**REPORT WRITING**

**Name:** Amaraiah.C

**Section:** BCA - ‘A’ sec

**Reg Number:** PROV/BCA/7/24/002

**Subject:** Python

**GitHub Link :** *https://github.com/Amaraiah11*

**PROGRAM 01 :- Arithmetic Operation**

a=int(input("Enter the first number:"))

b=int(input("Enter the second number:"))

print("Addition:",a+b)

print("Subtraction:",a-b)

print("Multiplication:",a\*b)

print("Division:",a/b)

print("Modulus:",a%b)

print("Exponentiation:",a\*\*b)

print("Floor Division:",a//b)

**Output :-**

Enter the first number: 10

Enter the second number: 3

Addition: 13

Subtraction: 7

Multiplication: 30

Division: 3.3333333333333335

Modulus: 1

Exponentiation: 1000

Floor Division: 3

**Explanation :**

Two inputs are taken from the user which are a and b respectively. Here I have used arithmetic like {+ , - , \* , / , \*\* , % , //} to add , sub , multiply , divide , finding , power etc..

**PROGRAM 02:- Comparison Operation**

X=int(input("Enter the number:"))

Y=int(input("Enter the number:"))

if X>Y:

print("X is greater than Y")

elif X==Y:

print("Both X and Y are equal")

elif X<=Y:

print("X is less than or equal to Y")

**Output :-**

Enter the number: 10

Enter the number: 2

X is greater than Y

**Explanation:-**

In this program input is taken from the user to find if the number is greater less than or less than equal .We have also used if, elif conditions .

**PROGRAM 03 :- Logical Operators**

a=True

b=False

c=True

print(a and b)

print(b and a)

print(a and c)

print(b and c)

print(a or b)

print(b or a)

print(a or c)

print(b or c)

print(not a)

print(not b)

print(not c)

**Output :-**

False

False

False

True

True

True

True

False

True

False

**Explanation :-**Here three Boolean values (True or False) are taken as input and we have used and, or, and not operators to return the result of combining them.

**PROGRAM 04:- String Manipulation**

a=input("Enter the string name:")

print(len(a))

print(a[0],a[-1])

print(a[::-1])

print(a.upper())

print(a.lower())

**Output :-**

Enter the string name: Sathvik

7

S k

kivhtaS

SATHVIK

Sathvik

**Explanation:-**In this program we have to change the sting:

>>Length of the string by using- (len(sting name))

>>First and last character by using -(string name[0],string name[-1])

>> String in reverse order by using-(string name[::-1])

>>string in uppercase and lowercase by using-(string name.upper()),(string name.lower())

**PROGRAM 05 :-String Formatting**

a=(input("Enter the Name:"))

b=(input("Enter the age:"))

print(f"Hello {a} you are {b} year sold")

**Output :-**

Enter the Name: Amar

Enter the age: 19

Hello Amar you are 19 year sold

**Explanation :-**In this program two input are taken by the user in first input user will be asked the ‘Name’ and then ‘age’ .In this code is used for(f"Hello {a} you are {b} year sold") we are using f to include and print both input taken from the user

**PR0GRAM 06 :- Substring search**

r=input("Write a sentence:")

s=input("Enter the word you want to search for:")

if s in r:

print(f"The word'{s}'is in the position:'{r.index(s)}' ")

elif s not in r:

print("the word does not exist")

**Output :-**

write a sentence: Roses are red

Enter the word you want to search for: Roses

The word'Roses'is in the position:'0'

**Explanation :-**In this program the inputs have been take by user, have to give a sentence and word that have to be searched . Here if and elif conditional statements are used . If condition checks whether the word is there in the sentence or not , if the statement is satisfied it prints the index of the given word . if not then elif statement will print that the given word is noy found in the sentence.

**PROGRAM 07 :-**

a=int(input("enter the number 1:"))

b=int(input("enter the number 2:"))

c=int(input("enter the number 3:"))

d=int(input("enter the number 4:"))

e=int(input("enter the number 5:"))

f=[a,b,c,d,e]

print(f)

print("the sum of list numbers is:",sum(f))

print("the largest number in list is:",max(f))

print("the smallest number in list is:",min(f))

**Output :-**

enter the number 1: 1

enter the number 2: 2

enter the number 3: 3

enter the number 4: 4

enter the number 5: 5

[1, 2, 3, 4, 5]

the sum of list numbers is: 15

the largest number in list is: 5

the smallest number in list is: 1

**Explanation :-** This program collects five integers from the user and stores them in a list, then performs some basic operations on that list.

1. \*Input\*: The program prompts the user to enter five integers one by one, which are stored in variables a, b, c, d, and e.

2. \*List Creation\*: These integers are then combined into a list f.

3. \*Output\*:

- It prints the list of entered numbers.

- It calculates and prints the sum of the numbers using the sum() function.

- It finds and prints the largest number in the list using the max() function.

- It finds and prints the smallest number in the list using the min() function.

Overall, this program demonstrates user input handling, list creation, and basic mathematical operations in Python.**#Program**

**08 :- List manipulation**

fruits=["apple","banana","dargon fruit","mango","custard apple"]

print(fruits)

fruits.append("pineapple")

print(fruits)

fruits.remove("banana")

print(fruits)

**Output :-**

['apple', 'banana', 'dargon fruit', 'mango', 'custard apple'] ['apple', 'banana', 'dargon fruit', 'mango', 'custard apple', 'pineapple'] ['apple', 'dargon fruit', 'mango', 'custard apple', 'pineapple']

**Explanation :-**This program manipulates a list of fruits using two methods: append and pop.

1. \*Initialization\*: The list Fruits is created with five fruit names: "Apple", "Orange", "Grapes", "Pineapple", and "Mango".

2. \*Append\*: The append method adds the string "Goa" to the end of the list.

3. \*Pop\*: The pop(1) method removes the fruit at index 1, which is "Orange", from the list.

4. \*Output\*: Finally, the modified list is printed, which now contains "Apple", "Grapes", "Pineapple", "Mango", and "Goa".

The resulting list demonstrates basic list manipulation techniques in Python.

**PROGRAM 09 :- Sorting a List**

A = int(input("Enter the number 1: "))

B = int(input("Enter the number 2: "))

C = int(input("Enter the number 3: "))

D = int(input("Enter the number 4: "))

E = int(input("Enter the number 5: "))

f = [A, B, C, D, E]

f.sort()

print("Ascending Order of the list: ",f)

f.sort(reverse=True)

print("Descending Order of the list: ",f)

**Output :-**

Enter the number 1: 9

Enter the number 2: 0

Enter the number 3: 4

Enter the number 4: 5

Enter the number 5: 67

Ascending Order of the list: [0, 4, 5, 9, 67]

Descending Order of the list:  [67, 9, 5, 4, 0]

**Explanation :-**This program sorts a list of five integers inputted by the user in both ascending and descending order.

1. \*Input\*: The user is prompted to enter five integers, which are stored in variables A, B, C, D, and E.

2. \*List Creation\*: These integers are combined into a list f.

3. \*Sorting\*:

- The list is sorted in ascending order using the sort() method, and the result is printed.

- The list is then sorted in descending order by using sort(reverse=True), and this result is also printed.

Overall, this program illustrates how to take user input, create a list, and sort it in both ascending and descending order.

**PRGRAM 10 :- List Slicing**

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

print(Numbers[:5])

print(Numbers[-5:])

print(Numbers[1:7])

**Output :-**

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

**Explanation :-**This program demonstrates list slicing in Python using a list of numbers.

1. \*Initialization\*: A list called Numbers is created containing integers from 1 to 10.

2. \*Slicing\*:

- Numbers[:5]: This slice retrieves the first five elements of the list, resulting in [1, 2, 3, 4, 5].

- Numbers[-5:]: This slice retrieves the last five elements of the list, resulting in [6, 7, 8, 9, 10].

- Numbers[1:7]: This slice retrieves elements from index 1 to index 6 (up to but not including index 7), resulting in [2, 3, 4, 5, 6, 7].

The program effectively showcases how to access specific portions of a list using slicing techniques.

**PROGRAM 11 :-Nested List**

students = []

for \_ in range(3):

name = input("Enter student name:")

scores = [float(input(f"Enter score {i+1}: ")) for i in range(3)]

students.append([name, scores])

for student in students:

avg = sum(student[1]) / 3

print(student[0], "'s average score:'",avg)

**Output :-**

Enter student name: Amar

Enter score 1: 100

Enter score 2: 90

Enter score 3: 98

Enter student name: Lochan

Enter score 1: 99

**Explanation :-**This program collects the names and scores of three students and calculates their average scores.

Explanation:

1. \*Initialization\*: An empty list called students is created to store each student's name and their scores.

2. \*Data Input\*:

- A loop runs three times, prompting the user to enter a student's name each time.

- For each student, a list comprehension collects three scores. The input scores are converted to floats for accurate calculations.

- Each student's name and their scores are stored together as a list, which is then appended to the students list.

3. \*Average Calculation\*:

- Another loop iterates through the students list.

- For each student, it calculates the average score by summing the scores and dividing by three.

- The program prints the student's name along with their calculated average score.

Overall, the program effectively demonstrates user input handling, list manipulation, and basic arithmetic operations to compute and display averages.