**In a Python file write lines of code to do the following:**

**2a) In the console, take integers from the user indefinitely, appending each number to a previously declared empty list. Write the loop such that the input *'x'* will break the loop, allowing the program to advance.**

**2b) Print the list back to the user.**

**2c) Print the data type of the list to the user.**

**2d) Print the length of the list to the user.**

**2e) Print the smallest item in the list to the user. Then print the largest item in the list.**

**2f) Print the sum of all the items in the list.**

**2g) Print the average of all the items in the list.**

**2h) Prompt the user for a number. Check if the number is in the list or not. If it is, print True. If it's not, print False.**

**2i) Sort the list, and then print the sorted list.**

**2j) Check if the values in the sorted list increase one at a time. If every value is one larger than the previous, print True. Else, print False.**

**2k) Declare an empty dictionary, then iterate over your list. For each number, check if the number is already in the dictionary as a key. If it is, increment its value by 1. If it is not, add it to the dictionary with a value of 1. With that, you just counted the frequency of each number in the list! Print the entire dictionary, and print the type of the dictionary.**