

Exercises_wk4

Q1: Define a variable ('text') that contains the following text: 'According to the Fortune 1000, -Walmart, -Amazon and -ExxonMobil are the three largest companies in the United States by revenue.', and print it. Next, use the lower(), strip() and split() methods to define a new variable ('text_adj') that consists of a list of all the words from the text, and print it. Carefully examine what happens! Finally, use a for loop, the append() method and the strip() method to clean the resulting list of the words from the text (i.e., try to remove the - signs, commas and dots).

NOTE: A dictionary is a collection of unordered data, which is stored in key-value pairs. Dictionaries are mutable.

Q2: Write a program that asks the user to input his/her name and age. Then create a dictionary with those key-value pairs, and print both the dictionary and its length.

Q3: Create a dictionary ('firms') with the following key-value pair: 'retailers': ['Walmart', 'Amazon', 'Costco']. Then print the retailer at index position 1 in the list within the 'retailers' key ('Amazon') in two different ways: (1) by first accessing the key and then the index, and (2) using the get() method. Also print the length of this dictionary.

Q4: Create a dictionary ('firms') with the following key-value pair: 'retailers': ['Walmart', 'Amazon', 'Costco']. Then use a for loop to print all the retailers from the list within the 'retailers' key on a separate line.

Q5: Write a program that counts how many times each letter appears in the word 'accounting', and save the results as key-value pairs in a dictionary (i.e., the letters are the keys and the counts are the values: 'a': 1, 'c': 2, 'o': 1, etc.). (Hint: Use a for loop and conditionals).

Q6: Rewrite the program of the previous exercise in such a way that it counts how many times each word (as opposed to each letter) appears in the following sentence: "Walmart, Amazon and ExxonMobil are the three largest companies in the United States by revenue". (Hint: You will need the split() method.)

Q7: Write a program that first prints each key-value pair from the dictionary you created in the previous exercise on a separate line (Hint: Use a for loop, the items() method and the format() method), then prints an empty line (Hint: Use the '\n' escape character), and finally prints only the key-value pairs from the dictionary with a value above 1 (Hint: Use a for loop, the items() method and the format() method again, but add a conditional.)

NOTE: A tuple is identical to a list, except it is immutable.

Q8: Create a tuple ('tuple1') that contains the following values: 'Amazon', [2019, 2020], 20.5, 798000, and print it. Then print the length of 'tuple1'.

Q9: Use indexing and slicing to respectively extract: (1) the element at index position 0 of the tuple ('Amazon'), (2) the element at index position 1 of the tuple ('[2019, 2020]'), (3) the element at index position 1 of the nested list ('2020'), and (4) the slice from the element at index position 2 to the end of the tuple ('(20.5, 798000)'), and print these elements and slices. (Hint: Be aware that Python uses zero-based indexing.)

Q10: Create a dictionary with the following key-value pairs: 'Walmart': 2200000, 'Amazon': 798000, 'ExxonMobil': 74900. Then create a list of tuples ('list1') where each tuple is (key, value), and print it (Hint: Use a for loop, the items() method and the append() method). Next, sort this list of tuples, and print it (Hint: Use the sort() method).