Programming in Python: Section 2 Practice

This practice will review topics from section 2 including logic and conditions, loops, and functions.

#1. Guess the Number Extension

Expand on your guess the number game by implementing **AT LEAST 2** of the optional challenges. You are free to implement all of them if you want more practice. The challenges are listed in order of difficulty to implement.

- Define a **play_again()** function that asks the user if they want to play again once they guess the number. The game should restart with a new secret number if they say yes, otherwise the game will end.
- Define a function called **validate_input()** that verifies the user input. What if users enter something other than a number? What if they enter a number that is not in the specified range? The Python method **.isdigit()** checks if the input is a whole number. You can find more information on string methods here.
- Add a limit to the number of guesses the user has. Once they reach the max number of guesses, the game should end and reveal the secret number to the user. After each guess, you should show the user how many guesses they have left.
- Do not allow the user to guess the same number twice in a game. If they do, display a message that they have already guessed that number and prompt them again. This should not decrease the number of guesses they have.
- Add a feature that allows the user to quit the game at any time by entering "quit". The game should ask "Are you sure you want to quit?" and end the game if yes.

#2: Trip Planner

You will create a program that helps users price an upcoming trip. The starter code for this problem is in **trip_planner_starter.py**.

- Write a function **hotel_cost()** which takes an int "nights". The hotel will cost $140 per night. If you stay more than 5 nights, you will get 10% off your total cost. The function should return the cost of the hotel for the number of nights given.

- Write a function **plane_cost()** which takes a string "city". The function should return the price of a round trip ticket based on the city inputted. Assume the following cities are the only valid cities, and that the user will enter a valid city:
    - Charlotte: $183
    - New York City: $362
    - Los Angeles: $320
    - Tampa: $252
    - Philadelphia: $260
    - Boston: $304
    - Houston: $248
    - Seattle: $191
- Define a function called **rental_cost()** that calculates the cost of a rental car given an int "days". The car costs $80 the first day, then $40 for every consecutive day you rent it. If you rent the car for 3 or more days, you will get $30 off your total price. If you rent it for 7 or more days, you get $50 off your total price. You cannot get both of these discounts.
- Finally, define a function called **calculate_trip_cost()** which takes a string "city", an int "days", and an int "nights". This function should make use of the previous three functions and return the total cost of the trip.

Your program should ask the user to enter the city they are traveling to, the number of days they will spend there, and the number of nights they are staying, and print the total cost of their trip. Test cases are provided in the starter code file.