National University of Computer & Emerging Sciences

Lab # 4

For

Programming Fundamentals - Lab

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FAST School of Computing

Instructions:

- Attempt all your questions on a paper, once done scan it with your cell phone and upload the PDF to the portal at Google Classroom.
- Plagiarism is strictly prohibited.
- Late submissions are not allowed.
- This is a pair-programming task, only one person is to submit the solutions.
- Write your roll numbers, lab#, section and date on the top right corner of the page.
- You are encouraged to discuss the problem and potential solutions with your partner.
- Write the inputs and outputs of the program before beginning the pseudocode.

Scenarios:

For all the scenarios given below, you are to think of solutions and write them down as pseudocode and flowcharts. Please follow the syntax taught in the class.

Important: For all problems write down the inputs and outputs of the pseudocode before you start writing down the pseudocode, along with the purpose.

Question#1

Develop pseudocode to find the greatest common divisor (GCD) of two given positive integers.

Question#2

Develop pseudocode to determine if a given positive integer is a perfect square or not.

Question#3

Write pseudocode to find the Nth term of the Fibonacci sequence

Question#4

Develop pseudocode to generate the first N terms of the series: 1, 4, 9, 16, ...

Question#5

Design pseudocode to print the first N prime numbers.

Question#6

Create pseudocode to find the sum of the first N terms of the harmonic series (1 + 1/2 + 1/3 + ... + 1/N).

Question#7

Write pseudocode to determine if a given positive integer is a prime palindrome or not.

Question#8

Write a pseudocode to take the ‘n’ number of integer inputs from the user and count the number of even numbers input by the user.