Logical Programming Approach :

Some Important Points :

* do-while is a exit-control loop because the body of **do block** will be executed at least one time.
* We should use while loop **'Where we don't know the number of iteration'** at looping stage.

1)Q/WAP to count the digits in a given number

```
package com.kit.dsi;

public class CountDigit1
{
    public static int getDigitCount(int num)
    {
        if(num==0)
        {
            return 1;
        }

        int count = 0;

        while(num != 0)
        {
            int digit = num % 10;
            count++;
            num = num / 10;
        }

        return count;
    }
}

package com.kit.dsi;

import com.kit.dsi.CountDigit1;

class
public class Tc1
{
    public static void main(String[] args)
    {
        int number = Integer.parseInt(System.readLn("Enter a number :"));

        IO.println("The total digits available in the number '"+number+" is
"+CountDigit1.getDigitCount(number));
    }
}
```

2)WAP to count the sum of the digits in a given number

Note : If any method return type is void then we cannot call the method directly by using
IO.println() statement.

```
package com.kit.dsi;

public class SumOfDigit1
{
    public static void getSumOfDigits(int num) //456 ---> 45
    {
        int sum = 0;

        while(num != 0)
        {
            int digit = num % 10;
            sum = sum + digit;
            num = num / 10;
        }

        IO.println("Sum of digit is "+sum);
    }
}

package com.kit.dsi;

import com.kit.dsi.SumOfDigit1;

class
public class Tc1
{
    public static void main(String[] args)
    {
        int number = Integer.parseInt(System.readLn("Enter a number :"));
        SumOfDigit1.getSumOfDigits(number);
    }
}
```

3)Find the product of digits of a number (Assignment) [Int product = 1]

4)Q Find the largest digit in a number.

```
package com.kit.dsi;

public class LargestNumber
{
    public static int getLargestNumber(int num)
    {
        int max = 0;

        while(num!= 0)
        {
            int digit = num%10;
            if(max < digit)
            {
                max = digit;
            }
            num = num /10;
        }
        return max;
    }
}

import com.kit.dsi.LargestNumber;

class
public class Tc2
{
    public static void main(String[] args)
    {
        int number = Integer.parseInt(System.readLn("Enter a number :"));
        IO.println("The largest digit in number" is "+LargestNumber.getLargestNumber(number));
    }
}
```

Some important points :

* I want to print current system date and time :
* To print current system date and time we have a built-in class called **Date available in java.util package which will automatically provide the current system date and time.**

```
package com.kit.dsi;

import java.util.Date;

public class PrintDateAndTime {

    public static void main(String[] args)
    {
        Date date = new Date();
        IO.println(date);
    }
}
```

Note : java.lang is a default package, so we need not not import java.lang package
by default it is available on All the classes which are available in java.lang
package are directly use without writing the import statement.

5) ,)Find the smallest digit in a number

```
package com.kit.dsi;

public class SmallestDigit
{
    public static int getSmallestDigit(int num) //11
    {
        int min = 9;

        while(num!=0)
        {
            int digit = num % 10;

            if(min > digit)
            {
                min = digit;
            }
            num = num /10;
        }

        return min;
    }
}

package com.kit.dsi;

import com.kit.dsi.SmallestDigit;

class
public class Tc3
{
    public static void main(String[] args)
    {
        int number = Integer.parseInt(IO.readLn("Enter a number :"));
        IO.println("The smallest digit in number" is "+
"+SmallestDigit.getSmallestDigit(number));
    }
}
```

6)Find the Factorial of a number.

We should always prefer for loop, if the number of iterations are fixed

```
package com.kit.dsi;

public class FindFactorial
{
    public static int getFactorial(int num) //5
    {
        int fact = 1; //fact = 120

        for(int i=1; i<=num; i++) //i = 6

        {
            fact = fact * i; //fact = 30 * 5

        return fact;
    }
}

package com.kit.dsi;

import com.kit.dsi.FindFactorial;

class
public class Tc4
{
    public static void main(String[] args)
    {
        int number = Integer.parseInt(IO.readLn("Enter a number :"));
        IO.println("The Factorial of "+number" is " +"+FindFactorial.getFactorial(number));
    }
}

//Find the Factorial by using recursive function
```