National University of Computer and Emerging Sciences

Laboratory Manuals

for

Computer Networks Lab

(CL -3001)

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Lab Manual 01

Objectives:

- Introduction to python Compiler

- Revision of Programming Concepts with Python Programming Language

Python3 Compiler:

In this lab, we will use the Python3 Compiler on Ubuntu to Compile the programs in Python and we will use POSIX Thread Libraries for multithreading in the later part of the lab. One important thing to note is that you will not be provided any IDE to code in Python. You will use a simple text editor to code in Linux which is called GEDIT. The text editor will not provide you any help in coding. You will have to write out the correct code yourself without any errors (we expect this from you in 5th semester).

After you have written your code, you will save your file with *.py* extension e.g *MyCode.py* and then you will move to the directory where you have saved your file from your home folder using command line in Ubuntu. To list the files and folders in the current directory you can simply write the "ls" command. To move into any directory you have to write "cd <directory_name>". To go directly into the home directory we simply write "cd". To go one step down in the hierarchy of directories we write "cd ..".

- ➢ To **COMPILE YOUR FILE** using python3 compiler you first have to go to the directory wherethe file is placed and then you will write the following:

    python3 <file_name>.py –o <executable_fileName>

If there is any error in your code then the compiler will tell you those errors and you will correct them. If there will be no error you will see an executable formed in the same directory having a diamond like shape.

- ➢ Then you will **RUN YOUR EXECUTABLE** by issuing the following command in the directory where your executable is placed:

    ./<executable_fileName>

Make sure you write the correct file name in any case otherwise you will get an error. You can use **TAB** after writing two to three letters of file and it will auto complete your file name for you.

- ➢ To open the terminal you will either open it using GUI or press "**Ctrl**+**Alt**+**T**". To open two windows in the same terminal you will use "**Ctrl**+**Shift**+**T**". To paste something in the

Terminal you will press "**Ctrl+Shift+V**". To copy something from your terminal you will use "**Ctrl+Shift+C**". To terminate any running program you will use "**Ctrl+C**" or "**Ctrl+Z**".

In Lab Statements:

1. Write a code in python which performs the following functions:

a) Reads the text file Input_File.txt and displays its data on the terminal. **[3]**

b) Write only the integers from the Input_File.txt file to another file which will be created at runtime. **[3]**

c) Find out all the words in the Input_File.txt File that contains one or more vowels and display result in a separate file named vowels.txt**. [3]**

d) Write non-alphabet words (non-alphabet word is the one in which all letters are nonalphabet e.g., "a#$2#" is not an alphabet word but "$%^&#32" is a non-alphabet word) from the Input_File.txt file into another text file which will be created at run-time. **[6]**

e) Using Vowel .txt file created in part c , invert the letters in the Input_File.txt file that are in Vowel.txt file . For example 'computer' will be inverted to 'retupmoc'. Rewrite the input file with the inverted letters and save the output in a separate file created at run time.**[5]**