

Python Programming Questions and Answers on List, Tuple, and Dictionary

1. List Questions

Q1: Write a Python program to find the sum of elements in a list.

Answer:

```
python
CopyEdit
lst = [1, 2, 3, 4, 5]
print("Sum of list elements:", sum(lst))
```

Output:

```
yaml
CopyEdit
Sum of list elements: 15
```

Q2: Write a program to find the largest and smallest number in a list.

Answer:

```
python
CopyEdit
lst = [10, 5, 25, 100, 50]
print("Largest:", max(lst))
print("Smallest:", min(lst))
```

Q3: Write a Python program to remove duplicates from a list.

Answer:

```
python
CopyEdit
lst = [1, 2, 3, 4, 2, 3, 5, 6, 1]
unique_list = list(set(lst))
print("Unique List:", unique_list)
```

Q4: Write a Python program to reverse a list.

Answer:

```
python
CopyEdit
lst = [10, 20, 30, 40]
print("Reversed List:", lst[::-1])
```

Q5: Write a Python program to check if an element exists in a list.

Answer:

```
python
CopyEdit
lst = [1, 2, 3, 4, 5]
num = int(input("Enter a number: "))
if num in lst:
    print(f"{num} exists in the list.")
else:
    print(f"{num} does not exist in the list.")
```

Q6: Write a Python program to sort a list in ascending and descending order.

Answer:

```
python
CopyEdit
lst = [3, 1, 5, 2, 4]
print("Ascending Order:", sorted(lst))
print("Descending Order:", sorted(lst, reverse=True))
```

2. Tuple Questions

Q7: Write a Python program to create a tuple and access its elements.

Answer:

```
python
CopyEdit
tup = (10, 20, 30, 40)
print("First element:", tup[0])
print("Last element:", tup[-1])
```

Q8: Write a Python program to find the length of a tuple.

Answer:

```
python
CopyEdit
tup = (1, 2, 3, 4, 5)
print("Length of tuple:", len(tup))
```

Q9: Write a Python program to convert a tuple to a list.

Answer:

```
python
CopyEdit
tup = (10, 20, 30)
lst = list(tup)
print("Converted List:", lst)
```

Q10: Write a Python program to check if an element exists in a tuple.

Answer:

```
python
CopyEdit
tup = (1, 2, 3, 4, 5)
num = int(input("Enter a number: "))
if num in tup:
    print(f"{num} exists in the tuple.")
else:
    print(f"{num} does not exist in the tuple.")
```

Q11: Write a Python program to find the index of an element in a tuple.

Answer:

```
python
CopyEdit
tup = (10, 20, 30, 40, 50)
print("Index of 30:", tup.index(30))
```

Q12: Write a Python program to count occurrences of an element in a tuple.

Answer:

```
python
CopyEdit
tup = (1, 2, 3, 2, 2, 4, 5)
print("Count of 2:", tup.count(2))
```

3. Dictionary Questions

Q13: Write a Python program to create a dictionary and print its keys and values.

Answer:

```
python
CopyEdit
student = {"name": "Alice", "age": 20, "grade": "A"}
print("Keys:", student.keys())
print("Values:", student.values())
```

Q14: Write a Python program to update a dictionary value.

Answer:

```
python
CopyEdit
student = {"name": "Alice", "age": 20, "grade": "A"}
student["grade"] = "A+"
print("Updated Dictionary:", student)
```

Q15: Write a Python program to check if a key exists in a dictionary.

Answer:

```
python
CopyEdit
student = {"name": "Alice", "age": 20, "grade": "A"}
key = input("Enter key: ")

if key in student:
    print(f"Key '{key}' exists in the dictionary.")
else:
    print(f"Key '{key}' does not exist.")
```

Q16: Write a Python program to merge two dictionaries.

Answer:

```
python
CopyEdit
dict1 = {'a': 1, 'b': 2}
```

```
dict2 = {'c': 3, 'd': 4}
merged_dict = {**dict1, **dict2}
print("Merged Dictionary:", merged_dict)
```

Q17: Write a Python program to delete a key from a dictionary.

Answer:

```
python
CopyEdit
student = {"name": "Alice", "age": 20, "grade": "A"}
del student["age"]
print("Dictionary after deletion:", student)
```

Q18: Write a Python program to find the maximum and minimum value in a dictionary.

Answer:

```
python
CopyEdit
marks = {'Math': 85, 'Science': 90, 'English': 80}
print("Maximum Marks:", max(marks.values()))
print("Minimum Marks:", min(marks.values()))
```

Q19: Write a Python program to iterate over a dictionary and print key-value pairs.

Answer:

```
python
CopyEdit
student = {"name": "Alice", "age": 20, "grade": "A"}
for key, value in student.items():
    print(f"{key}: {value}")
```

Q20: Write a Python program to create a dictionary from two lists.

Answer:

```
python
CopyEdit
keys = ["name", "age", "grade"]
values = ["Alice", 20, "A"]
student = dict(zip(keys, values))
```

```
print("Created Dictionary:", student)
```

Would you like more advanced Python questions on sets, functions, or data

1. Basic List Questions

Q1: Write a Python program to create a list and print it.

Answer:

```
python
CopyEdit
my_list = [1, 2, 3, 4, 5]
print(my_list)
```

Q2: Write a Python program to access elements from a list.

Answer:

```
python
CopyEdit
my_list = ['apple', 'banana', 'cherry']
print(my_list[0]) # Output: apple
print(my_list[-1]) # Output: cherry
```

Q3: Write a Python program to find the length of a list.

Answer:

```
python
CopyEdit
my_list = [10, 20, 30, 40]
print(len(my_list)) # Output: 4
```

2. List Manipulation Questions

Q4: Write a Python program to add an element to a list.

Answer:

```
python
CopyEdit
my_list = [1, 2, 3]
my_list.append(4)
print(my_list) # Output: [1, 2, 3, 4]
```

Q5: Write a Python program to insert an element at a specific position in a list.

Answer:

```
python
CopyEdit
my_list = [1, 2, 4, 5]
my_list.insert(2, 3) # Insert 3 at index 2
print(my_list) # Output: [1, 2, 3, 4, 5]
```

Q6: Write a Python program to remove an element from a list.

Answer:

```
python
CopyEdit
my_list = [1, 2, 3, 4, 5]
my_list.remove(3)
print(my_list) # Output: [1, 2, 4, 5]
```

Q7: Write a Python program to remove an element from a list using `pop()`.

Answer:

```
python
CopyEdit
my_list = [10, 20, 30, 40]
my_list.pop(2) # Remove element at index 2
print(my_list) # Output: [10, 20, 40]
```

Q8: Write a Python program to reverse a list.

Answer:

```
python
CopyEdit
my_list = [1, 2, 3, 4, 5]
print(my_list[::-1]) # Output: [5, 4, 3, 2, 1]
```

3. Searching and Sorting Lists

Q9: Write a Python program to check if an element exists in a list.

Answer:

```
python
CopyEdit
my_list = [10, 20, 30, 40]
if 30 in my_list:
    print("30 exists in the list") # Output: 30
exists in the list
```

Q10: Write a Python program to find the index of an element in a list.

Answer:

```
python
CopyEdit
my_list = ['a', 'b', 'c', 'd']
print(my_list.index('c')) # Output: 2
```

Q11: Write a Python program to sort a list in ascending order.

Answer:

```
python
CopyEdit
my_list = [5, 3, 8, 1, 2]
my_list.sort()
print(my_list) # Output: [1, 2, 3, 5, 8]
```

Q12: Write a Python program to sort a list in descending order.

Answer:

```
python
CopyEdit
my_list = [5, 3, 8, 1, 2]
my_list.sort(reverse=True)
print(my_list) # Output: [8, 5, 3, 2, 1]
```

4. List Operations and Computations

Q13: Write a Python program to find the sum of all elements in a list.

Answer:

```
python
CopyEdit
my_list = [1, 2, 3, 4, 5]
print(sum(my_list)) # Output: 15
```

Q14: Write a Python program to find the largest and smallest numbers in a list.

Answer:

```
python
CopyEdit
my_list = [10, 20, 5, 100, 50]
print("Max:", max(my_list)) # Output: 100
print("Min:", min(my_list)) # Output: 5
```

Q15: Write a Python program to count the occurrences of an element in a list.

Answer:

```
python
CopyEdit
my_list = [1, 2, 2, 3, 3, 3, 4]
print(my_list.count(3)) # Output: 3
```

5. List Comprehensions

Q16: Write a Python program to create a list of squares using list comprehension.

Answer:

```
python
CopyEdit
squares = [x**2 for x in range(1, 6)]
print(squares) # Output: [1, 4, 9, 16, 25]
```

Q17: Write a Python program to create a list of even numbers from 1 to 10 using list comprehension.

Answer:

```
python
CopyEdit
evens = [x for x in range(1, 11) if x % 2 == 0]
print(evens) # Output: [2, 4, 6, 8, 10]
```

6. Nested Lists and Advanced Operations

Q18: Write a Python program to create a matrix using nested lists.

Answer:

```
python
CopyEdit
matrix = [[1, 2, 3], [4, 5, 6], [7, 8, 9]]
print(matrix)
```

Q19: Write a Python program to flatten a nested list.

Answer:

```
python
CopyEdit
nested_list = [[1, 2], [3, 4], [5, 6]]
flat_list = [item for sublist in nested_list for item in sublist]
print(flat_list) # Output: [1, 2, 3, 4, 5, 6]
```

7. Converting Between Lists and Other Data Types

Q20: Write a Python program to convert a list to a tuple.

Answer:

```
python
CopyEdit
my_list = [1, 2, 3, 4, 5]
my_tuple = tuple(my_list)
print(my_tuple) # Output: (1, 2, 3, 4, 5)
```

Q21: Write a Python program to convert a list to a string.

Answer:

```
python
CopyEdit
my_list = ['Python', 'is', 'awesome']
my_string = " ".join(my_list)
print(my_string)  # Output: Python is awesome
```

8. Advanced List Operations

Q22: Write a Python program to find common elements between two lists.

Answer:

```
python
CopyEdit
list1 = [1, 2, 3, 4, 5]
list2 = [3, 4, 5, 6, 7]
common = list(set(list1) & set(list2))
print(common)  # Output: [3, 4, 5]
```

Q23: Write a Python program to remove empty strings from a list.

Answer:

```
python
CopyEdit
my_list = ["apple", "", "banana", "", "cherry"]
filtered_list = list(filter(None, my_list))
print(filtered_list)  # Output: ['apple',
'banana', 'cherry']
```