Lab 2: C++ Programming - Point and Structure

Pointers are the powerful feature of C++ programming, which differs it from other popular programming languages like: java and Visual Basic.

Pointers are used in C++ program to access the memory and manipulate the address.

Reference operator(&)
If var is a variable then, &var is the address in memory.

Additional Resources:

1. Explanation of C++ pointers: www.cplusplus.com/doc/tutorial/pointers
2. InformIT: C++ Reference Guide—Arrays and Pointers: www.informit.com/guides/content.aspx?g=cplusplus&seqNum=207'
3. To find out more about vectors, visit this site: www.cplusplus.com/reference/stl/vector.

- **List** – a collection of elements of the same type.
- **Pointer variable** – a variable whose content is an address (that is, a memory address).
- **Sequential search** – a search that starts with the first element in the list and compares every list element in order until a match is found.

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1. The function removeAt of the class arrayListType removes an element from the list by shifting the elements of the list. However, if the element to be removed is at the beginning of the list and the list is fairly large, it could take a lot of computer time. Because the list elements are in no particular order, you could simply remove the element by swapping the last element of the list with the item to be removed and reducing the length of the list. Rewrite the definition of the function removeAt using this technique.
2. The function remove of the class arrayListType removes only the first occurrence of an element. Add the function removeAll to the class arrayListType that would remove all occurrences of a given element. Also, write the definition of the function removeAll and a program to test this function.

// Submit the Programming Exercises 1 and 2 from Page 204 of textbook (showing removeAt and removeAll functions).