



The lecturer will sign off after check for completion and keeps this page for records.

For Student to complete	
ECE3104 Lab Sheet No: 1 Must be completed by 4:50pm 6 Oct 2015 Student Sign _____ Date Handed in: _____	Student Name: _____ Student ID: _____
For Tutor to Sign I have seen the tasks specified in this lab sheet running. Signed by: _____ Date: _____ (Lecturer/Tutor) Note: To achieve terms and be eligible to sit the final examination at least 6 of the 8 lab sheets must be signed off as completed within the time specified.	

Objectives:

At the end of this lab session you should be able to:

- | | Check |
|--|--------------------------|
| 1. Work around Visual/Dev C++ IDE | <input type="checkbox"/> |
| 2. Write a project in C++. | <input type="checkbox"/> |
| a. Setup a project | <input type="checkbox"/> |
| b. Write code | <input type="checkbox"/> |
| c. Run, save, open, edit project and print code | <input type="checkbox"/> |
| 3. Finding and fixing errors | <input type="checkbox"/> |
| 4. Object oriented programming: objects, classes, events and methods | <input type="checkbox"/> |



Introduction to Data Structure and Algorithm in C++

Activities for this lab:

- ▶ Explain the concepts of array.
- ▶ ***array creation and implementation***
- ▶ ***lab exercise***



Array

AIM: To write a program that implements the basic operations of the Array in C++.

Array

An array is a series of elements of the same type placed in contiguous memory locations that can be individually referenced by adding an index to a unique identifier. For example, we can store 5 values of type int in an array without having to declare 5 different variables, each one with a different identifier. Instead of that, using an array we can store 5 different values of the same type, with a unique identifier.

Lab Question:

1. Write a program that declares 10 element in an array, computes the Summation of Array Values.

```
1. int main ()
2. {
3. int ECE3104 [] = {6, 0,16, 2, 56, 40, 12, 81, 3, 29};
4. int n, result=0;
5. for ( n=0 ; n<10; n++ )
6. {
7. result += ECE3104 [n];
8. }
9. cout << result;
10. return 0;
```

Output: ?

2. What are the output by the following program segments?

```
1. int i;
2. int values[ 10 ] = { 4, 1, 1, 3, 4, 9, 9, 2, 1, 7 };

3. cout << "Element" << setw( 13 ) << "Value" << endl;

4. for ( i = 0; i < 10; i++ )
5. cout << setw( 7 ) << i << setw( 13 ) << values[ i ] << endl;
```

Output: ?



```
1. char string1[] = "How are you?";  
2. cout << "string1 is: " << string1 << endl;  
3. for ( int i = 0; string1[i] != '\0'; i++ )  
4. cout << string1[i] << "_";
```

Output: ?

```
1. #include <iostream>  
2. using namespace std  
3. int main()  
4. {  
5. int array[ 3 ][ 4 ] = { { 1, 2, 3, 4 }, { 2, 3, 4, 5 },  
   { 3, 4, 5, 6 } };  
  
6. cout << "array contains: " << endl;  
7. for ( int i = 0; i < 3; i++ )  
8. {  
9. for ( int j = 0; j < 4; j++ )  
10. {  
11.     cout << array[ i ][ j ] << " ";  
12. }  
  
13.     cout << endl;  
14. }
```

Output: ?



Excercise1:

Write A c++ Program That checks if a given Array is a Palindrome.

palindrome is a number that remains the same when its digits are reversed. Like 16461, for example

Excercise2:

Write A c++ Program Which Call A Function Which Sort The Given Array.