

Data Structures and Algorithms Lab

B.Sc.(Engg.) Part-II, Even Semester, Exam 2022

Shift-I

Solve any two of the following three problems

1. Create a program in your preferred programming language (e.g., Python, C++, Java) that allows the user to:
 - (a) Declare a 2D integer array of a size of your choice.
 - (b) Populate the array with random values.
 - (c) Enter a value to search for within the 2D array.
 - (d) Implement a search algorithm (e.g., linear search or binary search) to find the value in the 2D array and return its position (row and column).
 - (e) Print the position where the value was found or a message indicating that it wasn't found.
2. You are given a tower of 4 disks, initially stacked in decreasing size on 3rd tower. Write a program to transfer the entire tower to 2nd moving only one disk at a time, and never a larger one onto a smaller.
3. Create a program in your preferred programming language (e.g., Python, C++, Java) that allows the user to:
 - (a) Declare a Binary Search tree.
 - (b) insert value into the BST.
 - (c) Traverse the BST in preorder/inorder/postorder .
 - (e) Print all values of node greater than or equals to a given input by user.

N.B.: Since the question was retracted, this is not the original question but one created later after the exam.