Computer Programming Laboratory

B.Tech. 1st Semester

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Faculty	Engineering & Technology
Programme	B. Tech. in Computer Science and Engineering
Year/Semester	1st Year / 1st Semester
Name of the Laboratory	Computer Programming Laboratory
Laboratory Code	18ESL109A

List of Experiments

1. Introduction to Python programming environment
2. Variables, data types, operators and expressions
3. Input output operations
4. Logic operations and decision making
5. Loop statements
6. Character and string operations
7. Functions
8. File handling
9. Data structures
10. Libraries

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Index Sheet

No.	Lab Experiment	Performing the experiment (7)	Document (7)	Viva (6)	Total Marks (20)
1	Introduction to Python programming environment				
2	Variables, data types, operators and expressions				
3	Input output operations				
4	Logic operations and decision making				
5	Loop statements				
6	Character and string operations				
7	Functions				
8	File handling				
9	Data structures				
10	Libraries				
11	Lab Internal Test conducted along the lines of SEE and valued for 50 Marks and reduced for 20 Marks				
	Total Marks				

Lab Internal Marks =

Signature of the Staff In-charge

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Laboratory 1

Title of the Laboratory Exercise: Introduction to Python programming environment

1. Introduction and Purpose of Experiment

   Python is a high level, interactive, interpreted, object oriented scripting language. Spyder is an open source integrated development environment for programming in the Python language. In this laboratory exercise, students get familiar with the Spyder IDE to edit and run Python programs using a set of simple exercises.

2. Aim and Objectives

   Aim

   - To familiarise Spyder IDE and simple Python programs

   Objectives

   At the end of this lab, the student will be able to

   - Explain the features and use of Spyder IDE to develop Python programs
   - Edit and execute simple Python programs

3. Experimental Procedure

   Students are given a set of Python programs. Edit and execute Python programs using

   - Python command line
   - Command prompt from windows
   - Spyder IDE
     - Interactive mode
     - Script mode

4. Algorithms

   4.1 Algorithm for printing if the number is odd or even:

   Step1 : Start

   Step2 : Read a number of type integer

   Step3 : If ((number % 2) == 0) , then do

   Write number is even,

else write number is odd

Step4 : Stop

4.2 Algorithm for printing numbers from 1 to 10

Step1 : Start

Step2 : for i in range (1,11)

then do , write i

Step3 : Stop

4.3 Algorithm for printing factorial of a number

Step1 : Start

Step2 : Read a number of type integer

Step3 : fact := 1

Step4 : for number in range (1 , number+1)

then do, fact := fact * number

Step5 : Write fact value

Step6 : Stop

4.4 Algorithm for Swapping the values of two numbers

Step1 : Start

Step2 : Read two numbers of type integers

Step3 : a := a + b

b := a – b

a := a – b

Step4 : write the values of the two variables

Step5 : Stop

5. Presentation of Results

Figure 5.1

Figure 5.1 output of program of printing if the number is odd or even

Figure 5.2

Figure 5.2 Output of program of printing numbers from 1 to 10

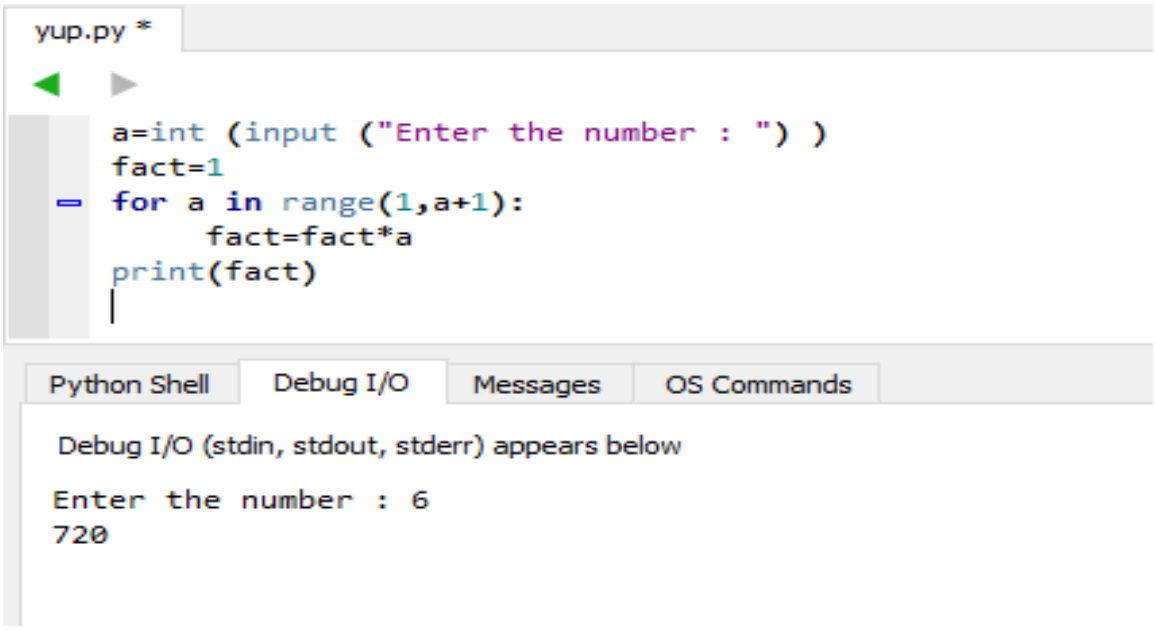

Figure 5.3

Figure 5.3 Output of program of printing factorial of the number

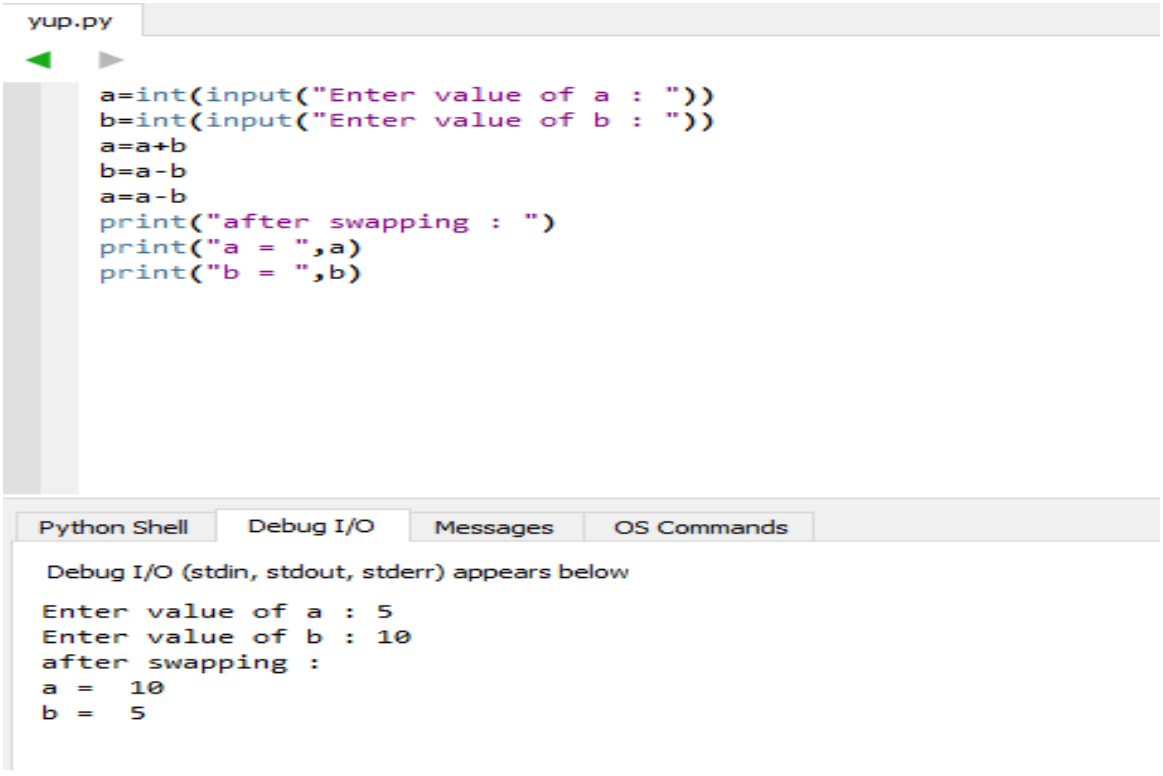

Figure 5.4

Figure 5.4 Output of swapping values of two variables