Heaven's Light is Our Guide

Computer Science & Engineering
Rajshahi University of Engineering & Technology

Lab Manual

Module- 06

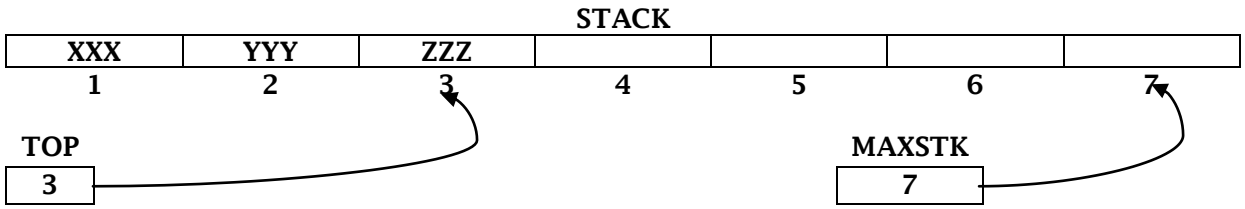
Course Title: Sessional based on CSE 1201
Course No. : CSE 1202

Experiment No. 6

Name of the Experiment: Stack

Duration: 1 cycle

Background Study: Chapter 6 (Theory and Problems of Data Structures Written by Seymour Lipschutz)



Problem I: Add an item into a stack (PUSH).
Algorithm6.1: PUSH(STACK, TOP, MAXSTK, ITEM)
This procedure pushes an ITEM into a stack.

1. [Stack already filled]
   IF TOP = MAXSTK, then Write: OVERFLOW, and Return
2. Set TOP:= TOP+1.
3. Set STACK[TOP]:= ITEM.
4. Return.

Flow Chart: Draw a flow chart.

Problem II: Delete an item from a stack (POP).
Algorithm6.2: POP(STACK, TOP, ITEM)
This procedure deletes the top elements of STACK and assigns it to the variable ITEM.

1. [Stack already Empty]
   IF TOP = 0 then: Write: UNDERFLOW, and Return.
2. Set ITEM:= STACK[TOP]
3. Set TOP:= TOP-1
4. Return.

Application of Stack

[1] Arithmetic Expression; Polish Notation
   i. Transforming Infix Expressions into Postfix Expression
   ii. Evaluation of a Postfix Expression
[2] Quick Sort

MORE PROBLEMS

1. Programming Problems of Chapter 6 of "Data Structures" by Seymour Lipschutz.

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