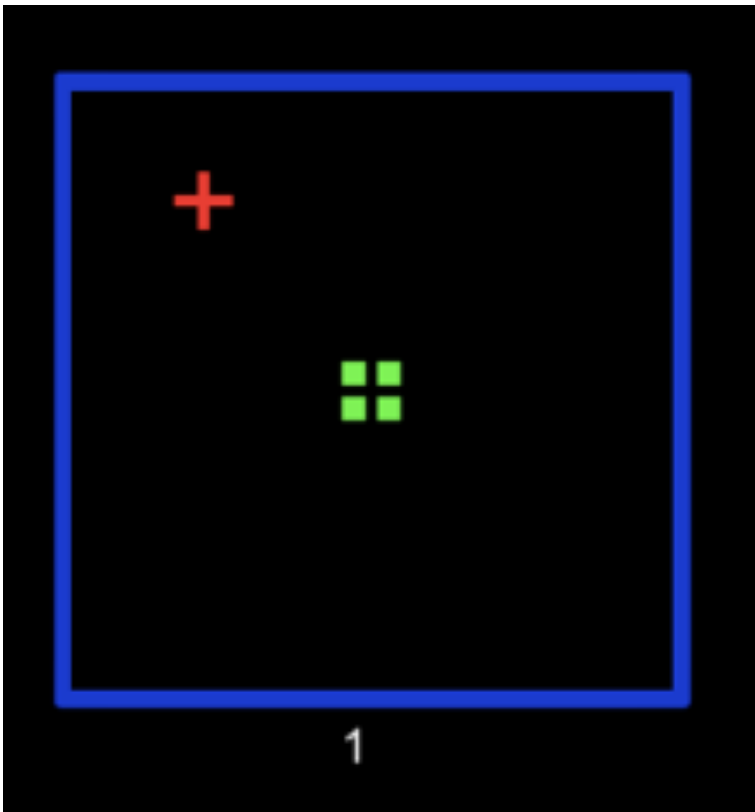


## Objective

To measure how accurate the child can overlay the cross on top of the square.

Make sure you have entered the length of the color bar in the Settings screen. Or you won't be able to perform this assessment.

## Process

- Use the cursor keys to move the cross and fit it inside the 4 little squares as tightly as possible. Holding down the cursor key will make the cross move faster.
- Press the spacebar when done.
- The assessment will repeat 3 times with different difficulty levels.

## Results

Sample result screen
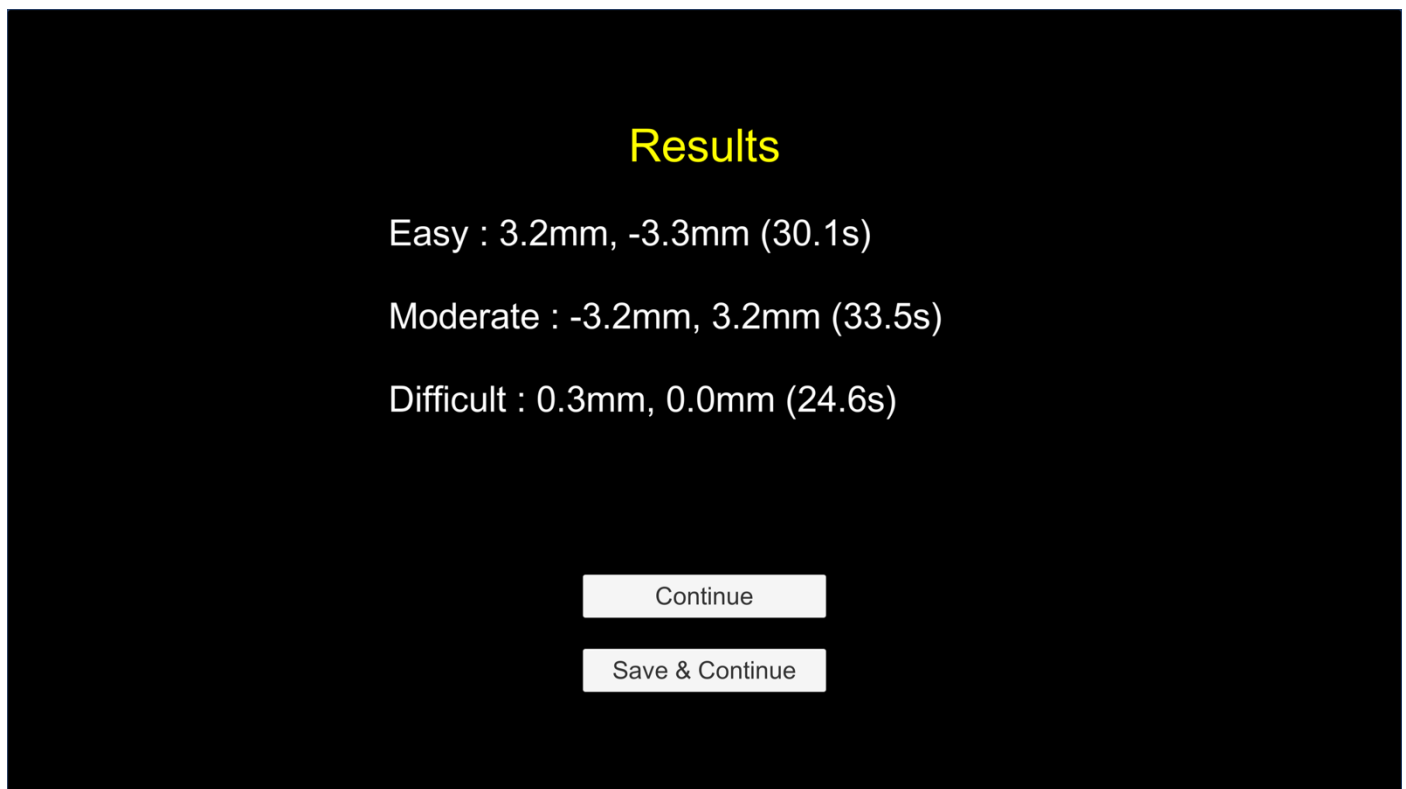


Result data
- The results show how accurate the cross is placed inside the 4 squares for each difficulty level.
- The first number measures the horizontal discrepancy, a positive number means the cross is over to the right and a negative number means the cross is over to the left.
- The second number measures the vertical discrepancy, a positive number means the cross is over to the top and a negative number means the cross is over to the bottom.
- The number at the end is the time taken to complete that difficulty level.

Choose    Continue    if you do not want to save the assessment result.

Choose    Save & Continue    if you want to save the assessment result. You will not see this button if no child has been selected in the Main Menu.

Go to the Results section to see an explanation of the assessment result.

# Assessment 2
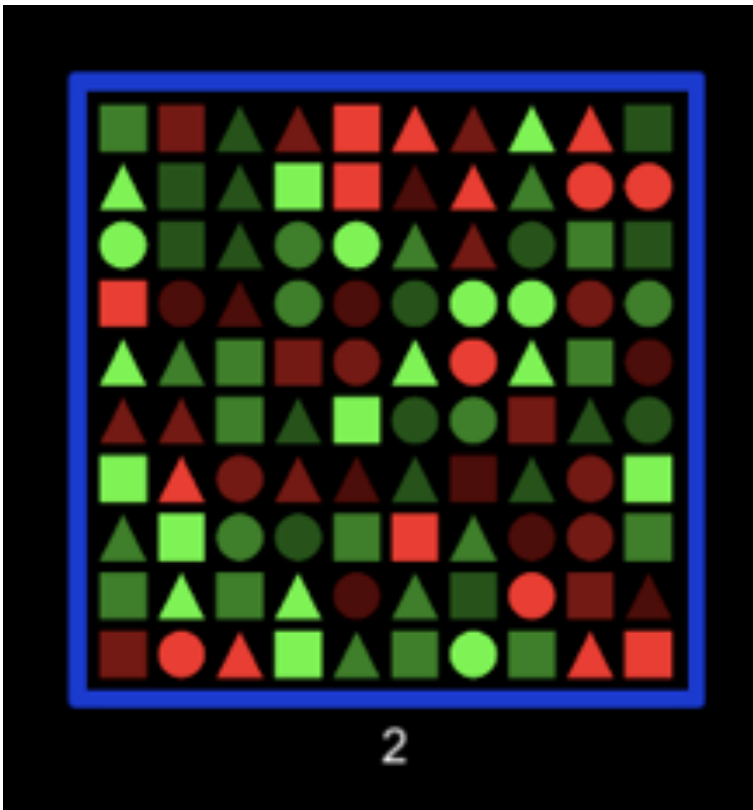


## Objective

To measure how well the child can pickup the shapes with different shades of color.

## Process

- When the assessment starts, it will instruct the child to find a particular shape – triangle, square or circle.
- The child will need to find and click on all the requested shapes (e.g. all the squares) as fast as he/she can.
- Click  Done  when he/she thinks there is no more requested shape to be found.

## Results

Sample result screen
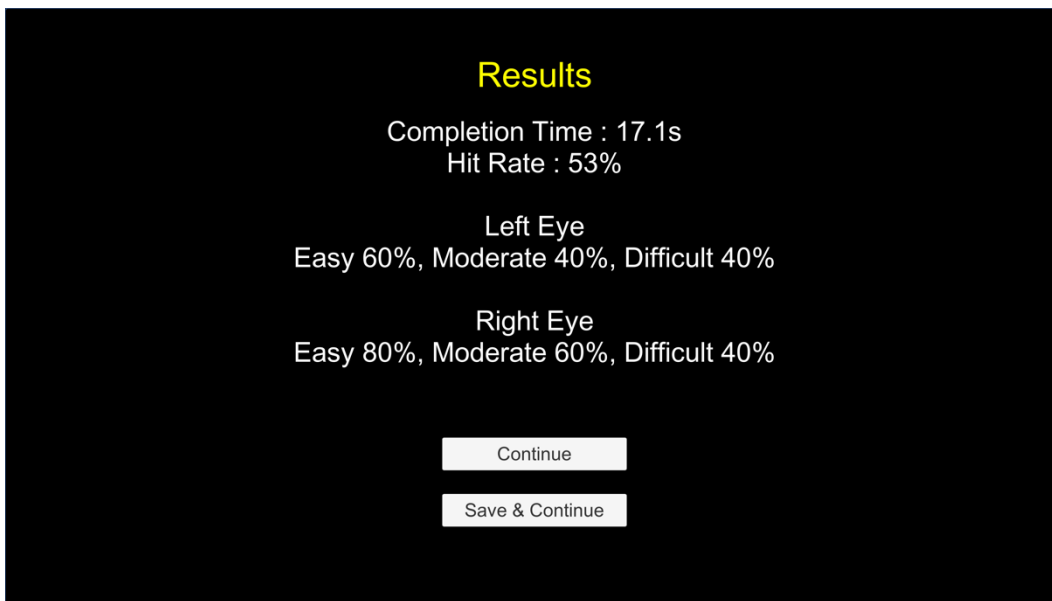


Result data
- The results show how well the child can pickup the shapes with different shades of color.
- Since the left and right eye are looking at different colors of the same shape, the results are reported separately.
- In this particular example, the left eye can pickup the correct shapes 60% of the time for easy-color, 40% of the time for moderate-color and 40% of the time for difficult-color. Similarly, the right eye can pickup the correct shapes 80% of the time for easy-color, 60% of the time for moderate-color and 40% of the time for difficult-color.

Choose **Continue** if you do not want to save the assessment result.

Choose **Save & Continue** if you want to save the assessment result. You will not see this button if no child has been selected in the Main Menu.

Go to the Results section to see an explanation of the assessment result.

# Assessment 3
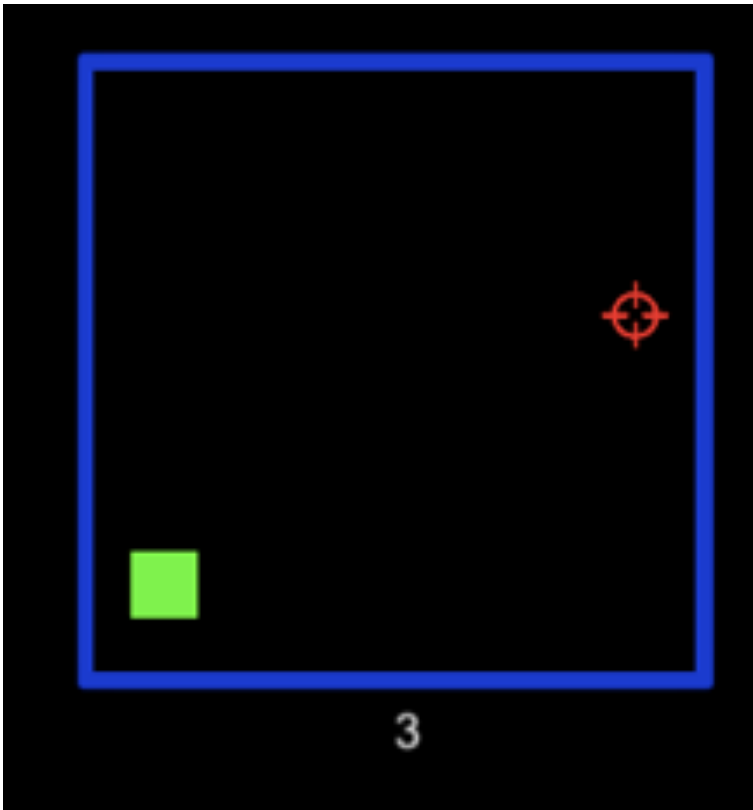


## Objective

To measure how well the child can see the different colors using an eyetracker.

## Process

- To perform this assessment, you will need to use an eyetracker and go through the calibration process with the child.
- When the assessment starts, the child only have to look at the rotating square until it "explodes". The square will appear randomly at the 4 corners of the screen.

# Results

Sample result screen
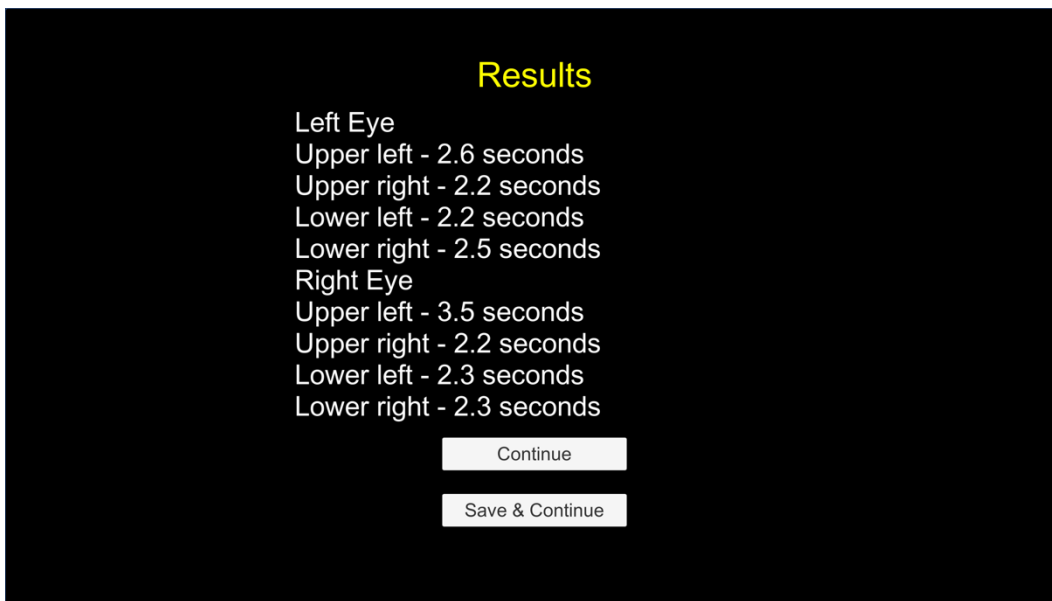


Result data

- The results show how fast the child can look at the target shape that appears randomly at the 4 corners of the screen.
- Left Eye refers to the color that the left eye is supposed to pickup. The 4 numbers indicate how fast the eye can go to that corner.
- Similarly, Right Eye refers to the color that the right eye is supposed to pickup. The 4 numbers indicate how fast the eye can go to that corner.

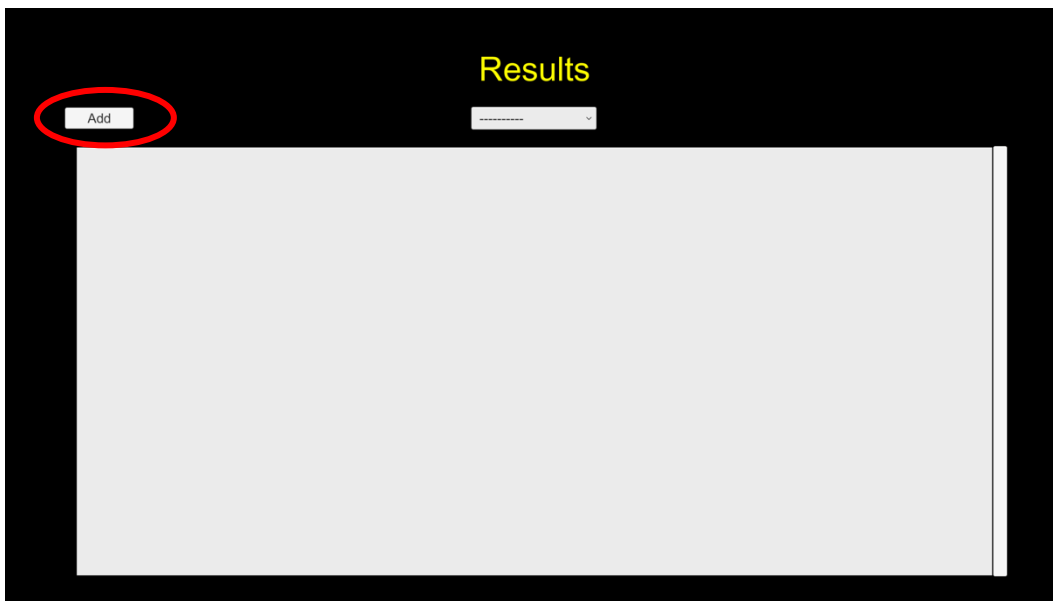Choose [Continue] if you do not want to save the assessment result.

Choose [Save & Continue] if you want to save the assessment result. You will not see this button if no child has been selected in the Main Menu.

Go to the Results section to see an explanation of the assessment result.
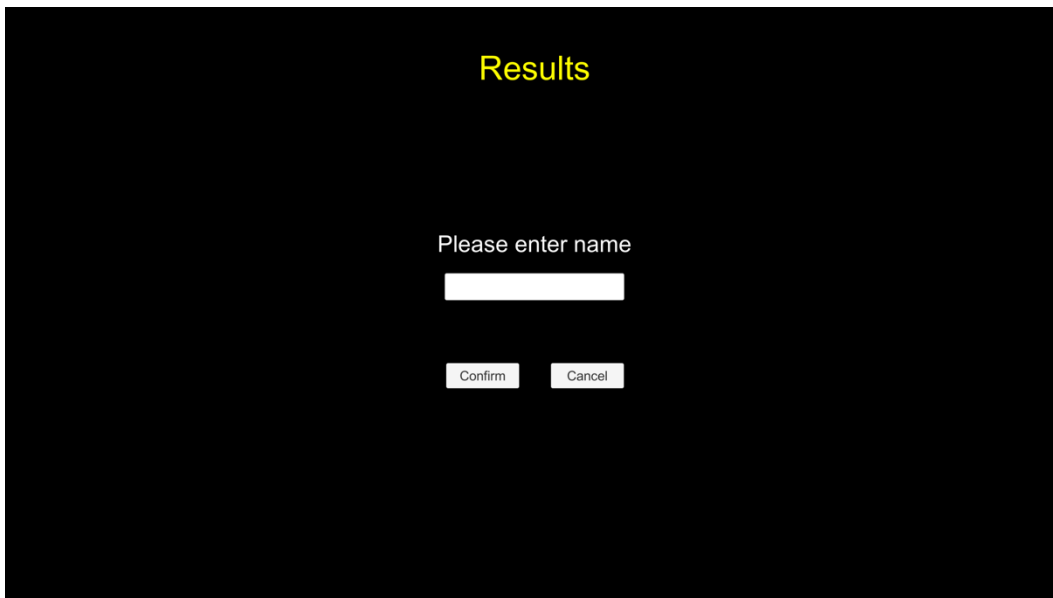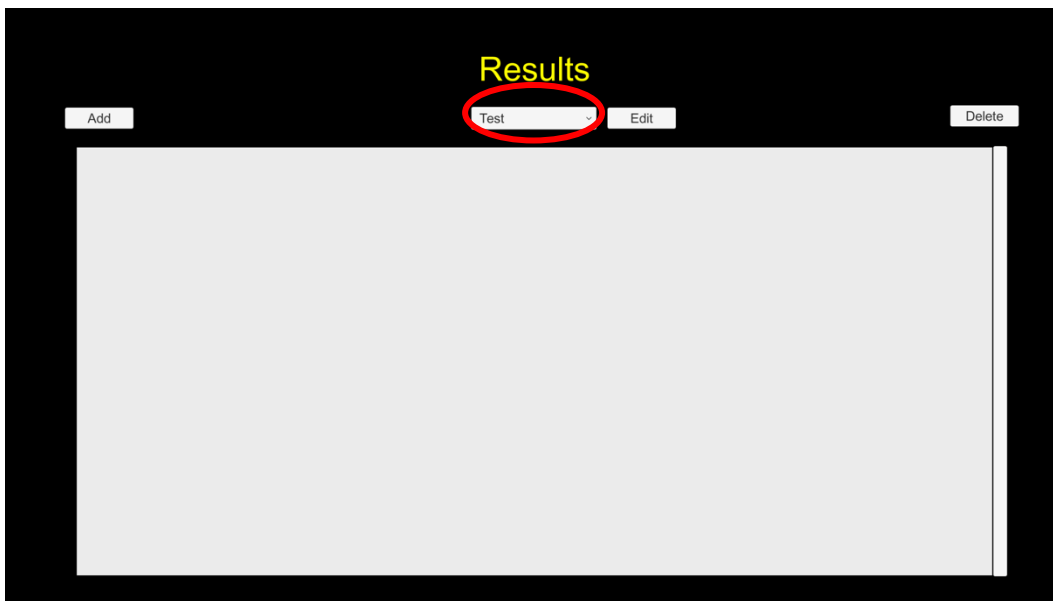
# Results

## Child Management

Click [ Add ] to add a new child.



Enter the name of the child. The name must not be used before.

After creating the new record, the child's name will appear in the dropdown list.
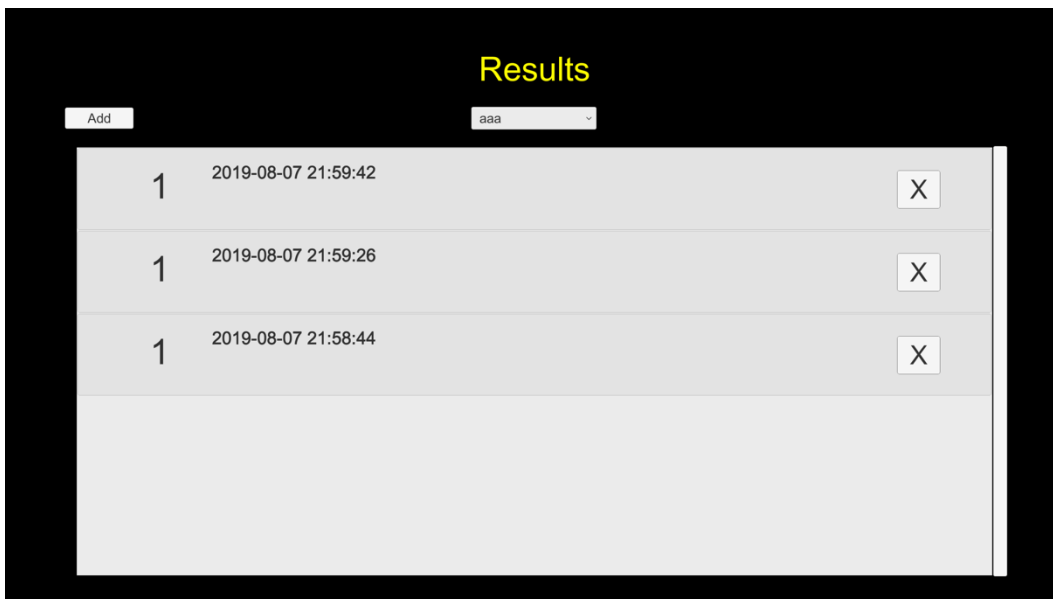


Click [ Edit ] to edit the child's name.

Click [ Delete ] to delete the child's record. Note that when the child's record is deleted from the system, it will be gone forever and cannot be recovered.

# Assessment Record Summary

Once a child has been selected from the dropdown list, all his/her assessment records will be displayed in reverse chronological order.



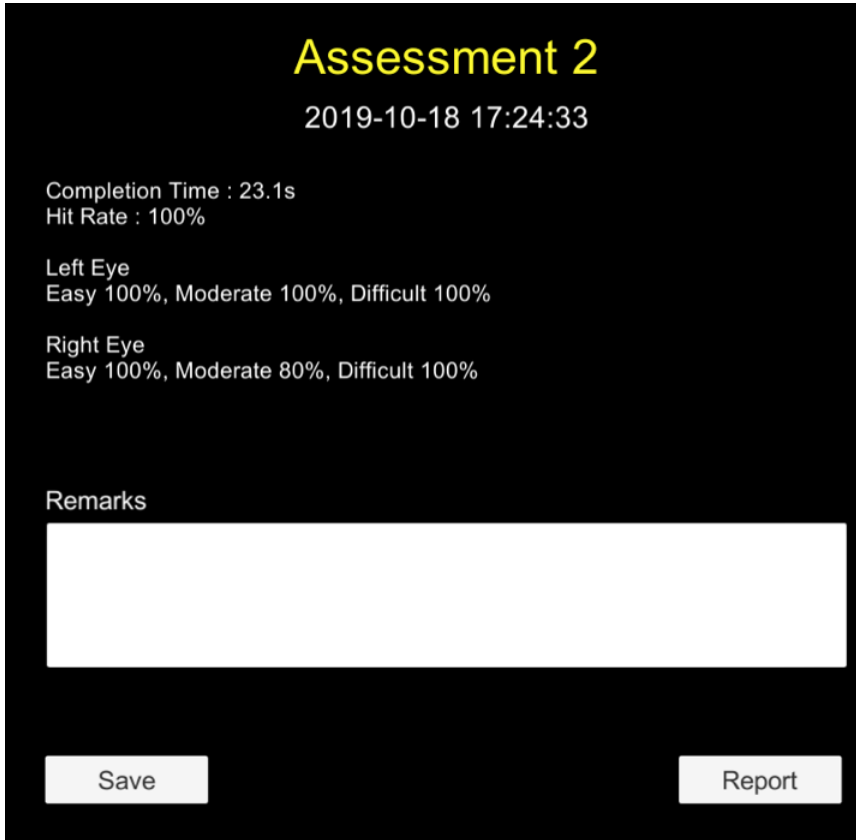The assessment record contains the following information
- "1"/"2"/"3" is the assessment type
- Date/time of the assessment

Click [X] to delete the record.

# Assessment Record Details

When you click on a particular record row, the details of the assessment record will be shown.

A sample assessment record



The information shown is exactly the same as those shown when the assessment is finished.

You can add any remarks you want, just remember to click Save after making any changes to the Remarks field.

Click [ Report ] to generate a PDF report.

After clicking Report, the location of the report file will be shown. The report is inside the folder you set in the settings screen.

# Report Sample

**eyesym**

## Richard - Assessment 2
## 2019-10-26 16:51:20

Completion Time : 26.5s
Hit Rate : 80%

Left Eye
Easy 60%, Moderate 60%, Difficult 80%

Right Eye
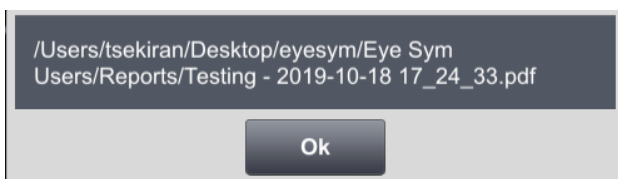Easy 100%, Moderate 80%, Difficult
100%