Sinai University

Faculty of Information Technology

Computer Programming (2) **Quiz #1**

10-11-2018 **Model Answer** **Time allowed: One Hour**

Answer the following Questions [15 marks]

Question 1: [5 marks]

Define a class **report** that has four data members: ***adno*** (of type **int**) , ***name*** (of type **string**), ***marks*** (array of 5 floating values), and ***average***(of type float) represent the average of 5 marks, and it has three member functions ***getavg()*** to compute the average obtained in five subject, ***readinfo()*** to accept values for adno, name, marks, then calculate the value of average, and ***displayinfo()*** to display all data members of report on the screen.

```
class report
{
private:
      int adno;
      char name[10];
      float marks[5], average;
public:
      void getavg()
      {
            float s = 0;
            for (int i = 0;  i < 5;  i++)
            {
                  s = s + marks[i];
                  average = s / 5;
            }
      }
      void readinfo()
      {
            cin >> adno >> name;
            for (int i = 0; i < 5; i++)
                  cin >> marks[i];
            getavg();
      }
      void displayinfo()
      {
            cout << adno << name;
            for (int i = 0; i < 5; i++)
                  cout << marks[i];
            cout << average;
      }
};
```

Question 2: **[10 marks]**

Define a class **account** that represents a bank account and has three data members: account number **accNo** (of type int), current balance **balance** (of type double), and periodic interest rate **rate** (of type double). It also has:

(a) a constructor that creates an account object and sets its data members to given values.
(b) a member function **show_account()** that displays the information of an account object.
(c) a member function **deposit()** that accepts an amount of money, then increases the balance of an account object by this amount.
(d) a member function **withdraw()** that accepts an amount of money, then decreases the balance of an account object by this amount if it does not exceed the balance and returns the amount withdrawn; otherwise, returns 0.
(e) a member function **compound()** that computes the interest of an account object and adds it to its balance, where interest = balance x rate.

Then, write a program that performs the following tasks:

(i) Reads the information of an accounts from the keyboard, and create **account** objects for these data, then
(ii) Asks the user to enter one of the following letters and performs the corresponding operation:
   D: Asks the user to enter an account number and an amount of money, and deposits this amount in the specified account, then displays the account.
   W: Asks the user to enter an account number and an amount of money, and attempts to withdraw this amount from the specified account, then displays a message indicating whether the withdrawal is done or not.
   C: Computes the interest for the ° accounts, then displays the accounts
(iii) Display the data of the account object

```
#include<iostream>
using namespace std;
class account
{
private:
	int accno;
	double balance, rate;
public:
	account(int n, double b, double r)
	{
		accno = n;
		balance = b;
		rate = r;
	}
	void show_account()
	{
		cout << accno << balance << rate;
	}
	void deposit(double m)
	{
		balance = balance + m;
	}
	double withdraw(double m)
	{
		if (balance >= m)
		{
			balance == balance - m;
			return m;
		}
		else
			return 0;
	}
	void compound()
	{
		double intrest = rate * balance;
		balance = balance + intrest;
	}
};
```

```
void main()
{
	int n;
	double b, r, m;
	char h;
	cin >> n >> b >> r;
	account  c1(n, b, r);
	cout << "enter your choice (D or W or C)";
	cin >> h;
	if (h == 'd')
	{
		cout << "enter the ammount of money";
		cin >> n>> m;
		c1.deposit(m);
		c1.show_account();
	}
	else if (h == 'w')
	{
		cout << "enter the ammount of money";
		cin >>n >>m;
		double am=c1.withdraw(m);
		if (am > 0)
			cout << "withdraw completed";
		else
			cout << "withdraw not completed";
	}
	else if (h == 'c')
	{
		c1.compound();
		c1.show_account();
	}
	c1.show_account();
}
```

With my best wishes