b Create – Applications From Ideas Written Response Submission Template

Please see <u>Assessment Overview and Performance Task Directions for Student</u> for the task directions and recommended word counts.

Program Purpose and Development

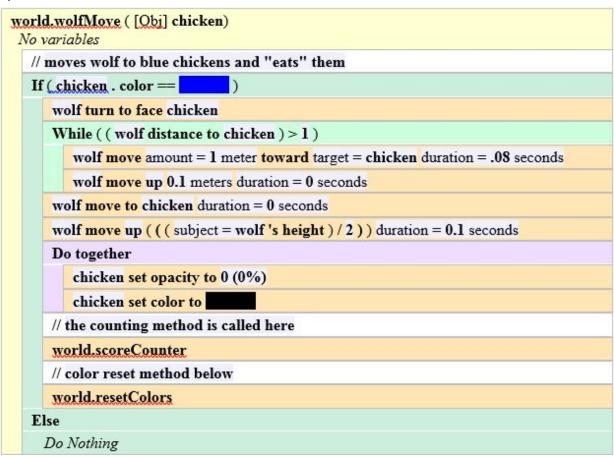
2a)

I created my game using ALICE which uses the Java programming language. The purpose of my game is for the wolf to "eat" five blue chickens before the timer runs out. The video depicts all of the chickens first changing color, then the wolf eating the blue chickens when they are clicked on. If the blue chickens run out, all of the chickens will change color again so that the goal of the game can be completed.

2b)

I independently developed this program starting with my original method and continuing to build off of that. During the process, as I would think of an element that I needed to add to the game, I would work on the code needed for that certain part of the game. An element that gave me some trouble was the first part my wolfMove method which was meant to have the wolf move to blue chickens and eat them. I had a few problems with this method because at first, my wolf would move, but end up halfway underground. After a lot of trial and error, I was able to make the wolf move up while moving forward and make sure that when it stopped moving it was above ground. I was also presented with opportunities to add aspects to make my game better. One of these moments was when I decided that my game was too easy to play. To make the game more fun, I looked up a tutorial on how to make a countdown timer. Once I added the timer to the game, there was more pressure, which made the game realistic.

2c)



```
world_resetColors()

No variables

// keeps track of the number of blue chickens and resets the colors if there are none left

world_numBlue set value to 0

For all world_chickens, every item_from_chickens together

If (item_from_chickens.color == _____)

world_numBlue set value to ((world_numBlue + 1))

Else

Do Nothing

For all world_chickens, every item_from_chickens together

If (world_numBlue == 0)

world_setrandomcolor_chicken = item_from_chickens

Else

Do Nothing
```

```
world.scoreCounter()
No variables

// counts the number of chickens eaten
increment world.counter by 1
chickenCounter set text to (world.counter as a string)
```

I chose to use my "wolfMove" method, which I wrote independently, that contains the code that tells my wolf how to move, as well as two other methods "resetColors" and "scoreCounter". "wolfMove" uses math to tell the wolf how to move towards the blue chickens and sets their opacity to zero. The method moves the wolf to the blue chickens and then the chickens' opacity is set to zero. The "resetColors" method uses math to count the number of blue chickens and proceeds to use logic and call my "setrandomcolors" (I will talk more about this method in 2D) method if there are no blue chickens left. My "scoreCounter" method uses math to count the number of chickens that have been "eaten" or disappeared.

2d)

```
world.setrandomcolor ([Obi] chicken)
 randomNum = 1
  // Gives all the chickens different colors
  randomNum set value to ( random number minimum = 1 maximum = 9 integerOnly =
 true)
  If (randomNum = 1)
     chicken set color to
                                duration = 0.5 seconds
  Else
     If (randomNum = 2)
        chicken set color to
                                   duration = 0.5 seconds
     Else
        If (randomNum == 3)
                                      duration = 0.5 seconds
           chicken set color to
        Else
           If (randomNum == 4)
                                         duration = 0.5 seconds
              chicken set color to
           Else
              If (randomNum == 5)
                 chicken set color to
                                            duration = 0.5 seconds
              Else
                 If (randomNum = 6)
                                               duration = 0.5 seconds
                    chicken set color to
                 Else
                    If (randomNum = 7)
                       chicken set color to
                                                  duration = 0.5 seconds
                    Else
                       If (randomNum = 8)
                                                         duration = 0.5 seconds
                          chicken set color to
                       Else
                          If (randomNum = 9)
                             chicken set color to
                                                        duration = 0.5 seconds
                          Else
                            Do Nothing
```

The abstraction I chose is my method "setrandomcolor." This method uses math to set a random number to each of the chickens that are used in my game. The method then uses logical if/else statements to assign different colors to the range of numbers that are given to the chickens. This abstraction helped manage the complexity of my program because it ensured that I would not have to put together the large amount of code every time that I called the method. I call this method once in the beginning of my program and then later if there are not any blue chickens left. Because of this abstraction I did not have to re-write the same ten if/else statements more than once.