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Uppercase.java class Uppercase Positive.java class InvalidInput extends Exception SwitchProg.java Wrapper class.txt X + File Edit View

Wrapper class:
-----
*In java every primitive datatype has a corresponding class which works like a wrapper for primitive.
Hence this class is known as wrapper class.
*The wrapper class in java provides mechanism to wrap the primitive into object.
*All the wrapper classes are final classes present in java.lang package.

Primitive data type      Wrapper Class
-----
boolean                  Boolean
char                     Character
byte                     Byte
short                    Short
int                      Integer
long                    Long
float                   Float
double                  Double

# Among these wrapper classes Byte, Short, Integer, Long, Float, Double are subclasses of Number class.

Use of Wrapper class :
-----
*To represent primitive data in the form of corresponding wrapper object.
*To convert string type primitive data into original primitive type (Except character).

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```

Uppercase.java      class Uppercase      • Positive.java      class InvalidInput extends Exception      • SwitchProg.java      • Wrapper class.txt

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To represent primitive data in the form of corresponding wrapper object

---

```
Byte b = 10; // auto boxing
System.out.println(b); // 10 [ not reference ]
We are not getting reference of Byte object because the to string is overridden inside wrapper class.
```

eg:

```
int i = 2578;
Integer ii = new Integer(i);
Sopln(ii); //2578
Sopln(ii); //2578
We are not getting reference of Integer object because the toString() method
is overridden inside wrapper class.
```

Autoboxing:

---

```
It is a process of automatic or implicit conversion of primitive datatype into its corresponding
non primitive datatype.
```

eg:

```
byte to Byte
short to Short
int to Integer
char to Character etc.,
Byte b = 50; // directly we can store the value inside the variable bcoz auto boxing is happening
Boolean b1 = true;
```

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Unboxing / auto unboxing

The process of automatic or implicit conversion of non primitive wrapper datatype into its corresponding primitive datatype.

eg:

```
Integer x1 = new Integer(520);
int x2 = x1;
System.out.println(x2); // 520
```

To convert String type primitive data into original primitive type:

Every wrapper class has a static method which is used to convert String representation of primitive to actual primitive.  
These methods are called Parse method. The process is known as parsing.

```
Byte : public static byte parseByte(String s) throws NumberFormatException
Short : public static short parseShort(String s) throws NumberFormatException
Integer : public static int parseInt(String s) throws NumberFormatException
Long : public static long parseLong(String S) throws NumberFormatException
Float : public static float parseFloat(String S) throws NumberFormatException
```

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```
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Short : public static short parseShort(String s) throws NumberFormatException
Integer : public static int parseInt(String s) throws NumberFormatException
Long : public static long parseLong(String S) throws NumberFormatException
Float : public static float parseFloat(String S) throws NumberFormatException
Double : public static double parseDouble(String s) throws NumberFormatException
Boolean : public static boolean parseBoolean (String S)
eg :
int x = Integer.parseInt("10");
System.out.println(x); //10

double d = Double.parseDouble("58.5");
System.out.println(d); //58.5

boolean b = Boolean.parseBoolean("true");
System.out.println(b); //true

String to boolean Conversion:
-----
* It doesn't follows case sensitive and if it only contains 'true' then it converted into 'true'.
* Or else for any other value including false value it will converted into false.
NumberFormatException

Whenever we are trying to convert any String to primitive number type if the content of string is not number type
it will throw an exception which is known as NumberFormatException.

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```

```
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Uppercase.java
Boolean : public static boolean parseBoolean (String S)
eg :
int x = Integer.parseInt("10");
Sopln(x); //10

double d = Double.parseDouble("58.5");
Sopln(d); //58.5

boolean b = Boolean.parseBoolean("true");
Sopln(b); //true

String to boolean Conversion:
-----
* It doesn't follow case sensitive and if it only contains 'true' then it converted into 'true' .
* Or else for any other value including false value it will converted into false.
NumberFormatException:
-----
Whenever we are trying to convert any String to primitive number type if the content of string is not number type
it will throw an exception which is known as NumberFormatException.

NOTE:
-----
* We can't convert String to char that's why there is no such method like parseChar (String). // it can done by charAt(index) method
* parseBoolean(String s) method won't throw NumberFormatException.
* For String to primitive conversion autoboxing and auto unboxing does not work. we have to do it explicitly.
```

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final keyword

- 
- . final is keyword.
  - . It is also known as modifier.
  - . It is applicable for class , variable and methods.

If class will be Final

- 
- . If class will be final we can't inherit that class ( we can't make the child of this class )
  - . final class prevent inheritance.

Example :

Demo.java

-----

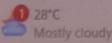
```
final class Demo
{
    int x = 89;
    public void m()
    {
        System.out.println("m()");
    }
}
```

Demo1.java

-----

```
class Demo1 extends Demo
{
    public static void main(String [] args)
```

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```
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class Demo1 extends Demo  
{  
    public static void main(String [] args)  
    {  
        Demo1 d = new Demo1();  
        System.out.println(d.x);  
        d.m();  
    }  
}
```

error: cannot inherit from final Demo  
class Demo1 extends Demo

If variable will final

- . If variable will be final, we can't reassign the value of the declared variable.
- . final variable prevent reassign or update the value

Convention Final Variable

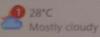
- . If we are taking any final variable in our class , we have to make the variable name as in UPPER CASE .  
For example:if variable name is age the we have declare like  
final int AGE = 20;

Ex:

```
class Prog  
{  
}
```

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```
Uppercase.java class Uppercase Positive.java class InvalidInput extends SwitchProg.java * Wrapper class.txt Final keyword.txt
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Ex:
class Prog
{
    final int AGE = 10;
    public static void main(String [] args)
    {
        Prog p = new Prog();
        System.out.println(p.AGE); // 10
        p.AGE = 20;// reassigning the value
        System.out.println(p.AGE);
    }
}
Compile Time Error :
error: cannot assign a value to final variable x
    p.x = 20;// reassigning the value

If method will be Final
-----
. If method will final , we can't override the method.
. Final method prevent method overriding .

Ex :
class Father
{
    final public void home()
    {
        System.out.println("Color: Red");
    }
}
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```

Uppercase.java class Uppercase Positive.java class InvalidInput extends SwitchProg.java

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```
class Son extends Father
{
    @Override
    public void home()
    {
        System.out.println("Color: Yellow");
    }
    public static void main(String [] args)
    {
        Son s = new Son();
        s.home();
    }
}
```

Compile Time Error:

error: home() in Son cannot override home() in Father  
public void home()  
^

overridden method is final

Q. Can we make our constructor final ?

Ans : No. We are using final keyword with method for preventing the override of method. As constructor is not inherited only to the child , then what is the use of make it final.  
That's why it is not possible.

Q. Is constructor inherited from parent to child ? Why ?

or

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Why constructor is not inherited from parent to child ?

Ans : No, as constructor name same as class name, if it is inherited to the child , then in the child class , the constructor name must be same as child class name which is not possible. And as constructor has no return type it wont considered as method also.

Q. Can we make our constructor private ?

Ans : yes, we can .If we declare a constructor private , we can create object of the class within the same class only, outside the class we can't create object of the class.

- Creating object inside the same class only is nothing but nature of Singleton class.

Q1.1 When we should go for private constructor ?

Ans :

- a) If we don't want to allow to create an object of a class outside of the class .
- b) When there is no subclass to be created for the class which which has the private constructor.Because a private constructor does not allow make sub class of it's own class .

Q. can we make constructor as static ?

Ans : No , it is by-default non-static , because it will called the time of object creation.

Q. Can we make abstract method private ?

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## Why constructor is not inherited from parent to child

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Q1.1 When we should go for private constructor

Ans :

a) If we don't want to allow to create an object of the class outside of the class .

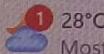
b) When there is no subclass to be created for which has the private constructor.Because a private constructor does not allow make sub class of it's own class.

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Ans : No , it is by-default non-static , because it will be available at time of object creation.

Q. Can we make abstract method private ?

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