Assignment 1.2

Variables, Input, Calculations, Conditions, and Turtle

SUBMISSION REQUIREMENTS: Submit a single zip file called **assignment1.2.zip**. It must contain all of your question code. Information regarding deductions for late submissions, invalid submissions, and grade disputes are available on the cuLearn assignment submission page.

This assignment has **20 marks**.
A full marking scheme is available on the cuLearn submission page.
The marking scheme may include test cases that your code must work with.
Bonus marks will not exceed 100% but will be applied both parts of the assignment.

NOTE: This is part one of a two part assignment totalling 50 marks. Your final grade will include these marks (0-20) plus the marks of A1.1 (0-30). Invalid submission penalties will only be applied once. Late submission penalties and deadline cutoffs **still apply to both assignments** (eg. if you submit A1.1 two hours late, A1.1 will receive a 5% reduction (5% of 30 marks is 1.5 marks); if you submit A1.2 *four* hours late, A1.2 will receive a 10% reduction (10% of 20 marks is 2 marks) - thus you will receive a total of 3.5 marks off of the assignment.

Problem 1 of 2 (Guessing Game, 10 marks)

Marking Scheme: Refer to assignment submission page
Submission: Save your file as **a1q1.py** and add it to the zip submission.
Reading Ahead: **1 bonus mark** for learning how to use a **for loop** to help accomplish the bottom question

It's the guessing game! In Part 1, you wrote the pseudocode and flowchart for a simple guessing game. Here, you'll be making a modified version of that game in Python that asks them for a max number, asks them for a number, and prints responses proportional to how far off they were. It will ask 5 times before quitting. You can use copy-paste for multiple guesses and the **quit()** function to end the program once they have guessed correctly.

Your program will ask the user for a maximum number to guess. It will then generate a random number between **one** and **the maximum guess** and prompt the user for a guess. It should then calculate the **difference** between the guess and the actual value - this should use the absolute value, so no negatives. If the difference is **over 50%** of the maximum value, it should tell the user "WAY TOO HIGH!" or "WAY TOO LOW!". If it is **under 10%**, it should tell them "Slightly high!" or "Slightly low!", otherwise it should report "Too High" or "Too Low".

The user should be prompted **five times** before giving up. When it ends, it should tell them what the number actually was.

- To repeat the prompts, you do not need to use loops, you can just copy paste the code. **Try to put a comment over each one** saying which guess it is.
- Topics you may want to explore:
    - Absolute values, when calculating the difference (Python link)
    - Python's math module
    - Python's random module
    - For Loop Bonus Marks: Chapters 4.4-4.7 (including the range function)

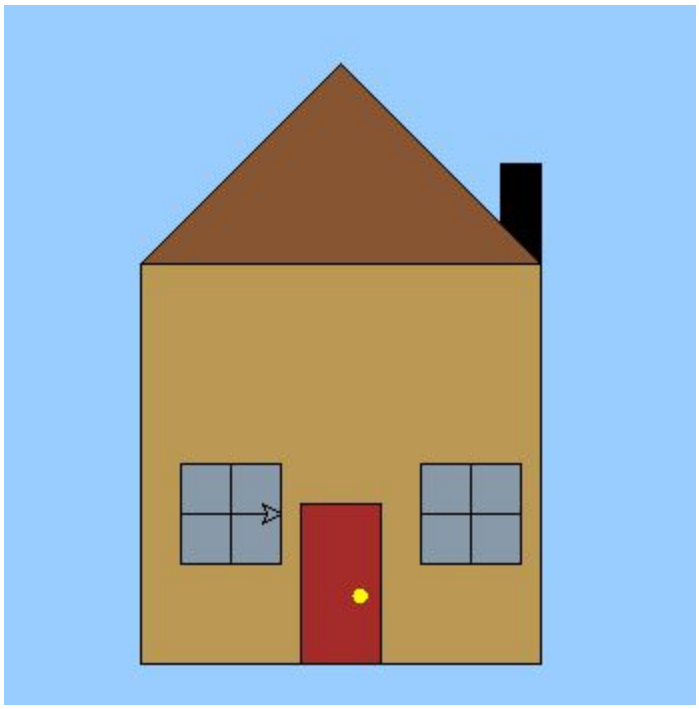
Problem 2 of 2 (Drawing a Picture, 10 marks)

Marking Scheme: Refer to assignment submission page
Submission: Save your file as **a1q2.py** and add it to the zip submission.
Bonus: **1 bonus mark** for modifying the picture using user input somehow
Reading Ahead: **1 bonus mark** for learning how to using **your own functions** to help draw shapes
Reading Ahead: **1 bonus mark** for using a loop to draw repeating patterns (stars, grass, etc.)

Now you're going to use Turtle to draw a simple picture. It **does not need to be a house!** Draw anything, be creative.

For full marks:

- You should only use turtle graphics (and math, if necessary)
- Use at least **four different colours**
- Include a **background colour**
- Use **at least one circle**
- Include at least **four distinct shapes (**rectangle, triangle, square, circle)
- No abstract art today; make sure it's something recognizable



Recap

Your zip file should contain your **a1q1.py** and **a1q2.py**, files.
Submit your **assignment1.2.zip** file to cuLearn.
Make sure you download the zip after submitting and verify the file contents.
Late submissions will receive a 2.5%/hour deduction up to an 8 hour cut-off period

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