CS1013 Programming Project
Exercise 2

1. Get the code presented in class working. i.e. setup and draw methods, human player (bat), and ball. The integer variables `mouseX` and `mouseY` provide the x and y co-ordinates of the mouse pointer.
(2 marks)

2. Use the player class to create a computer player. You will need to create a new method to control the computer's movement. A simple algorithm to use would be to have the computer player move 1 pixel towards the ball position every frame. The draw method for your new program will:
move the ball
move the computer player
move the human player
check for collision with human player
check for collision with computer player
draw the ball
draw the computer player
draw the human player
(3 marks).

3. Implement a `reset`() method which is called when the ball falls off the screen (either the human or the computer has lost the game). The method should put the ball back onto the screen and restart the game once the mouse button is pressed. If you define a method called `mousePressed()`, Processing will call it when the mouse is pressed. (3 marks).

4. Count the number of lives (hint: create an attribute and method in player). If the computer wins three times, a game over message is displayed. If the player wins three times, a different message is displayed. (2 marks).

Extra credit 1:
Modify your program so that the speed and direction of movement of the bat affects the trajectory of the ball when struck.

Extra credit 2:
Modify your program so that the ball speeds up and the computer player gets better over time. Show the current speed on the screen.

Lab challenge:
Details at the lab.