

Final Project Report

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Course: ECE243 2022 Fall at University of Toronto

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Project Name: *Catch the Skule*

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Description:

Inspired by the classic “Catch the Fruit” game, *Catch the Skule* is customized to have a Skule-related theme. Use the arrow buttons on the PS2 keyboard that is connected to the DE1-SoC board to move the fruit basket left and right to catch items randomly dropped from the sky.

How to play:

A helper page has been included in the game itself as shown in Figure 1.

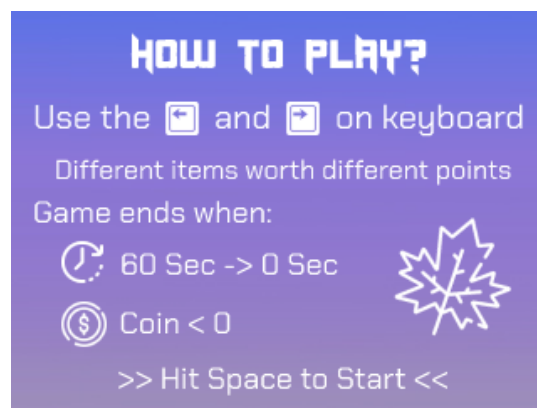


Figure 1. Helper Page

When the game timer counts down from 60 seconds to 0 seconds, or your coin (score) becomes less than 0, the game ends immediately.

Different items will have a different fixed value, and their worth value could be positive or negative or 0, but they will all be an integer. You will figure their values out while playing!

The drop rate and the initial position of the items are randomly generated. The moving speed of the basket is fixed to 8 pixels for every interrupt triggered on the PS2 keyboard.

A bonus element is implemented only once in the game. Let's see if you can catch him. Enjoy playing!

Attribution Table

Task	Who completes the task
<p>Config Interrupt (PS2, A9 Private Timer, Key) and makes them work.</p> <p>PS2: control the movement of the basket with the arrow keys, and control the game flow with the space bar.</p> <p>A9 Private Timer: Use to count down the game</p> <p>Key: Used to reset the game to the start page and clear all current game data. The reset can be performed during the game or when the game ends.</p>	Leo
Design the game flow & Logic	Leo & Rain
Come up with the game idea	Rain
Design the game UI	Leo
Double buffer config	Leo
Erase the object partially and fill the erased area with the background image pixel color	Leo
PlotImage function	Rain
Legality of the drawing check	Leo
Item collision event	Leo
Process the image to 2D array, and convert it to 1D array for our use (Images include the game backgrounds, random items)	Rain
Handle the generation and destroy of the randomly generated item	Leo
Coding Style check	Leo
Rosey related functions	Rain & Leo
Final Report Draft	Leo
Proofreading and revision	Rain