

CSC 106 Assignment 4

UVic Spring 2018

March 13, 2018

- For your fourth assignment, you will implement the program shown to you in Lab 9 and described in the following document. A code template can be found in the Lab 9 & 10 folder on connex, under Resources.
 - In Lab 9, you will familiarize yourself with the program specifications, be shown an example program, create a Dropbox account, ask questions, and begin working on your assignment.
 - You will finish your assignment and "demo" your code in Lab 10, the week of March 19th. A code demo is like a demonstration: you will show the lab TA your finished program and how you implemented each part. Your assignment grade is assigned during the demo.
 - Read this document very carefully and use this document along with the code template. These questions won't make sense on their own.
1. You will select the ball and background images used in your program, as well as the sound file. Insert your Dropbox links where the template indicates. Make sure it shows on the canvas and that you set the link parameter to "?dl=1" like in the example, or else your dropbox files won't load. [3 marks]
 2. The position of the ball is effected by the velocity parameter (x1,y1). If the ball collides with the left or right wall, we make the x1 component negative. If it collides with the top or bottom wall, the y1 component needs to be reversed. Movement of any object is defined as position $x(t+1) = x(t) + x1(t)$ and $y(t+1) = y(t) + y1(t)$, where x and y are position of the ball on the canvas and x1 and y1 are its velocity components.
 - (a) Create a function that checks if the ball has collided with the wall and reverse the direction of ball. This creates the effect of reflection/bouncing off the wall effect. [4 marks]
 - (b) This function also sets the switch to play sound. When you detect a collision, `math(soundswitch)` should be set to 'Y' [1 mark]
 - (c) Increment the count by 1 in case of collision with the walls [1 Mark]

3. The colour of the circles on the screen can be changed based on time. Each circle starts with a different colour and can be changed every 1 second in sequential order, creating a special effect (bonus question). Each colour has its own Hex code starting with the pound/hashtag symbol, for example black has a html code (#000000). The website <https://htmlcolorcodes.com/> gives hex values for many colours.
 - (a) Change the default colours, using colour values from the website provided. No marks will be provided if the default colours are used.[1 Mark]

Bonus questions and their description can be found on the template.