**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.](https://www.geeksforgeeks.org/taking-input-from-console-in-python/)

**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**

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| --- |
| # 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,](https://en.wikipedia.org/wiki/Literal_(computer_programming)) 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 |

1. 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” |

1. 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=',')

|  |
| --- |
|  |

1. 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)

|  |
| --- |
|  |

1. n1=int(input('"enter n1 value'))

n2=int(input('enter n2 value'))

|  |
| --- |
|  |

**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:**

|  |
| --- |
|  |

1. 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:**

|  |
| --- |
|  |

1. 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:**

|  |
| --- |
|  |