Computational Physics Lab

(PH49012)

Spring-2021, IIT KGP

Assignment 01

Q. In mathematics, the Fibonacci series are the numbers in the following integer sequence 0,1,1,2,3,5... By definition, the first two numbers in the Fibonacci series are 0 and 1, and each subsequent number is the sum of the previous two. The nth term of the series F_n of Fibonacci numbers is defined by the recurrence relation: $F_n = F_{n-1} + F_{n-2}$.

Take n as input to find the nth term of the sequence. Example: INPUT 4 $\implies$ OUTPUT 2. Compute and print the ratio $\frac{F_n}{F_{n-1}}$ rounded off up to 3 decimal places.
Note: If n is large this ratio tends to a fixed value, which is known as golden mean. Choose the value of n wisely while using the recurrence relation.