Intro to Programming
Scratch #11h – Catch a Crystal

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_11*. Click *File->Save now*

2. You are to follow these instructions to create a simple game.

   a. A *Crystal* appears at random at the top of the screen and moves towards the bottom.

   b. A *Bowl* which is controlled by the right and left arrow keys attempts to catch the *Crystal*.

   c. If the *Crystal* touches the *Bowl* before the *Crystal* hits the bottom of the stage, the user gets a point and the *Crystal* appears again at random at the top of the screen.

   d. If the *Crystal* hits the bottom before the *Bowl* touches it, the game is over.

   e. Music should play while the game is playing.

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. Do not use the one in the sample picture.

   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. Then in a *forever* loop, *play sound xxx until done*, using the song of your choice.

   b. When I receive game over: switch backdrop to the backdrop that says "Game Over".

5. Now, delete the *Sprite1* sprite and add the *Bowl* sprite. Move it close to the bottom of the screen. Add 2 scripts for the *Bowl*:

   a. When Green Flag clicked

      > go to x: 0 y: -152
      > show
      > forever
      >> if *key right arrow pressed?* then
      >>> change x by 6
      >> if *key left arrow pressed?* then
      >>> change x by -6

   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. It must be in large readout mode. You should have text on the Stage describing what the variable is.

7. The *Crystal* sprite is next. Add the *Crystal* sprite with 2 scripts:

   a. When Green Flag clicked

   > Set Score to 0
   > go to x: *pick random -205 to 205* y: *175*
   > switch costume to *pick random 1 to 2*
   > show
   > forever
   > > change y by -5
   > > If *touching Bowl* then
   > > > go to x: *pick random -205 to 205* y: 175
   > > > switch costume to *pick random 1 to 2*
   > > > change Score by 1
   > > If *y position < -178* then
   > > > broadcast *game over*

   b. When I receive *game over*:

   > hide
   > stop other scripts in sprite

8. Now, add 2 additional sprites. These may be any sprites you choose. Make sure they are an appropriate size for both the *Stage* and the *Bowl*. Do **not** pick the egg or the apple as shown in the sample picture, but do pick inanimate objects.

   a. You **do not** want to catch these sprites. If these sprites touch the *Bowl*, the game is over.

   b. If these sprites get to the bottom of the screen, they should move to the top in a random position.

   c. They should both **move faster** than the *Crystal* but different from each other.

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*

13. Turn in your *first_last_scratch_11.sb3* file to *missblomeyer.com* in the usual way.