Marking Scheme

Quiz Paper

BSc CE

Algorithms and Data Structures (630231)

First Quiz   First semester   Date: 11/11/2010

Section 1

Weighting 5% of the module total

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Marking Assignments

Question 1 This question is attributed with 5 marks if answered properly; the answers are as following:

Question 1.a *(2 marks)*

Solution:
The `for` loop has $2n$-4 iterations. Each time through the loop a fixed number of statements execute. Hence, this algorithm is $O(n)$. Now each time through the loop there is one addition, one subtraction, and one multiplication. Thus, the numbers of additions is $2n$-4, the number of subtractions is $2n$-4, and the number of multiplications is $2n$-4.

Question 1.b *(3 marks)*

Solution:
Prototype:
```
elemType min() const;
```
Definition:
```
template <class elemType>
elemType arrayListType<elemType>::min() const
{
    assert(length != 0);

    elemType smallest = list[0];

    for (int i = 1; i < length; i++)
        if (smallest > list[i])
            smallest = list[i];
    return smallest;
}
```