Atmiya University-Rajkot
M.C.A Semester-II
"Practical Assignment-2"

Subject: "(23PGCA206)-Object Oriented Programming using Java"

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1. Write a program user through input two numbers and check amicable number using Constructor.
Example– 220 and 284 are Amicable Numbers.
Divisors of 220 = 1, 2, 4, 5, 10, 11, 20, 22, 44, 55, 110
1+2+4+5+10+11+20+22+44+55+110=284
Divisors of 284 = 1, 2, 7, 71, 142
1+2+7+71+142=220

```
import java.util.*;
class Amicable
   {
     public static void main(String args[]) {
          Scanner in = new Scanner(System.in);
          System.out.print("Input the first number: ");
          int num1 = in.nextInt();
          System.out.print("Input the second number: ");
          int num2 = in.nextInt();
          int sum_num1 = 0, sum_num2 = 0;
          for (int i = 1; i <= num1; i++) {
             if (num1 % i == 0)
                sum_num1 += i;
          }
          for (int i = 1; i <= num2; i++) {
             if (num2 % i == 0)
                sum_num2 += i;
          }
          if (sum_num1 == sum_num2)
             System.out.println("These numbers are amicable.");
          else
```

```
        System.out.println("These numbers are not amicable.");
                System.out.println("\n");
    }
}
```

Output:

```
D:\JAVA>java Amicable
enter the first number: 220
enter the second number: 240
These numbers are not amicable.

D:\JAVA>javac Amicable.java
D:\JAVA>java Amicable
enter the first number: 220
enter the second number: 284
These numbers are amicable.
```

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2. Write a program user through input one number and then check. This no is
AutomorphicNumber or not. Using Constructor.

```
import java.util.*;
class Process
{
	Scanner sc=new Scanner(System.in);
	int no, s_r, sqr, temp, count=0;
	Process()
	{
		System.out.print("enter number:");
		no=sc.nextInt();
	}
	void perform()
	{
		temp=no;
		sqr=temp*temp;
		while(temp>0)
		{
			temp=temp/10;
			count++;
		}
		s_r=sqr%(int)Math.pow(10,count);
		if(s_r==no)
		{
			System.out.println("this number is Automorphic");
		}
		else
		{
```

```
                        System.out.println("this number is not Automorphic");
                }
        }
}
class Auto_mor
{
        public static void main(String[] args)
        {
                Process p=new Process();
                p.perform();
        }
}
```

Output:

```
D:\JAVA>java Auto_mor
enter number:7
this number is not Automorphic

D:\JAVA>javac Auto_mor.java
D:\JAVA>java Auto_mor
enter number:25
this number is Automorphic
```

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3. Write a program user through input one number and perform Factorial. Using Constructor.

```
import java.util.*;
class Factorial
{
    public static void main(String []args)
    {

       Scanner sc=new Scanner(System.in);

       System.out.print("Enter the number: ");
       int num=sc.nextInt();
       int i=1,fact=1;
       while(i<=num)
       {
          fact=fact*i;
          i++;
       }
       System.out.println("Factorial of the number: "+fact);
    }
}
```

Output:

```
D:\JAVA>java Factorial
Enter the number: 6
Factorial of the number: 720
```

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4. Write a program user through input one number and perform Factor .Using
Constructor.

```
import java.util.*;
class Factor
{
   public static void main(String[] args)
   {
      Scanner in = new Scanner(System.in);
      System.out.print("Enter The Number : ");
      int n = in.nextInt();
      for(int i=1;i<=n;i++)
      {
         if(n%i==0)
         {
            System.out.println(i);
         }
      }
   }
}
```

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Output:

```
D:\JAVA>java Factor
Enter The Number : 11
1
11

D:\JAVA>javac Factor.java

D:\JAVA>java Factor
Enter The Number : 12
1
2
3
4
6
12
```

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5. Write a program user through input one number and then check this number
is neon or not. Using Constructor.

```
import java.util.*;
class Neon
{
	public static void main(String args[])
	{
		int sum = 0, n;
		Scanner sc = new Scanner(System.in);
		System.out.print("Enter the number: ");
		n = sc.nextInt();
		int square = n * n;
		while(square != 0)
		{
			int digit = square % 10;
			sum = sum + digit;
			square = square / 10;
		}
		if(n == sum)
		System.out.println(n + " is a Neon Number.");
		else
		System.out.println(n + " is not a Neon Number.");
	}
}
```

Output:

```
D:\JAVA>java Neon
Enter the number: 8
8 is not a Neon Number.

D:\JAVA>javac Neon.java

D:\JAVA>java Neon
Enter the number: 9
9 is a Neon Number.
```