Homework 3: Questions for Pointers

Due date: Wednesday March 29, 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 3) *Current $<$ *hiSoFar 4) 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