Understanding for loop

- For loop consists of '3' statements (Initilization, Test Condition, Increment / Decrement operator)
- In initialization section we can take any valid java statement.
- Initialization will be executed only once in a loop.
- In condition statement we can take any java expression which returns 'boolean' as result.
- If we are not taking any expression compiler will give 'true' as default value.
- All 3 statements are optional in for loop.
- If we our condition is always true then the code written out side the loop will be "Un-reachable code" (Compile time error).
- If we our condition is always false then the code written in side the loop will be "Un-reachable code" (Compile time error).

syntax:

```
for(Initilization;Test-Condition;Increment/Decrement)
{


}
```

1) for loop consists of '3' statements, those are Initilization, Test-Condition, Increment (OR) Decrement Operator
2) If we are writing for loop 100% we need to write '2' semicolons, other wise we will be getting Compile time error.
3) Initilization statement will be executed only once in the for loop.
4) Pre-Increment or Post-Increment and Pre-Decrement or post-Decrement will not have any impact on the output
5) Initilization statement can be any valid java statement.
6) If we are not writing any condition then compiler will automatically consider the condition as true by default
7) All the statements are optional in for loop.

Training ▸ src ▸ com.pack1 ▸ ClassA ▸ meth1() : void

```
1  package com.pack1;
2
3  public class ClassA
4  {
5      void meth1()
6      {
7          System.out.println("--------meth1()---------");
8          for(int i=1;i<=5;i++)
9          {
10             System.out.println("i value : "+i);
11         }
12         System.out.println("meth1() execution completed");
13     }
14     public static void main(String[] args)
15     {
16         ClassA aobj=new ClassA();
17         aobj.meth1();
18     }
19 }
```

<terminated> ClassA [Java Application] C:\Program Files\Java\j

```
--------meth1()---------
i value : 1
i value : 2
i value : 3
i value : 4
i value : 5
meth1() execution completed
```

```
    }
    void meth2()
    {
        System.out.println("--------meth2()---------");
        for(int i=1;i<=5;i++) // i=2   2<=5
        {
            for(int j=5;j>=0;j--)// j=5  5>=0
            {
                System.out.println("i : "+i+" j : "+j);
            }
            System.out.println("-------------");
        }
        System.out.println("meth2() execution completed");
    }
    public static void main(String[] args)
    {
        ClassA aobj=new ClassA();
        //aobj.meth1();
        aobj.meth2();
    }
}
```

```
--------meth2()---------
i : 1 j : 5
i : 1 j : 4
i : 1 j : 3
i : 1 j : 2
i : 1 j : 1
i : 1 j : 0
-------------
i : 2 j : 5
i : 2 j : 4
i : 2 j : 3
i : 2 j : 2
i : 2 j : 1
i : 2 j : 0
-------------
i : 3 j : 5
i : 3 j : 4
i : 3 j : 3
i : 3 j : 2
i : 3 j : 1
i : 3 j : 0
-------------
i : 4 j : 5
```

```
    }
    void meth3()
    {
        System.out.println("--------meth3()---------");
        for(int i=1;i<=10;i++)
        {
            System.out.println("i value : "+i++);
            i++;
        }
        System.out.println("meth3() execution completed");
    }
    public static void main(String[] args)
    {
        ClassA aobj=new ClassA();
        //aobj.meth1();
        //aobj.meth2();
        aobj.meth3();
    }
}
```

```
--------meth3()---------
i value : 1
i value : 4
i value : 7
i value : 10
meth3() execution completed
```

```
33              i++;
34          }
35          System.out.println("meth3() execution completed");
36      }
37      void meth4()
38      {
39          System.out.println("--------meth4()---------");
40          int i=1;
41          for(;i<=10;)
42          {
43              System.out.println("i value : "+i++ + ++i);
44              i++;
45          }
46          System.out.println("meth4() execution completed");
47      }
48      public static void main(String[] args)
49      {
50          ClassA aobj=new ClassA();
51          //aobj.meth1();
52          //aobj.meth2();
53          //aobj.meth3();
54          aobj.meth4();
```

```
--------meth4()---------
i value : 13
i value : 46
i value : 79
i value : 1012
meth4() execution completed
```

```
49      void meth5()
50      {
51          System.out.println("--------meth5()---------");
52          for(int i=(new ClassA().meth6()-64);i<=5;new ClassA().meth7())
53          {
54              System.out.println("i value : "+i++);
55          }
56          System.out.println("meth5() execution completed");
57      }
58      int meth6()
59      {
60          System.out.println("meth6() called");
61          return 'A';
62      }
63      void meth7()
64      {
65          System.out.println("---------------");
66      }
67      public static void main(String[] args)
68      {
69          ClassA aobj=new ClassA();
70          //aobj.meth1();
71          //aobj.meth2();
```

```
<terminated> ClassA [Java Application] C:\Program Files\Java
--------meth5()---------
meth6() called
i value : 1
---------------
i value : 2
---------------
i value : 3
---------------
i value : 4
---------------
i value : 5
---------------
meth5() execution completed
```

```java
public class ClassA
{
    void meth1()
    {
        System.out.println("--------meth1()---------");
        for(int i=1;i<=5;++i)
        {
            System.out.println("i value : "+i);
        }
        System.out.println("meth1() execution completed");
    }
    void meth2()
    {
        System.out.println("--------meth2()---------");
        for(int i=1;i<=5;i++) // i=2   2<=5
        {
            for(int j=5;j>=0;j--)// j=5  5>=0
            {
                System.out.println("i : "+i+" j : "+j);
            }
            System.out.println("-------------");
        }
        System.out.println("meth2() execution completed");
    }
    void meth3()
    {
        System.out.println("--------meth3()---------");
        for(int i=1;i<=10;i++)
        {
            System.out.println("i value : "+i++);
            i++;
        }
        System.out.println("meth3() execution completed");
    }
```

```
37    void meth4()
38    {
39        System.out.println("--------meth4()---------");
40        int i=1;
41        for(;i<=10;)
42        {
43            System.out.println("i value : "+i++ +" "+ ++i);
44            //System.out.println("i value : "+(i++ + ++i));
45            i++;
46        }
47        System.out.println("meth4() execution completed");
48    }

49    void meth5()
50    {
51        System.out.println("--------meth5()---------");
52        for(int i=(new ClassA().meth6()-64);i<=5;new ClassA().meth7())
53        {
54            System.out.println("i value : "+i++);
55        }
56        System.out.println("meth5() execution completed");
57    }

58    int meth6()
59    {
60        System.out.println("meth6() called");
61        return 'A';
62    }
63    void meth7()
64    {
65        System.out.println("---------------");
66    }
67
68    void meth8()
69    {
70        System.out.println("--------meth8()---------");
71        int i=1;
72        for(;;)
73        {
74            System.out.println("i value : "+i);
75            i++;
76        }
77        //System.out.println("meth8() execution completed");// C.E because of Unreachable code
78    }
```

```
78      void meth9()
79      {
80          int i=1;
81          int j=5;
82          for(System.out.print("--------meth9()"),System.out.println("---------");i<=5;i++,j--)
83          {
84              System.out.println("i value : "+i);
85              System.out.println("j value : "+j);
86              System.out.println("-----------------");
87          }
88          System.out.println("meth9() execution completed");
89      }
90      public static void main(String[] args)
91      {
92          ClassA aobj=new ClassA();
93          aobj.meth1();
94          //aobj.meth2();
95          //aobj.meth3();
96          //aobj.meth4();
97          //aobj.meth5();
98          //aobj.meth8();
99          //aobj.meth9();
100     }
101 }
```

Assignment

Write a program on 3 for loops one inside the other.