LAB # 03

CONSOLE INPUT AND OUTPUT

OBJECTIVE

Taking input from user and controlling output position.

THEORY

Console I/O Functions

The keyboard and visual display unit (VDU) together are called a console. Python programming language provides many built-in functions to read any given input and to display data on screen, Console (also called Shell) is basically a command line interpreter that takes input from the user i.e one command at a time and interprets it. If it is error free then it runs the command and gives required output otherwise shows the error message.

Accepting Input from Console

To take input from the user we make use of a built-in function *input()*.

Syntax : input(*prompt*)

Displaying Input from Console

The print( ) function prints the specified message to the screen, or other standard output device.

The message can be a string, or any other object, the object will be converted into a string before written to the screen.

Syntax: print*(object(s)*, separator=*separator*, end=*end*, file=*file*, flush=*flush*)

Example:

```
name=input('Please enter your name: "') print("Hello, " , name ,  "!")
```

Output:

```
>>> %Run task1.py Please enter your name:ABC Hello, ABC!
>>>
```

Whatever you enter as input, input function convert it into a string. if you enter an integer value still input() function convert it into a string. You need to explicitly convert it into an integer in your code using typecasting.

Example:

```
# Program to check input     num
= input ("Enter number :")
print(num)
name1 = input("Enter name : ")
print(name1)

# Printing type of input value  print
("type of number", type(num))
print ("type of name",
type(name1))
```

We can also type cast this input to integer, float or string by specifying the input() function inside the type.

Typecasting the input to Integer/Float: There might be conditions when you might require integer input from user/console, the following code takes two input(integer/float) from console and typecasts them to integer then prints the sum.

Example

```
# input  num1 =
int(input())  num2
= int(input())

# printing the sum in integer  print(num1
+ num2)
```

Escape Sequence

In Python strings, the backslash "\" is a special character, also called the "**escape**" character. An escape sequence is a sequence of characters that does not represent itself when used inside a character or string literal, but is translated into another character or a sequence of characters that may be difficult or impossible to represent directly.

Escape Sequence	**Description**	**Example**	**Output**
\\	Prints Backslash	print ("\\")	\
\`	Prints single-quote	print ("\'")	'
\"	Pirnts double quote	print ("\"")	"
\n	ASCII linefeed (LF)	print ("hello\nworld")	hello world

\b	ASCII backspace (BS) removes previous character	print ("az" + "\b" + "c")	ac
\t	ASCII horizontal tab (TAB). Prints TAB	print ("\t*hello")	*hello

EXERCISE

A. Point out the errors or undefined/missing syntax, if any, in the following python programs.

```
1. print("Hello \b World!")
```

In this program space should not be there before \b

```
2. first_number = str ( input ("Enter first number") )
   second_number = str ( input ("Enter second number") )
       sum = (first_number +
second_number)
   print("Addition of two number is: ", sum)
```

In this program "str" should be replaced by "int"

```
3. age = 23
  message = "Happy " + age + "rd Birthday!"
print(message)
```

In this Program "+" should be replaced by ","

B. What would be the output of the following programs:

```
1.  a=5
  print("a =", a, sep='0', end=',')
```

```
Python 3.7.7 (bundled)
>>> %Run practise.py

  a =05,

>>>
```

2.
```
name = input("Enter Employee Name") salary = input("Enter salary") company = input ("Enter Company name") print("Printing Employee Details") print ("Name", "Salary", "Company")
print (name, salary, company)
```

```
>>> %Run practise.py

  Enter Employee Name Abdul Moiz Chishti
  Enter salary 70000
  Enter Company name SSUET
  Printing Employee Details
  Name Salary Company
   Abdul Moiz Chishti  70000  SSUET
```

3.
```
n1=int(input('"enter n1 value'))
n2=int(input('enter n2 value'))
```

```
>>> %Run practise.py

  "enter n1 value 5
  enter n2 value6
```

C. Write Python programs for the following:

1. Write a program to print a student's bio data having his/her Date of birth, Roll no, Section, Percentage and grade of matriculation and Intermediate. All the fields should be entered from the console at run time.

Code:

```
#Bio-Data using input function
print('\t\"BIO_DATA"')
bd= input('Enter Your Birth Date : ')
rn= input('Enter Your Roll No. : ')
sec= input('Enter Section: ')
matric_grade=input('Enter Matric Grade : ')
matric_percentage=input('Enter Matric Percentage : ')
inter_grade=input('Enter Inter Grade : ')
inter_percentage=input('Enter Intermediate Percentage : ')
print('\n\t\"BIO-DATA\"')
print('\nBirth Date : ',bd)
print('\nRoll No. : ',rn)
```

Output:

```
Python 3.7.7 (bundled)
>>> %Run 'Lab3 Task 1.py'

          "BIO_DATA"
  Enter Your Birth Date : 13-07-2002
  Enter Your Roll No. : SE-22A
  Enter Section: A
  Enter Matric Grade : A-1
  Enter Matric Percentage : 84
  Enter Inter Grade : B
  Enter Intermediate Percentage : 61

          "BIO-DATA"

  Birth Date :  13-07-2002

  Roll No. :  SE-22A

  Section :  A

  Matric Grade :  A-1

  Matric Percentage :  84

  Inter Grade :  B

  Inter percentage :  61

>>>
```

2. Write a program that asks the user what kind of food they would like. Print a message about that food, such as “Let me see if I can find you a Chowmein”. Food name must be in uppercase. (hint: use upper( ) for food name)

Code:

```
food= input('What kind of food would you like : ')
#uppercase command
print('\n Let me see if i can Find you ',food.upper())
```

Output:

```
Python 3.7.7 (bundled)
>>> %Run 'Lab 3 Task 2.py'

  What kind of food would you like : CHINESE RICE

   Let me see if i can Find you  CHINESE RICE

>>>
```

3. Take the marks of 5 courses from the user and calculate the average and percentage, display the result:

   Eachcourse=50 marks

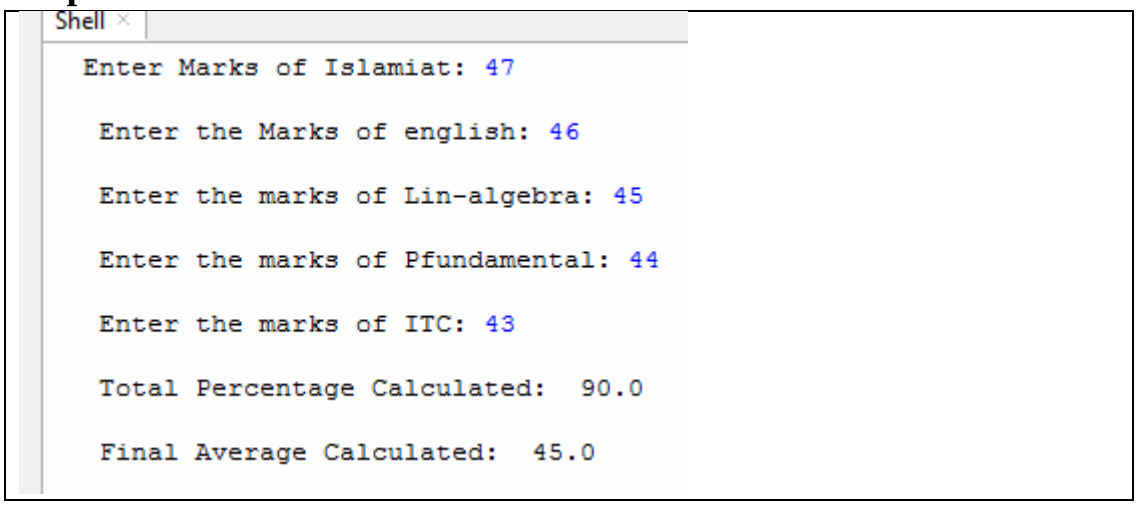
   Total_marks= course1+course2+course3+course4+course5

   average=Total_marks/5 percentage=(Total_marks x 100)/250

Code:

```
#course detail
course=50
Islamiat=input("Enter Marks of Islamiat: ")
English=input("\n Enter the Marks of english: ")
LinAlg=input("\n Enter the marks of Lin-algebra: ")
Pfund=input("\n Enter the marks of Pfundamental: ")
ITC=input("\n Enter the marks of ITC: ")
Obtained_Marks=int(Islamiat)+int(English)+int(LinAlg)+int(Pfund)+int(ITC)
Total_Marks=course*5
average = Obtained_Marks/5
percentage=(Obtained_Marks*100)/Total_Marks
print("\n Total Percentage Calculated: ", percentage)
print("\n Final Average Calculated: ", average)
```

Output:


Shell
Enter Marks of Islamiat: 47
Enter the Marks of english: 46
Enter the marks of Lin-algebra: 45
Enter the marks of Pfundamental: 44
Enter the marks of ITC: 43
Total Percentage Calculated: 90.0
Final Average Calculated: 45.0