Dt : 7/11/2022

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PolyMorphism in Java:

=>The process in which programming component having more than one form is known as PolyMorphism.

Poly - Many

Morphism - Forms

=>PolyMorphism is categorized into two types:

1.Dynamic PolyMorphism

2.Static PolyMorphism

1.Dynamic PolyMorphism:

=>The polyMorphism at execution stage is known as Dynamic PolyMorphism or Runtime PolyMorphism.

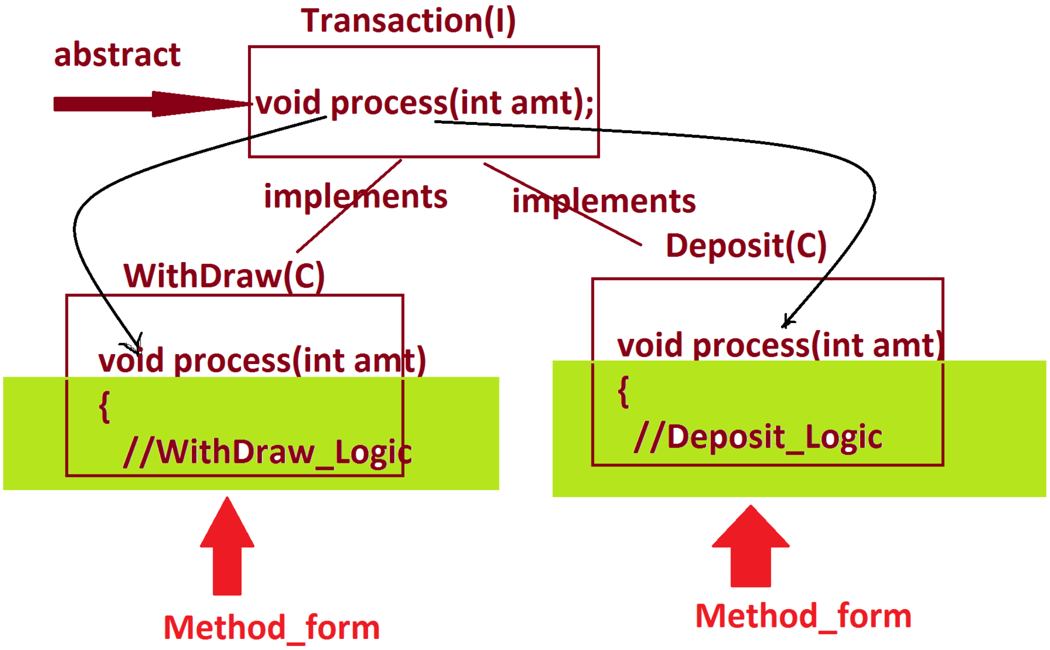
Ex:

Method Overriding process

Note:

=>Through Method Overriding process we can have more than one form to a method at execution stage,because of this reason Method Overriding process comes under Dynamic PolyMorphism or Runtime PolyMorphism.

Diagram:



2.Static PolyMorphism:

=>The PolyMorphism at compilation stage is knonw as static PolyMorphism or Compiletime PolyMorphism

Ex:

Method Overloding process

Note:

=>Through Method Overloading process we can contruct same method with different forms by changing para_list or para_type,and these forms are identified by the compiler at compilation stage,because of this reason Method Overloading process comes under Static PolyMorphism or Compiletime PolyMorphism.

Ex:

```
public class Addition
{
      public void add(int x,int y) {}
      public void add(int x,int y,int z) {}
      public void add(int x,float y) {}
}
```

===

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=>Compiler at compilation stage will control the following keywords:

1.static

2.private

3.final

1.static:

=>The following are the static programming components:

(a)static Variables

(b)static Methods

(c)Static Blocks

(d)Static classes

(e)Static Interfaces

(f)Static Abstract Classes

=>There is no concept of static constructors in Java.

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2.private:

=>The following are the private programming components:

(a)private variables

(b)private methods

(c)private constructors

(d)private Classes

=>There is no concept of private blocks,private Interfaces and private abstract classes.

(a)private variables:

=>The variables which are declared with "private" keyword are known as private variables.

Coding rule:

=>private variables are accessed by the NonPrivate methods of same class,which means private variables are available to the methods declared inside the same class.

Note:

=>In realtime private variables are used in Bean classes and POJO classes.(POJO - Plain Old Java Object)

(b)private methods:

=>The methods which are declared with private keyword are known as private methods.

Coding rule:

=>These private methods are executed using NonPrivate methods of same class.

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(c)private constructors:

=>The constructor which is declared with "private" keyword is known as private constructor.

Coding Rule:

=>Private constructor is executed when the object is created inside the same class where private Constructor is available,which means private constructor will restrict the object creation from externally.

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Note:

=>Uisng private constructors we can construct "SingleTon classes".

faq:

define SingleTon classes?

=>The classes which generate only one object are known as "SingleTon classes"

faq:

define "SingleTon class design pattern"?

=>The process of constructing SingleTon classes using the following components is known as "SingleTon class design Pattern".

(i)private static reference variable

(ii)private Constructor

(iii)static method