

Type Casting

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20/07/23

Punith Sir Assignment

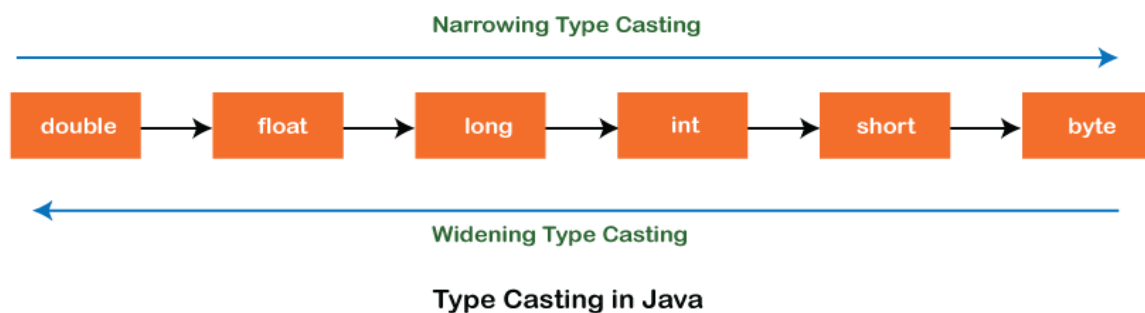
Today's assignment topic is Data types are converting with each other and prove what type of Type Casting is that. Proving of conversion of data types in Type Casting is in table format and also examples of each and every conversion of data types.

Before we going with this above topic, we want to know what is type casting and data types.

What is Type Casting?

The way of converting data from one data type to another data type is called Type Casting. By using casting data cannot be changed but only the data type is changed. There are two types of Type Casting's.

1. Implicit type casting.
2. Explicit type casting.



Type Casting

1. Implicit type casting(automatic type conversion):

The conversion of smaller data type to the larger datatype is called implicit type casting or widening.

The compiler will automatically change one type of data into another if it makes sense. For example if you assign a integer value to the float variable the compiler will automatically convert the int to a float.

2. Explicit Type Casting:

Conversion of larger data type into a smaller datatype is called Explicit Type Casting or Narrowing.

In explicit type casting there is a possible chance of losing the data. It does not happen on its own. We must do it explicitly otherwise compile-time error is thrown.

Data types

There are two types of data types

1. Primitive data types: the primitive data types include Boolean, char, byte, short, int, long, float, double.

2. Non primitive data types: the non-primitive data types include classes, interfaces, and arrays.

Type Casting

I know little bit about the above topics now it's time to going to solve today's assignment, let's go. Convert each datatype of data and know that will be implicit typecasting or explicit typecasting.

1. CHAR

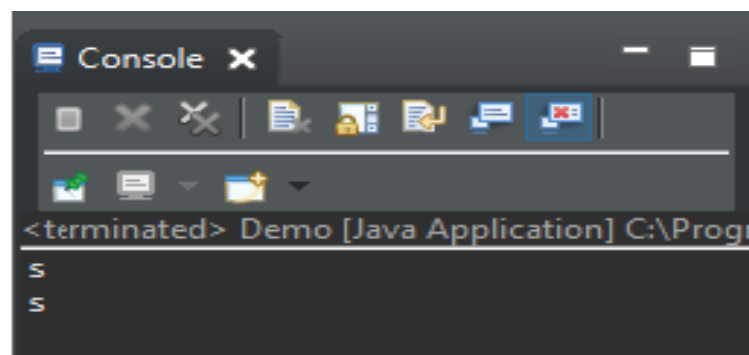
char is used for character data type of data in real world issues, it can be stored 2bytes of data. Representation of char is in single cotes('').).

Ex:1 :Converting char data type to char data type of data



```
1 package as1;
2
3 public class Demo {
4
5     public static void main(String[] args) {
6         char a='s';
7         char b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11
12        // TODO Auto-generated method stub
13
14    }
15
16 }
17
```

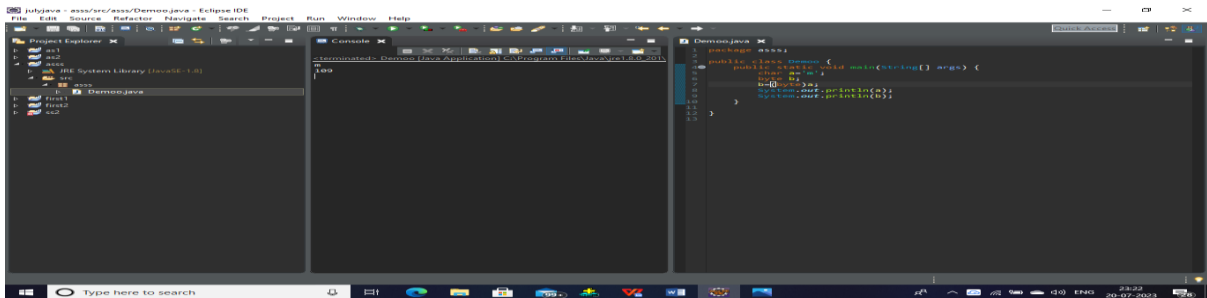
Output: converting of char data type with char data type of data will be not required but it may be implicit data type.



```
<terminated> Demo [Java Application] C:\Progr
s
s
```

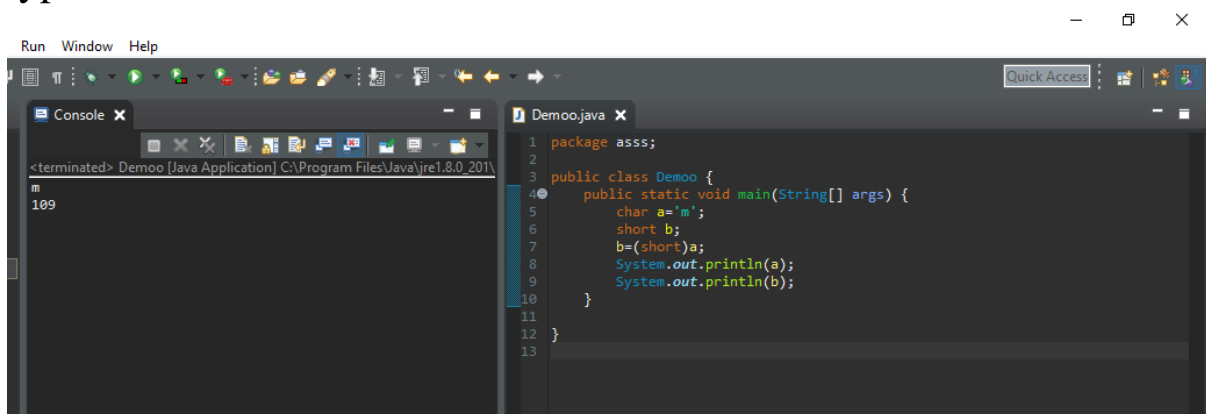
Type Casting

Ex 2: checking Type casting of char data type with byte data type of data



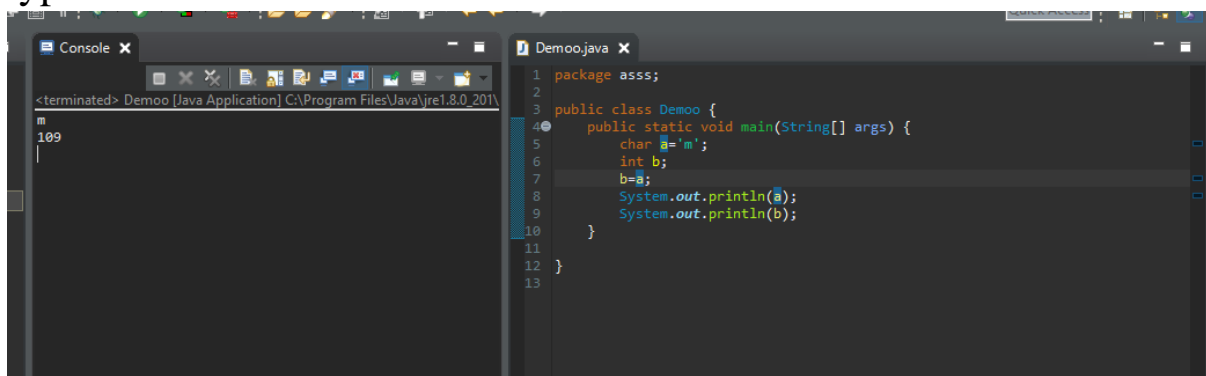
Conclusion : it shows an error for conversion of char to float ,so it is a explicit type casting.

Example 3: checking Type casting of char data type with short data type of data



Conclusion: it is not possible implicit type casting of converting char data type to short data type of data, we want to use this we can modify that as per syntax. So finally it is a explicit typecasting.

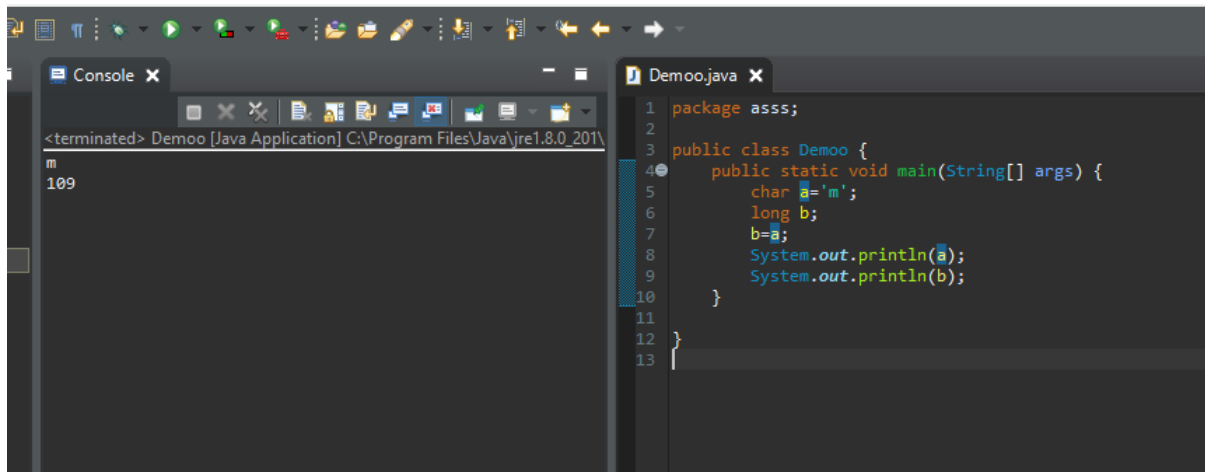
Example 4: checking Type casting of char data type with int data type of data



Type Casting

Conclusion: it is a implicit type casting, it is possible to implicitly converting of char data type to int data type of data.

Example 5: checking Type casting of char data type with long data type of data

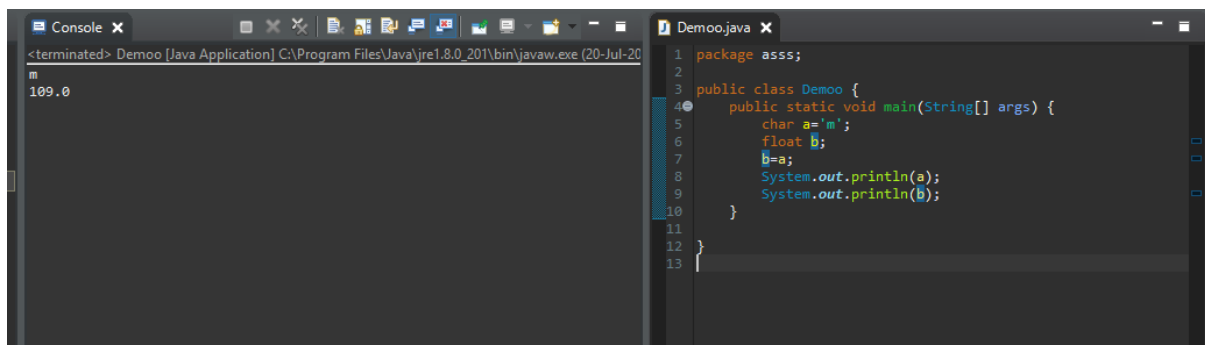


```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         char a='m';
6         long b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

Console output:
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\
m
109

Conclusion: it is possible for converting of char data type with long data type of data. so it is implicit type casting.

Example 6: checking Type casting of char data type with float data type of data



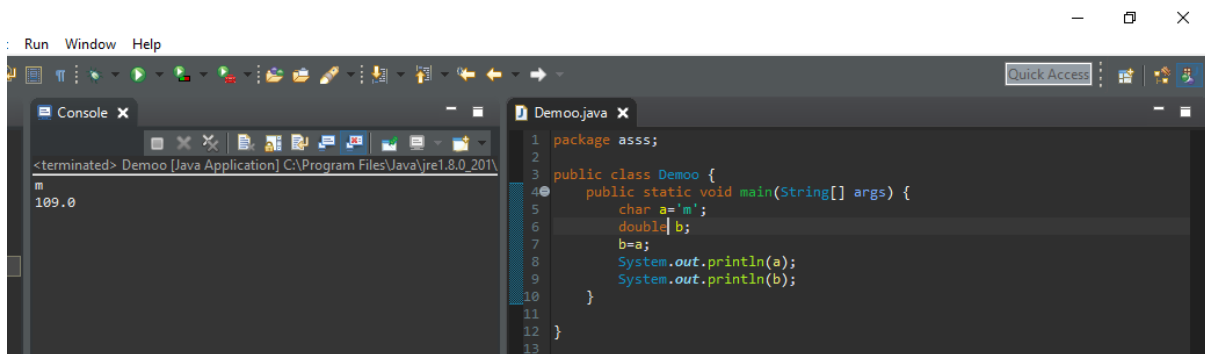
```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         char a='m';
6         float b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

Console output:
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (20-Jul-20
m
109.0

Conclusion: it is possible for converting of char data type with float data type of data. so it is implicit type casting.

Type Casting

Example 7: checking Type casting of char data type with double data type of data

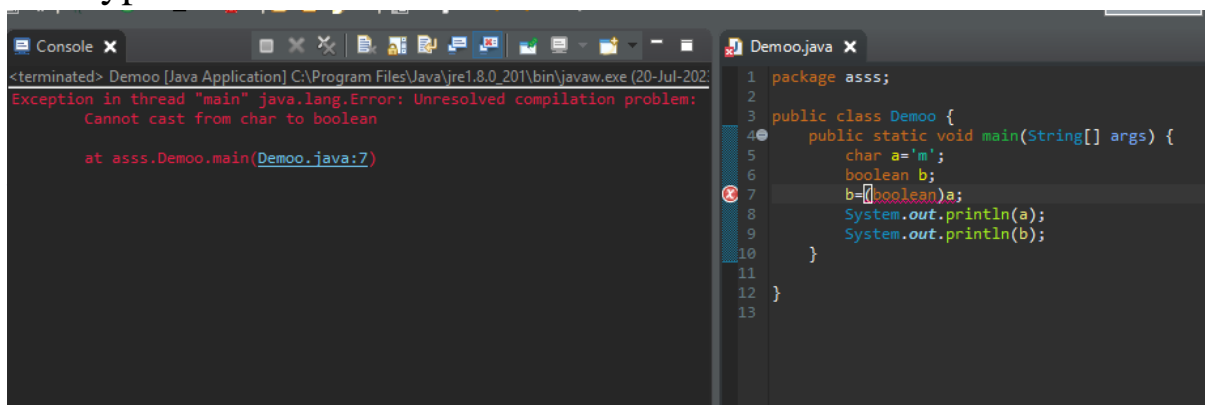


The screenshot shows an IDE with a console window on the left and a code editor on the right. The console displays the output of a Java application: "m" followed by "109.0". The code editor shows a file named "Demoo.java" with the following code:

```
1 package assss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         char a='m';
6         double b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13 }
```

Conclusion: it is possible to converting of char data type with double data type of data. so it is implicit type casting.

Example 8: checking Type casting of char data type with Boolean data type of data



The screenshot shows an IDE with a console window on the left and a code editor on the right. The console displays a compilation error: "Exception in thread 'main' java.lang.Error: Unresolved compilation problem: Cannot cast from char to boolean at asss.Demoo.main(Demoo.java:7)". The code editor shows a file named "Demoo.java" with the following code:

```
1 package assss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         char a='m';
6         boolean b;
7         b=(boolean)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13 }
```

Conclusion: compiler will not support for casting of char data type to Boolean data type of data

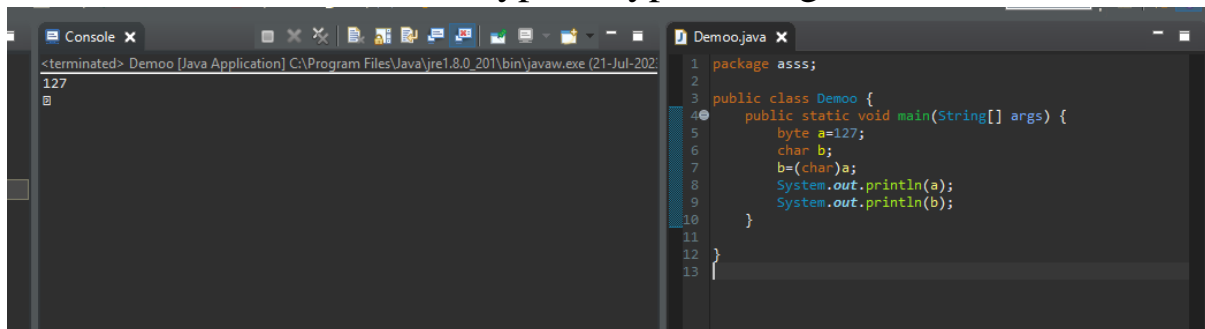
“Above all examples are type casting of char data type with all primitive data types of data. Now we are going to convert byte data type to all primitive data types of data.”

Type Casting

2. BYTE:

Byte is used for integer type of data type in real world. It can be stored 1 byte of data. Let's see all the examples of converting byte to all primitive data types of data. Range of byte is -128 to +127, in between these numbers can store byte.

Example 1: converting byte to char data type of data. In these conversion we know which type of type casting.

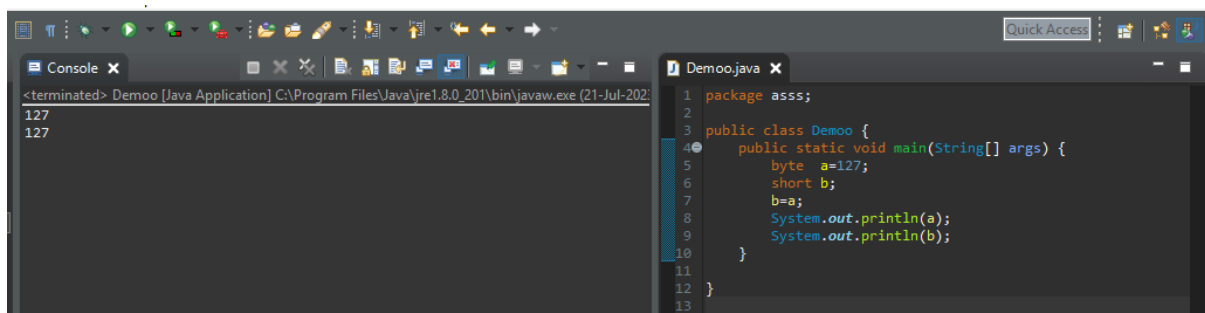


```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         byte a=127;
6         char b;
7         b=(char)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-202
127
127
```

Conclusion: it is not possible for implicit type casting of converting byte data type to char data type of data, we want to use this we can modify that as per syntax. So finally it is a explicit typecasting.

Example 2: converting byte to short data type of data. In these conversion we know which type of type casting is this.



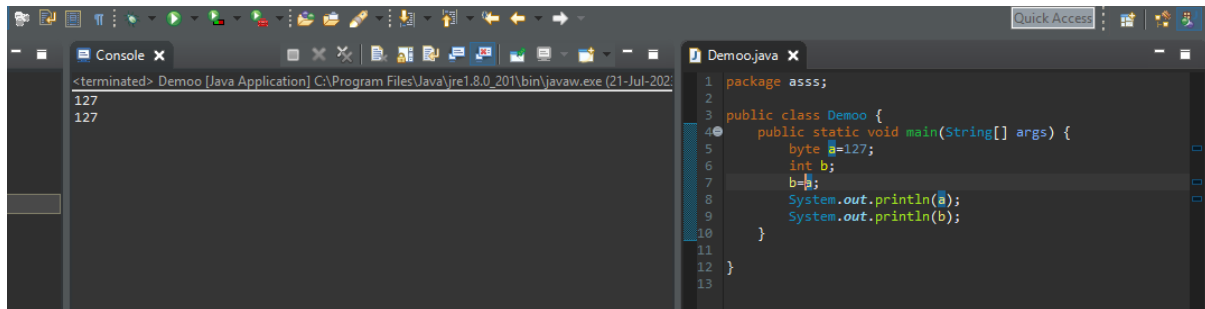
```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         byte a=127;
6         short b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-202
127
127
```

Conclusion: conversion of byte to short data type of data is implicit type casting.

Type Casting

Example 3: converting byte to int data type of data. In these conversion we know which type of type casting is this.

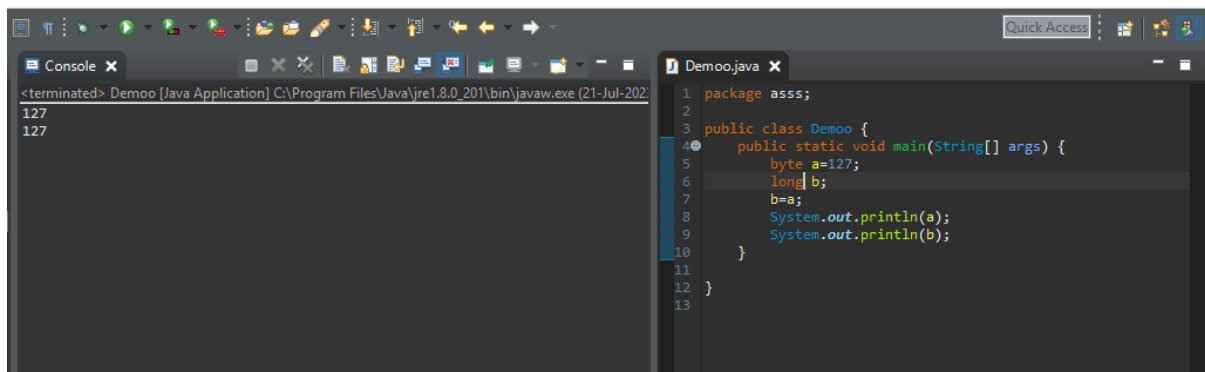


```
1 package ass5;  
2  
3 public class Demo {  
4     public static void main(String[] args) {  
5         byte a=127;  
6         int b;  
7         b=a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11 }  
12  
13
```

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-202  
127  
127
```

Conclusion: conversion of byte to int data type of data is implicit type casting.

Example 4: converting byte to long data type of data. In these conversion we know which type of type casting is this



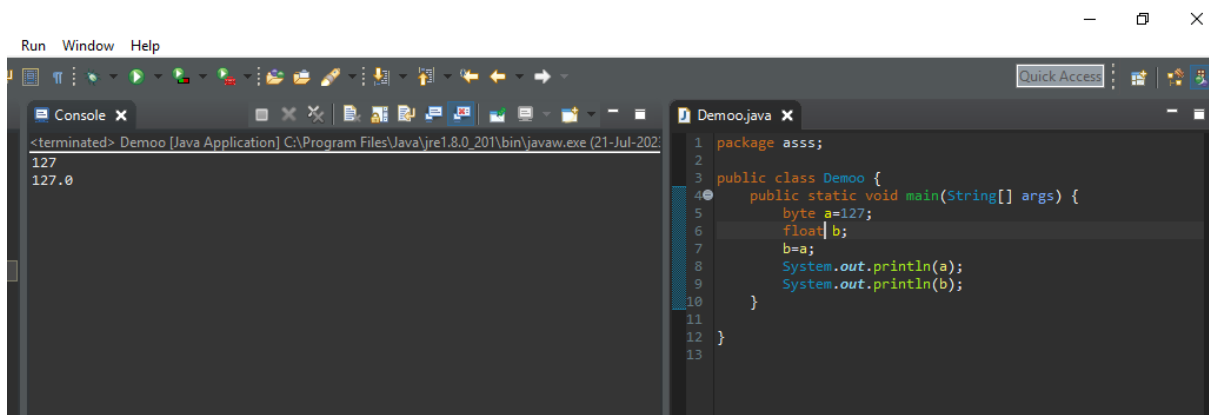
```
1 package ass5;  
2  
3 public class Demo {  
4     public static void main(String[] args) {  
5         byte a=127;  
6         long b;  
7         b=a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11 }  
12  
13
```

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-202  
127  
127
```

Conclusion: conversion of byte to long data type of data is implicit type casting.

Example 5: converting byte to float data type of data. In these conversion we know which type of type casting is this

Type Casting

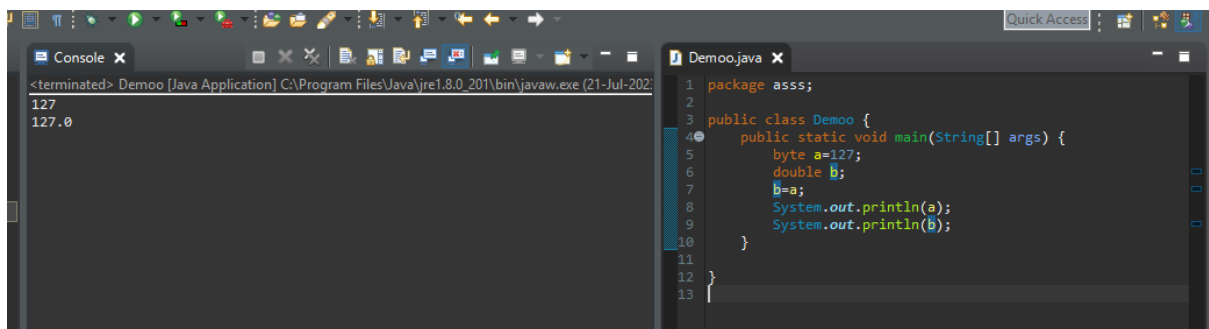


The screenshot shows an IDE with a console window on the left and a code editor on the right. The console window displays the output of a Java application: 127 and 127.0. The code editor shows a file named Demoo.java with the following code:

```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         byte a=127;
6         float b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13 }
```

Conclusion: conversion of byte to float data type of data is implicit type casting.

Example 6: converting byte to double data type of data. In these conversion we know which type of type casting is this

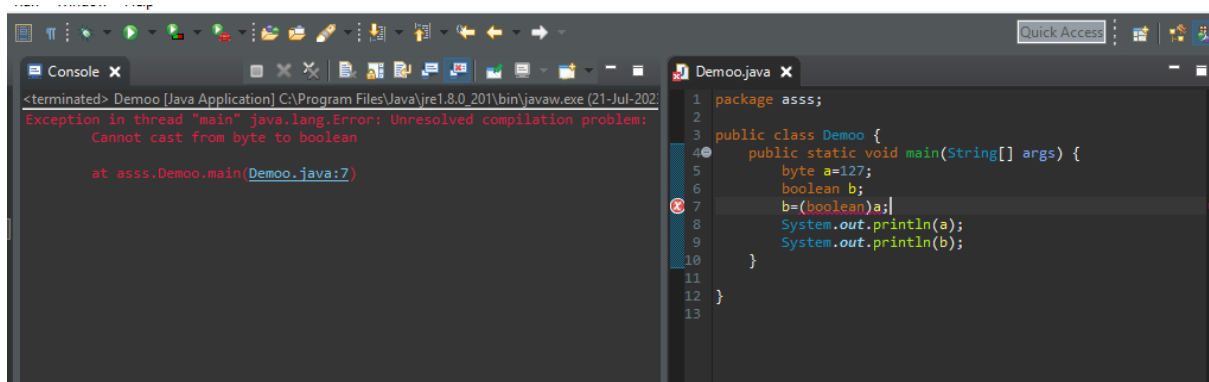


The screenshot shows an IDE with a console window on the left and a code editor on the right. The console window displays the output of a Java application: 127 and 127.0. The code editor shows a file named Demoo.java with the following code:

```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         byte a=127;
6         double b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13 }
```

Conclusion: conversion of byte to double data type of data is implicit type casting.

Example 7: converting byte to Boolean data type of data. In these conversion we know which type of type casting is this



The screenshot shows an IDE with a console window on the left and a code editor on the right. The console window displays a compilation error: Exception in thread "main" java.lang.Error: Unresolved compilation problem: Cannot cast from byte to boolean. The code editor shows a file named Demoo.java with the following code:

```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         byte a=127;
6         boolean b;
7         b=(boolean)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13 }
```

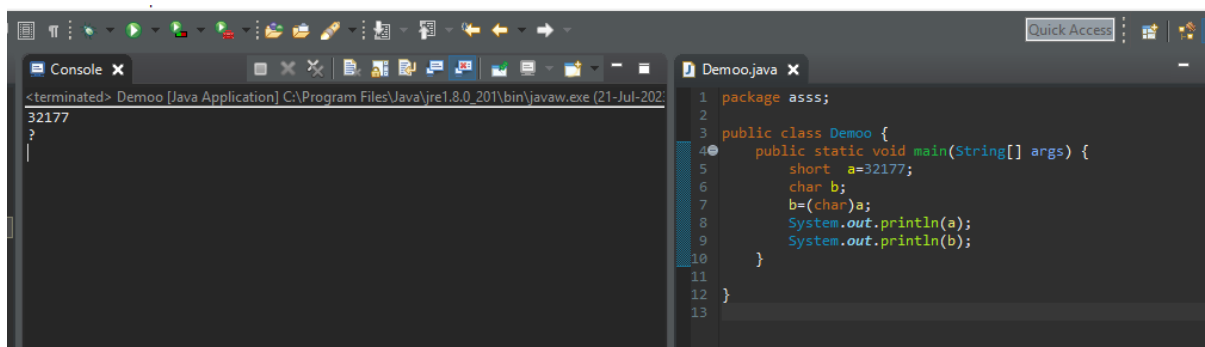
Type Casting

Conclusion: conversion of byte to Boolean data type of data casting is not possible.

3. **SHORT:** converting short data type to all primitive data types of data.

Range of short is in between -32768 to +32767 (2 bytes).

Example 1: converting short data type to char data type of data. In these conversion we know which type of type casting is this.

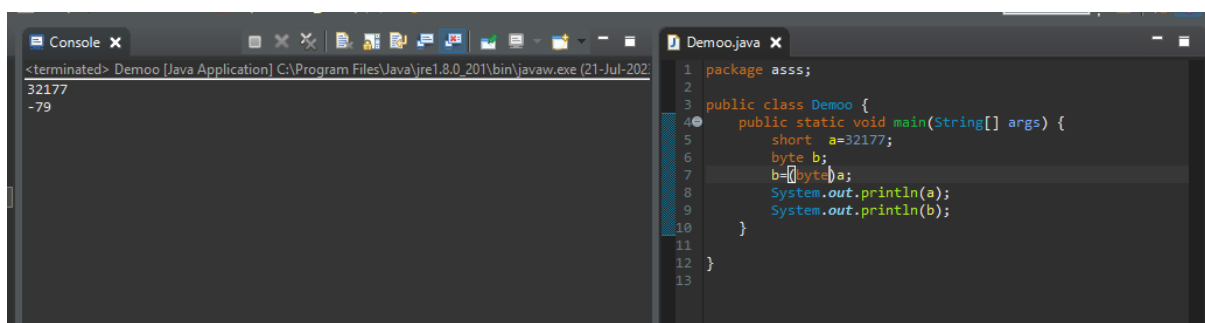


The screenshot shows an IDE with two windows. The 'Console' window on the left displays the output of a Java application: 32177 followed by a question mark. The 'Demoo.java' window on the right shows the following code:

```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         short a=32177;
6         char b;
7         b=(char)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

Conclusion: conversion of short data type to char data type of data is Explicit type casting.

Example 2: converting short data type to byte data type of data. In these conversion we know which type of type casting is this.



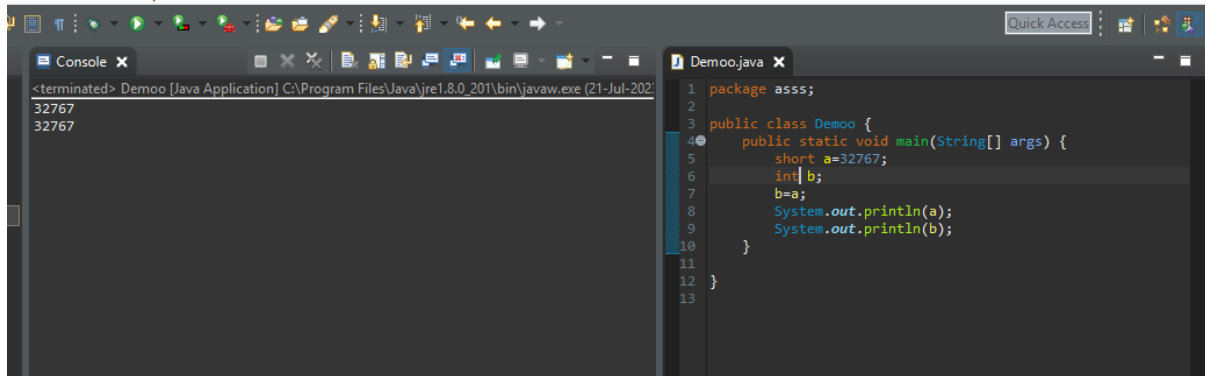
The screenshot shows an IDE with two windows. The 'Console' window on the left displays the output of a Java application: 32177 followed by -79. The 'Demoo.java' window on the right shows the following code:

```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         short a=32177;
6         byte b;
7         b=(byte)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

Conclusion: conversion of short data type to byte data type of data is Explicit type casting.

Type Casting

Example 3: converting short data type to int data type of data. In these conversion we know which type of type casting is this.

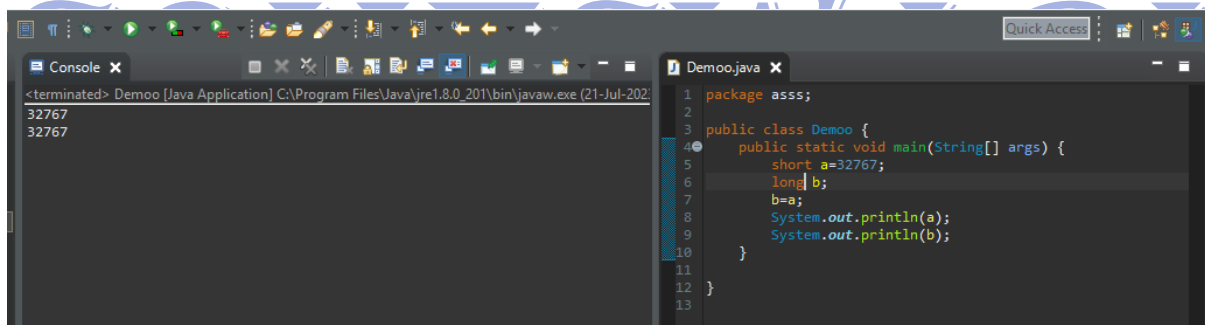


```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         short a=32767;
6         int b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-202
32767
32767
```

Conclusion: conversion of short data type to int data type of data is implicit type casting.

Example 4: converting short data type to long data type of data. In these conversion we know which type of type casting is this.



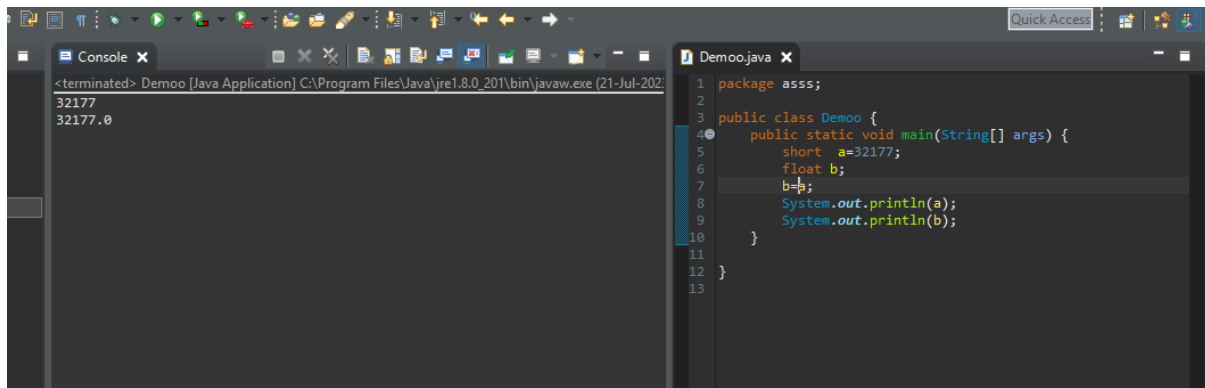
```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         short a=32767;
6         long b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-202
32767
32767
```

Conclusion: conversion of short data type to long data type of data is implicit type casting.

Example 5: converting short data type to float data type of data. In these conversion we know which type of type casting is this.

Type Casting

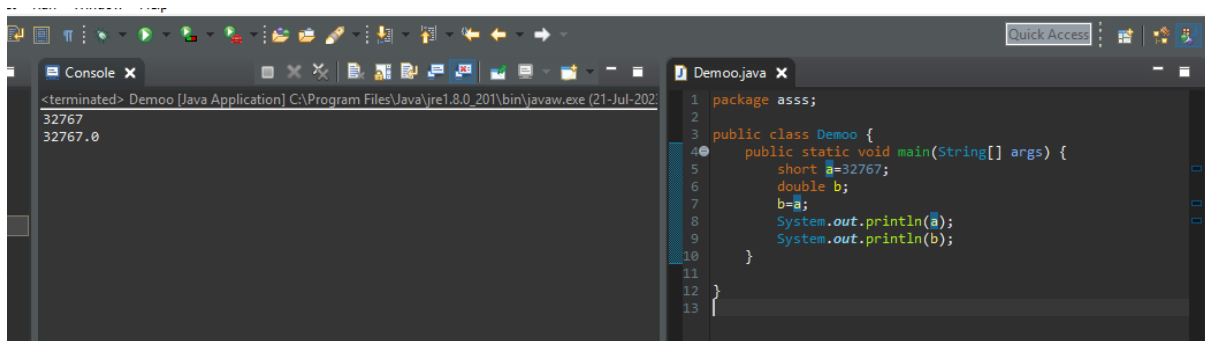


The screenshot shows an IDE with two windows. The 'Console' window on the left displays the output of a Java application: `<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2022: 32177 32177.0`. The 'Demoo.java' window on the right shows the following code:

```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         short a=32177;
6         float b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12 }
13 }
```

Conclusion: conversion of short data type to float data type of data is implicit type casting.

Example 6: converting short data type to double data type of data. In these conversion we know which type of type casting is this.

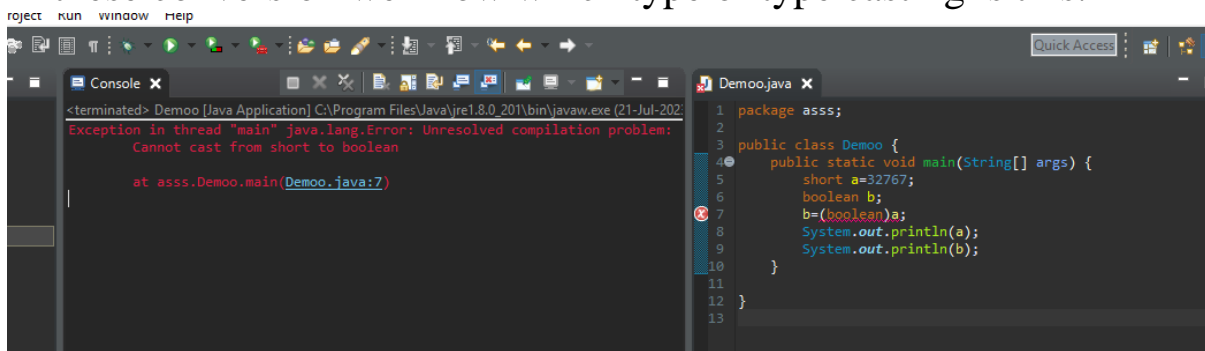


The screenshot shows an IDE with two windows. The 'Console' window on the left displays the output of a Java application: `<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2022: 32767 32767.0`. The 'Demoo.java' window on the right shows the following code:

```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         short a=32767;
6         double b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12 }
13 }
```

Conclusion: conversion of short data type to double data type of data is implicit type casting.

Example 7: converting short data type to Boolean data type of data. In these conversion we know which type of type casting is this.



The screenshot shows an IDE with two windows. The 'Console' window on the left displays a compilation error: `<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2022: Exception in thread "main" java.lang.Error: Unresolved compilation problem: Cannot cast from short to boolean at asss.Demoo.main(Demoo.java:7)`. The 'Demoo.java' window on the right shows the following code:

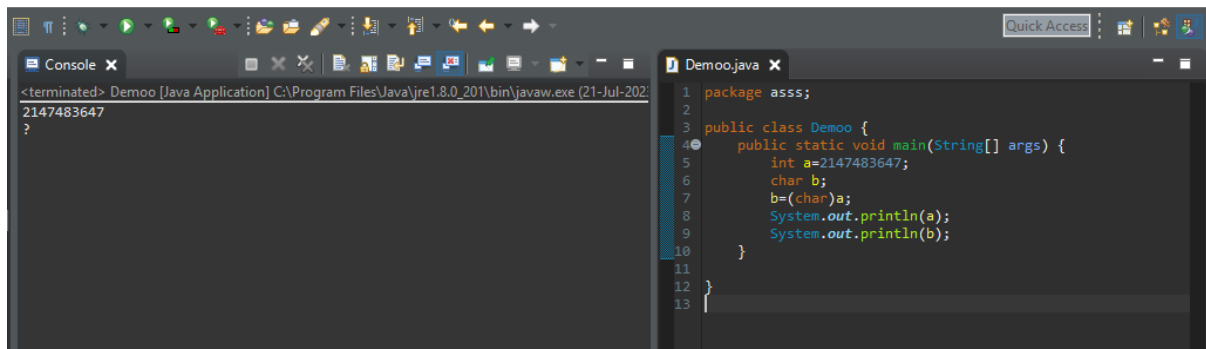
```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         short a=32767;
6         boolean b;
7         b=(boolean)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12 }
13 }
```

Conclusion: conversion of short data type to Boolean data type of data casting is not possible.

Type Casting

- 4. int:** int is used for integer type of data ,it can be stored 4 bytes of data, in between range of -2147483648 to +2147483647.

Example 1: converting int data type to char data type of data. In these conversion we know which type of type casting is this.



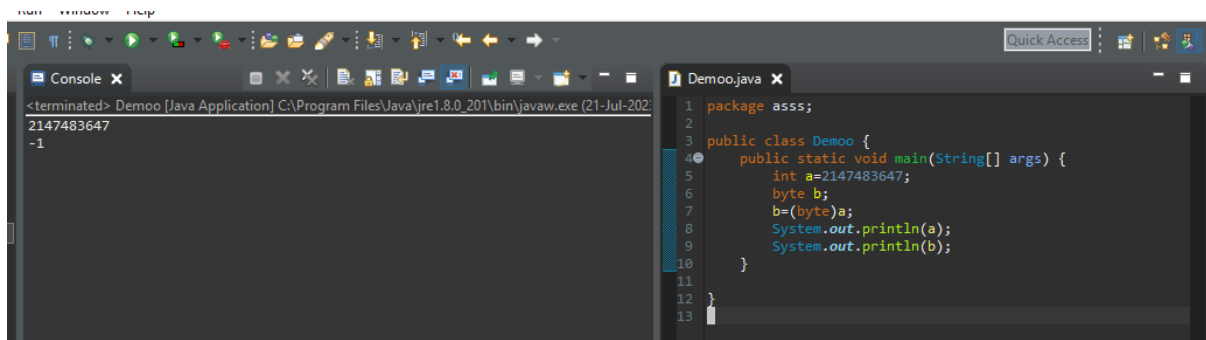
The screenshot shows an IDE with two windows. The 'Console' window on the left displays the output of a Java application: the integer value '2147483647' followed by a question mark '?'. The 'Demo0.java' window on the right contains the following code:

```
1 package ass5;  
2  
3 public class Demo0 {  
4     public static void main(String[] args) {  
5         int a=2147483647;  
6         char b;  
7         b=(char)a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11 }  
12  
13 }
```

Conclusion: conversion of int to char data type of data is Explicit type casting.

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Example 2: converting int data type to byte data type of data. In these conversion we know which type of type casting is this



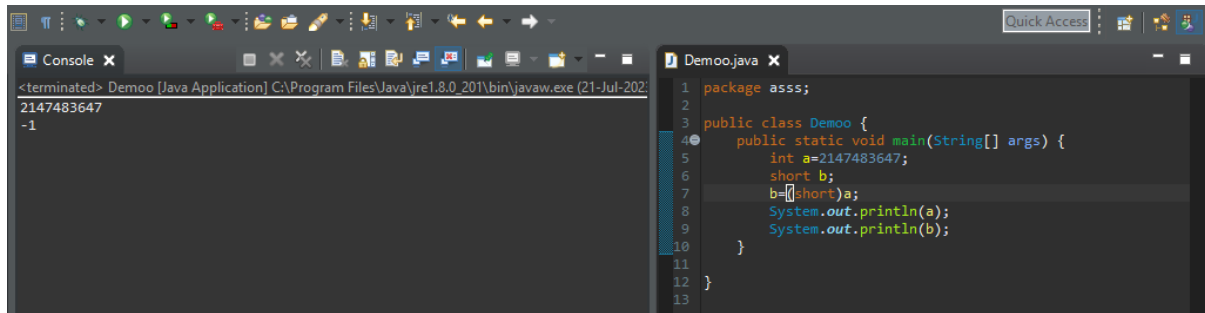
The screenshot shows an IDE with two windows. The 'Console' window on the left displays the output of a Java application: the integer value '2147483647' followed by the byte value '-1'. The 'Demo0.java' window on the right contains the following code:

```
1 package ass5;  
2  
3 public class Demo0 {  
4     public static void main(String[] args) {  
5         int a=2147483647;  
6         byte b;  
7         b=(byte)a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11 }  
12  
13 }
```

Type Casting

Conclusion: conversion of int to byte data type of data is Explicit type casting. In this conversion data loss is possible because 4 bytes of data can be converted to 1 byte of data.

Example 3: converting int data type to short data type of data. In these conversion we know which type of type casting is this.

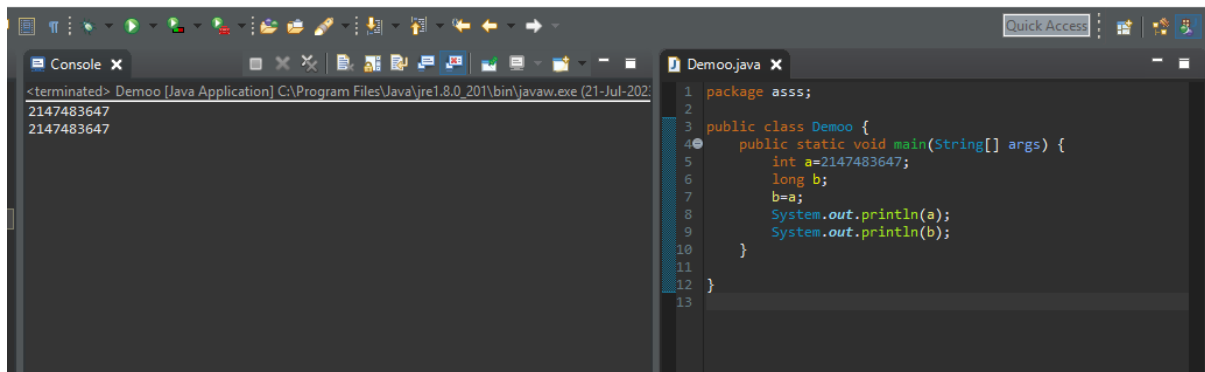


```
1 package ass3;  
2  
3 public class Demo0 {  
4     public static void main(String[] args) {  
5         int a=2147483647;  
6         short b;  
7         b=(short)a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11 }  
12  
13
```

Console output:
<terminated> Demo0 [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2022)
2147483647
-1

Conclusion: conversion of int to short data type of data is Explicit type casting. In this conversion data loss is possible because 4 bytes of data can be converted to 2 bytes of data.

Example 4: converting int data type to long data type of data. In these conversion we know which type of type casting is this.



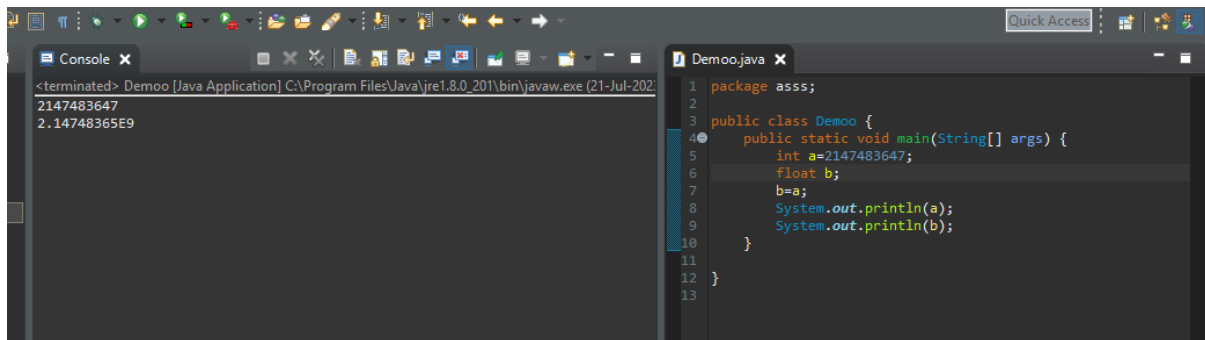
```
1 package ass3;  
2  
3 public class Demo0 {  
4     public static void main(String[] args) {  
5         int a=2147483647;  
6         long b;  
7         b=a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11 }  
12  
13
```

Console output:
<terminated> Demo0 [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2022)
2147483647
2147483647

Conclusion: conversion of int to long data type of data is implicit type casting.

Example 5: converting int data type to float data type of data. In these conversion we know which type of type casting is this

Type Casting



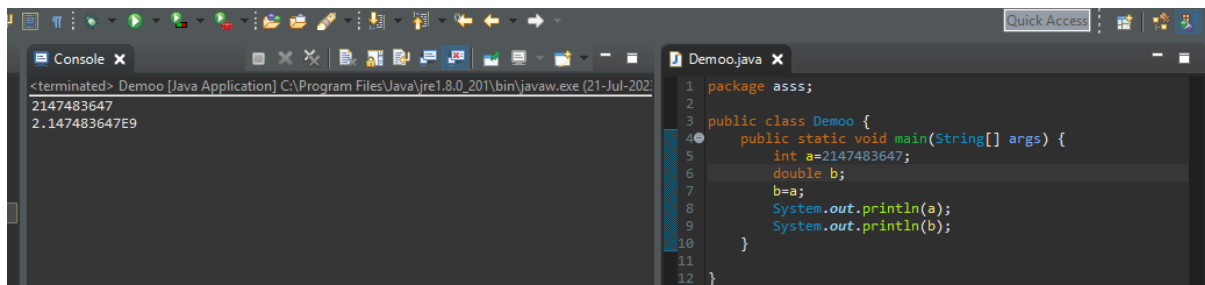
```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         int a=2147483647;
6         float b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

Console output:

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2022)
2147483647
2.147483647E9
```

Conclusion: conversion of int to float data type of data is implicit type casting.

Example 6: converting int data type to double data type of data. In these conversion we know which type of type casting is this



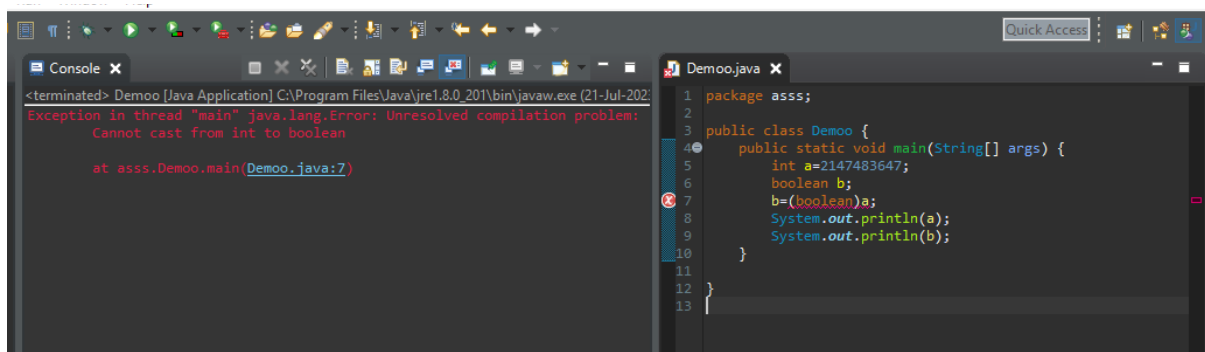
```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         int a=2147483647;
6         double b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
```

Console output:

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2022)
2147483647
2.147483647E9
```

Conclusion: conversion of int to double data type of data is implicit type casting.

Example 7: converting int data type to Boolean data type of data. In these conversion we know which type of type casting is this



```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         int a=2147483647;
6         boolean b;
7         b=(boolean)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

Console output:

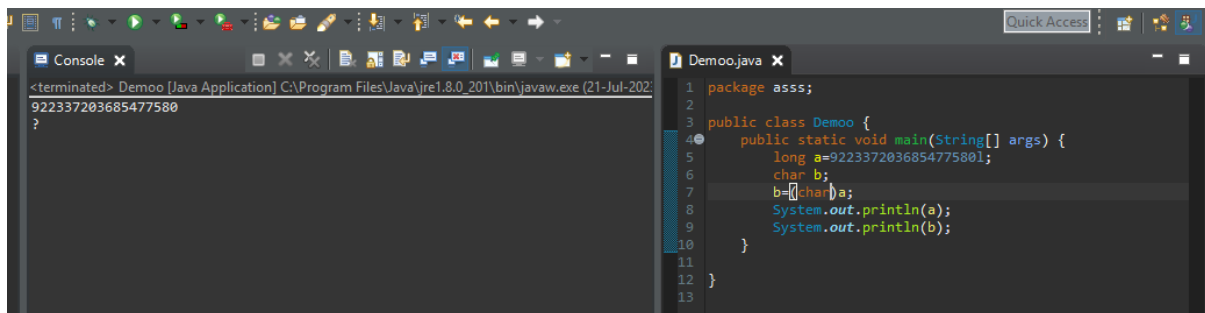
```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2022)
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
    Cannot cast from int to boolean
    at asss.Demoo.main(Demoo.java:7)
```

Conclusion: conversion of int data type to Boolean data type of data casting is not possible.

Type Casting

5. Long : it is also a integer type data type if the range of this is -9223372036854775808 to 9223372036854775807.

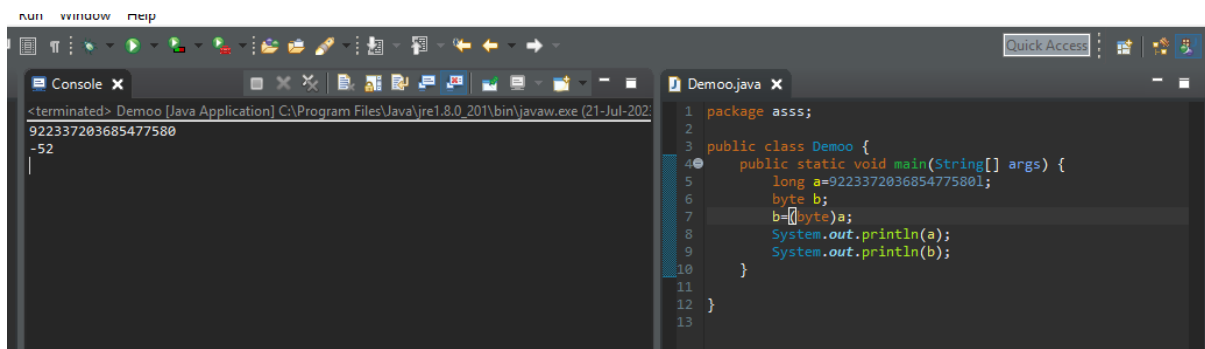
Example 1: converting long data type to char data type of data. In these conversion we know which type of type casting is this



```
1 package ass;  
2  
3 public class Demoo {  
4     public static void main(String[] args) {  
5         long a=9223372036854775801;  
6         char b;  
7         b=(char)a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11 }  
12  
13
```

Conclusion: conversion of long data type to char data type of data is Explicit type casting.

Example 2: converting long data type to byte data type of data. In these conversion we know which type of type casting is this

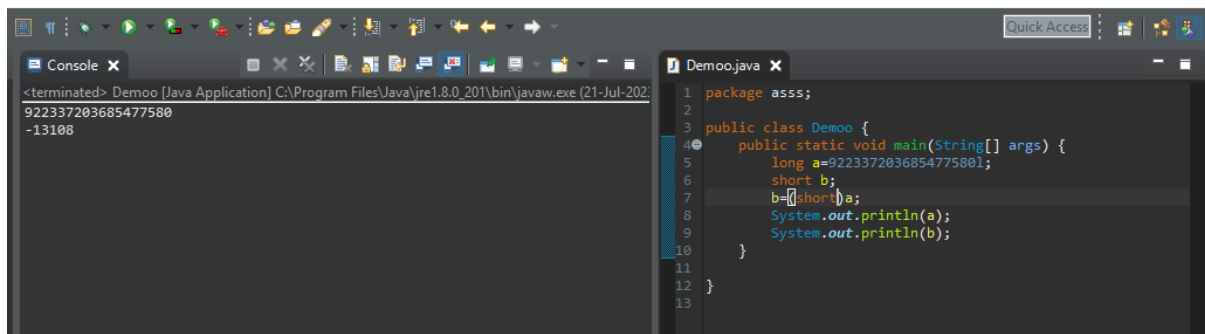


```
1 package ass;  
2  
3 public class Demoo {  
4     public static void main(String[] args) {  
5         long a=9223372036854775801;  
6         byte b;  
7         b=(byte)a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11 }  
12  
13
```

Conclusion: conversion of long to byte data type of data is Explicit type casting. In this conversion data loss is possible because 8 bytes of data can be converted to 1 byte of data.

Example 3: converting long data type to short data type of data. In these conversion we know which type of type casting is this

Type Casting

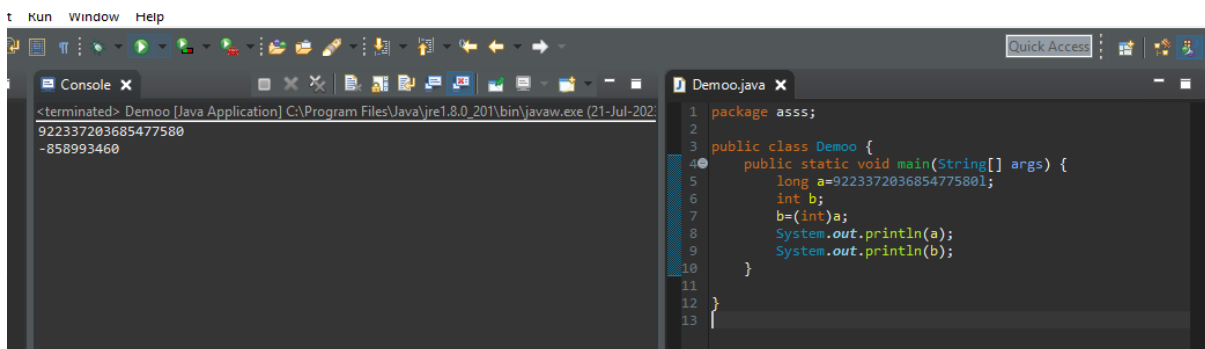


```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         long a=9223372036854775801;
6         short b;
7         b=(short)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-202
922337203685477580
-13108
```

Conclusion: conversion of long to short data type of data is Explicit type casting. In this conversion data loss is possible because 8 bytes of data can be converted to 2 bytes of data.

Example 4: converting long data type to int data type of data. In these conversion we know which type of type casting is this

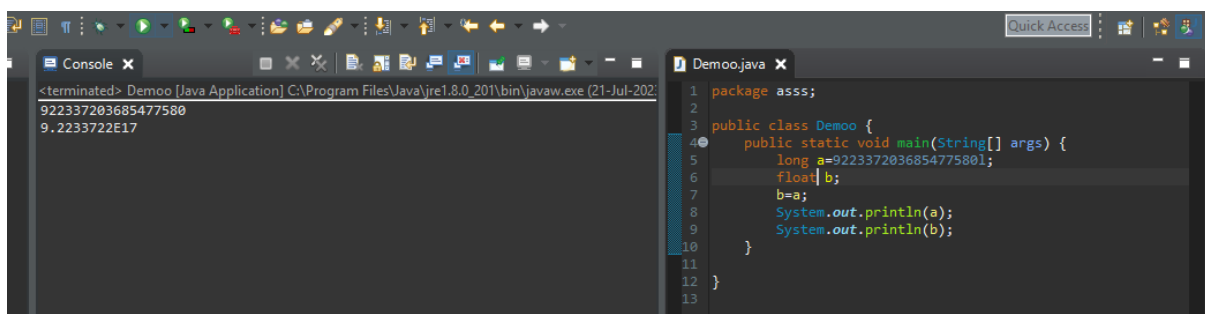


```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         long a=9223372036854775801;
6         int b;
7         b=(int)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-202
922337203685477580
-858993460
```

Conclusion: conversion of long to int data type of data is Explicit type casting. In this conversion data loss is possible because 8 bytes of data can be converted to 4 byte's of data.

Example 5: converting long data type to float data type of data. In these conversion we know which type of type casting is this



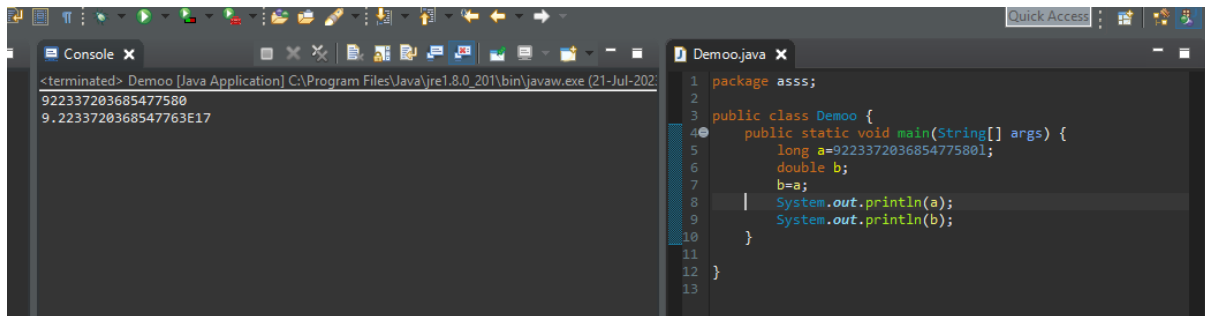
```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         long a=9223372036854775801;
6         float b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-202
922337203685477580
9.2233722E17
```

Type Casting

Conclusion: conversion of long data type to float data type of data is implicit type casting.

Example 6: converting long data type to double data type of data. In these conversion we know which type of type casting is this

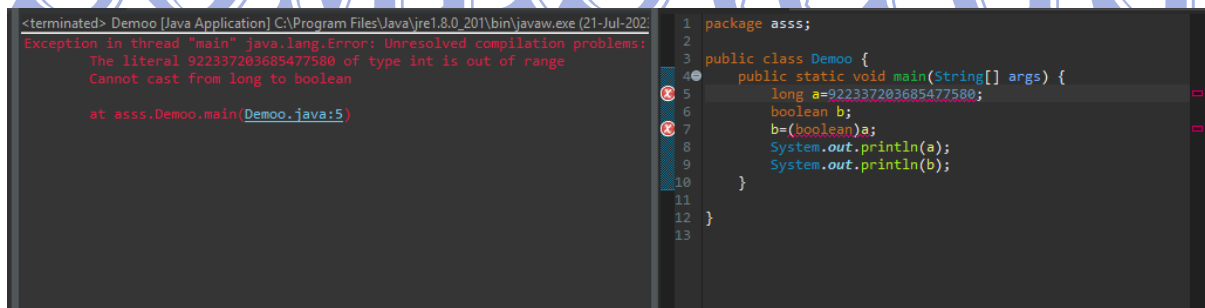


The screenshot shows an IDE with two windows. The 'Console' window on the left displays the output of a Java application: `<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2022: 922337203685477580 9.2233720368547763E17`. The 'Demo0.java' window on the right shows the following code:

```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         long a=9223372036854775801;
6         double b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13 }
```

Conclusion: conversion of long data type to double data type of data is implicit type casting.

Example 7: converting long data type to Boolean data type of data. In these conversion we know which type of type casting is this



The screenshot shows an IDE with two windows. The 'Console' window on the left displays a compilation error: `Exception in thread "main" java.lang.Error: Unresolved compilation problems: The literal 922337203685477580 of type int is out of range Cannot cast from long to boolean at asss.Demoo.main(Demoo.java:5)`. The 'Demo0.java' window on the right shows the following code:

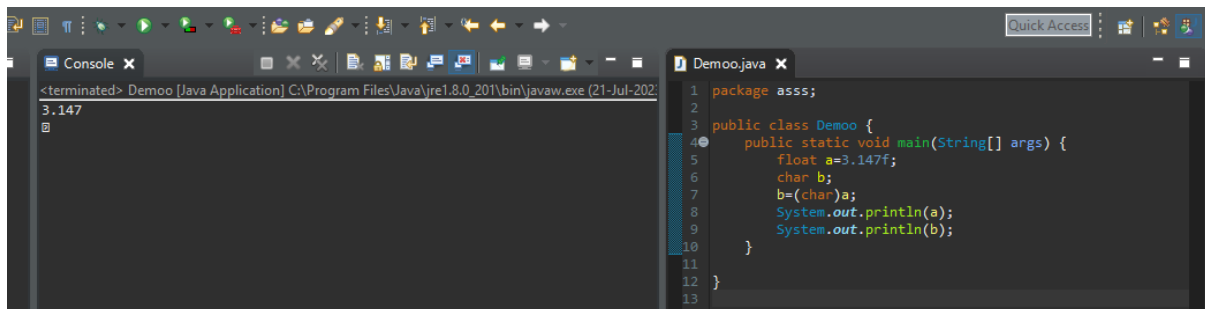
```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         long a=9223372036854775801;
6         boolean b;
7         b=(boolean)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13 }
```

Conclusion: conversion of long data type to Boolean data type of data casting is not possible.

Type Casting

6. Float : float data type is a type of real number, it can be stored after decimal point only 7 digits. It occupies 4 bytes of data.

Example 1: converting float data type to char data type of data. In these conversions we know which type of type casting is this

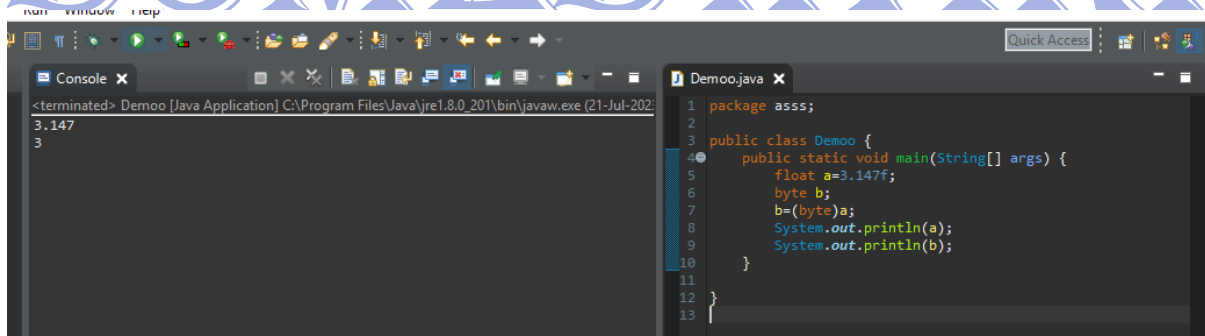


```
1 package ass5;  
2  
3 public class Demo0 {  
4     public static void main(String[] args) {  
5         float a=3.147f;  
6         char b;  
7         b=(char)a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11 }  
12  
13
```

Console output:
<terminated> Demo0 [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2021)
3.147
3

Conclusion: conversion of float data type to char data type of data is Explicit type casting

Example 2: converting float data type to byte data type of data. In these conversions we know which type of type casting is this



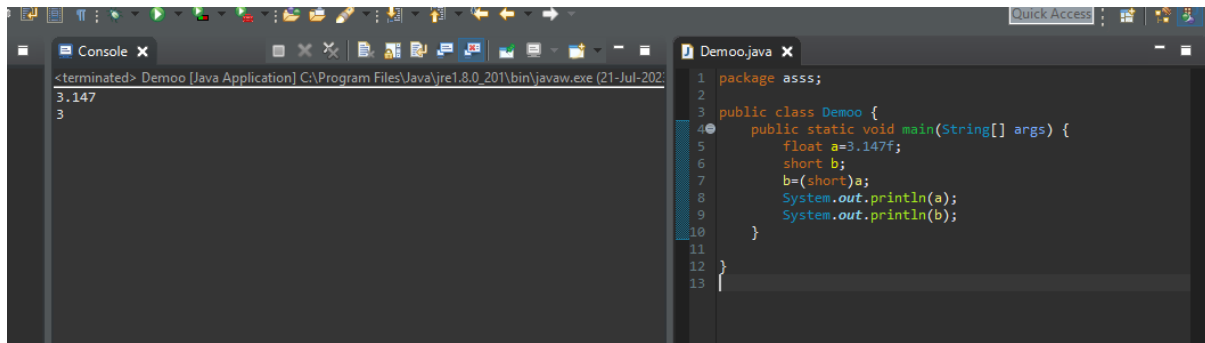
```
1 package ass5;  
2  
3 public class Demo0 {  
4     public static void main(String[] args) {  
5         float a=3.147f;  
6         byte b;  
7         b=(byte)a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11 }  
12  
13
```

Console output:
<terminated> Demo0 [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2021)
3.147
3

Conclusion: conversion of float data type to byte data type of data is Explicit type casting

Example 3: converting float data type to short data type of data. In these conversions we know which type of type casting is this

Type Casting

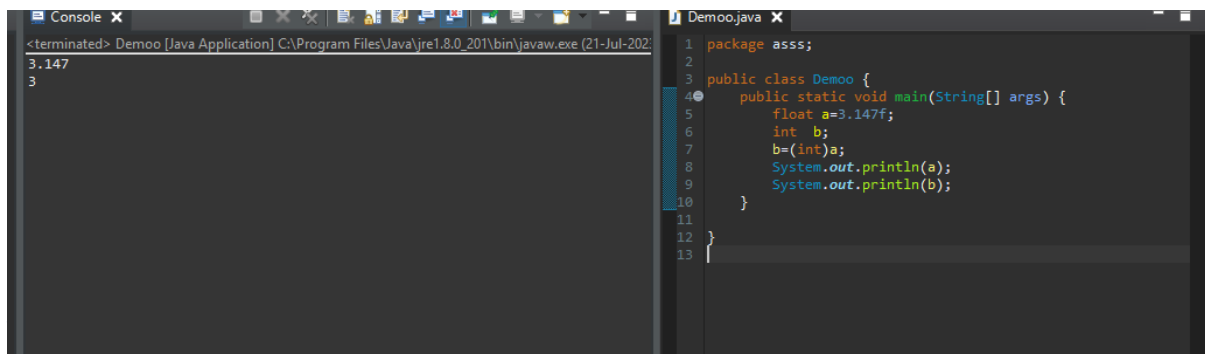


```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         float a=3.147f;
6         short b;
7         b=(short)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

Console output: 3.147, 3

Conclusion: conversion of float data type to short data type of data is Explicit type casting

Example 4: converting float data type to int data type of data. In these conversion we know which type of type casting is this

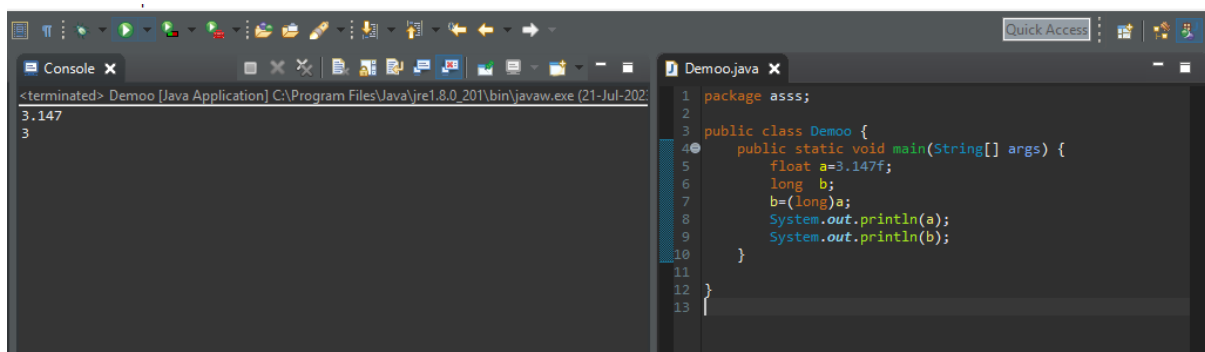


```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         float a=3.147f;
6         int b;
7         b=(int)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

Console output: 3.147, 3

Conclusion: conversion of float data type to int data type of data is Explicit type casting

Example 5: converting float data type to long data type of data. In these conversion we know which type of type casting is this



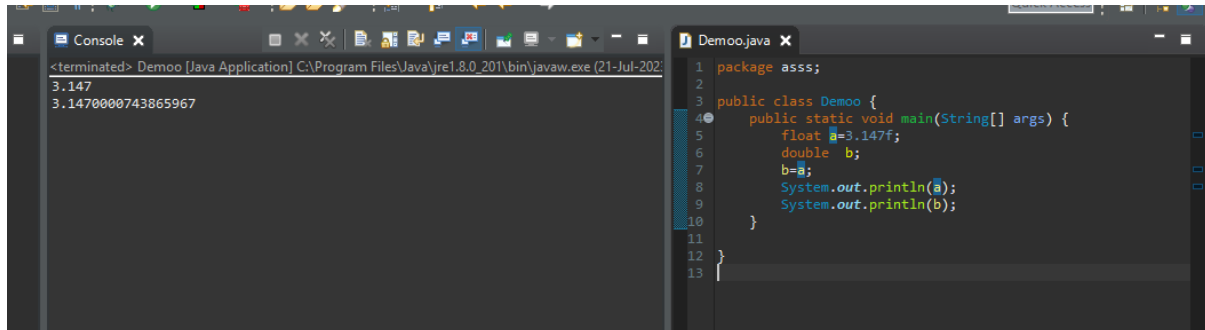
```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         float a=3.147f;
6         long b;
7         b=(long)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

Console output: 3.147, 3

Conclusion: conversion of float data type to long data type of data is Explicit type casting

Type Casting

Example 6: converting float data type to double data type of data. In these conversion we know which type of type casting is this

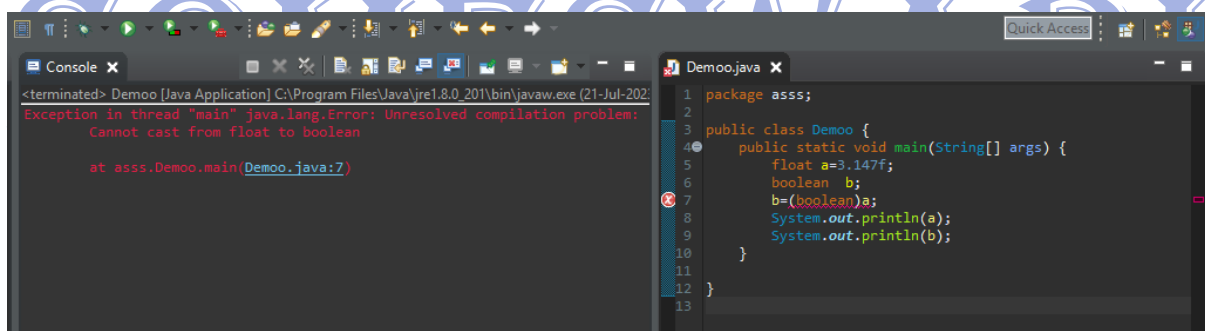


The screenshot shows an IDE with two windows. The 'Console' window on the left displays the output of a Java application: '3.147' followed by '3.147000743865967'. The 'Demoo.java' window on the right shows the following code:

```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         float a=3.147f;
6         double b;
7         b=a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

Conclusion: conversion of float data type to double data type of data is implicit type casting

Example 7: converting float data type to Boolean data type of data. In these conversion we know which type of type casting is this



The screenshot shows an IDE with two windows. The 'Console' window on the left displays a compilation error: 'Exception in thread "main" java.lang.Error: Unresolved compilation problem: Cannot cast from float to boolean' and 'at ass.Demoo.main(Demoo.java:7)'. The 'Demoo.java' window on the right shows the following code:

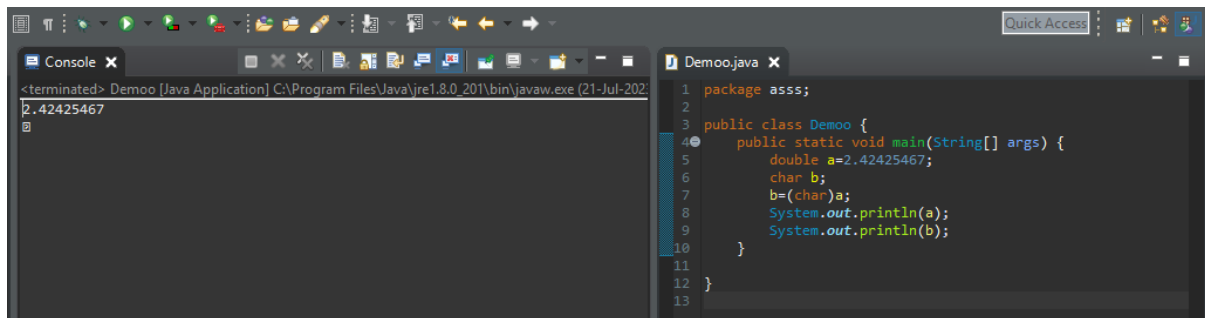
```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         float a=3.147f;
6         boolean b;
7         b=(boolean)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

Conclusion: conversion of float data type to Boolean data type of data casting is not possible.

Type Casting

7. Double : double is also a real number data type ,it is stored 8 bytes of data and 15 digits after decimal point.

Example 1: converting double data type to char data type of data. In these conversion we know which type of type casting is this

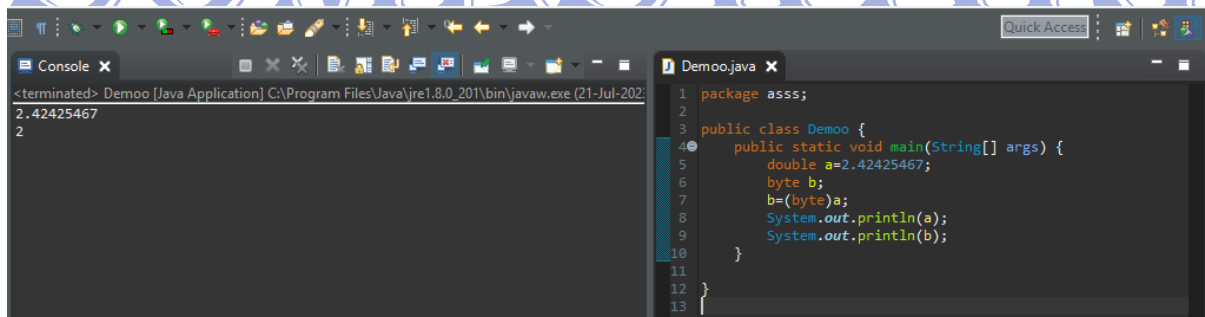


The screenshot shows an IDE with a console window on the left and a code editor on the right. The console window displays the output of the program: 2.42425467 and 2. The code editor shows the following Java code:

```
1 package ass5;  
2  
3 public class Demoo {  
4     public static void main(String[] args) {  
5         double a=2.42425467;  
6         char b;  
7         b=(char)a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11  
12 }  
13
```

Conclusion: conversion of double data type to char data type of data is Explicit type casting

Example 2: converting double data type to byte data type of data. In these conversion we know which type of type casting is this



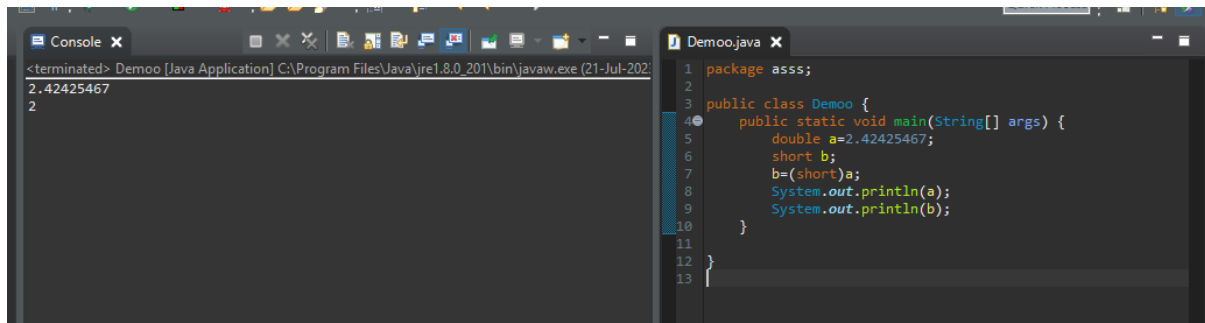
The screenshot shows an IDE with a console window on the left and a code editor on the right. The console window displays the output of the program: 2.42425467 and 2. The code editor shows the following Java code:

```
1 package ass5;  
2  
3 public class Demoo {  
4     public static void main(String[] args) {  
5         double a=2.42425467;  
6         byte b;  
7         b=(byte)a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11  
12 }  
13
```

Conclusion: conversion of double data type to bytedata type of data is Explicit type casting

Example 3: converting double data type to short data type of data. In these conversion we know which type of type casting is this

Type Casting

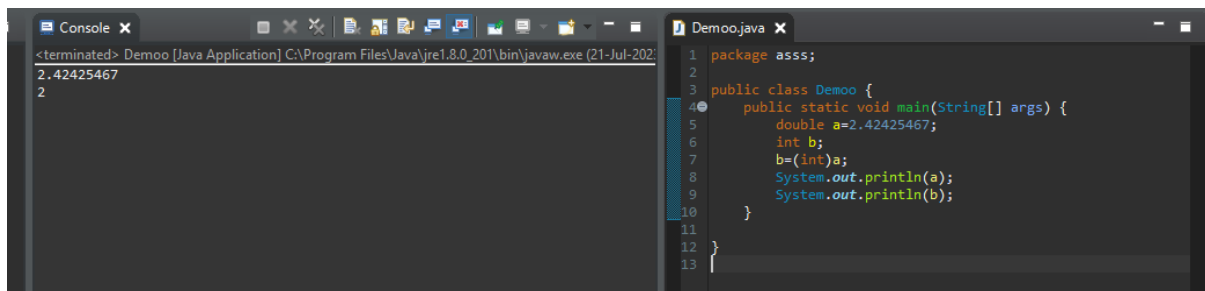


```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         double a=2.42425467;
6         short b;
7         b=(short)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-202
2.42425467
2
```

Conclusion: conversion of double data type to shoet data type of data is Explicit type casting

Example 4: converting double data type to int data type of data. In these conversion we know which type of type casting is this

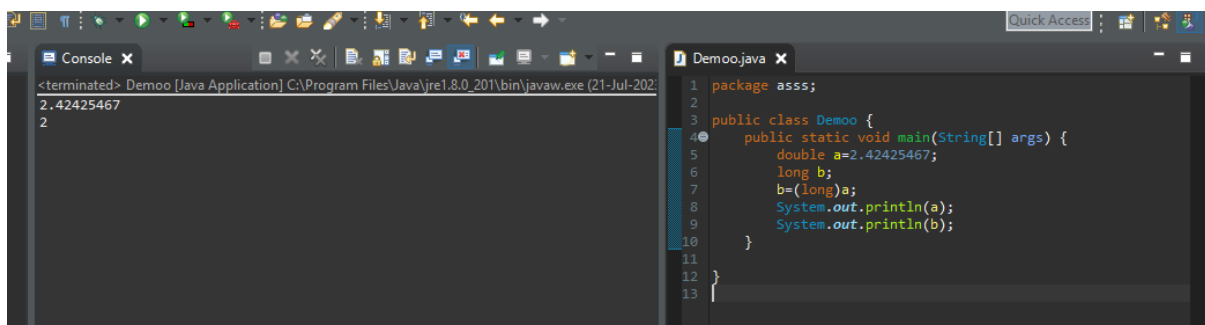


```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         double a=2.42425467;
6         int b;
7         b=(int)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-202
2.42425467
2
```

Conclusion: conversion of double data type to int data type of data is Explicit type casting

Example 5: converting double data type to long data type of data. In these conversion we know which type of type casting is this



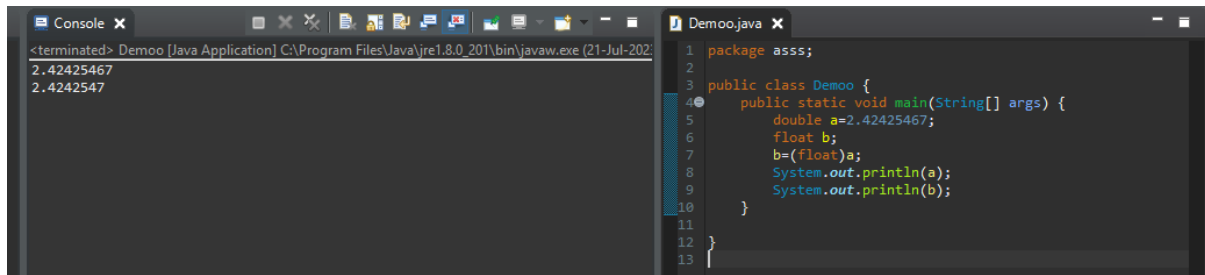
```
1 package asss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         double a=2.42425467;
6         long b;
7         b=(long)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13
```

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-202
2.42425467
2
```

Conclusion: conversion of double data type to long data type of data is Explicit type casting

Type Casting

Example 6: converting double data type to float data type of data. In these conversion we know which type of type casting is this

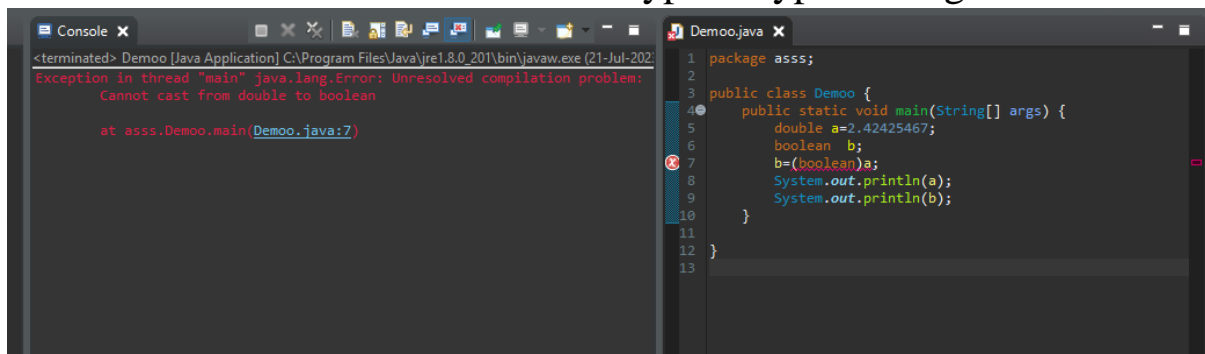


The screenshot shows an IDE with two windows. The 'Console' window on the left displays the output of a Java application: `<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2021 2.42425467 2.4242547`. The 'Demoo.java' window on the right shows the following code:

```
1 package ass5;  
2  
3 public class Demoo {  
4     public static void main(String[] args) {  
5         double a=2.42425467;  
6         float b;  
7         b=(float)a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11  
12  
13 }
```

Conclusion: conversion of double data type to float data type of data is Explicit type casting.

Example7: convertig double data type to Boolean data type of data. In these conversion we know which type of type casting is this



The screenshot shows an IDE with two windows. The 'Console' window on the left displays a compilation error: `<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2021 Exception in thread "main" java.lang.Error: Unresolved compilation problem: Cannot cast from double to boolean at ass5.Demoo.main(Demoo.java:7)`. The 'Demoo.java' window on the right shows the following code:

```
1 package ass5;  
2  
3 public class Demoo {  
4     public static void main(String[] args) {  
5         double a=2.42425467;  
6         boolean b;  
7         b=(boolean)a;  
8         System.out.println(a);  
9         System.out.println(b);  
10    }  
11  
12  
13 }
```

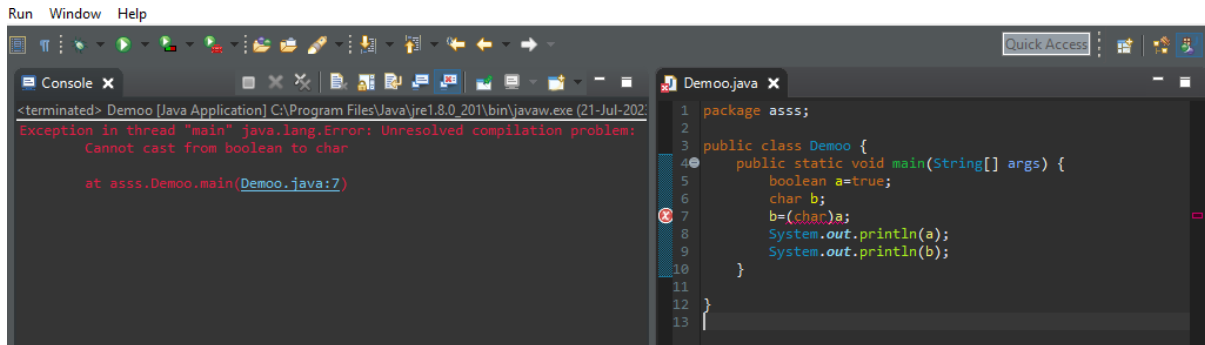
Conclusion: conversion of double data type to Boolean data type of data casting is not possible

8. Boolean: Boolean is true/ false type of data type, this is no standard size of memory allocated, depends on os, it's either 1 byte nor 2 bytes of memory allocated

True & false are the key words.

Type Casting

Example1: Converting Boolean data type to char data type of data. In these conversion we know which type of type casting is this

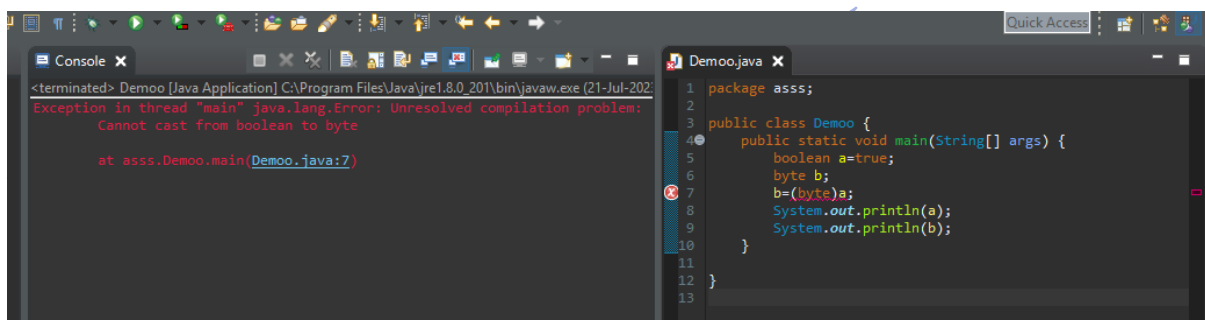


```
1 package assss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         boolean a=true;
6         char b;
7         b=(char)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13 }
```

Console output:
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2021)
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Cannot cast from boolean to char
at assss.Demoo.main(Demoo.java:7)

Conclusion: conversion of Boolean data type to char data type of data casting is not possible

Example2: Converting Boolean data type to byte data type of data. In these conversion we know which type of type casting is this



```
1 package assss;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         boolean a=true;
6         byte b;
7         b=(byte)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13 }
```

Console output:
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2021)
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Cannot cast from boolean to byte
at assss.Demoo.main(Demoo.java:7)

Conclusion: conversion of Boolean data type to byte data type of data casting is not possible

Example 3: Converting Boolean data type to short data type of data. In these conversion we know which type of type casting is this

Type Casting

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2022:
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
    Cannot cast from boolean to short
    at assss.Demoo.main(Demoo.java:7)

package assss;

public class Demoo {
    public static void main(String[] args) {
        boolean a=true;
        short b;
        b=(short)a;
        System.out.println(a);
        System.out.println(b);
    }
}
```

Conclusion: conversion of Boolean data type to short data type of data casting is not possible

Example 4: Converting Boolean data type to int data type of data. In these conversion we know which type of type casting is this

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2022:
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
    Cannot cast from boolean to int
    at assss.Demoo.main(Demoo.java:7)

package assss;

public class Demoo {
    public static void main(String[] args) {
        boolean a=true;
        int b;
        b=(int)a;
        System.out.println(a);
        System.out.println(b);
    }
}
```

Conclusion: conversion of Boolean data type to int data type of data casting is not possible

Example 5: Converting Boolean data type to long data type of data. In these conversion we know which type of type casting is this

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2022:
Exception in thread "main" java.lang.Error: Unresolved compilation problems:
    Cannot cast from boolean to long
    Syntax error on token ")", delete this token
    at assss.Demoo.main(Demoo.java:7)

package assss;

public class Demoo {
    public static void main(String[] args) {
        boolean a=true;
        long b;
        b=(long)a;
        System.out.println(a);
        System.out.println(b);
    }
}
```

Conclusion: conversion of Boolean data type to long data type of data casting is not possible

Type Casting

Example 6: Converting Boolean data type to float data type of data. In these conversion we know which type of type casting is this

```
<terminated> Demoo [Java Application] C:\Program Files\Java\jre1.8.0_201\bin\javaw.exe (21-Jul-2022)
Exception in thread "main" java.lang.Error: Unresolved compilation problems:
    Cannot cast from boolean to float
    Syntax error on token "<strong>)</strong>", delete this token
    at asss.Demoo.main(Demoo.java:7)

1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         boolean a=true;
6         float b;
7         b=(float)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13 }
```

Conclusion: conversion of Boolean data type to float data type of data casting is not possible

Example 7: Converting Boolean data type to double data type of data. In these conversion we know which type of type casting is this

```
1 package ass;
2
3 public class Demoo {
4     public static void main(String[] args) {
5         boolean a=true;
6         double b;
7         b=(double)a;
8         System.out.println(a);
9         System.out.println(b);
10    }
11 }
12
13 }
```

Conclusion: conversion of Boolean data type to double data type of data casting is not possible

Type Casting

This table explains type casting of each data type of data...

	char	byte	short	int	long	float	double	boolean
char	NCR	EC	EC	IC	IC	IC	IC	Cann't cast
byte	EC	NCR	IC	IC	IC	IC	IC	Cann't cast
short	EC	EC	NCR	IC	IC	IC	IC	Cann't cast
int	EC	EC	EC	NCR	IC	IC	IC	Cann't cast
long	EC	EC	EC	EC	NCR	EC	EC	Cann't cast
float	EC	EC	EC	EC	EC	NCR	EC	Cann't cast
double	EC	EC	EC	EC	EC	EC	NCR	Cann't cast
boolean								Cann't cast

● Type casting is not possible

● Type casting is possible

SOMESWARI