Intro to Programming
Scratch #10 – Catch an Apple

Objective: Demonstrate your understanding of Scratch learned up until now to create a simple game.

1. Login to the Scratch website. Create a new project. Change the name of this project to *first_last_scratch_10*. Click *File->Save now*

2. You are to follow these instructions to create a simple game. An *apple* appears at random at the top of the screen and moves towards the bottom. The *Flying Cat* which is controlled by the right and left arrow keys attempts to catch the apple. If the *Flying Cat* touches the apple before it hits the bottom of the stage, the user gets a point and the apple appears again at random at the top of the screen. If the apple hits the bottom before the *Flying C*at touches it, the game is over.

3. Start by creating 2 backdrops for the Stage:

    a. The first backdrop will be the one displayed while the game is playing. Pick a backdrop, or create one yourself.
    b. The second backdrop says "Game Over".

4. Next, add 2 scripts for the *Stage*:

    a. When Green Flag clicked: switch backdrop to the one displayed while the game is playing.
    b. When I receive game over: switch backdrop to the backdrop that says "Game Over".

5. Now, delete the *Cat* sprite and add the *Cat1 Flying* sprite. Move it close to the bottom of the screen. Add 2 scripts for the *Flying Cat*:

    a. When Green Flag clicked

            set rotation style left-right
            go to x: 0 y: -152
            show
            forever
                    if *key right arrow pressed?* Then
                            point in direction 90
                            move 6 steps
                    if *key left arrow pressed?* Then
                            point in direction -90
                            move 6 steps

    b. When I receive *game over*:

            hide
            stop other scripts in sprite

6. Add a variable called *Score* for all sprites. It should be visible on the Stage.

7. The *Apple* sprite is next. Add the *Apple* sprite with a single script that starts *when the green flag is clicked.*

        Set score to 0

Go to x: pick random -205 to 205 y: 175
Show
Forever
      Change y by -5
      If *touching Cat1 Flying* then
            Go to x: pick random -205 to 205 y: 175
            Change score by 1
      If *y position < -148* then
            Broadcast game over
            Hide
            Stop this script

8. Now, add another sprite. This may be any sprite you choose. It should be avoided by the *Flying Cat*. If it touches the *Flying Cat*, the game is over. If it gets to the bottom of the screen, it should move to the top in a random position. It should **move faste**r than the Apple.

9. Make sure that all sprites hide when the game is over.
10. Make sure that all scripts stop when the game is over.

11. Always do *File->Save now* before you log out of the Scratch website.

12. Now do *File->Save to your computer*. If you are using a MacBook make sure to save to your flash drive. If you are on a Chromebook, it should download automatically to the downloads folder.

13. Turn in your *first_last_scratch_10.sb3* file to *missblomeyer.com* in the usual way.