CS128 Lab 7 Nested loops Spring 2022

Request a signature after completing all subtasks for task1.

Task1a - Write a non-nested for loop using the range function to produce the output (count down from 5 to 1).

```
5
4
3
2
1
```

Task1b: Write a nested for loop using the range function to produce the output.

The outer loop should loop 5 times as in task1a.

The inner loop should loop exactly 10 times, each iteration printing a single digit as shown in the expected output.

```
5555555555
4444444444
3333333333
2222222222
1111111111
```

Task1c - Adapt the code from task1b to produce the output. Instead of always looping 10 times, the inner loop should be based on the outer loop variable.

```
55555
4444
333
22
1
```

Request a signature after completing all subtasks for task1.

Task2: Recall the factorial function n! = 1*2*3*….*n

Task2a: Write a nested for loop to produce the output. Hint: There are 5 lines of output, so the outer loop should loop 5 times. The number of times the inner loop occurs depends on which line of output is being generated (loop once on 1st line, loop twice on 2nd line, etc)

```
1*
1*2*
1*2*3*
1*2*3*4*
1*2*3*4*5*
```

Task2b - Adapt the code from task2a to produce the output (don't print * after last digit) HINT: Add a conditional inside the loop to test whether to print * or not.

```
1
1*2
1*2*3
1*2*3*4
1*2*3*4*5
```

Task2c -Adapt the code from task2b to show the formula for the factorial function.

```
1!  =  1
2!  =  1*2
3!  =  1*2*3
4!  =  1*2*3*4
5!  =  1*2*3*4*5
```

Task2d -Adapt the code from task2c to show the formula and product for the factorial function.

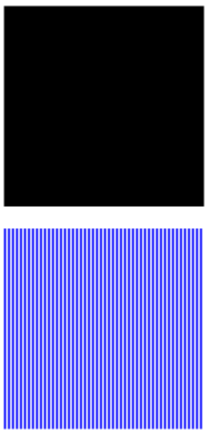
```
1!  =  1  =  1
2!  =  1*2  =  2
3!  =  1*2*3  =  6
4!  =  1*2*3*4  =  24
5!  =  1*2*3*4*5  =  120
```

Request a signature after completing all subtasks for task2.

Task3

Run the code for task3, which produces a 100x100 image with black pixels:

Add a nested for loop to set the color of pixels in even columns to blue, and pixels in odd columns white (rgb all 255).



Request a signature for task3.