Instructions

Although there are two questions for the first assignment, this specification describes only the first question. For this question you will be submitting your solution as a single file containing source code written in Python 3. This file should NOT be compressed into a "zip" file (since it is only one file), and you will submit this file using cuLearn.

- ***The Python source file (i.e., the .py file) for Question 1 (of 2) must be named "XXXXXXXXX-a1q1.py", where XXXXXXXXX is your 9-digit student number. If you do not name your file correctly the teaching assistants will be unable to mark it.***
- ***The due date for Question 1 (of 2) is September 24, 2016, by 11:30pm.***

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Late assignments will be accepted for 48 hours after the deadline, but the penalty for submitting a late assignment is a loss of 2.0% per hour.

♦

You are expected to demonstrate good programming practices at all times (e.g., choosing descriptive variable names, provide comments in your code, etc.) and your code will be penalized if it is poorly written.

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You are expected to do the necessary preparatory work (e.g., devising an algorithm) before you begin coding. Whenever appropriate, you will be asked to present either pseudocode or a flowchart before you will receive any assistance from the instructor or a teaching assistant.

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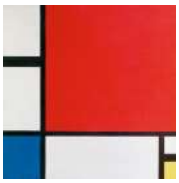
This assignment is uniquely generated; every student in the class is required to complete a slightly different version of this assignment. To ensure that each unique assignment shares the same level of difficulty, a unique assignment generator (and supporting files) has been made available on cuLearn.

To receive the assignment instructions that are specific to you, download the "unique-assignment-generator-for-A1.zip" file from cuLearn. Once you have extracted the contents to your working folder, use the command prompt to run the "generator-for-A1.py" program and then enter and confirm your student number.

Question 1 (of 2)

When you ran the unique assignment generator for this assignment, the program showed you a small image in the SimpleGraphics window and as a separate file "your-assigned-image.gif". For the first question of this assignment you will create a program that will use the SimpleGraphics library to reproduce this image. Your facsimile must use the same colours and be exactly the same size (i.e., 100 pixels wide and 50 pixels high). Ensure that you have completely read "Tutorial 1: Drawing with the SimpleGraphics Library before attempting this question.

You have already seen an example of this activity in class during the "Introduction to Python" lecture at the beginning of the second week, in which we wrote a Python program to reproduce "Composition II in Red, Blue, and Yellow" by Piet Mondrian using SimpleGraphics.



Your program must import and use functions from the SimpleGraphics library, and you are not permitted to import anything. Please also note that your program must not "pause" its execution or interact with the user in any way (e.g., by calling `input`). Your program is restricted to the following functions - you may not use any functions other than the following:

`line`	`curve`	`arc`
`rect`	`ellipse`	`polygon`
`setColor`	`setOutline`	`setFill`

If you wish to match the colours in your image exactly, open the "your-assigned-image.gif" into a simple drawing program like Paint (or take a screenshot of the SimpleGraphics window with the "print screen" key). You can then use a "color picker" or "eyedropper" tool to click on the colour you would like to match and then press "edit colors" to see the red, green, and blue values of with that colour. This is an optional activity but you should attempt to make your reproduction as accurate as possible.

Please note that your display settings might be configured to display images larger than they actually are, so you must ensure that your reproduction is 100 pixels wide and 50 pixels high.

Alternatively, please note that you are permitted to complete your image reproduction using grayscale (i.e., a monochrome palette ranging from white to black, including several shades of gray). You can easily acquire the grayscale version of your assigned image by opening the file "your-assigned-image.gif" in Microsoft Word and reducing the "color saturation" (under the "format" menu in "picture tools") to 0%. If you take this approach please note that you are still expected to match the correct shades of gray as closely as possible.