Python Assignment Report

This assignment covers operators, strings, and lists through a variety of tasks on basic fundamentals of Python. The arithmetic, comparison, and logical operations in the operators portion, which helped me better grasp how Python handles conditions and calculations. The string exercises featured experimenting with string formatting and substring searches, as well as discovering string lengths, reversing strings, and changing the string cases. In addition to adding, deleting, sorting, and slicing list parts All things considered, the assignment strengthened my comprehension of Python's fundamental features and enhanced my capacity to produce clear, concise code.

Approach

1.Operators

- **Question 1 Arithmetic Operators :-** In this question I wrote a code which takes 2 inputs from the user to carry out several fundamental arithmetic operations, including addition, subtraction, multiplication, division, exponential and floor division.

  CODE:

  ```
  a=int(input("enter no 1 :-"))
  b=int(input("enter no 2 :-"))
  print("Addition :-",a+b)      #this will add the two numbers
  print("Subtraction :-",a-b)        #this will subtract the two numbers
  ```

print("Multiplication :-",a*b) **#this will give product of the two numbers**

print("Division :-",a/b) **#this will give the quotient by dividing the two numbers**

print("Modulus :-",a%b) **#this will give remainder of the two numbers**

print("Exponentation :-",a**b) **#this will the two numbers**

print("Floor Division :-",a//b) **#this will do floor division the two numbers**

- **Question 2 Comparison Operators :-** in this question the comparison opeeators are used which finds whether a number is greater than the other one or not.

  CODE:

  a=int(input("enter a :-")) **#input no 1**

  b=int(input("enter b :-")) **#input no 2**

  if a>b: **#if condition checks whether the condition is true or not and prints the output accordingly**

    print("a is greater than b")

  elif a<b: **#elif condition is similar to if condition and checks whether the condition is true or not**

    print("a is smaller than b")

  else: **#this condition is like a conclusion**

    print("both are equal")

- **Question 3 Logical Operators :-** In this question the user enter three boolean input and the input is compared with each other and printed with the logical operators AND, OR & NOT

  CODE:

  ```
  a=input("enter a boolean value 1:-
  ").strip().lower()=="true"     #strip() will clear all white spaces and lower will help to remove indentation

  b=input("enter a boolean value 2:-
  ").strip().lower()=="true"

  c=input("enter a boolean value 3:-
  ").strip().lower()=="true"

  print(a and b and c)

  print(a or b or c)

  print(not a)

  print(not b)

  print(not c)
  ```

2.Strings

- **Question 4 String Manipulation :-** In this question the user inputs string and various operations are performed such as printing first element, last element and reversing the list

  CODE:

  ```
  a=input("enter any string")
  ```

print(len(a)) **#this will print the length of the string**

print(a[0]) **#it will print the first character of the string**

print(a[-1]) **#it will print the last character of the string**

print(a[::-1]) **#it will print the string in the reverse order**

print(a.upper()) **#it will print the string in the uppercase**

print(a.lower()) **#it will print the string in the lowercase**

- **Question 5 String formatting :-** In this question the user inputs their name and age and a customised message is printed.

  CODE:

  n=input("enter your name") **#enter the name**

  a=int(input("enter your age")) **#enter the age in numbers**

  print("hello",n,"you are",a,"years old")

- **Question 6 Substring Search :-** In this question the user inputs a sentence and then enters the word which it wants to find and the result is displayed in terms of the index on from which the word is starting.

  CODE:

  string=input("Enter a string: ")

```
word=input("Enter the word which you want to find")
if word in string:
    print(string.index(word))     #it will provide the index of the word which is to be found
else:
        print("Word not found")
```

3.List

- **Question 7 List Operation :-** in this question the for loop is used and range is set 5 and input is taken from the user for 5 times in form of integer and operations such as sum, maximum number, minimum number are performed.

  CODE:

```
num=[float(input("Enter number: "))for i in range(5)]
print(sum(num))    # it will do the summation of the numbers
print(max(num))    # it will print the largest number from the list
print(min(num))    # it will print the smallest number from the list
```

- **Question 8 List Manipulation :-** In this question the list is created of the names of the fruit and an element is added and one element is removed from the list.

  CODE:

```
fruits = ['Apple', 'Mango', 'Orange', 'Kiwi', 'Lychee']
```

```
fruits+=['watermelon']
fruits.remove(fruits[1])      # it will remove the second element from the list
print(fruits)
```

- **Question 9 Sorting A List :-** in this question while loop is used and 5 values are taken as an input from the user and the values are stored in a list and then ascending and descending operations are performed on the list.

  CODE:

```
num=[]
while len(num) < 5:
    number=int(input("Enter a number: "))
    num.append(number)
print("Ascending order:",sorted(num))     # it will print the list in ascending order
print("Descending order:",sorted(num,reverse=True))
# it will print the list in descending order
```

- **Question 10 List Slicing :-** in this question a list is taken containing ten elements and operations are performed on the list which prints first 5 elements, last five elements, and 2nd to 7nth element.

  CODE:

```
nos=[1,2,3,4,5,6,7,8,9,10]
```

```
print(nos[:5])    # it will print the first five numbers from the list

print(nos[5:])    # it will print the numbers from 5th index till the end

print(nos[2:8])    # it will print the numbers from 2nd position till the 7nth position
```

Key Learning

1. Operators: I learned how to effectively carry out a variety of calculations and checks using arithmetic, comparison, and logical operators.
2. String Manipulation: By investigating various approaches to handling and processing string data, I enhanced my proficiency in manipulating strings using built-in Python functions.
3. List Operations: I became more familiar with list operations, such as how to make, edit, sort, and cut lists. I also learned how to work with nested structures, which are used to store more complicated data.

GitHub link:- https://github.com/MahirMavani/Python-Assignment-