CSE 332 Summer 18 Pseudocode Advice Version 2 Adapted from Jeff Erickson's Pseudocode guidelines in his Algorithms notes

Your goal in writing pseudocode should be that if you handed your pseudocode to a competent programmer, they could implement the algorithm in their language of choice, without needing to understand why the algorithm works.

Here are some specific guidelines:

- Never write "and so on." Explicitly use recursion or a loop.
- Use standard imperative programming constructs and keywords (Array[index], function(argument), if/else if/else, for/while loops etc.)
- Indent carefully. If the indentation is unclear, use "end if", "end while", etc. or use braces.
- Use good variable names.
- Never use a pronouns. don't write "Remove the minimum from heap 1 and insert it into heap2" instead write: "x ← heap1.removeMin() heap2.insert(x)" The example here isn't too bad, but with more complicated statements, what "it" is gets fuzzy.
- If an operation (other than a function we've discussed in class) takes more than O(1) time, you need to break it down into multiple pieces.
- When in doubt about how much detail we're looking for, ask a member of the staff.
- Good examples of pseudocode are available at:
 - The next page of this handout.
 - Wikipedia articles for your favorite algorithms.
 - The Algorithms notes this guide is adapted from (including pseudocode for singing songs!)

Here are some examples.

```
BinarySearch(target, Array A, int start, int end)
    if(end == start)
        if(A[start] == target)
            return start
        else
            return -1
        endIf
    endIf
    int mid = start + (end - start)/2
    if(A[mid] == target)
        return mid
    else if(A[mid] < target)</pre>
        return BinarySearch(target, A, mid+1, end)
    else
        return BinarySearch(target, A, start, mid-1)
    endIf
FizzBuzz(int n)
    for i from 1 to n
        if(i is divisible by 15)
            print "FizzBuzz"
        elseif(i is divisible by 3)
            print "Fizz"
        elseif(i is divisible by 5)
            print "Buzz"
        else
            print "i"
```