

## Intro to Programming

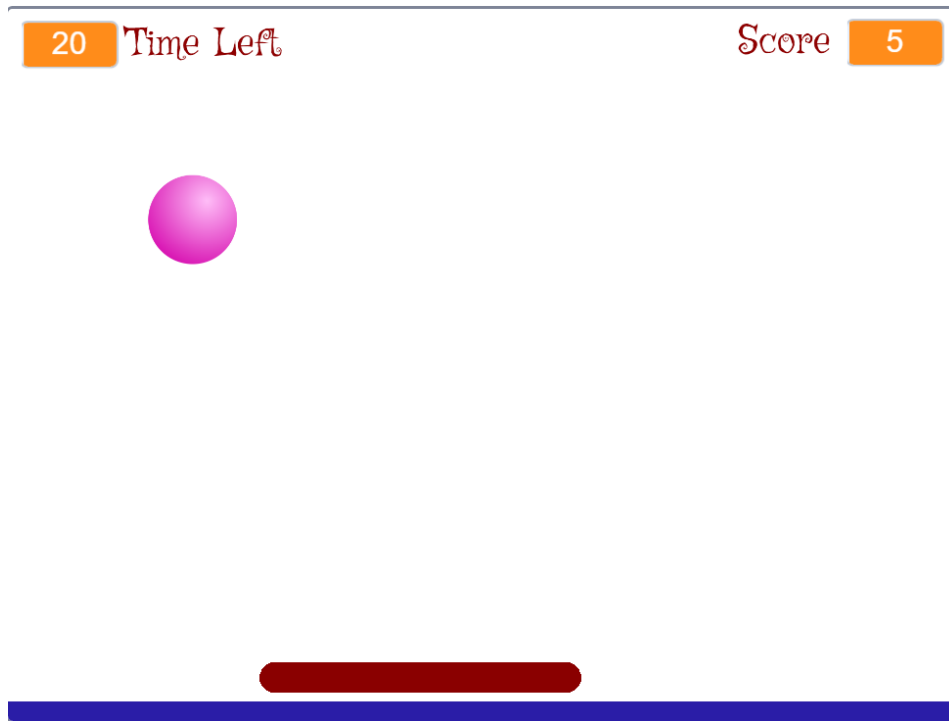
### Scratch #14 – Pong

Objective: Use the techniques you've learned in Scratch to finish a 3-level pong game.

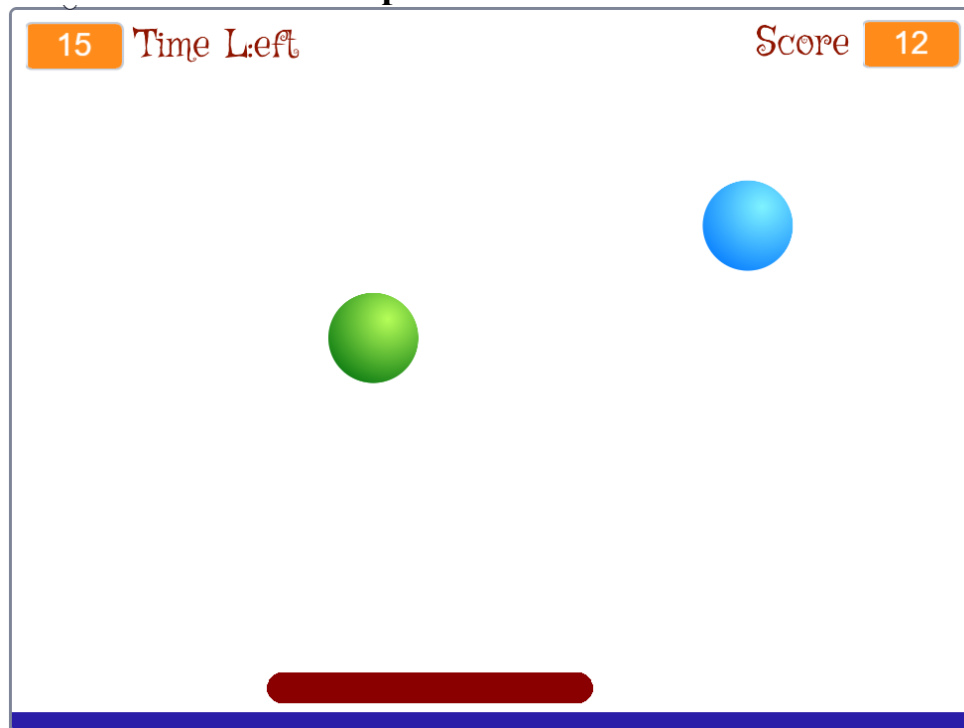
1. Login to the Scratch website. You should already have a project called *scratch\_14\_example* that we completed in class.
  - a. Open the *scratch\_14\_example* project.
  - b. Do *File->Save as a copy*. The name of the project will change to *scratch\_14\_example copy*.
  - c. Rename the project to *first\_last\_scratch\_14*
  - d. Do *File->Save now*
2. Get ready.
  - a. Add a second **Ball** sprite. This sprite will only be used on level 2
  - b. Create a variable called **Score** for **all** sprites. This variable should appear on the Stage when the green flag is clicked.
  - c. The winner and loser screens we did in class were lame. Make better versions of these screens.
3. You have these requirements for the project:
  - a. **Sounds:**
    - i. Make a sound when a ball hits the paddle or a brick. You can use the same sound for the paddle and the brick or different sounds for each one of them. *Boing* is always a good sound. (Make sure to **start sound** and **not play sound** until done).
    - ii. If the player wins, play a cheering sound (until done).
    - iii. If the player loses, play a sad sound (until done).
    - iv. Play music while the game is playing.
  - b. **When a level starts, the ball(s):**
    - i. stops other scripts in sprite (Levels 2 and 3)
    - ii. switch cosume to one that hasn't been used yet
    - iii. point in direction (pick random 20 to 70)
    - iv. set x (pick random -200 to 200)
    - v. set y (pick random -10 to 160) (Level 1 and 2) set y (pick random -10 to 10) Level 3
    - vi. show
    - vii. the forever loop
  - c. **On the stage, when a level starts:**
    - i. set speed to 0
    - ii. wait 1 sec (level 1 & 2); wait 2 sec (level 3)
    - iii. set speed to 10
    - iv. Whatever loop is needed (timer countdown on levels 1 & 2, forever loop on level 3)

- d. **Level 1:**
  - i. Timer is set for 15 seconds.
  - ii. One ball appears on the screen.
  - iii. Speed increases by 3 every 3 seconds.
  - iv. Score increases when the ball hits the paddle.
  - v. Both *Time Left* and *Score* appear on the screen. Both variables are in **large readout** mode with labels on the Stage.
- e. **Level 2:**
  - i. Timer is set for 25 seconds.
  - ii. Two balls appear on the screen. They must have different colors and the colors must be different from the ball on Level 1.
  - iii. Speed increases by 3 every 5 seconds.
  - iv. Score increases when either ball hits the paddle.
  - v. Both *Time Left* and *Score* appear on the screen. Both variables are in large readout mode with labels on the Stage.
- f. **Level 3:**
  - i. Both the *Time Left* variable and the *Score* variable hide. Neither variable should appear on the screen. There is no timer in Level 3. Game plays until all bricks are gone.
  - ii. One ball appears on the screen. It must have a different color from any of the balls on Levels 1 and 2.
  - iii. 21 bricks appear on the screen with 3 rows and 7 columns. Each row has a different color brick.
  - iv. Speed increases by 3 every 6 seconds.
  - v. Score increases when the ball hits the paddle and when a brick is hit.
  - vi. Level ends when all 21 bricks have been hit.
- g. **Game Over:**
  - i. The game is over if the player either loses or wins.
  - ii. The *Score* variable appears on the screen when the game is over. It should have a label reading *Final Score*.
  - iii. The *Time Left* variable does not appear on the screen when the game is over.
  - iv. The player loses the game if any ball hits the **Death Line** in Level 1, 2, or 3
  - v. The player wins the game if all 3 levels are completed successfully.
4. **All** sprites need to receive winner and loser broadcasts. When the game is over, all scripts should stop.
5. Always do *File->Save now* before you log out of the Scratch website.
6. Now do *File->Save to your computer*.
  7. Turn in your *first\_last\_scratch\_14.sb3* file to *missblomeyer.com* in the usual way.

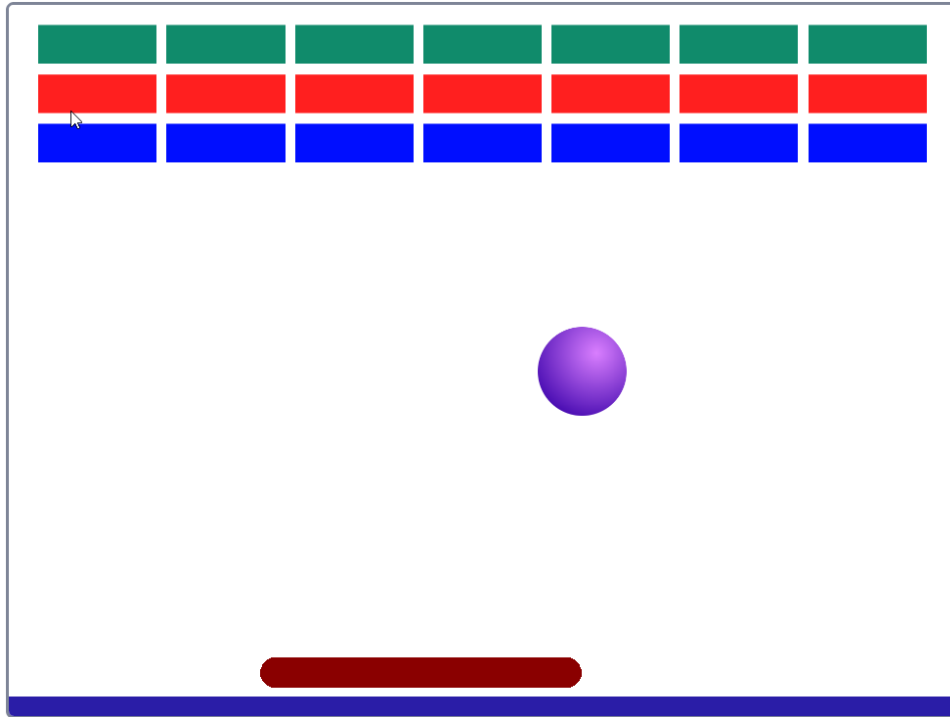
### Sample Level 1 Screen



### Sample Level 2 Screen



### Sample Level 3 Screen



### Sample Loser Screen



## Sample Winner Screen

