SP21-BCS-007

September 11, 2023

1 LAB 02: Advance Python

1.1 Task 1: Loops and Lists

Use loops to accept 5 random values inputs from the user and store them in a list. Then, print the list.

[ ]:
```
my_list = []

for i in range(5):
    my_list.append(input("Enter any value: "))

print("The given list is: ", end="")
print(my_list)
```

```
The list is: ['5', 'Asad Ali', '22', '2001', '2023']
```

1.2 Task 2: Loops and Lists

Use loops to accept 5 number inputs from the user and store them in a list. Then, print the sum of value sin the list.

[ ]:
```
my_list = []

for i in range(5):
    my_list.append(input("Enter any value: "))

print("The given list is: ", end="")
print(my_list)

sum = 0
for i in my_list:
    sum += int(i)

print("The sum of all the elements in the list is: ", end="")
print(sum)
```

```
The given list is: ['5', '5', '5', '8', '5']
The sum of all the elements in the list is: 28
```

1.3 Task 3: Loops and Lists

Use loops to accept 5 number inputs from the user and store them in a list. Then, print the list in acsending order.

[ ]:
```
my_list = []

for i in range(5):
    my_list.append(input("Enter any value: "))

print("The given list in ascending order is: ", end="")
my_list.sort()
print(my_list)
```

```
The given list in ascending order is: ['1', '5', '7', '8', '9']
```

1.4 Task 4: Loops and Lists

Accept two lists of 5 numbers each from the user. Then, join the two lists.

[ ]:
```
list1 = [input("Enter any value: ") for i in range(5)]
list2 = [input("Enter any value: ") for i in range(5)]

print("The given lists are: ")
print(list1, list2, sep="\n")

list3 = list1 + list2
print("The concatenated list is: ", end="")
print(list3)
```

```
The given lists are:
['8', '5', '8', '2', '4']
['7', '3', '6', '5', '8']
The concatenated list is: ['8', '5', '8', '2', '4', '7', '3', '6', '5', '8']
```

1.5 Task 5: Search in a List

Accept a list of 5 numbers from the user. Then, accept a number from the user and search it in the list. If the number is found, print its index. Otherwise, print “Not Found”.

[ ]:
```
list = [input("Enter any value: ") for i in range(10)]
print("The given list is: ", end="")
print(list)

num = int(input("Enter the number to be searched: "))

if num in list:
    print(f"The number {num} is present in the list.")
else:
    print(f"The number {num} is not present in the list.")
```

```
The given list is: ['5', '8', '5', '6', '5', '8', '9', '5', '6', '5']
The number is not present in the list.
```

1.6 Task 6: Functions

Write a function that takes a person's name as an argument and returns a greeting message.

[ ]:
```python
def greetings(name):
    print(f"Hello {name}, have a nice day!")


greetings("Asad Ali")
greetings("Asad ur Rehaman")
greetings("Haroon")
```

```
Hello Asad Ali, have a nice day!
Hello Asad ur Rehaman, have a nice day!
Hello Haroon, have a nice day!
```

1.7 Task 7: Palindrome

Write a function that takes a string as an argument and returns True if the string is a palindrome. Otherwise, return False.

[ ]:
```python
def palindrome(string):
    string = string.lower()

    if string == string[::-1]:
        return True
    else:
        return False


print(palindrome("madam"))
print(palindrome("hello"))
print(palindrome("woW"))
```

```
True
False
True
```

1.8 Task 8: 2D-Lists

Given a 3x3 matrix as 2d-Lists, print its multiplication matrix.

[ ]:
```python
a = [[1, 0, 0], [0, 1, 0], [0, 0, 1]]
b = [[1, 2, 3], [4, 5, 6], [7, 8, 9]]

result = [[0, 0, 0], [0, 0, 0], [0, 0, 0]]
```

```
for i in range(len(a)):
    for j in range(len(a[0])):
        for k in range(len(b)):
            result[i][j] += a[i][k] * b[k][j]

print("The resultant matrix is: ")
for r in result:
    print(r)
```

```
The resultant matrix is:
[1, 2, 3]
[4, 5, 6]
[7, 8, 9]
```