Lesson – 2- Home Work Assignment

Problem – 1

Create a class called Prog1. In the main method of the class, output to the console the result of doing the following two computations:

1. get a random number x in the range 1 .. 9 and compute π^x.
2. get a random number y in the range 3 .. 14 and compute y^π.

Use the RandomNumbers.java class that has been provided for you as an attachment. (Do not use the Random class directly.) Use Math API to solve π^x and y^π.

Problem – 2

The records of a database table Product have been stored in text format as s string in your given program using delimiters ":" and "," in the following way: Different rows are separated by ":" and, within a particular record, different column entries are separated by ",". In each record, the first column is always productId.

Write a program (called Prog2) that will read from the string records and extract all the product id's that occur in the String. Here records works as text file. Your program should then output ALL the product id to the console in the following form: (this is a typical example)

231A

113D

521W

009G

```
public class Prog2 {

        public static void main(String[] args){

//column names:             productId, name,numInStock,provider,pricePerUnit
          String records = "231A,Light Bulb,123,Wilco,1.75:"+
                           "113D,Hairbrush,19,Aamco,3.75:"+
                           "521W,Shampoo,24,Acme,6.95:"+
                           "440Q,Dishwashing Detergent,20,Wilco,1.75:"+
                           "009G,Toothbrush,77,Wilco,0.85:"+
                           "336C,Comb,34,Wilco,0.99:"+
                           "523E,Paper Pad Set,109,Congdon and Chrome,2.45:"+
                           "888A,Fake Diamond Ring,111,AmericusDiamond,3.95:"+
                           "176A,Romance Nove1 1,20,Barnes and Noble,3.50:"+
                           "176B,Romance Nove1 2,20,Barnes and Noble,3.50:"+
```

```
                "176C,Romance Nove1 3,20,Barnes and Noble,3.50:"+
                "500D,Floss,44,Wilco,1.25:"+
                "135B,Ant Farm,5,Wilco,8.00:"+
                "211Q,Bicycle,9,Schwinn,75.95:"+
                 "932V,Pen Set,50,Congdon and Chrome,9.95:"+
                 "678Q,Pencil 50,123,Congdon and Chrome,9.95:"+
                 "239A,Colored Pencils,25,Congdon and Chrome,4.75:"+
                 "975B,Shower Curtain,25,Wilco,6.50:"+
                 "870K,Dog Bowl,15,Wilco,4.75:"+
                 "231S,Cat Bowl,15,Wilco,4.75:"+
                 "562M,Kitty Litter,15,Wilco,3.25:"+
                 "777X,Dog Bone,15,Wilco,4.15:"+
                 "933W,Cat Toy,15,Wilco,2.35:"+
                 "215A,Hair Ball,0,Little Jimmy,0.00:";

        // Implement the code

        }

}
```

Problem – 3

Write a program called RemoveDups. Create an array which accepts an array of Strings only. Creates a new array in which all duplicate Strings in the original input array have been removed. You should not use any APIs like HashSet, TreeSet etc., Write your own logic. Also, your result should not contain null values.

For example, if the input array is

["horse", "dog", "cat", "horse", dog"]

then the output would be the following array:

["horse","dog","cat"]

Problem – 4

Create a class `Prog4`. Inside its `main` method, create `float` variables to store each of the following numbers:

```
1.27, 3.881, 9.6
```

Output to the console the following two values:

1. the sum of the `floats` as an integer, obtained by casting the sum to type `int`
2. the sum of the `floats` as an integer, obtained by rounding the sum to the nearest integer, using the `Math.round` function

Problem – 5

Create a class Prog5 and implement the given method which takes the two arrays of inputs and combine the two arrays into single array.

public int[] combine(int[] a, int[] b);

Example: Input array a : [5,6,-4,3,1]

Input array b: [3,8,9,11]

Output arrays: [5,6,-4,3,1, 3,8,9,11]

Problem-6

Create a Java method

```
static int min(int[] arrayOfInts)
```

(in a class Prog6) that outputs the minimum of an array of `int`s.

Example: For the given array of int inputs, method return the result of minimum -22

```
[2, -21, 3, 45, 0, 12, 18, 6, 3, 1, 0, -22]
```

NOTE: You may not use the sorting tools available in the Java libraries; for instance, you may not call Arrays.sort() to sort the input array. (No credit if you do it this way.)