

Homework 5: Questions for Pointers

Due date: Monday 30, 11:59pm

1. Assume the variable declarations: `int Foo = 0;`
`int *ptr = &Foo;`

Which of the following statements will change the value of `Foo` to 1?

1) `ptr++`; 2) `Foo++`; 3) `(*Foo)++`; 4) `(*ptr)++`

For question 2 through 6, consider the following implementation of a function to find the maximum value in an array of integers. The for loop is required to be implemented using pointers to access elements rather than direct array indexing.

```
int maxEntry(const int* const Data, int Sz) { //Line 1
    if ( Data == NULL || Sz <= 0 )          //    2a
        return INT_MIN;                    //    2b
    int Count;                             //    3
    // Set hiSoFar to point to the first array element:
    const int *hiSoFar = _____;       //    4
    // Set Current to point to the second array element:
    const int *Current = _____;       //    5
    for (Count=1 ; Count < Sz; _____ ) { //    6
        if(_____)                          //    7
            hiSoFar = Current;             //    8
    }
    return ( _____ );                 //    9
}
```

2. How should the blank in Line 4 be filled?
1) `Data` 2) `*Data` 3) `&Data` 4) `&Data[0]` 5) `Data[0]`
3. How should the blank in Line 5 be filled?
1) `hiSoFar` 2) `hiSoFar++` 3) `Data++` 4) `&Data[1]`
4. How should the blank in Line 6 be filled? 1) `Count++` 2) `Current++` 3) `Count++, Current++` 4) It should be left blank. 5) None of these [revisit this, once you filled in the next question.]
5. How should the blank in Line 7 be filled? 1) `Current > hiSoFar` 2) `&Current > &hiSoFar` 4) `*Current < *hiSoFar` 5) None of these
6. How should the blank in Line 9 be filled? 1) `*hiSoFar` 2) `&hiSoFar` 3) `hiSoFar` 4) It should be left blank 5) None of these
7. Consider implementing a function to dynamically allocate an array of integers and set all its elements to zero:

```
void ZeroIt( _____ A, const int Size) {
    A = new int[Size];
    for (int Idx = 0; Idx < Size; Idx++) {
        A[Idx] = 0;
    }
}
```

Which of the following choices for the blank preceding the formal parameter `A` is the best?

- 1) `int*` 2) `int*&` 3) `const int*` 4) `int* const` 5) `const int* const` 6) All of the above