Intro to Programming
Scratch #15 – Basketball

Objective: Turn the game we started in class into a 2 player game.

1. Login to the Scratch website. You should already have a project called *scratch_15_example* that we completed in class.
   a. Open the *scratch_15_example* project.
   b. Do *File->Save as a copy*. The name of the project will change *to scratch_15_example copy*.
   c. Rename the project to *first_last_scratch_15*
   d. Do *File->Save now*
2. Add a second player:
   a. Add another Cat to the project. Rename it to *Player 2*. Modify *Player 2* so that it is a different color than Orange. Make sure to modify both costumes.
   b. The *Player 2* sprite will need *2* variables*: y velocity* ***for this sprite only****,* and *Player 2 Score* ***for all sprites***.
   c. The *Player 2 Score* variable needs to be set to 0 when the green flag is clicked.
   d. *Player 1 Score* and *Player 2 Score* should be on the Stage in large readout mode with labels.
   e. The scripts for *Player 2* are the same as the scripts for *Player 1* except:
      i. *Player 2* should start at x:165, y: -130
      ii. It should point in direction -90
      iii. It should use the left arrow and right arrow keys to move left and right instead of the a and d keys.
      iv. It should use the *up arrow* key to jump instead of the w key.
      v. It should use the *space* key to shoot instead of the v key.
3. The 2 players will share the *Hoop/Hitbox* and *Basketball*. This means that the *Basketball* can't go to either player unless neither player is shooting. Also, the *Basketball* should move right when *Player 1* is shooting, but left when *Player 2* is shooting. The *Basketball* should also turn right when *Player 1* is shooting, but turn left when *Player 2* is shooting. Here are some ideas on how to make that happen:
   a. Create a variable for the *Basketball* sprite only named *who has ball*. Make sure this is set to 0 when the green flag is clicked.
   b. Create 2 more variables for the *Basketball* sprite only named *x velocity* and *turn direction*.
   c. Now, find the script that executes when *Player 1* shoots. Instead of actually shooting in this script, check to see if *who has ball* = 0. If it does, set *who has ball* to 1, go to *Player 1*, set *x-velocity* to 8, set *turn direction* to 6, and broadcast *shoot*.
   d. Create another script for when the space key is pressed (which is how *Player 2* shoots.) This should look very similar to the script for *Player 1*: check to see if *who has ball* = 0. If it does, set *who has ball* to 2, go to *Player 2*, set *x-velocity* to -8, set *turn direction* to -6 and broadcast *shoot*.

e. Create a *When I receive shoot* script that does the shooting. It should contain most of the code we did in class in the *When v key pressed* script. The new script will need to check to see which player has the ball in order to figure out which score to increment. It should change x by *x velocity* and turn by *turn direction*. At the end of the script, it should set *who has ball* back to 0.

4. Always do *File->Save now* before you log out of the Scratch website.
5. Now do *File->Save to your computer*.
6. Turn in your *first_last_scratch_15.sb3* file to *missblomeyer.com* in the usual way.