In today's lab, you will work in pairs to create a Ping Pong game from scratch in Scratch.

You can work with someone you know, or someone you don't know, and you will create ONE game between the two of you.

Unlike previous labs, you will not be following along with the TA, but rather working on your own to fulfill the following specifications. Feel free to ask for help from the TA/tutors if you get stuck.

**Pong Specifications:**

1) Your game should be two-player.
   - You should select two keys on each side of the keyboard to be the up/down keys for the respective players.

2) You should have at least 5 sprites:
   - Two paddles, a ball, a "Right Side Wins" message, and a "Left Side Wins" message.
   - The paddles should be roughly 1/3 of the playing screen high and fairly narrow.
   - The ball should be small enough to make the game challenging.

3) You need to have variables to display the current score plus a "speed" variable to control the speed of the ball.

4) Your ball sprite should start at position (0,0) and move in a random direction at speed "speed" to start (don't forget to set the "speed" at the beginning of each game!)
   - You might want to choose a random number in a given range, such as 45 to 145 so that the ball doesn't start by going straight up and down.
5) One side scores a point if the ball touches the wall on the opposite side.
   - To do this, check IF the "x position" is greater than 220 for a score by the left hand side or IF the "x position" is less than -220 for a score by the right hand side.
   - When a point is scored, the ball should be reset to position (0,0) and aimed towards the side that scored the point.
   - IF either side reaches a given score (such as 5), then that side should win. The game should stop, and the correct "wins" sprite should be shown.

6) IF the ball is "touching" the paddle (use the "touching" block in the sensing group), then you want to:
   - "point in direction" of "pick random" from 45 to 145 when touching the left-hand paddle
   - "point in direction" of "pick random" from -45 to -145 when touching the right-hand paddle

7) If you hit an edge, you want to bounce off of it (look at the "if on edge, bounce" operator).

8) You will have to use messages to communicate between different sprites (for example, when one side scores a point, you want to check if they won the game, and if they did, you should broadcast a message saying they did. When the "win" message receives that broadcast message, it should display itself and stop the game).

**Pong Enhancements:**

After you have the basic game specified above working (and SAVED!!!!!! – a good name for this program is **Pong**), you need to add these enhancements plus any that you come up with yourself.

1) When either player hits the ball, increase the "speed" by some small amount. The longer the game lasts, the faster the ball goes.

2) If one side scores a point, have that players paddle "change size by" some number like -10. This means that the winning player's paddle shrinks making it harder for that player.

3) Add any other fun enhancements that you want such as additional balls or a four-player game (or whatever you can come up with!).
**Getting Checked Off**

You do not need to put your game online. When you and your partner are finished, you will both be checked off if your game follows **all of the above specifications AND enhancements.**