İTÜ Computer Engineering Department
BLG252E Object Oriented Programming
1st Homework

Due Date: March 14, 2011 9.00 AM

In this assignment, you will design C++ classes for the following real-world objects. Each student information (**Student**) is maintained with the following attributes: id (int), name (char array) and surname (char array). Constructor of the Student will ask the user of the program to provide all necessary information (id, name etc.) via keyboard. A **ClassList** is an array of pointers to **Student** objects. One can generate a new ClassList object by copying the contents of another ClassList object. You will provide the required services for the classes to run the test code given below. If necessary, you need to provide the copy constructor for the **ClassList** class. If not, you need to explain why it is not required.

Test code (included in the archive file):

```
#include "Student.h"
#include "ClassList.h"
#include <iostream>
using namespace std;
const unsigned int MAX_NUM = 5;

int main() {

  Student students[MAX_NUM+1]; //Student information is provided by the user via keyboard
  ClassList BLG252E(MAX_NUM); // Has an empty array of Student objects

  for(int i= 0; i < MAX_NUM +1; i++)
       if (!BLG252E.insert(students[i]))
              cout << "Inserting the student info is failed" << endl;

  cout << "****************************************" << endl;
  //Listing all students in the class
  BLG252E.printAll();
    cout << "****************************************" << endl;
  //A new object is generated by copying the contents of another object
  ClassList BLG312 = BLG252E;
  cout << "****************************************" << endl;
  int search_id;
  //Finding the student with the id given by the user
  cout << "Searching for a student in the class BLG252E.." << endl
       << "id: "; cin >> search_id;

  Student* s1 = BLG252E.find(search_id);
  if (s1 != NULL){
       s1->print();
       s1->setSurname("New Surname");
  }
  else cout << "Student does not exist in the class " << endl;
  cout << "****************************************" << endl;
  BLG252E.printAll();
  cout << "****************************************" << endl;
  //New class is listed on the screen
  BLG312.printAll();

  return 0;
}
```

Submission Procedure:

1. Your source code archive should contain **Student.h**, **Student.cpp**, **ClassList.h**, **ClassList.cpp**, and **TestClassList.cpp** files.
2. Make sure you write your name and number to all the header files of your project with the following format.

```
/*
 *
 *  BLG252E
 *  2011 Spring
 *  1st Homework
 *
 */

/*
 *
 * Student Name: !! enter here !!
 * Student ID  : !! enter here !!
 *
 */
```

3. Make sure that GNU C++ Compiler (g++) compiles your project and the application runs in Unix smoothly. This is important because we will evaluate your homework in Unix using g++.
4. Use comments wherever necessary in your code to explain what you did.
5. After you make sure that everything is compiled smoothly, archive all files into a zip file. Submit this file through www.ninova.itu.edu.tr. Ninova enables you to change your submission before the submission deadline.

Academic dishonesty including but not limited to cheating, plagiarism, collaboration is unacceptable and subject to disciplinary actions. Any student found guilty will get grade F.