SWE 2001 – DATA STRUCTURES AND ALGORITHMS LAB

ASSESSMENT -1 PROBLEM STATEMENTS

1. Given an array A of n integers. You have to make a queue and stack of the given integers. Queue should contain only prime numbers and stack should contain only composite numbers. Display queue and stack contents

   Let the array A contains 5 integers: 7, 21, 18, 3 , 12 then the content of queue and stack will be :

   Queue : 7 , 3

   Stack : 12 , 18 , 21

2. Using push and pop operations of stack create a queue and display the contents of queue. NOTE: Stack's property is LIFO and Queue's property is FIFO.
   Input : Stack contents say 1,2,3,4,5
   Output: Queue contents: 1,2,3,4,5

3. Humpy likes to jump from one building to another. But he only jumps to next higher building and stops when no higher building is available. Stamina required for a journey is **xor** of all the heights on which humpy jumps until he stops. If heights are {1 2 4}, and he starts from 1, goes to 2 and then to 4. Stamina for the entire journey is 1⊕2⊕4=7. [Use arrays]

   Input:

   5 (No. of buildings)
   1 2 3 8 6 (Height of the buildings)

   Output:

   8 (1 ^ 2 ^ 3 ^ 8 = 8)