

Name: _____

SAMPLE Programming Assessment 1
CMP 326: Programming Methods II
Lehman College– CUNY
7 September 2010

Problem 1	15	
Problem 2	20	
Problem 3	15	
Total	50	

Directions:

- Include your name (as a comment) in each solution
- Submit each solution on Blackboard, under “Programming Assessment 2” in Assignments.
- Submit .java files only.

1. Using the `ArraySorter` (from the textbook zip files), implement the `insertion sort`.

“Every repetition of insertion sort removes an element from the input data, inserting it into the correct position in the already-sorted list, until no input elements remain.”

```
for j =1 to length(A)-1
    key = A[ j ]
    //A[ j ] is added in the sorted sequence A[1, .. j-1]
    i = j - 1
    while i >= 0 and A [ i ] > key
        A[ i +1 ] = A[ i ]
        i = i -1
    A [i +1] = key
```

(Description and pseudocode from http://en.wikipedia.org/wiki/insertion_sort.)

2. Write a new class `Manager` that extends the `Person` class (from the zip files on Blackboard or the textbook). In addition to the attributes of a `Person`, the `Manager` class should also keep track of the number of employees and have an array of `Person` to hold the employees. Include new methods to access the number of Employees as well as add a new employee and print out the current employees.
3. Write a program that stores 5 numbers in an array, and then asks the user for the index of the entry to display. Using exception handling, gracefully handle any array index out of bounds.