



ACADEMY OF TECHNOLOGY  
**Lab Assignment (Assignment 05)**  
Paper name: Data Structure and Algorithm  
Code: PCC-CS391 Semester: 3<sup>rd</sup>  
Discipline: CSE Time: 2 Hours

*Date: August 24, 2022*

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1. Write a program to find the factorial of a number using tail recursion.
  2. Write a program to find the  $n^{th}$  Fibonacci number using tail recursion.
  3. Write a program to implement Tower of Hanoi Problem.
  4. Write a menu driven program in C or C++ to perform the following operations on single linked list.
    - (a) *insert* a node at the beginning of the list.
    - (b) *insert* a node at the end of the list.
    - (c) *deletet* a node from the beginning of the list.
    - (d) *delete* a node at the end of the list.
    - (e) *display* the whole list.
    - (f) *search* an element  $x$  in the list.
    - (g) *reverse* the list.
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