**Object-Oriented Programming Lab#4, Fall 2019**

**Today’s Topics**

* Class and Object
* Initialization of fields.
* Constructor
* String concatenation
* Array of reference type

**Problems/Assignments**

**Problem#1**

Create a Banking System, where a user can create new account, deposit money, withdraw money and check the balance

**What you need to do:**

1. Create a **BankAccount** class which has **3 instance variables**; name, id and balance.
   1. Create a constructor with 3 arguments and initialize the attributes.

The class also has the **following 4 methods**;

* 1. void deposit(double depAmount)
* inside the method the balance need to be increased by the “depAmount” amount.
  1. void withdraw(double withAmount)
* the balance is decreased by “withAmount” amount. We have to make sure the balanced do not become negative.
  1. double getBalance()
* the method returns the balance.
  1. void display()

– this method displays the attributes in the format “Name:[name]; Id:[id]; Balance:[balance]”.

1. Now create an **application class** (that has the main method) named “**Bank**” which will have the **main** method.
   * In the main method, you need to create an account first. So, take input for the 3 fields (name, id, balance) from the user. After taking the input, create a BankAccount object.
   * After creating the account, you have to provide a menu on the console. It will take user input to decide what action to take.
     + Input ‘1’ means deposit money. For this input, you have to ask user for the amount of money he wants to deposit.
     + Input ‘2’ means withdraw money. So, you have to ask user for the amount of money he wants to withdraw. Also you need to prompt if he needs to know the balance. If yes, you need to display the balance before the withdrawal and after the withdrawal.
     + Input ‘3’ means display the balance of the account. In that case you have to display the balance.
     + Input ‘0’ means exit the system.

**Problem#2:**

Update **Problem#1** to handle multiple accounts, where user can do the following

* create more than one account
* deposit money to any account
* withdraw money from any account
* Get the balance info of any account.

**What you need to do:**

In the main method create an array of BankAccount type. And do the following

1. Add 2 mores option in your previous menu for creating new account and displaying the account info.
   1. When user chooses create account option, take input from user for the 3 fields, create a BankAccount Object and add to the BankAccount array.
   2. If user chooses display option, access each element of the bankAccount array and call the display method.
2. For the deposit, withdraw and getBalance option, now you have to take the account number as input and do the following.
   1. Find the account from the Array
   2. Call the respective method with appropriate parameter.