

Programming Fundamentals LAB – BSDSF24

(Both Morning and Afternoon)

Lab 02 – 27-09-2024

Task 01 (3 marks for each)

1. Turn on a LAB computer or your LAPTOP
2. Do Logon
3. Enter Command Line Interface (CLI), the BLACK windows and observe the prompt and a blinking cursor
4. Type D: and press enter, and observe/note WHAT appears on screen, WHERE on the screen. What is command prompt and where it is now
5. Type md pflab01 and press enter, and observe/note WHAT appears on screen, WHERE on the screen. Observe the command prompt
6. Type cd pflab01 and press enter, and observe/note WHAT appears on screen, WHERE on the screen. Observe the command prompt it should be **D:\pflab02>**
7. Type cl or CL and press enter, and observe/note WHAT appears on screen, WHERE on the screen. If cl is not recognized, it mean the computer is not configured properly
8. In **search** type **Developer Command Prompt** and observe/note WHAT appears on screen
9. Repeat sub tasks 4 and 6 to get command prompt as D:\pflab02>
10. In the command prompt window, type start notepad++ average.cpp and press enter to start notepad++ application creating a new file average.cpp, if app ask you for creation of a new file, respond yes

Task 02 (20 marks)

1. Write the code (program) for computing average of two number in the notepad++ and save the file, (get assistance from TA, if required). Be careful in typing the code, type 100% as it is taught in the class session
2. Move to the command windows again and type CL /EHsc average.cpp, this will compile the program average.cpp and generate two more files named average.obj and average.exe, if your code (program) has mistakes (errors) the above mentioned files are not created and some messages on the screen appeared. Go back to notepad++ windows, correct the mistakes and repeat subtask 12
3. After successfully completing subtask 12, type average or average.exe and press enter, this will start execution of you compiled program, enter the appropriate input values and note the output. Repeat this step several times with different input values and observe the output for their correctness

Task 03 (10 marks for each)

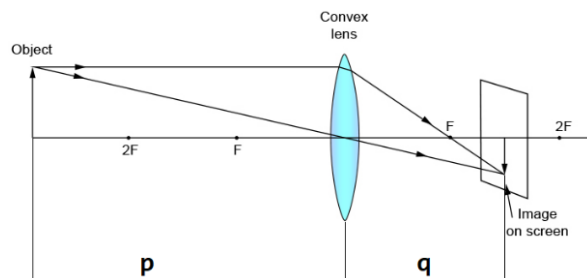
1. Copy average.cpp as dollars.cpp or create a new file dollars.cpp. Modify the lines of new CPP program, so that it asks user to enter the dollars, converts them to rupees at the rate of 278.10 rupees/dollar, and later display the rupees for the dollars enter by the use. Compile and run the program on the CLI command window.

To compile use cl dollars.cpp

If successfully compiled and dollars.exe is generated, run it by typing dollars.exe followed by enter at the prompt

2. Compute and display the focal length f of a convex lens using the object and image distances p and q respectively as shown in figure.

$$\frac{1}{f} = \frac{1}{p} + \frac{1}{q}$$



3. Create a new file sumrange.cpp and later compile and execute it as completed in above tasks. This file has a program to sum a range of natural numbers, for example 3 to 7 or 39 to 96, etc. As we know the sum of first N natural numbers is half of $N(N+1)$, we need to use it as follows.

$$\sum_{k=s}^e k = \sum_{k=1}^e k - \sum_{k=1}^s k$$

4. Write a program then compile it and execute that input a number from the user and output BIG number or SMALL number depending upon the number entered is greater than 1000 or not. This program is to get familiar with the simple use of **if**.
5. Write a program to display first 10000 odd number using while loop. You need to use $i = i + 2$ in the counting program discussed in class session. This program is to get familiar with the simple use of **while**.

-- End of Lab --