Answers for Lab 3
Week 4

1. Design and write a class to represent a bank account that includes the following members:
    a. Data members
        - Owner name
        - Account number
        - Balance amount in the account
    b. Methods members
        - To assign initial values
        - To deposit an amount
        - To withdraw an amount after checking balance
        - To display the owner name and balance

Sample Answer:

```
class BankAccount
{
      String ownerName;
      String accNumber;
      double balance;

      public void setOwner (String name)
      {
            ownerName = name;
      }
      public void setNumber (String number)
      {
            accNumber = number;
      }
      public void setBalance (double amount)
      {
            if (amount >= 0) {
                  balance = amount;
            }
            else
                  System.out.println("Error: Invalid amount!");
      }
      public void deposit (double amount)
      {
            if (amount > 0) {
                  balance += amount;
            }
            else
                  System.out.println("Error: Invalid amount!");
```

```
        }
        public void withdraw (double amount)
        {
                if (amount > 0 && amount < balance){
                        balance -= amount;
                }
                else
                        System.out.println("Error: Insufficient found or
invalid amount!");
        }
        public void display ()
        {
                System.out.println ("Account owner's name: "+
ownerName);
                System.out.println ("Account balance: "+ balance);
        }
}
```

2. Modify the above class to incorporate a constructor to provide initial values.

Sample Answer:

```
class BankAccount
{
        String ownerName;
        String accNumber;
        double balance;

        BankAccount (String name, String number, double amount)
        {
                ownerName = name;
                accNumber = number;
                if (amount >= 0) {
                        balance = amount;
                }
                else
                        System.out.println("Error: Invalid amount!");
        }
        public void deposit (double amount)
        {
                if (amount > 0) {
                        balance += amount;
                }
                else
                        System.out.println("Error: Invalid amount!");

        }
        public void withdraw (double amount)
        {
                if (amount > 0 && amount < balance){
                        balance -= amount;
                }
                else
```

```
                        System.out.println("Error: Insufficient found or
invalid amount!");
        }
        public void display ()
        {
                System.out.println ("Account owner's name: "+
ownerName);
                System.out.println ("Account balance: "+ balance);
        }
}
```

3. Write a main method for the above class that reads in the initial values from the keyboard.

Sample Answer:

```
import  java.util.*;
import java.io.*;

class BankAccount
{
   String ownerName;
   String accNumber;
   double balance;

        …
        …
        …
   static DataInputStream dis = new DataInputStream(System.in);
   static StringTokenizer st;

   public static void main(String[] args) throws IOException
   {
        System.out.print("Please enter an account number: ");
        st = new StringTokenizer(dis.readLine());
        String num = new String(st.nextToken());

        System.out.print("Please enter the owner's name: ");
        String name = new String (dis.readLine());

        System.out.print("Please enter the balance: ");
        st = new StringTokenizer(dis.readLine());
        double blns = new Double (st.nextToken()).doubleValue();

        BankAccount acc = new BankAccount(name, num, blns);
        acc.display();

        acc.deposit(blns);
        acc.display();

        acc.withdraw(2*blns);
        acc.display();

        acc.withdraw(blns);
        acc.display();
```

```
    }
}
```