LAB Solutions

Tuesday 7/1/2008

1. Write a program to produces several random numbers in various ranges: 1) over all possible int value; 2) from 0 to 9; 3) from 1 to 10; 4) from 20 to 34; 5) from -10 to 9; 6) between 0.0 and 1.0, and 7) between 1.0 and 6.0

```
import java.util.*;

public class RandomNumGen{
   public static void main (String args[]){
      int intNum;
      float floatNum;

      Random randomNumber = new Random();

      intNum = randomNumber.nextInt();
      System.out.println (intNum);

      intNum = randomNumber.nextInt(10);
      System.out.println (intNum);

      intNum = randomNumber.nextInt(10) + 1;
      System.out.println (intNum);

      intNum = randomNumber.nextInt(15) + 20;
      System.out.println (intNum);

      intNum = randomNumber.nextInt(20) - 10;
      System.out.println (intNum);

      floatNum = randomNumber.nextFloat();
      System.out.println (floatNum);

      floatNum = randomNumber.nextFloat() * 5 + 1.0f;
      System.out.println (floatNum);
     }
}
```

2. Complete the `Employee` class below and implement the main class to create an `Employee` object and print out the object.

```
public class Employee {
   private String firstName;
   private String lastName;
   private String socialSecurityNumber;
   private double monthlySalary;

   public Employee (String first, String last, String ssn, double salary){
      firstName = first;
      lastName = last;
      socialSecurityNumber = ssn;
      monthlySalary = salary;
   }
```

```
   public void setFirstName(String first){
      firstName = first;
   }

   public void setLastNname(String last){
      lastName = last;
   }

   public void setSocialSecurtyNnumber(String ssn){
      socialSecurityNumber = ssn;
   }

   public String getFirstName(){
      return firstName;
   }

   public String getLastName(){
      return lastName;
   }

   public String getSocialSecurityNumber(){
      return socialSecurityNumber;
   }

   public double getMonthlySalary(){
      return monthlySalary;
   }

   public String stringEmployeeInfo(){
      return getFirstName() + " " + getLastName() + "\nSSN: " +
getSocialSecurityNumber()+ "\nMonthly Salary: " + getMonthlySalary();
   }
}

public class EmployeeDemo
{
   public static void main (String args[])
   {
      Employee myEmployee = new Employee("George", "Bush", "111-22-3333",
50000.00);
      System.out.println (myEmployee.stringEmployeeInfo());
   }
}
```

3. Construct a class `Person`. A `person` should have a name, an address and an age. Make use of the class String. Form a constructor and some appropriate methods for class Person (Exercise 2 on page 79). Also create a `person` object and print it by implementing the main class.

```
public class Person {
   private String Name;
   private String Address;
   private int age;

   public Person (String name, String addr, int ageInput){
      Name = name;
      Address = addr;
      age = ageInput;
   }

   public void setName (String name) {
```

```
      Name = name;
   }

   public void setAddress (String addr) {
      Address = addr;
  }

   public void setAge (int ageInput) {
      age = ageInput;
   }

   public String getName (){
      return Name;
   }

   public String getAddress () {
      return Address;
   }

   public int getAge () {
      return age;
   }

   public String toString () {
      return "Name: " + getName() + "\nAddress: " + getAddress() + "\nAge: " +
getAge();
   }
}


public class PersonDemo {
   public static void main (String args[]) {

     Person person = new Person ("George Bush", "\n 1600 Pennsylvania Avenue
NW\n Washington, DC 20500", 61);
      System.out.println (person.toString());
   }
}
```