CS2134 Homework 2 Spring 2016

February 5, 2016

Programming Part:



Written Part

1. For each of the following code fragments, determine the worst case running time using Big- Oh notation as a function of n.

(a)  O(log(n))

(b)  O(nlog(n)))

(c)  O(n)

(d) O(n^2)

(e) O(n^2)

2. For the following functions, order them by their rates of growth from fastest to slowest:

n3, n2, n1.5, n log2 n, n log n, n, n/2,

3. What is the difference between delete [] and delete?

Delete is the standard function used to deallocate memory from the heap, and delete[] is a built in way to deallocate arrays from the heap without leaving memory leaks.

4. For programming problem 1, Using big-Oh notation if size = n, give the worst case running  time for the:

(a) O(n)

(b) O(1)

5. Using big-Oh notation what is the running time of the following code snippets where v is a vector of n > 0 integers.

(a) O(n)

(b)  O(1)

6. If your code contained the following functions1

// Function 1

void f( const string & s )

{

cout << "Function 1 was called." << endl;

}

// Function 2

void f( string & s )

{

cout << "Function 2 was called." << endl;

}

// Function 3

void f( string && s )

{

cout << "Function 3 was called." << endl;

}

State which function was called for each of the following.

(a)  function 3

(b)  function 2

(c)  function 2

(d)  function 1

// I had guessed it would be 3,2,3,1 but when I ran in my compiler It came out as this.

7) Determine if the specified expression is an rvalue or an lvalue:

(a)  L

(b)  R //wrong

(c)  R

(d)  R //wrong

8. Anything wrong with this code? If there is, please describe what the problem is, otherwise state there is no problem.

The code without the & after the string in the definition runs fine. However it does state your name in both the main, when it is outputted from the function return, as well as inside the function itself.   
With the & in the definition, the variable passed to main is a dangling reference and there is an error.