ASSIGNMENT 4

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# 1. Write a Python program to create a list of 5 fruits. Print the first fruit, the last
# fruit, and the fruit at index 2.
fruits = []
for i in range(5):
    fruit = input(f"Enter fruit {i + 1}: ")
    fruits.append(fruit)
print(fruits[0], fruits[-1], fruits[2])
```

```
Enter fruit 1: apple
Enter fruit 2: banana
Enter fruit 3: cherry
Enter fruit 4: strawberry
Enter fruit 5: blueberry
apple blueberry cherry
```

```
# 2. Write a Python program that stores numbers 1 to 10 in a list. Print the first 3
# numbers, the last 3 numbers, and every alternate number.
num = list(range(1, 11))
print("First 3 numbers:", num[:3])
print("Last 3 numbers:", num[-3:])
print("Every alternate number:", num[::2])
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First 3 numbers: [1, 2, 3]
Last 3 numbers: [8, 9, 10]
Every alternate number: [1, 3, 5, 7, 9]
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# 3. Write a Python program to create an empty list. Add numbers 1, 2, and 3 using
# append(). Then extend the list with [4, 5, 6]. Print the final list.
list1 = []
list1.append(1)
list1.append(2)
list1.append(3)
list1.extend([4, 5, 6])
print("Final list:", list1)
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Final list: [1, 2, 3, 4, 5, 6]
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# 4. Write a Python program with a list of numbers [10, 20, 30, 40, 50].
# Remove the number 30 using remove().
# Remove the last element using pop().
# Print the updated list after each step.
numbers = [10, 20, 30, 40, 50]
print("Original list:", numbers)
numbers.remove(30)
print("After removing 30:", numbers)
numbers.pop()
print("After popping the last element:", numbers)
```

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Original list: [10, 20, 30, 40, 50]
After removing 30: [10, 20, 40, 50]
After popping the last element: [10, 20, 40]
```

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# 5. Write a Python program to check if a given number is present in the list of numbers.
# If present, print ”Found”, otherwise ”Not Found”
num_list = []
for i in range(5):
    n = int(input(f"Enter number {i + 1}: "))
    num_list.append(n)

item = int(input("Enter a number to search: "))
if item in num_list:
    print("Found")
else:
    print("Not Found")
```

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Enter number 1: 45
Enter number 2: 10
Enter number 3: 22
Enter number 4: 32
Enter number 5: 2
```

```
Enter a number to search: 32
Found
```

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# 6. Write a Python program to calculate the sum, average of numbers and also find the
# maximum and minimum numbers stored in the list.
numbers = []
for i in range(5):
    n = int(input(f"Enter number {i + 1}: "))
    numbers.append(n)
sum_numbers = sum(numbers)
average = sum_numbers / len(numbers)
max_number = max(numbers)
min_number = min(numbers)
print("Sum:", sum_numbers)
print("Average:", average)
print("Maximum:", max_number)
print("Minimum:", min_number)
```

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Enter number 1: 8
Enter number 2: 9
Enter number 3: 22
Enter number 4: 33
Enter number 5: 20
Sum: 92
Average: 18.4
Maximum: 33
Minimum: 8
```

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# 7. Write a Python program that counts how many times a given number appears in
# the list.
numbers = []
for i in range(5):
    n = int(input(f"Enter number {i + 1}: "))
    numbers.append(n)
item = int(input("Enter a number to count its occurrences: "))
count = numbers.count(item)
print(f"The number {item} appears {count} times in the list.")
```

```
Enter number 1: 11
Enter number 2: 22
Enter number 3: 33
Enter number 4: 22
Enter number 5: 11
Enter a number to count its occurrences: 22
The number 22 appears 2 times in the list.
```

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# 8. Write a Python program to remove duplicates from the list [1, 2, 2, 3, 4, 4, 5] and
# print the unique values.
numbers = [1, 2, 2, 3, 4, 4, 5]
unique_numbers = list(set(numbers))
print("Unique values:", unique_numbers)
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Unique values: [1, 2, 3, 4, 5]
```

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# 9. Write a Python program to reverse a list using list slicing.
numbers = []
for i in range(5):
    n = int(input(f"Enter number {i + 1}: "))
    numbers.append(n)
rev = numbers[::-1]
print("Reversed list:", rev)
```

```
Enter number 1: 12
Enter number 2: -9
Enter number 3: 0
Enter number 4: 35
Enter number 5: 11
Reversed list: [11, 35, 0, -9, 12]
```

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# 10. Concatenate two lists index-wise.
# list1 = [“M”, “na”, “i”, “Ku”]
# list2 = [“y”, “me”, “s”, “nal”]
# Expected output: [’My’, ’name’, ’is’, ’Kunal’]

l1 = ["M", "na", "i", "Ku"]
l2 = ["y", "me", "s", "nal"]
# l3 = []
```

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# for i in range(len(l1)):
#     l3.append(l1[i] + l2[i])
# print("Concatenated list:", l3)

l3 = [a + b for a, b in zip(l1, l2)]
print("Concatenated list:", l3)
```

```
Concatenated list: ['My', 'name', 'is', 'Kunal']
```

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# 11. Write a Python program using list comprehension to create a list of even numbers
# between 1 and 20.
even_numbers = [i for i in range(1, 21) if i % 2 == 0]
print("Even numbers between 1 and 20:", even_numbers)
```

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Even numbers between 1 and 20: [2, 4, 6, 8, 10, 12, 14, 16, 18, 20]
```

```
# 12. Write a Python program to find the second largest number in a list of numbers.
numbers = []
for i in range(5):
    n = int(input(f"Enter number {i + 1}: "))
    numbers.append(n)

print(numbers)

numbers.sort()
unique_numbers = list(set(numbers))
if len(unique_numbers) < 2:
    print("Not enough unique elements to find the second largest number.")
else:
    second_largest = unique_numbers[-2]
    print("The second largest number is:", second_largest)
```

```
Enter number 1: 12
Enter number 2: 0
Enter number 3: 4
Enter number 4: 13
Enter number 5: 22
[12, 0, 4, 13, 22]
The second largest number is: 13
```

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# 13. Write a Python program to check if the list [1, 2, 3, 2, 1] is a palindrome (same
# forwards and backwards).

num = [1, 2, 3, 2, 1]
if num == num[::-1]:
    print("The list is a palindrome.")
else:
    print("The list is not a palindrome.")
```

```
The list is a palindrome.
```

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# 14. Given a two Python list. Iterate both lists simultaneously such that list1 should
# display item in original order and list2 in reverse order
# list1 = [20, 35, 45, 78]
# list2 = [100, 200, 300, 400]
# Expected output:
# 20 400
# 35 300
# 45 200
# 78 100
list1 = [20, 35, 45, 78]
list2 = [100, 200, 300, 400]
for i in range(len(list1)):
    print(list1[i], list2[-(i + 1)])
```

```
20 400
35 300
45 200
78 100
```

```
# 15. Add item 7000 after 6000 in the following Python List
# list1 = [10, 20, [300, 400, [5000, 6000], 500], 30, 40]
# Expected output:[10, 20, [300, 400, [5000, 6000, 7000], 500], 30, 40]
list1 = [10, 20, [300, 400, [5000, 6000], 500], 30, 40]
list1[2][2].insert(3, 7000)
print("Updated list:", list1)
```

```
Updated list: [10, 20, [300, 400, [5000, 6000, 7000], 500], 30, 40]
```

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# 16. Given a Python list, find value 20 in the list, and if it is present, replace it with
# 200. Only update the first occurrence of a value
# list1 = [5, 10, 15, 20, 25, 50, 20]
# Expected output:
# list1 = [5, 10, 15, 200, 25, 50, 20]

list1 = [5, 10, 15, 20, 25, 50, 20]
if 20 in list1:
    index = list1.index(20)
    list1[index] = 200
print("Updated list:", list1)
```

```
Updated list: [5, 10, 15, 200, 25, 50, 20]
```

```
# 17. Write a Python program to split a sentence ”Python is fun” into a list of words,
# and then join them back into a single string separated by -.
sen = "Python is fun"
words = sen.split(' ')
new_sen = '-'.join(words)
print("Joined string:", new_sen)
```

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Joined string: Python-is-fun
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# 18. Given a list of strings, display each string reversed.
# List = [“cat”, “dog”, “bird”]
# Expected output: [‘tac’, ‘god’, ‘drib’]

List = ["cat", "dog", "bird"]
reversed_list = [s[::-1] for s in List]
print("Reversed strings:", reversed_list)
```

```
Reversed strings: ['tac', 'god', 'drib']
```

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# 19. Given a nested list, flatten it into a single list.
# Input: [[1, 2], [3, 4], [5, 6]]
# Expected Output: [1, 2, 3, 4, 5, 6]
nested_list = [[1, 2], [3, 4], [5, 6]]
flattened_list = [item for sublist in nested_list for item in sublist]
print("Flattened list:", flattened_list)
```

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Flattened list: [1, 2, 3, 4, 5, 6]
```

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# 20. Given a list, find the index where the sum of the left part equals the sum of the
# right part.
# Input: [1, 7, 3, 6, 5, 6]
# Expected Output: 3 (because [1+7+3] = [5+6])
numbers = [1, 7, 3, 5, 6]
total_sum = sum(numbers)
left_sum = 0
for i in range(len(numbers)):
    left_sum += numbers[i]
    if left_sum == total_sum - left_sum:
        print("Index where left sum equals right sum:", i)
        break
else:
    print("No index found where left sum equals right sum.")
```

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Index where left sum equals right sum: 2
```