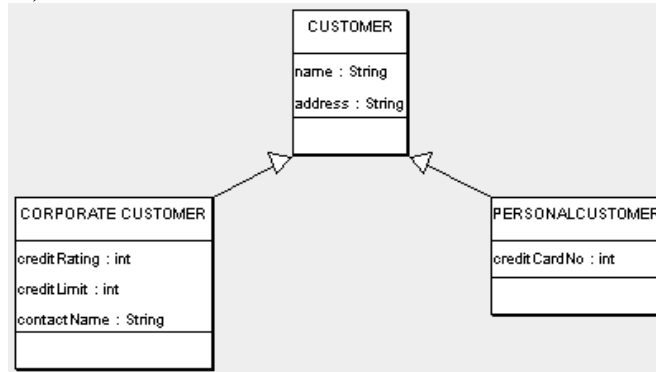


Homework No.4

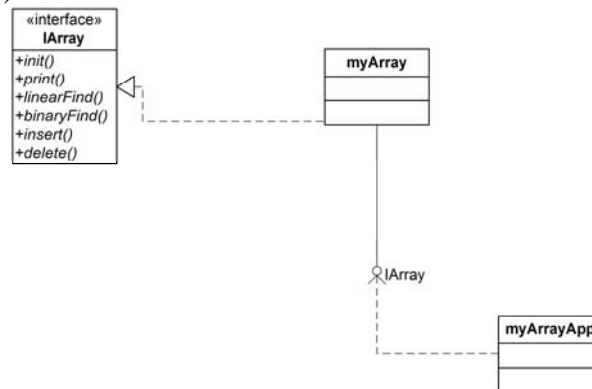
Due Date: January 14, 2005 at the beginning of the class

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%)