Questions on lists, set, tuples and dictionaries

1. Write a python program that will ask you to input a list of integers on a single line and will print the sum of all numbers present in the list: [1 Mark]

Test cases:

Input	Output	Percentage
Input Required List[1,2,3,4]	10	25% Visible
Input Required List[-10,10,0,1]	1	25% Visible
Input Required List[1,2,3,4,5]	15	50% (Hidden)

2. [1 Mark]

Write a python program that will ask you to input a list of integers on a single line and will print a new list containing squares of all odd numbers present in the input list maintaining the order of arrangement of elements in the input list

Test Case:

Input	Output	Percentage
Input Required List[1,2,3,4,5]	[1, 9, 25]	25% Visible
Input Required List[-10,0,10,1,9,2]	[1, 81]	25% Visible
Input Required List[1,2,3,5]	[1, 9, 25]	50% (Hidden)

3. Write a Python program that prompts the user to enter a list of strings and a tuple of integers. The program should iterate over the list and append to a new list the result of concatenating each string with its corresponding integer from the tuple (repeating the tuple elements if necessary). Input:

Test Cases:

Input	Output	Weightage	Visibility
Enter a list of strings separated by spaces: 1 2 3 Enter a tuple of integers separated by spaces: 4 5 6	['14', '25', '36']	25%	Visible
Enter a list of strings separated by	['dog4', 'cat5']	25%	Visible

spaces: dog cat Enter a tuple of integers separated by spaces: 4 5 Enter a list of strings separated by spaces: x y z Enter a tuple of integers separated by spaces: 7 8	['x7', 'y8', 'z7']	50%	Hidden

4. Write a Python program that prompts the user to enter a list of integers. The program should use list comprehension to create a list of tuples, where each tuple contains an integer and its square if the integer is even; otherwise, it should contain the integer and its cube. [1 Mark]

Test Cases:

Input	Output	Weightage	Visibility
Enter a list of integers separated by spaces: 1 2 3 4	[(1, 1), (2, 4), (3, 27), (4, 16)]	25%	Visible
Enter a list of integers separated by spaces: 5 6 7	[(5, 125), (6, 36), (7, 343)]	25%	Visible
Enter a list of integers separated by spaces: 10 11 12	[(10, 100), (11, 1331), (12, 144)]	50%	Hidden

5. [1 Mark]

Write a Python program that prompts the user to enter a set of integers. The program should allow the user to:

1. Add a new integer to the set.

2. Remove an integer from the set if it exists.

Check if a specific integer is present in the set.

Test Cases:

Input	Output	Weightage	Visibility
Enter a set of integers separated by spaces: 1 2 3 Enter an integer to add to the set: 4 Enter an integer to remove from the set: 1 Enter an integer to check for membership: 2	{2, 3, 4} Is 2 present in the set? Yes	25%	Visible
Enter a set of integers separated by spaces: 6 7 8 Enter an integer to add to the set: 9 Enter an integer to remove from the set: 6 Enter an integer to check for membership: 10	{8, 9, 7} Is 10 present in the set? No	25%	Visible
Enter a set of integers separated by spaces: 11 13 100 99 Enter an integer to add to the set: 98 Enter an integer to remove from the set: 0 Enter an integer to check for membership: 12	{98, 99, 100, 11, 13} Is 12 present in the set? No	50%	Hidden

6. Write a Python program that prompts the user to enter a dictionary where each key is a string and each value is a list of integers. The program should use dictionary comprehension to create a new dictionary where each key maps to the sum of the integers in the list. [1 Mark]

Test Cases:

Input	Output	Weightage	Visibility
Enter number of dictionary items: 1	{'x': 6}	25%	Visible

Enter a string key: x Enter a list of integers separated by spaces: 1 2 3 Enter number of dictionary items: 2 Enter a string key: x Enter a list of integers separated by spaces: 1 2 Enter a string key: y Enter a list of integers separated by spaces: 3 4	{'x': 3, 'y': 7}	25%	Visible
Enter number of dictionary items: 2 Enter a string key: x Enter a list of integers separated by spaces: 12 10 Enter a string key: y Enter a list of integers separated by spaces: 13 15	{'x': 22, 'y': 28}	50%	Hidden

7. [1 Mark]

Write a Python program that prompts the user to enter a set of integers. The program should use a function to filter out even numbers and return a set of these even numbers.

Test Cases:

Input	Output	Weightage	Visibility
Enter a set of integers separated by spaces: 12 13 15	{12}	25%	Visible
Enter a set of integers separated by spaces: 11 10 12 13	{10, 12}	25%	Visible
Enter a set of integers separated by spaces: 1 2 3 4	{2, 4}	50%	Hidden

8. [1 Marks]

Write a Python Program that will ask to input a list from the keyboard and will generate a set consisting of string values present in the input list

Test Cases:

Input	Output	Weightage	Visibility
Input the required list["ABC",123,12.5,"DEF","ABC"]	{'DEF', 'ABC'}	25%	Visible

Input the required list["1",2,3.5,"1"]	{'1'}	25%	Visible
Input the required list["12","12",13,14,"ABC"]	{'12', 'ABC'}	50%	Hidden

9. DIY (Do It Yourself)

Write a python program that will ask you to input a list of integers on a single line and will print the multiplication of all numbers present in the list: [1 Mark]

Test case:

Input	Output	Percentage
Input Required List[1,2,3,4]	24	25% Visible
Input Required List[-10,10,0,1]	0	25% Visible
Input Required List[1,2,3,4,5]	120	50% (Hidden)

10. [1 Mark]

Accessing Elements from Lists and Tuples (Easy Difficulty) Objective: Access specific elements from lists and tuples based on user input.

Problem: Write a Python program that prompts the user to enter a list of numbers and a tuple of characters. The program should then print the first element from the list and the second element from the tuple.

Test cases:

Input	Output	Weightage	Visibility
Enter a list of numbers separated by spaces: 1 2 3 4 Enter a tuple of characters separated by spaces: a b c	1 b	25%	Visible
Enter a list of numbers separated by spaces: 10 20 30 Enter a tuple of characters separated by spaces: x y z	10 y	25%	Visible
Enter a list of numbers separated by spaces: 5 6 7 8	5 beta	50%	Hidden

Enter a tuple of characters separated by spaces: alpha beta gamma

11. DIY

[1 Mark]

Write a Python program that prompts the user to enter a list of strings and a tuple of integers. The program should iterate over the list and append to a new list the result of concatenating each string with its corresponding integer from the tuple (repeating the list elements if necessary). Input:

Test cases:

Input	Output	Weightage	Visibility
Enter a list of strings separated by spaces: 1 2 3 Enter a tuple of integers separated by spaces: 4 5 6	['14', '25', '36']	25%	Visible
Enter a list of strings separated by spaces: dog cat Enter a tuple of integers separated by spaces: 4 5	['dog4', 'cat5']	25%	Visible
Enter a list of strings separated by spaces: x y Enter a tuple of integers separated by spaces: 7 8 9	['x7', 'y8', 'x9']	50%	Hidden

12. DIY

Write a Python program that prompts the user to enter a list of integers. The program should use list comprehension to create a list of tuples, where each tuple contains an integer and the integer itself if the integer is even; otherwise, it should contain the integer and its cube. [1 Mark]

Test case:

Input	Output	Weightage	Visibility

Enter a list of integers separated by spaces: 1 2 3 4	[(1, 1), (2, 2), (3, 27), (4, 4)]	25%	Visible
Enter a list of integers separated by spaces: 5 6 7	[(5, 125), (6, 6), (7, 343)]	25%	Visible
Enter a list of integers separated by spaces: 10 11 12	[(10, 100), (11, 11), (12, 144)]	50%	Hidden

13. [1 Mark]

Basic Set Operations (Easy Difficulty)

Objective: Perform basic set operations: addition, removal, and checking for membership. Problem: Write a Python program that prompts the user to enter a set of integers. The program should allow the user to:

1. Add the average of all current set's integers to the set.
2. Remove the average of two integers from the set if it exists.
3. Check if the average of a specific integer and another value is present in the set.

Test cases:

Test Case No.	Input	Output	Weightage	Visibility
1	Enter a set of integers separated by spaces:10 20 30 40 Enter the first integer to average for removal: 20	{40, 10, 20, 30} Is the average of 10 and 40 present in the set? No	35%	Visible

	Enter the second integer to average for removal: 30 Enter an integer to check its average with another:10 Enter the second value:40			
2	Enter a set of integers separated by spaces:5 15 25 35	{35, 5, 15, 20} Is the average of 5 and 25 present in the set? Yes	35%	Visible
	Enter the first integer to average for removal: 15 Enter the second integer to average for removal: 35 Enter an integer to check its average with another:5 Enter the second value:25			
3.	Enter a set of integers separated by spaces:100 200 300 400	{100, 200, 400, 250} Is the average of 100 and 300 present in the set? Yes	30%	Hidden
	Enter the first integer to average for removal: 200			

Enter the second integer to average for removal:400

Enter an integer to check its average with another:100

Enter the second value:300

14. [1 Mark]

Basic Dictionary Operations (Easy Difficulty)

Objective: Perform basic dictionary operations: addition, modification, and deletion of key- value pairs.

Problem: Write a Python program that prompts the user to enter a dictionary where keys are strings and values are integers. The program should:

1. Add a new key-value pair to the dictionary.
2. Reverse the order of the keys.
3. Delete a key-value pair if it exists.

Test cases:

Test Case No.	Input	Output	Weightage	Visibility
1	Enter number of key-value pairs: 3 Enter a key (string): cat Enter a value (integer): 1 Enter a key (string): dog Enter a value (integer): 2 Enter a key (string):bird Enter a value (integer):3 Enter a new key to add:fish Enter a value for the new key:4 Enter a key to delete: dog	{'tac': 1, 'drib': 3, 'hsif': 4}	25%	Visible

2	Enter number of key-value pairs: 2 Enter a key (string): apple Enter a value (integer): 5 Enter a key (string): orange Enter a value (integer): 7 Enter a key (string): banana Enter a value for the new key: 9 Enter a key to delete: apple	{'egnaro': 7, 'ananab': 9}	25%	Visible
3.	Enter number of key-value pairs: 1 Enter a key (string): school Enter a value (integer): 10 Enter a new key to add: college Enter a value for the new key: 20 Enter a key to delete: school	{'egelloc': 20}	50%	Hidden

15. DIY

[1 Mark]

Write a Python program that prompts the user to enter a set of integers. The program should use a function to filter out odd numbers and return a set of these odd numbers.

Test cases:

Input	Output	Weightage	Visibility
Enter a set of integers separated by spaces: 12 13 15	{13,15}	25%	Visible
Enter a set of integers separated by spaces: 11 10 12 13	{11, 13}	25%	Visible
Enter a set of integers separated by spaces: 1 2 3 4	{1, 3}	50%	Hidden

16. [1 Marks]

Set Operations: Union, Intersection, and Difference (Moderate Difficulty) Objective: Perform set operations: union, intersection, and difference.

Problem: Write a Python program that prompts the user to enter two sets of integers. The program should compute and print the number of common elements (intersection) and the number of unique elements in both sets combined.

Test cases:

Test Case No.	Input	Output	Weightage	Visibility
1	Enter the first set of integers separated by spaces: 1 2 3 4 5	{2}	35%	Visible
	Enter the second set of integers separated by spaces:4 5 6 7 8	{8}		
2	Enter the first set of integers separated by spaces: 10 20 30	{0}	35%	Visible
	Enter the second set of integers separated by spaces:40 50 60	{6}		

3.	Enter the first set of integers separated by spaces: 5 10 15 Enter the second set of integers separated by spaces:5 10 20 25	{2} {5}	30%	Hidden

17: DIY

Problem: Write a Python program that prompts the user to enter a list of numbers and a tuple of characters. The program should then print the second element from the list and the third element from the tuple.

Test Cases:

Input	Output	Weightage	Visibility
Enter a list of numbers separated by spaces: 1 2 3 4 Enter a tuple of characters separated by spaces: a b c	2 c	25%	Visible
Enter a list of numbers separated by spaces: 10 20 30 Enter a tuple of characters separated by spaces: x y z	20 z	25%	Visible
Enter a list of numbers separated by spaces: 5 6 7 8 Enter a tuple of characters separated by spaces: alpha beta gamma	6 gamma	50%	Hidden

18: Modifying Lists and Using Tuples in Dictionaries (Easy Difficulty) Objective: Modify elements in a list and use tuples as dictionary keys based on user input.

Problem: Write a Python program that prompts the user to enter a list of integers and a tuple of two strings. The program should append the sum of the list elements to the list and create a dictionary entry where the tuple is the key and the sum is the value.

Test Cases:

Input	Output	Weightage	Visibility
Enter a list of integers separated by spaces: 1 2 3	[1, 2, 3, 6] {('a', 'b'): 6}	25%	Visible
Enter two strings separated by a space: a b Enter a list of integers separated by spaces: 5 5 5	[5, 5, 5, 15] {('x', 'y'): 15}	25%	Visible
Enter two strings separated by a space: x y Enter a list of integers separated by spaces: 10 20 30	[10, 20, 30, 60] {('name1', 'name2'): 60}	50%	Hidden
Enter two strings separated by a space: name1 name2			

19: DIY

Problem: Write a python program that will ask you to input a list of integers on a single line and will print the max of all numbers present in the list: [1 Mark]

Test Cases:

Input	Output	Percentage
Input Required List[1,2,3,4]	4	25% Visible
Input Required List[-10,10,0,1]	10	25% Visible

Input Required List[1,2,3,4,5]	5	50% (Hidden)

20. DIY

Write a python program that will ask you to input a list of integers on a single line and will print a new list containing cubes of all odd numbers present in the input list maintaining the order of arrangement of elements in the input list

Test Cases:

Input	Output	Percentage
Input Required List[1,2,3,4,5]	[1, 27, 125]	25% Visible
Input Required List[-10,0,10,1,9,2]	[1, 729]	25% Visible
Input Required List[1,2,3,5]	[1, 27, 125]	50% (Hidden)

21. DIY

Problem: Write a Python program that prompts the user to enter a set of integers. The program should allow the user to:

1. Add the average of all current set's integers to the set.
2. Remove the average of two integers from the set if it exists.
3. Check if the average of a specific integer and another value is present in the set.

Test Case No.	Input	Output	Weightage	Visibility
1	Enter a set of integers separated by spaces:10 20 30 40 Enter the first integer to average for removal: 20 Enter the second integer to average for removal: 30	{40, 10, 20, 30} Is the average of 10 and 40 present in the set? No	35%	Visible

	Enter an integer to check its average with another:10 Enter the second value:40			
2	Enter a set of integers separated by spaces:5 15 25 35 Enter the first integer to average for removal: 15 Enter the second integer to average for removal: 35 Enter an integer to check its average with another:5 Enter the second value:25	{35, 5, 15, 20} Is the average of 5 and 25 present in the set? Yes	35%	Visible
3.	Enter a set of integers separated by spaces:100 200 300 400 Enter the first integer to average for removal: 200 Enter the second integer to average for removal:400	{100, 200, 400, 250} Is the average of 100 and 300 present in the set? Yes	30%	Hidden

Enter an integer to check its average with another:100

Enter the second value:300

22. DIY

Problem: Write a Python program that prompts the user to enter a dictionary where keys are strings and values are integers. The program should:

1. Add a new key-value pair to the dictionary.
2. Reverse the order of the keys.
3. Delete a key-value pair if it exists.

Test Case No.	Input	Output	Weightage	Visibility
1	Enter number of key-value pairs: 3 Enter a key (string): cat Enter a value (integer): 1 Enter a key (string): dog Enter a value (integer): 2 Enter a key (string):bird Enter a value (integer):3 Enter a new key to add:fish Enter a value for the new key:4 Enter a key to delete: dog	{'tac': 1, 'drib': 3, 'hsif': 4}	25%	Visible
2	Enter number of key-value pairs: 2 Enter a key (string): apple Enter a value (integer): 5 Enter a key (string): orange Enter a value (integer): 7	{'egnaro': 7, 'ananab': 9}	25%	Visible

	Enter a key (string): banana Enter a value for the new key: 9 Enter a key to delete: apple			
3.	Enter number of key-value pairs: 1 Enter a key (string): school Enter a value (integer): 10 Enter a new key to add: college Enter a value for the new key: 20 Enter a key to delete: school	{'egelloc': 20}	50%	Hidden

23: DIY

Problem: Write a Python program that prompts the user to enter two sets of integers. The program should compute and print the common elements, number of common elements (intersection) and the number of unique elements in both sets combined.

Test Cases

Test Case No.	Input	Output	Weightage	Visibility
1	Enter the first set of integers separated by spaces: 1 2 3 4 5 Enter the second set of integers separated by spaces:4 5 6 7 8	{4,5} {2} {8}	35%	Visible

2	Enter the first set of integers separated by spaces: 10 20 30 Enter the second set of integers separated by spaces:40 50 60	{} {0} {6}	35%	Visible
3.	Enter the first set of integers separated by spaces: 5 10 15 Enter the second set of integers separated by spaces:5 10 20 25	{5,10} {2} {5}	30%	Hidden

24: Problem: Write a Python program that prompts the user to enter a set of integers. The program should use a function to filter out numbers greater than 10 and return a set of these numbers.

Case No.	Inputs	Outputs	Weightage	Visibility
1	Enter a set of integers separated by spaces:5 12 8 15 3	{12, 15}	35%	Visible
2	Enter a set of integers separated by spaces:2 7 9	set()	35%	Visible
3.	Enter a set of integers separated by spaces:20 30 5 10 50	{50, 20, 30}	30%	Hidden

25: DIY

Problem: Write a Python program that prompts the user to enter a list of strings and a tuple of integers. The program should print the first element of the list and the last element of the tuple.

Test Cases:

Input	Output	Weightage	Visibility
Enter string values separated by white space: a b c	a 3	25%	Visible

Enter int values separated by white space: 1 2 3 Enter string values separated by white space: dog cat mouse	dog 6	25%	Visible
Enter int values separated by white space: 4 5 6 Enter string values separated by white space: x y z	x 9	50%	Hidden
Enter int values separated by white space: 7 8 9			

26: DIY

Problem: Write a python program that will ask you to input a list of integers on a single line and will print the min of all numbers present in the list.

Test Cases:

Input	Output	Percentage
Input Required List: [1,2,3,4]	1	25% Visible
Input Required List: [10,-10,0,1]	0	25% Visible
Input Required List: [1,2,3,4,5]	1	50% (Hidden)

27: DIY

Problem: Write a Python program that prompts the user to enter a list of integers and a tuple of two strings. The program should append the multiplication of the list elements to the list and create a dictionary entry where the tuple is the key and the multiplication is the value.

Test Cases:

Input	Output	Weightage	Visibility
Enter a list of integers separated by spaces: 1 2 3	[1, 2, 3, 6] {('a', 'b'): 6}	25%	Visible

Enter two strings separated by space: a b Enter a list of integers separated by spaces: 5 5 5	[5, 5, 5, 125] {('x', 'y'): 125}	25%	Visible
Enter two strings separated by space: x y Enter a list of integers separated by spaces: 10 20 30	[10, 20, 30, 6000] {('name1', 'name2'): 6000}	50%	Hidden
Enter two strings separated by space: name1 name2			

28: Problem: Write a Python program that prompts the user to enter a list of tuples. Each tuple contains a string and a list of integers. The program should create a new list of tuples where each tuple contains the string and the maximum value from the list of integers.

Test Cases:

Input	Output	Weightage	Visibility
Enter the number of tuples: 2 Enter string value for tuple 1: item1 Enter space-separated integers for tuple 1: 1 2 Enter string value for tuple 2: item2	[('item1', 2), ('item2', 4)]	25%	Visible

Enter space-separated integers for tuple 2: 3 4 Enter the number of tuples: 1	[('alpha', 20)]	25%	Visible
Enter string value for tuple 1: alpha Enter space-separated integers for tuple 1: 10 20 Enter the number of tuples: 3	[('x', 8), ('y', 6), ('z', 9)]	50%	Hidden
Enter string value for tuple 1: x Enter space-separated integers for tuple 1: 7 8 Enter string value for tuple 2: y Enter space-separated integers for tuple 2: 1. 6 Enter string value for tuple 3: z Enter space-separated integers for tuple 3: 1. 9			

29: Problem: Write a Python program that prompts the user to enter a list of integers. The program should use list comprehension to create a list of tuples, where each tuple contains an integer and its multiple of 3 if the integer is odd; otherwise, it should contain the integer and its multiple of 5.

Test Cases:

Input	Output	Weightage	Visibility
Enter space-separated	[(1, 3), (2, 10), (3, 9), (4, 20)]	25%	Visible

integers: 1 2 3 4			
Enter space-separated integers: 5 6 7	[(5, 15), (6, 30), (7, 21)]	25%	Visible
Enter space-separated integers: 8 9 10	[(8, 40), (9, 27), (10, 50)]	50%	Hidden

30: Problem: Write a Python program that prompts the user to enter a list of strings and a tuple of integers. The program should sort the list of strings in ascending order and transform the tuple into a list of its squares.

Test Cases:

Input	Output	Weightage	Visibility
Enter space-separated strings: banana apple cherry Enter space-separated integers for the tuple: 1 2 3	['apple', 'banana', 'cherry'] [1, 4, 9]	25%	Visible
Enter space-separated strings: dog cat bat Enter space-separated integers for the tuple: 4 5 6	['bat', 'cat', 'dog'] [16, 25, 36]	25%	Visible
Enter space-separated strings: orange kiwi Enter space-separated integers for the tuple: 7 8	['kiwi', 'orange'] [49, 64]	50%	Hidden

31: Problem: Write a Python program that prompts the user to enter a list of dictionaries. Each dictionary contains a string key and a list of integers. The program should calculate the average of the integers for each dictionary and return a new dictionary with the original keys and the squares of calculated averages.

Test Cases:

Input	Output	Weightage	Visibility

Enter the number of dictionaries: 2 Enter string key for dictionary 1: a Enter space-separated integers for key a: 1 2 Enter string key for dictionary 2: b Enter space-separated integers for key b: 3 4	{'a': 2.25, 'b': 12.25}	25%	Visible
Enter the number of dictionaries: 1 Enter string key for dictionary 1: c Enter space-separated integers for key c: 10 20 30	{'c': 400.0}	25%	Visible
Enter the number of dictionaries: 3 Enter string key for dictionary 1: x Enter space-separated integers for key x: 7 8 Enter string key for dictionary 2: y Enter space-separated integers for key y: 1 2 3 Enter string key for dictionary 3: z Enter space-separated integers for key z: 4	{'x': 56.25, 'y': 4.0, 'z': 16.0}	50%	Hidden

Problem: Write a Python program that prompts the user to enter a list of tuples, where each tuple contains a string and a list of integers. The program should use map and reduce to compute the total sum of all integers across all tuples and the length of all strings concatenated.

Test Cases:

Input	Output	Weightage	Visibility
Enter the number of tuples:3 Enter string value for tuple 1:a Enter space-separated integers for tuple 1: 11 Enter string value for tuple 2:b Enter space-separated integers for tuple 2:21 31 Enter string value for tuple 3:c Enter space-separated integers for tuple 3: 41 51 61	216 3	25%	Visible
Enter the number of tuples:2 Enter string value for tuple 1:python Enter space-separated integers for tuple 1:10 20 Enter string value for tuple 2:programming Enter space-separated integers for tuple 2:30 40	100 17	25%	Visible
Enter the number of tuples:1 Enter string value for tuple 1:computer Enter space-separated integers for tuple 1:15 25	40 8	50%	Hidden

33: **DIY**

Problem: Write a Python program that prompts the user to enter a set of integers. The program should allow the user to:

1. Add the average of all current set's integers to the set.
2. Remove the average of two integers from the set if it exists.
3. Check if the average of a specific integer and another value is present in the set.

Test Case No.	Input	Output	Weightage	Visibility
1	Enter a set of integers separated by spaces: 10 20 30 40 Enter the first integer to average for removal: 20 Enter the second integer to average for removal: 30 Enter an integer to check its average with another: 40	{40, 10, 20, 30} Is the average of 40 and 10 present in the set?No	25%	Visible
2	Enter a set of integers separated by spaces: 5 15 25 35 Enter the first integer to average for removal: 15 Enter the second integer to average for removal: 35 Enter an integer to check its	{35, 5, 15, 20} Is the average of 5 and 25 present in the set? Yes	25%	Visible

	average with another: 5			
3.	Enter a set of integers separated by spaces: 100 200 300 400 Enter the first integer to average for removal: 200 Enter the second integer to average for removal: 400 Enter an integer to check its average with another: 100	{100, 200, 400, 250} Is the average of 100 and 300 present in the set? Yes	50%	Hidden

34: **DIY**

Problem: Write a Python program that prompts the user to enter a dictionary where keys are strings and values are integers. The program should:

1. Add a new key-value pair to the dictionary.
2. Reverse the order of the keys.
3. Delete a key-value pair if it exists.

Test Case No.	Input	Output	Weightage	Visibility
1	Enter number of key-value pairs: 2 Enter a key (string): ab Enter a value (integer): 1 Enter a key (string): cd Enter a value (integer): 2	{'dc': 2, 'fe': 3}	25%	Visible

	Enter a new key to add: ef Enter a value for the new key: 3 Enter a key to delete: ab Enter number of key-value pairs: 2 Enter a key (string): ab			
2	Enter number of key-value pairs: 1 Enter a key (string): a Enter a value (integer): 1 Enter a new key to add: bc Enter a value for the new key: 2 Enter a key to delete: a Enter number of key-value pairs: 1 Enter a key (string): a	{'cb': 2}	25%	Visible
3.	Enter number of key-value pairs: 1 Enter a key (string): de Enter a value	{'ji': 77}	50%	Hidden

(integer): 56 Enter a new key to add: ij Enter a value for the new key: 77 Enter a key to delete: de			

35: **DIY**

Problem: Write a Python program that prompts the user to enter a list of numbers and a tuple of characters. The program should then print the first element from the list and the first element from the tuple.

Test Cases:

Input	Output	Weightage	Visibility
Enter a list of numbers separated by spaces: 1 2 3 Enter a tuple of characters separated by spaces: a b c	1 a	25%	Visible
Enter a list of numbers separated by spaces: 1 2 Enter a tuple of characters separated by spaces: d e	1 d	25%	Visible
Enter a list of numbers separated by spaces: 1 2 3 4 Enter a tuple of characters separated by spaces: a b c d	1 0061	50%	Hidden

36: **DIY**

Problem: Write a Python program that prompts the user to enter a list of integers and a tuple of two strings. The program should append the sum of the list elements to the list and create a dictionary entry where the tuple is the key and the sum is the value.

Test Cases:

Input	Output	Weightage	Visibility
Enter a list of integers separated by spaces: 1 2 Enter two strings separated by a space: a b	[1, 2, 3] {('a', 'b'): 3}	25%	Visible
Enter a list of integers separated by spaces: 10 20 Enter two strings separated by a space: x y	[10, 20, 30] {('x', 'y'): 30}	25%	Visible
Enter a list of integers separated by spaces: 1 Enter two strings separated by a space: p	[1, 1] {('p',): 1}	50%	Hidden

37: Iterating Over Lists and Tuples

Problem: Write a Python program that prompts the user to enter a list of integers and a tuple of characters. The program should alternate between the elements of the list and tuple and print the result as a new list.

Test Cases:

Input	Output	Weightage	Visibility
Enter a list of integers separated by spaces: 1 2 3 Enter a tuple of characters separated by spaces: a b c	[1, 'a', 2, 'b', 3, 'c']	25%	Visible

Enter a list of integers separated by spaces: 100 200 Enter a tuple of characters separated by spaces: x y	[100, 'x', 200, 'y']	25%	Visible
Enter a list of integers separated by spaces: 1 2 3 Enter a tuple of characters separated by spaces: 4 5 6	[1, '4', 2, '5', 3, '6']	50%	Hidden

38: **DIY**

Write a Python program that prompts the user to enter a set of integers. The program should use a function to filter out even numbers and return a set of these even numbers.

Test Cases:

Input	Output	Weightage	Visibility
Enter a set of integers separated by spaces: 12 13 15	{12}	25%	Visible
Enter a set of integers separated by spaces: 11 10 12 13	{10, 12}	25%	Visible
Enter a set of integers separated by spaces: 1 2 3 4	{2, 4}	50%	Hidden

Problem-39: List Comprehensions with Conditional Logic and Tuple Packing (Moderate Difficulty)

Problem: Write a Python program that prompts the user to enter a list of integers. The program should return a list of tuples, where each tuple contains an integer and a string "Even" or "Odd" based on whether the integer is even or odd.

Test Cases:

Input	Output	Weightage	Visibility

Enter a list of integers separated by spaces: 1 2 3 4 5	[(1, 'Odd'), (2, 'Even'), (3, 'Odd'), (4, 'Even'), (5, 'Odd')]	25%	Visible
Enter a list of integers separated by spaces: 1 2	[(1, 'Odd'), (2, 'Even')]	25%	Visible
Enter a list of integers separated by spaces: 7	[(7, 'Odd')]	50%	Hidden

Problem-40: Dictionary Merging and Updating

Problem: Write a Python program that prompts the user to enter two dictionaries where keys are strings and values are integers. The program should merge these dictionaries, updating the values of overlapping keys by subtracting the value of the second dictionary from the first.

Test Case No.	Input	Output	Weightage	Visibility
1	Enter number of key-value pairs for the first dictionary: 2 Enter a key (string): a Enter a value (integer): 1 Enter a key (string): b Enter a value (integer): 2 Enter number of key-value pairs for the second dictionary: 2 Enter a key (string): c Enter a value (integer): 3 Enter a key (string): d	{'a': 1, 'b': 2, 'c': -3, 'd': -4}	25%	Visible