Assignment No:-10

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1. Write a java program to input a number and check inputted number is Krishnamurthy number or not.

```
import java.util.*;
public class CheckNumIskrishnamurthyNumOrNot
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter Your number:");
                int num = sc.nextInt();
                System.out.println("----------------------");
                int sum=0,rem=0,temp=num;
                while(temp!=0)
                {
                        int j=1,fact=1;
                        rem=temp%10;
                        while(j<=rem)
                        {
                                fact=fact*j;
                                j++;
                        }
                        sum+=fact;
                        temp=temp/10;
                }
                if(num==sum)
                {
                        System.out.println("Inputed number is krishnamurthy number");
                }
                else
                {
                        System.out.println("Inputed number is not krishnamurthy number");
                }
        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac CheckNumIskrishnamurthyNumOrNot.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java CheckNumIskrishnamurthyNumOrNot
Enter Your number:
145
----------------------
Inputed number is krishnamurthy number
```

2. Write a Java program to find the sum of the prime numbers between 100 and 200, but only consider the prime numbers that have a digit sum greater than 10. Print the sum of those prime numbers.

```
import java.util.*;
public class PrintPrimeNumAndSumThatIsGraterThanTen
{
	public static void main(String[]ar)
	{
		Scanner sc = new Scanner(System.in);
		System.out.println("Enter first number:");
		int n = sc.nextInt();
		System.out.println("----------------------");
		System.out.println("Enter last number:");
		int n1 = sc.nextInt();
		int i=n,sum1=0;
		while(i<=n1)
		{
			int j=1,c=0;
			while(j<=i)
			{
				if(i%j==0)
				{
					c++;
				}
				j++;
			}
			if(c==2)
			{
				int rem=0,temp=i,sum=0;
				while(temp!=0)
				{
					rem=temp%10;
					sum=sum+rem;
					temp=temp/10;
				}
					if(sum>=10)
					{
						System.out.println(i+" = "+sum);
						sum1+=i;
					}

			}
		i++;
		}
		System.out.println("-----------------------------------\nAddition of all prime number:"+sum1);

	}
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac PrintPrimeNumAndSumThatIsGraterThanTen.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PrintPrimeNumAndSumThatIsGraterThanTen
Enter first number:
100
----------------------
Enter last number:
200
109 = 10
127 = 10
137 = 11
139 = 13
149 = 14
157 = 13
163 = 10
167 = 14
173 = 11
179 = 17
181 = 10
191 = 11
193 = 13
197 = 17
199 = 19
---------------------------------
Addition of all prime number:2461
```

3. Write a Java program to check whether a number is an automorphic number or not.

```
import java.util.*;
public class CheckAutomorphicNumber
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter first number:");
                int n = sc.nextInt();
                System.out.println("----------------------");
                int i=n,sq=0;
                while(true)
                {
                        sq=i*i;
                        int j=sq-(i*i-i);
                        int temp=sq%100;
                        int temp1=sq%10;
                        if(temp1==n)
                        {
                                System.out.println(n+" is an automorphic number");
                        }
                        else if(temp==j)
                        {
                                        System.out.println(n+" is an automorphic number");
                        }
                        else
                        {
                                        System.out.println(n+" is not an automorphic number");
                        }

                break;
                }
                System.out.println("----------------------------------");
        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java CheckAutomorphicNumber
Enter first number:
76
----------------------
76 is an automorphic number
-----------------------------------

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java CheckAutomorphicNumber
Enter first number:
5
----------------------
5 is an automorphic number
-----------------------------------

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java CheckAutomorphicNumber
Enter first number:
2
----------------------
2 is not an automorphic number
-----------------------------------
```

4. Write a Java program to check whether a number is a Duck Number or not.

```
import java.util.*;
public class CheckDuckNumber
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter first number:");
                String n = sc.next();
                boolean condition = false;
                System.out.println("----------------------");
                for(int i = 0; i <= n.length(); i++)
                {
                        if (n.charAt(i)!= '0')
                        {
                                condition = true;
                                System.out.println(n + " is a duck number.");
                                break;
                        }
                        else if(n.charAt(i)== '0')
                        {
                                condition = true;
                                 System.out.println(n + " is not a duck number.");
                                break;
                        }
                }
        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac CheckDuckNumber.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java CheckDuckNumber
Enter first number:
012
----------------------
012 is not a duck number.

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java CheckDuckNumber
Enter first number:
120
----------------------
120 is a duck number.
```

5. Create a Java program to generate the first N prime numbers and calculate the sum of their squares.

```
import java.util.*;
public class PrintPrimeNumAndSumOfSquare
{
	public static void main(String[]ar)
	{
		Scanner sc = new Scanner(System.in);
		System.out.println("Enter first number:");
		int n = sc.nextInt();
		System.out.println("----------------------");
		System.out.println("Enter last number:");
		int n1 = sc.nextInt();
		System.out.println("----------------------");
		int i=n,sum=0;
		while(i<=n1)
		{
			int j=1,c=0;
			while(j<=i)
			{
				if(i%j==0)
				{
					c++;
				}
				j++;
			}
			int rem=i*i;
			if(c==2)
			{
				sum+=rem;
				System.out.println(i+" * "+i+" = "+rem);
			}
		i++;
		}
			System.out.println("\n----------------------------\nAddition of all square prime number is:"+sum);
	}
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PrintPrimeNumAndSumOfSquare
Enter first number:
1
----------------------
Enter last number:
15
----------------------
2 * 2 = 4
3 * 3 = 9
5 * 5 = 25
7 * 7 = 49
11 * 11 = 121
13 * 13 = 169

----------------------------
Addition of all square prime number is:377
```

6. Write a Java program to check if a given number is a palindrome and calculate the sum of its digits.

```
import java.util.*;
public class PalindromeAnTheirAddOfDigit
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter n number");
                int n = sc.nextInt();
                System.out.println("---------------------------------");
                int temp=n,rem=0,sum=0,rev=0;
                while(temp!=0)
                {
                        rem=temp%10;
                        rev=(rev*10)+rem;
                        sum+=rem;
                        temp=temp/10;
                }
                if(rev==n)
                {
                        System.out.println("Number is palindrome");

                }
                else
                {
                        System.out.println("Number is not palindrome");
                }
                System.out.println("---------------------------------\nAddition is:"+sum);
        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac PalindromeAnTheirAddOfDigit.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PalindromeAnTheirAddOfDigit
Enter n number
121
---------------------------------
Number is palindrome
---------------------------------
Addition is:4
```

7. Write a program to print the prime series between 10-20, but only till two digit from starting and find the sum of those two numbers.

```
import java.util.*;
public class PrintPrimeNumAndSumOfTenToTwenty
{
	public static void main(String[]ar)
	{
		Scanner sc = new Scanner(System.in);
		System.out.println("Enter first number:");
		int n = sc.nextInt();
		System.out.println("----------------------");
		System.out.println("Enter last number:");
		int n1 = sc.nextInt();
		System.out.println("----------------------");
		int i=n,sum=0;
		while(i<=n1)
		{
			int j=1,c=0;
			while(j<=i)
			{
				if(i%j==0)
				{
					c++;
				}
				j++;
			}
			if(c==2)
			{
				if(i<=13)
				{
					sum+=i;
					System.out.println(i+" ");
				}
			}
		i++;
		}
			System.out.println("\n----------------------------\nAddition of all prime number is:"+sum);
	}
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac PrintPrimeNumAndSumOfTenToTwenty.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PrintPrimeNumAndSumOfTenToTwenty
Enter first number:
10
----------------------
Enter last number:
20
----------------------
11
13

----------------------------
Addition of all prime number is:24
```

8. Write a Java program to generate the prime numbers between 500 and 600, but only consider the prime numbers where the sum of their digits is a multiple of 3. Print the list of those prime numbers.

```
import java.util.*;
public class PrintPrimeNumAndSumAndThierMultipleOfThree
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter first number:");
                int n = sc.nextInt();
                System.out.println("----------------------");
                System.out.println("Enter last number:");
                int n1 = sc.nextInt();
                System.out.println("----------------------");
                int i=n;
                while(i<=n1)
                {
                        int j=1,c=0;
                        while(j<=i)
                        {
                                if(i%j==0)
                                {
                                        c++;
                                }
                                j++;
                        }
                        if(c==2)
                        {
                                int rem=0,temp=i,sum=0;
                                while(temp!=0)
                                {
                                        rem=temp%10;
                                        sum=sum+rem;
                                        temp=temp/10;
                                }
                                if(sum%3==0)
                                {
                                        System.out.println("sum of their digits is a multiple of 3: "+i);
                                }
                        }
                i++;
                }
        }
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PrintPrimeNumAndSumAndThierMultipleOfThree
Enter first number:
1
----------------------
Enter last number:
600
----------------------
sum of their digits is a multiple of 3: 3

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PrintPrimeNumAndSumAndThierMultipleOfThree
Enter first number:
500
----------------------
Enter last number:
600
----------------------
```

9. Write a java program to generate the palindrome number between given range, if the element is palindrome find the sum of the element, if not then find the average of the element.

```
import java.util.*;
public class PalindromeAnTheirAddOfDigitAndAverage
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter n number");
                int n = sc.nextInt();
                System.out.println("---------------------------------");
                int temp=n,rem=0,sum=0,rev=0;
                double avg=0;
                while(temp!=0)
                {
                        rem=temp%10;
                        rev=(rev*10)+rem;
                        sum+=rem;
                        avg=sum/3;
                        temp=temp/10;
                }
                if(rev==n)
                {
                        System.out.println("Addition is:"+sum);
                        System.out.println("---------------------------------");
                        System.out.println("Number is palindrome");

                }
                else
                {
                        System.out.println("Average is:"+avg);
                        System.out.println("---------------------------------");
                        System.out.println("Number is not palindrome");
                }

        }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PalindromeAnTheirAddOfDigitAndAverage
Enter n number
121
---------------------------------
Addition is:4
---------------------------------
Number is palindrome

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PalindromeAnTheirAddOfDigitAndAverage
Enter n number
133
---------------------------------
Average is:2.0
---------------------------------
Number is not palindrome
```

10. Pattern Pyramid.

```
public class PatternFivePyramid
{
	public static void main(String[]ae)
	{
		int n=11;
		for(int i=1;i<n;i++)
		{
			for(int j=1;j<=n;j++)
			{
				if(i==1 && j>=5 && j<=5 || i==2 && j>=4 && j<=6 || i==3 && j>=3 && j<=7 || i==4 && j>=2 && j<=8 || i==5 && j>=1 && j<=9)
				{
					System.out.print("*");
				}
				else
				{
					System.out.print(" ");
				}
			}
			System.out.println();
		}

	}
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac PatternFivePyramid.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PatternFivePyramid
    *
   ***
  *****
 *******
*********
```

11. Pattern Reverse Pyramid.

```
public class PatternFivePyramidReverse
{
	public static void main(String[]ae)
	{
		int n=11;
		for(int i=1;i<n;i++)
		{
			for(int j=1;j<=n;j++)
			{
				if(i==1 && j>=1 && j<=9 || i==2 && j>=2 && j<=8 || i==3 && j>=3 && j<=7 || i==4 && j>=4 && j<=6 || i==5 && j>=5 && j<=5)
				{
					System.out.print("*");
				}
				else
				{
					System.out.print(" ");
				}
			}
			System.out.println();
		}

	}
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac PatternFivePyramidReverse.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PatternFivePyramidReverse
*********
 *******
  *****
   ***
    *
```

12. Pattern.

```
import java.util.*;
public class UsingWhileLoopPatternKite
{
	public static void main(String[]ar)
	{
		Scanner sc = new Scanner(System.in);
		System.out.println("Enter n number:");
		int n = sc.nextInt();
		System.out.println("_____________________________");
		int i=1;
		while(i<=n)
		{
			int j=1;
			while(j<=n)
			{
				if(i==1 && j>=1 && j<=5 || i==2 && j>=1 && j<=4 || i==3 && j>=1 && j<=3 || i==4 && j>=1 && j<=2 || i==5 && j>=1 && j<=1 || i==
1 && j>=5 && j<=9 || i==2 && j>=6 && j<=9 || i==3 && j>=7 && j<=9 || i==4 && j>=8 && j<=9 || i==5 && j>=9 && j<=9 || i==6 && j>=1 && j<=2 || i==7 && j>=1 &&
j<=3 || i==8 && j>=1 && j<=4 || i==9 && j>=1 && j<=5 || i==6 && j>=8 && j<=9 || i==7 && j>=7 && j<=9 || i==8 && j>=6 && j<=9 || i==9 && j>=5 && j<=9)
				{
					System.out.print("*");
				}
				else
				{
					System.out.print(" ");
				}
			j++;
			}
		i++;
		System.out.println();
		}
	}
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac UsingWhileLoopPatternKite.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java UsingWhileLoopPatternKite
Enter n number:
9
_____________________________
*********
****  ****
***    ***
**      **
*        *
**      **
***    ***
****  ****
*********
```