Dt : 29/8/2023

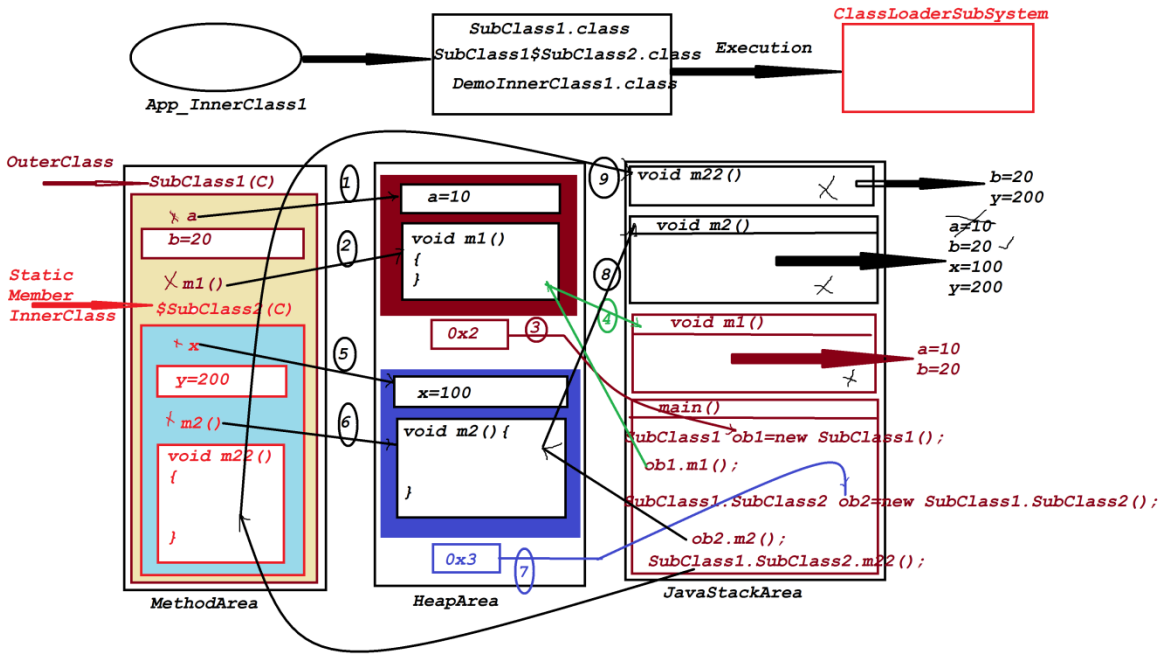
Execution Flow of above program:(Demonstrating Static member InnerClass)

ClassFiles:

SubClass1.class

SubClass1$SubClass2.class

DemoInnerClass1.class(MainClass)



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(b)NonStatic member InnerClasses:

=>The member InnerClasses which are declared without static keyword are known as NonStatic member InnerClasses.

=>These NonStatic member InnerClasses are categorized into two types:

(i)Instance member InnerClasses

(ii)Local member InnerClasses

(i)Instance member InnerClasses:

=>The NonStatic member InnerClasses which are declared outside the methods are known as Instance member InnerClasses or Object member InnerClasses.

Coding Rules:

(i)Instance member InnerClasses can be declared with both static and NonStatic members.

(ii)Instance methods of Instance member InnerClasses can access Instance variables of OuterClass directly,because Instance member InnerClass Objects will hold the reference of OuterClass Objects.

(iii)Static members of Instance member InnerClasses can access only static members of OuterClass and InnerClass directly.

=>we use the following syntax to create object for Instance member InnerClasses:

```
OuterClass_name.InnerClass_name ob =
                OuterClass_Object_name.new InnerClass_name();
```

ProjectName : App_InnerClass2

packages,

p1 : SubClass1.java

```
package p1;
public class SubClass1 {
  public int a=10;
  public static int b=20;
  public void m1()
  {
       System.out.println("****OuterClass m1()****");
       System.out.println("The value a:"+a);
       System.out.println("The value b:"+b);
  }//OuterClass method
  public class SubClass2
  {
       public int x=100;
       public static int y=200;
       public void m2()
       {
           System.out.println("===InnerClass Instance
m2()====");
           System.out.println("The value x:"+x);
           System.out.println("The value y:"+y);
           System.out.println("The value a:"+a);
           System.out.println("The value b:"+b);

       }
       public static void m22()
       {
                System.out.println("===InnerClass static
m22()====");
                //System.out.println("The value x:"+x);
                System.out.println("The value y:"+y);
                //System.out.println("The value a:"+a);
                System.out.println("The value b:"+b);
       }
  }//Instance member InnerClass
}//OuterClass
```

p2 : DemoInnerClass2.java(MainClass)

```
package p2;
import p1.*;
public class DemoInnerClass2 {
     public static void main(String[] args) {
       SubClass1 ob1 = new SubClass1();//OuterClass
Object
       ob1.m1();//OuterClass_method_call
       SubClass1.SubClass2 ob2 = ob1.new SubClass2();
                 //Instance member InnerClas Object
       ob2.m2();//InnerClass Instance method_call
       SubClass1.SubClass2.m22();
            //InnerClass Static method_call
     }
}
```

o/p:

*******OuterClass m1()*******

The value a:10

The value b:20

===InnerClass Instance m2()====

The value x:100

The value y:200

The value a:10

The value b:20

===InnerClass static m22()====

The value y:200

The value b:20

Assignment:

Update App_InnerClass1,initializing variables using Constructor.

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