ICS3U/Culminating Project (10% of final mark)

- Choose an artistic piece that you will recreate using *at least* `ellipse/circle`, `rect`, `line, triangle` as your shapes. You can also create a game.
- Using an IPO Chart, plan out how the user can interact with your drawing/game (this will help you figure out where/how you'll be using *input*, *variables*, keyboard input, mouse input, and `if` statements). (IPO example video here, website showing an example here)
- *looping structures* (`for` or `while`).
- Multiple looping structures (`for` or `while`) must be used.
- Create the planned program.

Task Criteria

Submit first (through Google Classroom / Brightspace):

- Find an artistic image you plan to replicate. (or think of a game to create)
- Create an IPO chart for your program
- Submit a link to or copy of image and your IPO chart (Due June 3rd)
- Create your program using the following:
    - Documentation (Comments)
    - Input (using mouse and keyboard commands) and Output (your drawing)
        - include a comment on what it is being used for at the location you are using the button/key
    - Variables (built in and custom)
    - Conditional statements (including `if`, `elif`, `else`, `and`, `or`, `<`, `>`, etc.) must be used.
    - For loops and while loops must be used
    - You must have at least 2 user defined functions that assist your code
    - You must use all data types discussed in class (int, float, boolean, string, list, dictionary)
    - You must use the math and random library
    - String formatting (look up the p.text() function to display words on the screen)

Success Criteria for ***Plan, write, and maintain simple programs***	**Look Fors**
I can use variables, expressions, and assignment statements to store and manipulate numbers and text in a program	* variables used have purpose, * variables are given appropriate values, * variables are modified over time, * variables are used more than once, * variables or constants used in if statement evaluations, * variety of data types used as variables
I can write a program that includes input (keyboard and mouse) and output (shown on screen)	* receive keyboard input, * keyboard input is dissimilar to tasks, * mouse input used, * mouse input is dissimilar to tasks, * output is dissimilar to tasks
I can write a program that includes a decision structure for two or more choices (if statements)	* if statements are properly formatted, * if statement blocks include `else if` when appropriate, * if statements are separated into different blocks (instead of `elif`) when appropriate, * use of `else` statements as necessary, * used a variety of operators (i.e. not just `==`)

I can write clear and maintainable internal documentation to a specific set of standards (header, comments)	* clear, descriptive header, * header follows provided template, * comments exist above blocks of code, * comments are descriptive and easy to understand, * comments are appropriate to the block of code, * comments are *not* on every line
I can write clear and maintainable code using proper programming standards (constant and variable names, indenting)	* variable names follow naming conventions, * variable naming convention chosen is consistently used throughout program, * variable names are descriptive to what they do, * indenting is completed per industry standards
I can write a program that includes looping structures	* correct formatting of loops, * able to use multiple loops for different areas of the sketch, * used appropriately named variables for loop
I can use functions to store repeatable chunks of code.	* function names are useful * functions have a distinct purpose * functions are used multiple times
I can use proper string formatting and incorporate external libraries in my solution	* useful string formatting * string formatting that follows examples from class * proper use of the random library * proper use of the math library

I can use the culminating time efficiently to work towards a complete and finalized product	*Working on the culminating daily *Indicate early if you plan you plan to miss a day

Task Criteria

Submit first (through Google Classroom / Brightspace):

- Find an artistic image you plan to replicate. (or think of a game to create)
- Create an IPO chart for your program
- Submit your IPO chart
- Create your program using the following:
    - Documentation (Comments)
    - Input (using mouse and keyboard commands) and Output (your drawing)
        - include a comment on what it is being used for at the location you are using the button/key
    - Variables (built-in and custom)
    - Conditional statements (including `if`, `else if`, `else`, `and`, `or`, `<`, `>`, etc.) must be used.
    - For loops and while loops must be used
    - You must have at least 2 user-defined functions that assist your code
    - You must use all data types discussed in class (int, float, boolean, string, list, dictionary)
    - You must use the math and random library
    - String formatting (look up the text() function to display words on the screen)