Data Structures and Algorithms

Lab 06 – Recursion

Exercises/Tasks:

1. Implement binary search using a recursive approach. Also, show its working in the main method.
2. Implement a recursive method to compute the factorial of a given number. Also, show its working in the main method.
3. Write a program to generate the Fibonacci series till N, where N is a number input by the user. Then, show its working in the main method.
4. Write a program to reverse stack using a recursive approach.
5. Write a program to print all nodes of a Linked List (using a recursive approach).
6. Write a program to print all nodes of a Singly Linked List **in reverse order** (using a recursive approach).
7. Write a recursive method that determines if a string s is a palindrome, that is, it is equal to its reverse. A string is said to be a palindrome if the string read from left to right is equal to the string read from right to left. For example, ignoring the difference between uppercase and lowercase letters, the string "racecar" is a palindrome, while the string "cake" is not so.
8. Solve the problem of the Towers of Hanoi using recursion.