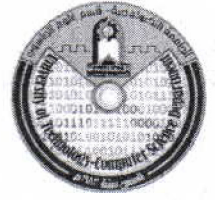




Ministry of Higher Education and Scientific Research
University of Technology
Department of Computer Science
Final Exam / 2013 -2014



Subject: Object Oriented Programming
Branch: All Branches
Examiners: Dr. Rana F. Ghani & L. Eklas Falih

Year: second
Time : 3 Hours
Date: 27/5/2014

Note: Answer All Questions

Q1// Write an object oriented program that convert currency from Dollar into its equivalent in Iraqi Dinar. The program includes two classes called Dollar and IDinar. Also, the program includes a friend function to convert the currency type.
(12 degrees)

Q3// correct the error(s) of one of the following programs: (10 degrees)

Program a	Program b
<pre>class String { private: enum { SZ=80 }; char str[SZ]; public: String(char s[]) { strcpy(str, s); } void display() const { cout << str; } String operator + (String ss) const { String temp; if(strlen(str) + strlen(ss.str) < SZ) { strcpy(temp.str, str); strcat(temp.str, ss.str); } else { cout << "\nString overflow"; exit(1); } return temp; }}; int main() { String s1 = "ABC "; String s2 = "DEF"; s1.display(); s2.display(); s1+=s2 S1.display(); return 0;}</pre>	<pre>class A { protected: int x; A(int n):x(n) {} }; class B : public A { }; class C : public A { }; } class D : public B, public C { public: void get () { cout << x } }; int main() { D d; cout<< d.geta(); return 0; }</pre>

Q2// Answer one of the following branches:

(13 degrees)

- a) Write an object oriented program that uses the template concept to implement a queue of any type. The program includes queue class that includes an array of template type, the function Add() to add a new data item to the rear of the queue and the function Delete() to remove a data item from the front of the queue.
- b) Write an object oriented program that uses the concept of template to sort the contents of an array of any type. The program includes data class which include an array A of template type and sort() as a function to sort the contents of A in an ascending order.


Q4// A TV channel needs to print a table of tennis and soccer games that will be shown on the channel. Each entry of the table includes date, time of the game, the names of the teams or players of the game and the status of the game.

Write an object oriented program that includes a class game that stores the day, month, year, hour and minute of the game (type int).

From game class, derive two classes: tennis and soccer classes. Class tennis adds player1 name and player2 name(type string) rank1 and rank2 (type int). Class soccer adds team1 name and team2 name(type string) sequence1 and sequence2 (type int).

Write a main() function that includes an array of size 20 to accept pointers of type tennis or soccer to fill in data and then displaying the data according to the channel table requirements. The status of the game is computed according to a Boolean function isimportant() which returns true if one or both of the players' rank is less than or equal to 10 for tennis class and return true when one or both of teams' sequence is less than 3 for soccer class.

(15 degrees)


نور محمد علي

