Autoboxing

The automatic conversion of primitive data type into its corresponding wrapper class is known as autoboxing, for example, byte to Byte, char to Character, int to Integer, long to Long, float to Float, boolean to Boolean, double to Double, and short to Short.

Since Java 5, we do not need to use the valueOf() method of wrapper classes to convert the primitive into objects.

**Wrapper class Example: Primitive to Wrapper**

//Java program to convert primitive into objects

//Autoboxing example of int to Integer

**public** **class** WrapperExample1{

**public** **static** **void** main(String args[]){

//Converting int into Integer

**int** a=20;

Integer i=Integer.valueOf(a);//converting int into Integer explicitly

Integer j=a;//autoboxing, now compiler will write Integer.valueOf(a) internally

  System.out.println(a+" "+i+" "+j);

}

}

Output:

20 20 20

Graphical user interface, text, application

Description automatically generatedUnboxing

The automatic conversion of wrapper type into its corresponding primitive type is known as unboxing. It is the reverse process of autoboxing. Since Java 5, we do not need to use the intValue() method of wrapper classes to convert the wrapper type into primitives.

**Wrapper class Example: Wrapper to Primitive**

//Java program to convert object into primitives

//Unboxing example of Integer to int

**public** **class** WrapperExample2{

**public** **static** **void** main(String args[]){

//Converting Integer to int

Integer a=**new** Integer(3);

**int** i=a.intValue();//converting Integer to int explicitly

**int** j=a;//unboxing, now compiler will write a.intValue() internally

System.out.println(a+" "+i+" "+j);

}

}

Output:

3 3 3

Graphical user interface, text, application

Description automatically generated

Java Wrapper classes Example

//Java Program to convert all primitives into its corresponding

//wrapper objects and vice-versa

**public** **class** WrapperExample3{

**public** **static** **void** main(String args[]){

**byte** b=10;

**short** s=20;

**int** i=30;

**long** l=40;

**float** f=50.0F;

**double** d=60.0D;

**char** c='a';

**boolean** b2=**true**;

//Autoboxing: Converting primitives into objects

Byte byteobj=b;

Short shortobj=s;

Integer intobj=i;

Long longobj=l;

Float floatobj=f;

Double doubleobj=d;

Character charobj=c;

Boolean boolobj=b2;

//Printing objects

System.out.println("---Printing object values---");

System.out.println("Byte object: "+byteobj);

System.out.println("Short object: "+shortobj);

System.out.println("Integer object: "+intobj);

System.out.println("Long object: "+longobj);

System.out.println("Float object: "+floatobj);

System.out.println("Double object: "+doubleobj);

System.out.println("Character object: "+charobj);

System.out.println("Boolean object: "+boolobj);

//Unboxing: Converting Objects to Primitives

**byte** bytevalue=byteobj;

**short** shortvalue=shortobj;

**int** intvalue=intobj;

**long** longvalue=longobj;

**float** floatvalue=floatobj;

**double** doublevalue=doubleobj;

**char** charvalue=charobj;

**boolean** boolvalue=boolobj;

//Printing primitives

System.out.println("---Printing primitive values---");

System.out.println("byte value: "+bytevalue);

System.out.println("short value: "+shortvalue);

System.out.println("int value: "+intvalue);

System.out.println("long value: "+longvalue);

System.out.println("float value: "+floatvalue);

System.out.println("double value: "+doublevalue);

System.out.println("char value: "+charvalue);

System.out.println("boolean value: "+boolvalue);

}

}

Output:

---Printing object values---

Byte object: 10

Short object: 20

Integer object: 30

Long object: 40

Float object: 50.0

Double object: 60.0

Character object: a

Boolean object: true

---Printing primitive values---

byte value: 10

short value: 20

int value: 30

long value: 40

float value: 50.0

double value: 60.0

char value: a

boolean value: true

Graphical user interface, text, application

Description automatically generated

Custom Wrapper class in Java

Java Wrapper classes wrap the primitive data types, that is why it is known as wrapper classes. We can also create a class which wraps a primitive data type. So, we can create a custom wrapper class in Java.

//Creating the custom wrapper class

**class** Javatpoint{

**private** **int** i;

Javatpoint(){}

Javatpoint(**int** i){

**this**.i=i;

}

**public** **int** getValue(){

**return** i;

}

**public** **void** setValue(**int** i){

**this**.i=i;

}

@Override

**public** String toString() {

**return** Integer.toString(i);

}

}

//Testing the custom wrapper class

**public** **class** TestJavatpoint{

**public** **static** **void** main(String[] args){

Javatpoint j=**new** Javatpoint(10);

System.out.println(j);

}

}

Output:

10

Graphical user interface, text, application

Description automatically generatedGraphical user interface, application, Word

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