Loops

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Loop Statements

loop statements are used to execute the set of instructions in a repeated order.

The execution of the set of instructions depends upon a particular condition.

In Java, we have three types of loops that execute similarly. However, there are differences in their syntax and condition checking time.

1.   for loop
2.   while loop
3.   do-while loop
4.   for-each

Q1: diff between while & do while loop ?

While loop checks the condition before executing the statement,

do-while loop executes the statement at least once before checking the condition

```
package Loops;
public class forLoop1_printNum_from_1_to_5
{
        public static void main(String[] args)
        {
                //start num: 1
                //end num:   5
                //incr/decr: incr by 1

                //   1   6<=5   6
                for(int i=1; i<=5; i++)
                {
                        System.out.println(i);    //1 2 3 4 5
                }


//                for(startNum; condition/endNum; incr/decr )
//                {
//                        //for loop body
//                }

        }
}


package Loops;
public class forLoop2_printNum_from_11_to_100
{
        public static void main(String[] args)
        {
                //start num: 11
                //end num:   100
                //incr/decr: incr by 1


                for(int i=11; i<=100; i++)
                {
                        System.out.println(i);
                }
        }
}
```

```java
package Loops;
public class forLoop3_printEvenNum_from_2_to_8
{
        public static void main(String[] args)
        {
                //start num: 2
                //end num:  8
                //incr/decr: incr by 2

                //    2  10<=8    2+2=4+2=6+2=8+2=10
                for(int i=2; i<=8; i=i+2)
                {
                        System.out.println(i);    //2  4  6 8
                }
        }
}


package Loops;

public class forLoop4_printEvenNum_from_20_to_80
{
        public static void main(String[] args)
        {
                for(int i=20; i<=80; i=i+2)
                {
                        System.out.println(i);
                }
        }
}




package Loops;
public class forLoop5_printNum_from_9_to_5
{
        public static void main(String[] args)
        {
                //start num: 9
                //end num:  5
                //incr/decr: decr by 1

                //    9  4>=5  4
                for(int i=9; i>=5; i--)
                {
                        System.out.println(i);    //9 8 7 6 5
                }
        }
}


package Loops;
public class forLoop6_printNum_from_100_to_20
{
        public static void main(String[] args)
        {

                for(int i=100; i>=20; i--)
                {
                        System.out.println(i);
                }
        }
}


package Loops;
public class forLoop7_printOddNum_from_7_to_3
{
        public static void main(String[] args)
        {
                //       1>=3   7-2=5-2=3-2=1
                for(int i=7; i>=3; i=i-2)
```

```java
                    {
                            System.out.println(i);        //7 5 3
                    }
            }
}


package Loops;
public class forLoop8_printOddNum_from_91_to_11
{
            public static void main(String[] args)
            {
                    for(int i=91; i>=11; i=i-2)
                    {
                            System.out.println(i);
                    }
            }
}


package Loops;
public class forLoop9_printMsg_MultipleTimes
{
            public static void main(String[] args)
            {

                    //        3<=5
                    for(int i=1; i<=5; i++)
                    {
                            System.out.println("Hi");    //Hi  Hi  Hi
                    }
            }
}


package Loops;
public class forLoop10_squareOfNumFrom1_to_5
{
            public static void main(String[] args)
            {

                    for(int i=1; i<=5; i++)
                    {
                            System.out.println(i*i*i);
                    }
            }
}


package Loops;
public class whileLoop1_printNumFrom_1_to_5
{
            public static void main(String[] args)
            {
                    int i=9;  //start num
                      //9<=5
                    while(i<=5)   //end num
                    {
                            System.out.println(i);   //1 2 3 4 5

                            i++;     //6 // incr /decr
                    }
            }
}


package Loops;
public class whileLoop2_printEvenNumFrom_2_to_8
{
            public static void main(String[] args)
            {
                    int i=2;
                    //   10<=8
                    while(i<=8)
                    {
                            System.out.println(i);  //2 4 6 8
```

```
                        i=i+2;        //2+2=4+2=6+2=8+2=10
                }
        }
}


package Loops;
public class whileLoop3_printNumFrom_5_to_1
{
        public static void main(String[] args)
        {
                int i=5;

                //   0>=1
                while(i>=1)
                {
                        System.out.println(i);     //5 4 3 2 1

                        i--;     //0
                }
        }
}


package Loops;
public class whileLoop4_printEvenNumFrom_60_to_10
{
        public static void main(String[] args)
        {
                int i=60;

                while(i>=10)
                {
                        System.out.println(i);    //6  4 2

                        i=i-2;     //0
                }
        }
}


package Loops;
public class DoWhileLoop1_printNumFrom_1_to_5
{
        public static void main(String[] args)
        {
                int i=9;                //start num

                do
                {
                        System.out.println(i);     //9
                        i++;       // 10          //incr or decr
                }
                while(i<=5);
                //   10<=5
        }
}
```

Even Odd Logical Program Assignment: -   https://www.youtube.com/watch?v=P-t9GzrHiDg&t=163s