Dt : 21/7/2023

Assignment:(Solution)

Construct the application from the following layout:

Program : DemoVariavles2.java

```java
class Addition

{

        int p;

        static int q;

}

class Subtraction

{

        int x;

        static int y;

}

class  DemoVariables2

{

        public static void main(String args[])

        {

                Addition ob1 = new Addition();

    ob1.p = 10;

                Addition.q = 20;
```

```
    Subtraction ob2 = new Subtraction();

    ob2.x = 12;

    Subtraction.y = 7;



            System.out.println("Sum="+(ob1.p+Addition.q));

            System.out.println("Sub="+(ob2.x-Subtraction.y));

        }

}
```

==

Note:

=>From the above diagram,Variables are:

a=14

b=12

x=15

y=13

ob1=0x2

0b2=0x3

==

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Methods in Java:

=>Methods are the actions which are executed to generate result.

=>Based on "static" keyword the methods are categorized into

two types:

    1.static methods

    2.NonStatic methods(Instance methods)

1.static methods:

  =>The methods which are declared with "static" keyword are known

   as static methods or Class methods

  =>These static methods will get the memory within the class while

  class loading and can be accessed with class_name

structure of static methods:

static return_type method_name(para_list)

{

 //method_body

}

Coding Rule:

  =>static methods can access static variables directly available

in the same class,but cannot access Instance variables.

 --

Types of static methods:

  =>Static methods are categorized into two types:

(i)Pre-defined static methods

(ii)User defined static methods

(i)Pre-defined static methods:

   =>The static methods which are ready constructed and available

from JavaLib are known as Pre-defined static method or Buil-in

Static methods.

(ii)User defined static methods:

   =>The static methods which are defined by the programmer are

known as User defined static methods.

 --

2.NonStatic methods(Instance methods):

   =>The methods which are declared without "static" keyword are

known as NonStatic methods or Instance methods or Object methods

   =>These Instance methods will get the memory within the Object

while Object creation and can be accessed with Object_name.

Structure of Instance method:

return_type method_name(para_list)

{

  //method_body

}

Coding Rule:

  =>Instance methods can access both Instance variables and static variables directly.

Types of Instance methods:

  =>Instance methods are categorized into two types:

    (i)Pre-defined Instance methods

    (ii)User defined Instance methods

(i)Pre-defined Instance methods:

  =>The Instance methods which are ready constructed and available from JavaLib are known as Pre-defined Instance methods or Built-in Instance methods.

(ii)User defined Instance methods :

  =>The Instance methods which are defined by the programmer are known as User defined Instance methods.

 ===

Ex program : DemoMethods1.java

class MTest

```java
{
    int a=10;

    static int b=20;

    static void m1()

{

    System.out.println("****static m1()*****");

    //System.out.println("The value a="+a);

    System.out.println("The value b="+b);

}

    void m2()

{

    System.out.println("****Instance m2()****");

    System.out.println("The value a="+a);

    System.out.println("The value b="+b);

}

}
class DemoMethods1

{

    public static void main(String[] args)

    {

        MTest.m1();

        MTest ob = new MTest();
```

```
            ob.m2();

        }

}
```

o/p:

****static m1()*****

The value b=20

****Instance m2()****

The value a=10

The value b=20

==