Heaven's Light is Our Guide

Computer Science & Engineering
Rajshahi University of Engineering & Technology

Lab Manual

Module- 02

Course Title: Sessional based on CSE 1201
Course No. : CSE 1202

Experiment No. 2

Name of the Experiment: Arrays, Records and Pointers

Duration: 1 cycle

Background Study: Chapter 4 (Theory and Problems of Data Structures Written by Seymour Lipschutz)

Problem I: Traversing Linear Array.
Algorithm2.1: (Given a linear array LA with Lower bound LB and upper bound UB. This algorithm traverses LA)

1. Set K := LB
2. Repeat 3 and 4 while K≤UB
3. Write: LA[K].
4. Set K:=K+1.
   [End of step 2 loop]
5. Exit

(Draw the Flow chart for above algorithm)

Problem II: Insert into a Linear Array.
Algorithm2.2: INSERT (LA, N, K, x)
(Here LA is a linear array with N elements and K is a positive integer such that K≤N. This algorithm inserts an element x into the K^{th} position in LA)

1. Set J:=N.
2. Repeat steps 3 and 4 while K≤J
3. Set LA[J+1] := LA[J]
4. J:=J-1.
   [End of step 2 loop]
5. Set LA[K]:=x.
6. Set N:=N+1.
7. Exit

(Draw the Flow chart for above algorithm)

Problem III: Deleting from a linear array.
Algorithm2.3:: INSERT (LA, N, K, x)
(Here LA is a linear array with N elements and K is a positive integer such that K≤N. This algorithm deletes the K^{th} element from LA)

1. Set x:=LA[K] and J :=K.
2. Repeat steps 3 and 4 while K<N
3. Set LA[J] := LA[J+1]
4. J:=J+1.
   [End of step 2 loop]
5. Set N:=N-1.
6. Exit

(Draw the Flow chart for above algorithm)

Problem IV: Update the value of kth value of a linear array.
Algorithm2.3: (Do yourself)
(Draw the Flow chart for above algorithm)

MORE PROBLEMS

1. Programming Problems of Chapter 4 of "Data Structures" by Seymour Lipschutz.

LAB REPORT: You have to submit all assigned problems in next lab.