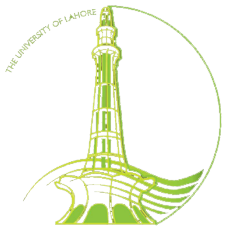

THE UNIVERSITY OF LAHORE
ISLAMABAD CAMPUS

Data Structure And Algorithum

Lab Report

Name:	Ch Hasnain Zafar
Registration #:	SEU-F16-104
Lab Report #:	01
Dated:	04-03-2018
Submitted To:	Mr. Usman Ahmed

The University of Lahore, Islamabad Campus
Department of Computer Science & Information Technology

Experiment # 1
Array and its Implementation

Objective
To understand and implement the Array Problem.

Software Tool
1. DEV C++

1 Theory

What is the Array ?
An array is a collection of data items, all of the same type, accessed using a common name. A one-dimensional array is like a list; A two dimensional array is like a table; The C language places no limits on the number of dimensions in an array, though specific implementations may. Array Implementation The first decision that must be made is how big an array to declare to hold the data items in the stack. It is usually prudent to use a constant as the size of the stack. In C a declaration along the lines of:

will declare a stack size of 10 elements (from 0 to 9). If we need to change the size of the stack later we can just change this value and recompile. In addition to the data being held in the stack, we will need to hold data about the stack, in particular the number of entries being held in the stack. We need to hold the data about the stack in the same place as the data in the stack, so this probably means that we need to use a C struct. Trying to use meaningful variable names we have a declaration of:

now that we have the declaration of the structure we can make our function prototypes:

Only now do we have to start thinking about exactly how to implement the operations! The method used in this course is to add items at the location indicated by the index top, and then increment top. The first operation then is to write the init function. All this has to do is to set top to zero (the number of items in a newly created stack):

Note the use of the "*" and "-¿" notation to allow us to change the values in the stack rather than copies of the values.