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Specification for Assignment 1 of 6

Your submission for this assignment **must include your full name** (as it appears on cuLearn) and your nine-digit **student number as a comment at the top of every source file you submit**.

Your submission for this assignment must be a **single source file** with a **file name of either 'comp1405\_f19\_#####\_a1.py' or 'comp1005\_f19\_#####\_a1.py'** (with the number signs replaced by your nine-digit student number). It **must also be written** using the **Python 3** programming language, and **must run on the official virtual machine**.

***Do not compress your submission into a "zip" file.***

***Late assignments will not be accepted and will receive a mark of 0.***

***Submissions that crash*** (i.e., terminate with an error) on execution will **receive a mark of 0**.

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***The due date for this assignment is Saturday, September 21, 2019, by 11:00pm.***

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For this assignment, you will design an algorithm for drawing a cartoon house and then you will create a Python 3 program that implements your algorithm using only the pygame library. The requirements are detailed on the following page, but as a clarifying example you may consider the image included below, which was created using only polygons, rectangles, and circles.



Do not attempt reproduce the cartoon included above. Your cartoon must be original (i.e., it must have been created by you and you alone) and it must meet the requirements detailed on the following page.

Although you will not submit your rough work, if you visit the instructor or a teaching assistant you will be expected to present an original image of what you are planning to draw before you will receive any assistance with the syntax. Consider using graph paper for this.

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Specification for Assignment 1 of 6

Your cartoon must meet the following requirements:

- a) it must import the pygame library (and only the pygame library)
- b) it must be a depiction that includes at least<sup>1</sup> a house, a tree, a door, and a window
- c) it must be drawn within a pygame window of size 500 × 500
- d) it must remain on the screen for 3 seconds
- e) it must be saved to a file named "house\_#####.bmp"<sup>2</sup>
- f) it must use the fill function to change the background colour
- g) it must call the pygame.draw.polygon function at least three times
- h) it must call the pygame.draw.rect function at least twice
- i) it must call the pygame.draw.circle function at least once
- j) it must call the pygame.draw.ellipse function at least once
- k) it must use at least 7 different colours<sup>3</sup> from [www.computerhope.com/htmcolor.htm](http://www.computerhope.com/htmcolor.htm)<sup>4</sup>
- l) the name<sup>5</sup> and RGB values of each colour **must appear as comments** in your code
- m) every drawn element (i.e., rect, circle, etc.) must be accompanied by a comment

<sup>1</sup> it may include additional elements if you wish

<sup>2</sup> replace the number signs with your nine-digit student number

<sup>3</sup> including the background colour (i.e., background colour plus six other colours)

<sup>4</sup> each colour you use must appear in the list on that website

<sup>5</sup> the name of each of the colours must match the name that appears on the site provided

In the interest of clarity, please understand that **you will be uploading ONLY a single file containing a program written in Python 3 (named 'comp1405\_f19\_#####\_a1.py')** and **NOT** an image file named "house\_#####.bmp". Your Python program must **CREATE** the image file when the teaching assistant runs the program in order to mark it, but you do not submit an image file for this assignment.

You will need to **SEARCH** the pygame documentation **YOURSELF** to determine how to save an image file. You will also need to review the following pygame library documentation for details about the requirements of each of these functions you will require:

<https://www.pygame.org/docs/ref/display.html>

<https://www.pygame.org/docs/ref/surface.html>

<https://www.pygame.org/docs/ref/rect.html>

<https://www.pygame.org/docs/ref/draw.html>

<https://www.pygame.org/docs/ref/time.html>

<https://www.pygame.org/docs/ref/image.html>

This program (along with any other program submitted in this class) must be a completely original work, authored by you and you alone, prepared for this offering (i.e., Fall 2019) of COMP1005/COMP1405. Do not discuss this assignment with anyone except the instructor or the teaching assistants, and do not copy images or source code samples from the internet or any other source.