CMPE 160.01
INTRODUCTION TO OBJECT ORIENTED PROG.

Assignment 2 Report

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The project has 6 classes. Main class is setting the game and the canvas for the start and calls an Environment class which will run the game. Most of the work is done in Environment class, which are moving the balls and the player, storing the constants, storing the loopTime* for every frame, calling the functions that are going to check whether there is a collision. If game duration is greater than TOTAL_GAME_DURATION, the loop will be ended, and it is one of two ways for losing the game.

Player class contains two functions which make player move while “left arrow” or “right arrow” key is pressed in the keyboard. Arrow class contains a function which calculates arrow’s y-position with the percentage of elapsed time/arrow period. Bar class contains two functions, one of them returns the bar color with respect to remaining time, the other one returns how much big should the bar be.

Ball class stores every ball’s own property and has a function called “move”, which makes balls do projectile motion and the elastic collision with the canvas edges. “move” function also checks whether there is a collision between balls and the arrow or the player or not. If any ball touches the player, the loop will be ended, and it is the second and the last way for losing the game. If any ball touches the arrow and is big enough, it will split into half and these two parts will be smaller. One of them will start to move to the left and one to the right. If it is not big enough, it disappears from the screen. If there is no ball display in the screen anymore, the loop will be ended, and it is the only way for winning the game.

If the loop is ended, an end-game-screen will show up and the user will be asked if user wants to replay or exit. If replay option is chosen by the “y” key, the adjustments for the game to start will be made over again, also loop will be activated. If the exit option is chosen by the “n” key, canvas will disappear, and the code will be terminated.

*loopTime = duration as second between every frame showed up

I had difficulties with the projectile motion, although I attempted to the lab and understand the code that is written for one ball motion, I could not apply it to this project. Because of this issue, Ball class’s constants are changed by myself, and attempt after attempt I think I found the best fitting variables for them. Ball’s current highs, Ball duration for x-axis to be crossed and the “visible parts” are still the same. However, it is done with not all variables but constants and variables.

https://clipchamp.com/watch/KRwFYk3hBxR