Homework No.4
Due Date: January 14, 2005 at the beginning of the class
A late turn-in will not be accepted

1) What are basic principles of OO design/programming? Describe each principle with some details and examples (20%)

2) Explain differences between interface and class. (5%)

3) Describe the following UML class diagrams in plain English (what does it mean/represent)
   a. (10 %)

   b. (10%)

4) Explain what big O notation is and why it is important to understand this aspect during software design/implementation. (10%)

5) Rewrite the following big O in a ordered sequence (low to high) (5%)
   \( O(n), O(N^2), O(\log N), O( N \log N), O (1), O (N^3) \)

6) Explain why sometimes you would want to keep your data in an ordered array. Also explain what price you have to pay to maintain it in the ordered sequence. (10%)

7) Analyze the complexity of your project #2 (in a big O notation for overall, comparison, swapping/shifting cost) (10%)

8) Explain these term LIFO, FIFO and what ADT these policies represented. (10%)

9) Given an expression 10 * ( 5 + 20), show how to use the Stack ADT to do infix-postfix translation. (10%)