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Homework 1.1

Randomly generate numbers between:

a) 0,1,2,3

Code:

Homework1_1a.java > ...

```java
public class Homework1_1a{
    //main method
    Run | Debug
    public static void main(String[] args){
        // Homework 1.1: Randomly generate numbers:
        // a) 0,1,2,3\
        int min= 0;
        int max= 3;
        int range = max-min + 1; //operasi menentukan range
        int random = (int)(Math.random()*range + min);  //casting angka random ke variabel int random
        System.out.println(random); //output angka random
    }
}
```

Hasil output:

Windows PowerShell

```
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> javac Homework1_1a.java
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1a
3
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1a
1
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1a
2
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1a
2
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1a
0
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1a
2
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1a
0
PS D:\Kuliah\Semester 2\Praktikum ASD\homework>
```

b) 1,2,3,4,5,6

Code:

```java
public class Homework1_1b{
    //main method
    Run | Debug
    public static void main(String[] args){
        // Homework 1.1: Randomly generate numbers:
        // b) 1,2,3,4,5,6
        int min= 1;
        int max= 6;
        int range = max-min + 1; //operasi menentukan range
        int random = (int)(Math.random()*range + min);  //casting angka random ke variabel int random
        System.out.println(random); //output angka random

    }
}
```

Hasil output:

```
Windows PowerShell
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> javac Homework1_1b.java
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1b
6
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1b
5
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1b
6
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1b
2
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1b
1
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1b
1
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1b
1
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1b
4
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1b
3
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1b
4
PS D:\Kuliah\Semester 2\Praktikum ASD\homework>
```

c) 2,4,6,8

Code:

```java
public class Homework1_1c{
    //main method
    Run | Debug
    public static void main(String[] args){
        // Homework 1.1: Randomly generate numbers:
        // c) 2,4,6,8
        int min= 2;
        int max= 8;
        int range = max-min + 1; //opersi menentukan range
        int random;
        do {
            random = (int)(Math.random()*range + min); //casting angka random ke variabel int random
            if (random % 2 == 0){
                System.out.println(random); //output random jika angka yang muncul genap
            }
        }while (random % 2 == 1); //melakukan perulangan jika angka yang muncul ganjil

    }
}
```

Hasil output:

```
Windows PowerShell
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> javac Homework1_1c.java
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1c
8
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1c
6
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1c
6
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1c
4
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1c
6
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1c
6
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1c
2
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1c
6
PS D:\Kuliah\Semester 2\Praktikum ASD\homework>
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1c
8
PS D:\Kuliah\Semester 2\Praktikum ASD\homework>
```

d) -5,-4,...,4,5

Code:

```java
public class Homework1_1d{
    //main method
    Run | Debug
    public static void main(String[] args){
        // Homework 1.1: Randomly generate numbers:
        // d) -5,-4,...,4,5
        int min= -5;
        int max= 5;
        int range = max-min + 1; //operasi menentukan range
        int random = (int)(Math.random()*range + min);  //casting angka random ke variabel int random
        System.out.println(random); //output angka random

    }
}
```

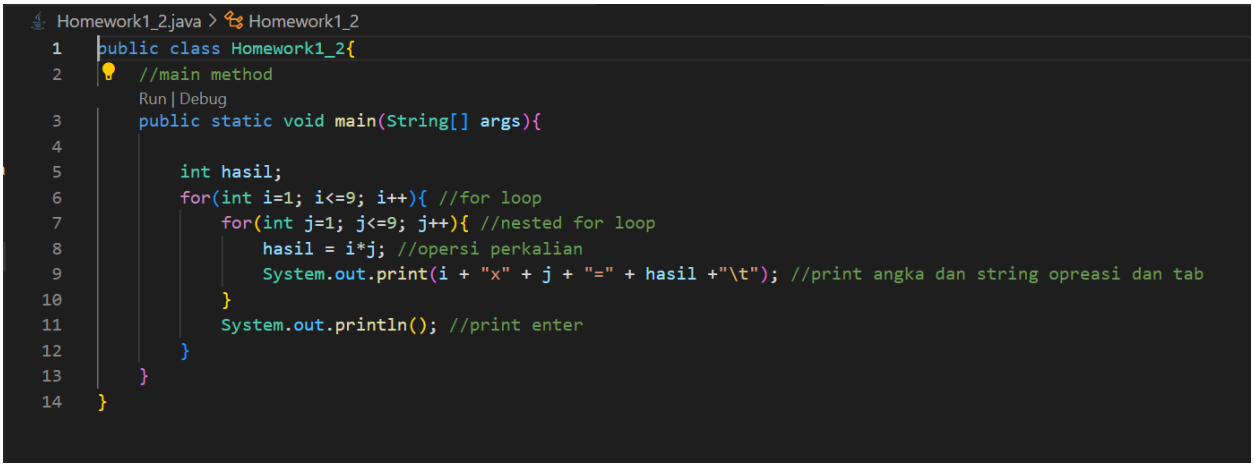
Hasil output:

```
Windows PowerShell
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> javac Homework1_1d.java
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1d
-2
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1d
0
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1d
-3
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1d
5
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1d
-1
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1d
5
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1d
0
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1d
-2
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1d
0
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1d
0
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1d
5
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_1d
0
PS D:\Kuliah\Semester 2\Praktikum ASD\homework>
```

Homework 1.2

Create a program that outputs 9x9 multiplication table

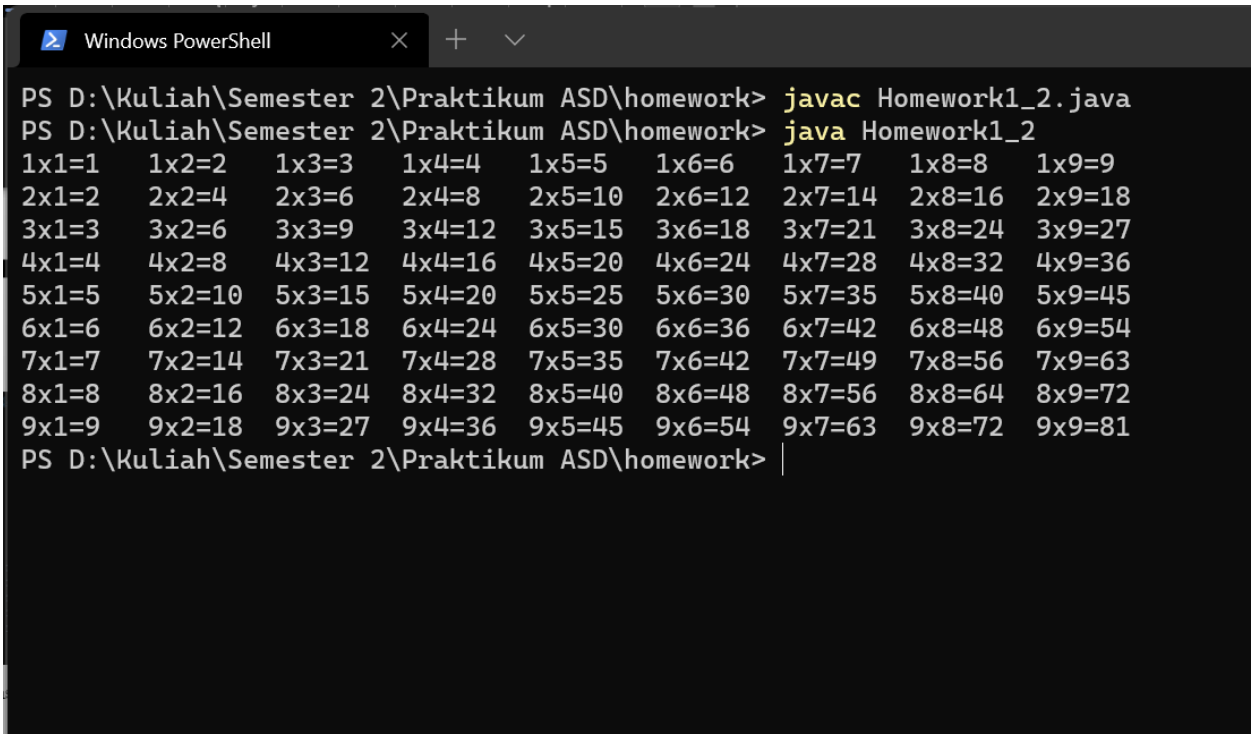
Code:



```java
public class Homework1_2{
    //main method
    public static void main(String[] args){

        int hasil;
        for(int i=1; i<=9; i++){ //for loop
            for(int j=1; j<=9; j++){ //nested for loop
                hasil = i*j; //opersi perkalian
                System.out.print(i + "x" + j + "=" + hasil +"\t"); //print angka dan string opreasi dan tab
            }
            System.out.println(); //print enter
        }
    }
}
```

Hasil output:



```
Windows PowerShell
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> javac Homework1_2.java
PS D:\Kuliah\Semester 2\Praktikum ASD\homework> java Homework1_2
1x1=1   1x2=2   1x3=3   1x4=4   1x5=5   1x6=6   1x7=7   1x8=8   1x9=9
2x1=2   2x2=4   2x3=6   2x4=8   2x5=10  2x6=12  2x7=14  2x8=16  2x9=18
3x1=3   3x2=6   3x3=9   3x4=12  3x5=15  3x6=18  3x7=21  3x8=24  3x9=27
4x1=4   4x2=8   4x3=12  4x4=16  4x5=20  4x6=24  4x7=28  4x8=32  4x9=36
5x1=5   5x2=10  5x3=15  5x4=20  5x5=25  5x6=30  5x7=35  5x8=40  5x9=45
6x1=6   6x2=12  6x3=18  6x4=24  6x5=30  6x6=36  6x7=42  6x8=48  6x9=54
7x1=7   7x2=14  7x3=21  7x4=28  7x5=35  7x6=42  7x7=49  7x8=56  7x9=63
8x1=8   8x2=16  8x3=24  8x4=32  8x5=40  8x6=48  8x7=56  8x8=64  8x9=72
9x1=9   9x2=18  9x3=27  9x4=36  9x5=45  9x6=54  9x7=63  9x8=72  9x9=81
PS D:\Kuliah\Semester 2\Praktikum ASD\homework>
```