Output of Java Program | Set 3

Predict the output of following Java Programs:

```
// filename: Test.java
class Test {
    int x  = 10;
    public static void main(String[] args) {
        Test t = new Test();
        System.out.println(t.x);
    }
}
```

The program works fine and prints 10. Unlike C++, in Java, members can initialized with declaration of class. This initialization works well when the initialization value is available and the initialization can be put on one line (See this for more details). For example, the following program also works fine.

```
// filename: Test.java
class Test {
    int y = 2;
    int x  = y+2;
    public static void main(String[] args) {
        Test m = new Test();
        System.out.println("x = " + m.x + ", y = " + m.y);
    }
}
```

Output of the above program is “x = 4, y = 2″. y is initialized first, then x is initialized as y + 2. So the value of x becomes 4.

What happen when a member is initialized in class declaration and constructor both? Consider the following program.

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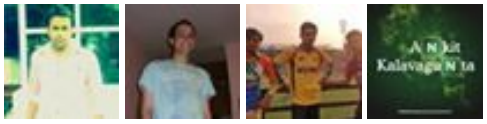

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```
// filename: Test.java
public class Test
{
    int x = 2;
    Test(int i) { x = i; }
    public static void main(String[] args) {
        Test t = new Test(5);
        System.out.println("x = " + t.x);
    }
}
```

Output of the above program is “x = 5″. The initialization with class declaration in Java is like initialization using Initializer List in C++. So, in the above program, the value assigned inside the constructor overwrites the previous value of x which is 2, and x becomes 5.

As an exercise, predict the output of following program.

```
// filename: Test2.java
class Test1 {
    Test1(int x) {
        System.out.println("Constructor called " + x);
    }
}

// This class contains an instance of Test1
class Test2 {
    Test1 t1 = new Test1(10);

    Test2(int i) { t1 = new Test1(i); }

    public static void main(String[] args) {
        Test2 t2 = new Test2(5);
    }
}
```

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Instance initialization block is added to every constructor or at the first line. Otl
appending the instance initialization block code ...before constructor code
EX:

```
Class A{
int a=10;
int b=20;
public A(){
a=11
}
public A(int aa,int bb){
a=aa;
b=bb;
}
}
```

After Compilation...The code looks like below

```
Class A{
int a=10;
```

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The output of exercise is :

Constructor called 10

705

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Correct output. t1 is first initialized in the declaration of class Test2. t1 constructor of Test2(). Two objects Test1 are created, first object is cr objects is created in constructor of Test2() when a new value is assigr

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