

ASSIGNMENT ON TYPE CASTING

Submitted by

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submitted to

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TYPE CASTING:

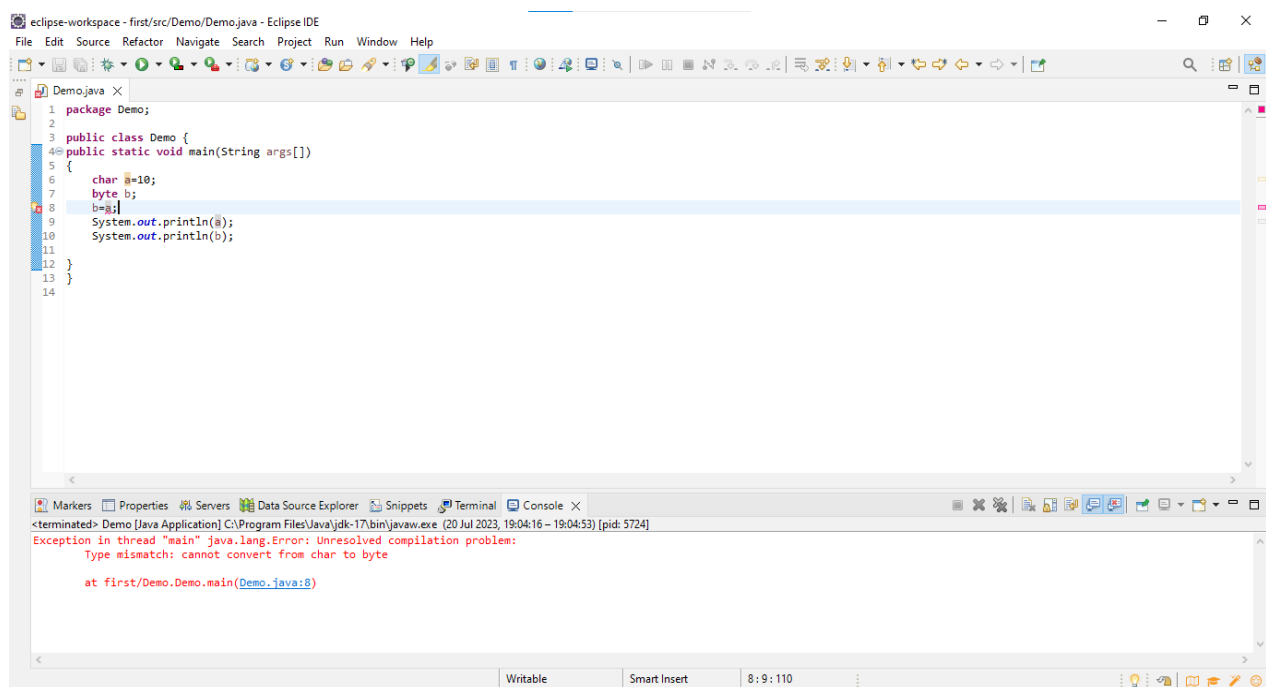
Type casting is a way of converting data from one data type to another data type.

There are two types of type casting:

- Widening Type Casting.
- Narrowing Type Casting.

CHAR SECTION

CHAR TO BYTE



The screenshot shows the Eclipse IDE interface. The main editor window displays a Java file named `Demo.java` with the following code:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         char a=10;
7         byte b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

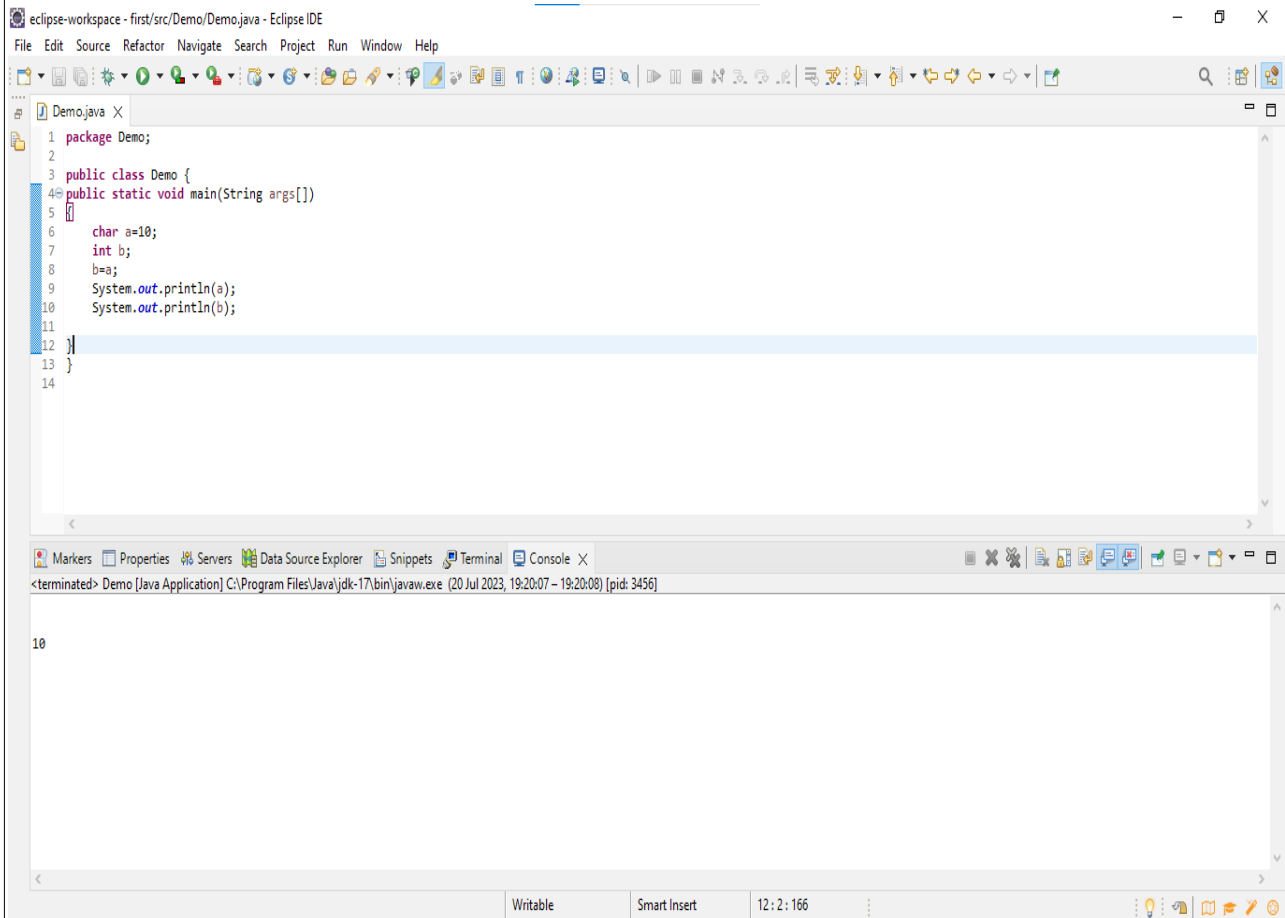
The IDE has a red squiggly line under the assignment `b=a;` on line 8, indicating a compilation error. The bottom console window shows the following error message:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 19:04:16 ~ 19:04:53) [pid: 5724]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from char to byte
    at first/Demo.Demo.main(Demo.java:8)
```

CONCLUSION:

Error because from char to byte explicit conversion should be done.

CHAR TO INT

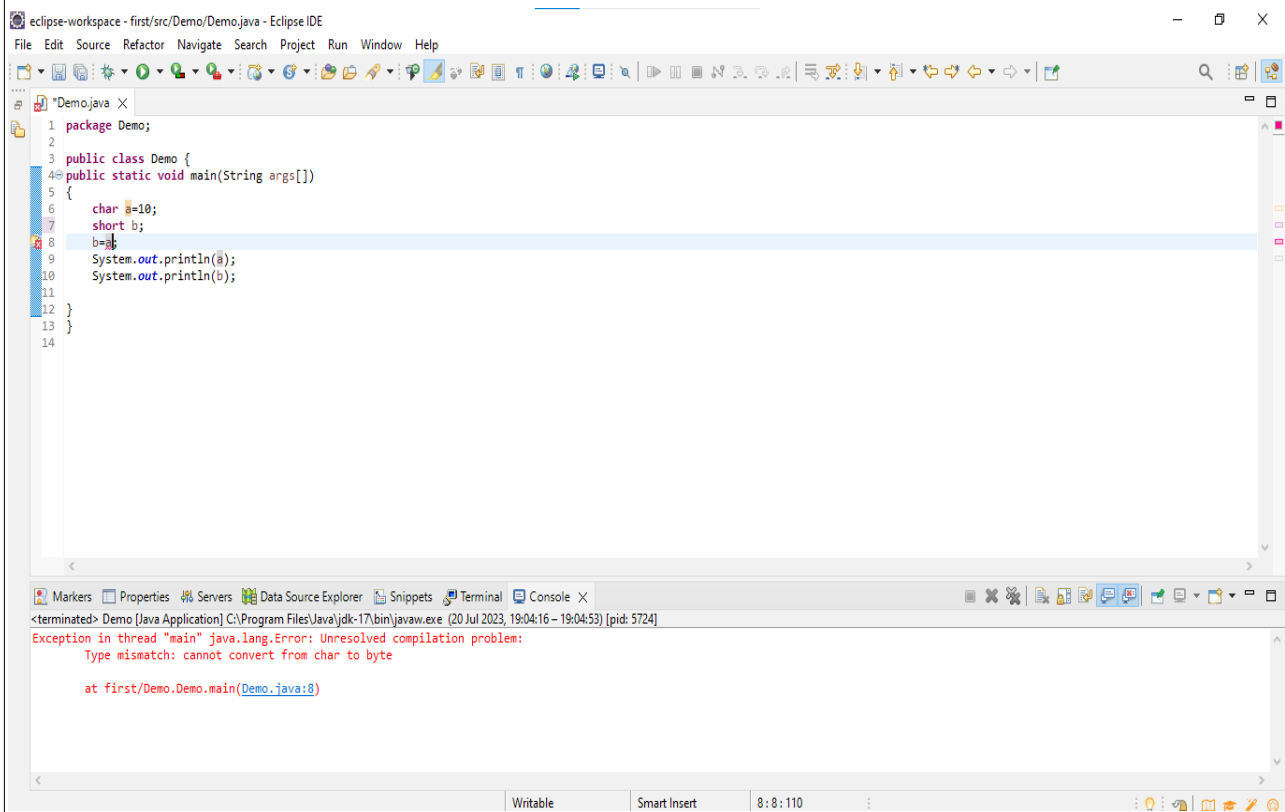


The screenshot shows the Eclipse IDE with a Java file named Demo.java. The code defines a package Demo, a public class Demo, and a main method. Inside the main method, a char variable 'a' is assigned the value 10, an int variable 'b' is declared, 'b' is assigned the value of 'a', and both 'a' and 'b' are printed to the console. The console output shows the number 10.

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         char a=10;
7         int b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13
14
```

Console Output: 10

CHAR TO SHORT



The screenshot shows the Eclipse IDE with a Java file named Demo.java. The code defines a package Demo, a public class Demo, and a main method. Inside the main method, a char variable 'a' is assigned the value 10, a short variable 'b' is declared, 'b' is assigned the value of 'a', and both 'a' and 'b' are printed to the console. The console output shows a compilation error: 'Exception in thread "main" java.lang.Error: Unresolved compilation problem: Type mismatch: cannot convert from char to byte'.

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         char a=10;
7         short b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13
14
```

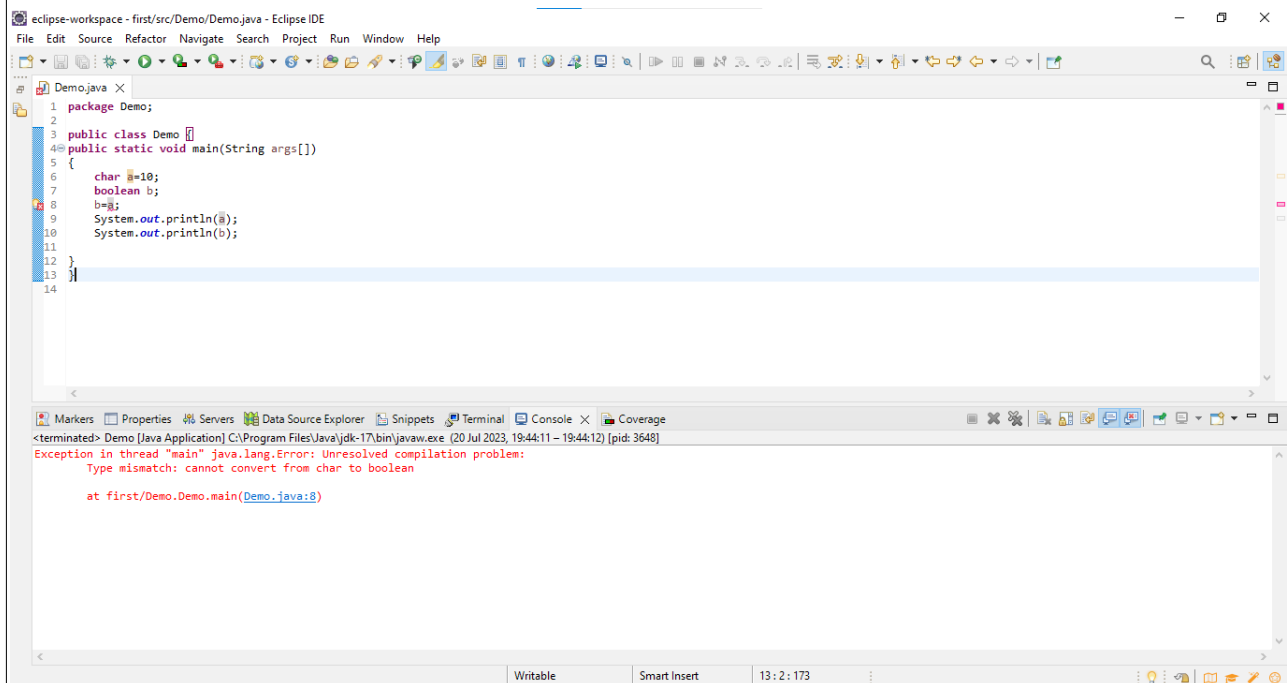
Console Output: Exception in thread "main" java.lang.Error: Unresolved compilation problem: Type mismatch: cannot convert from char to byte

at first/Demo.Demo.main(Demo.java:8)

CONCLUSION:

Error because from char to byte explicit conversion is done.

CHAR TO BOOLEAN:



The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code is as follows:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         char a=10;
7         boolean b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13
14
```

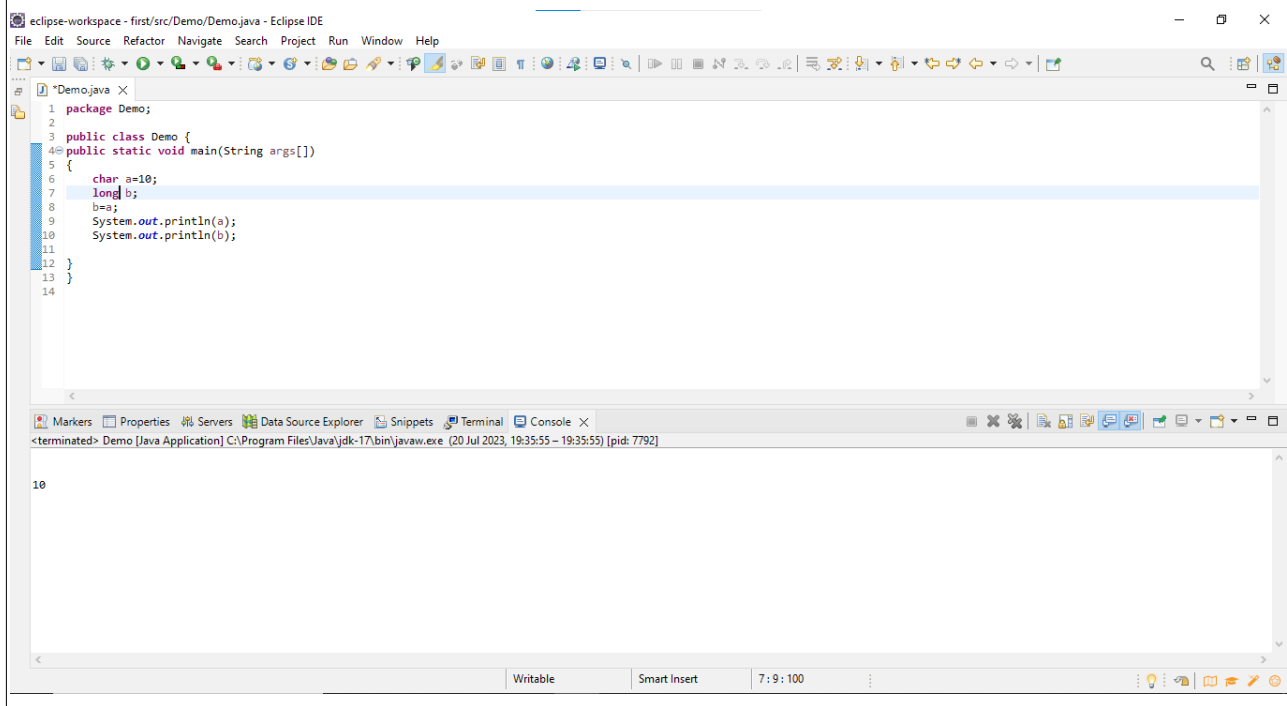
The IDE's console window shows the following error message:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 19:44:11 - 19:44:12) [pid: 3648]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from char to boolean
    at first/Demo.Demo.main(Demo.java:8)
```

CONCLUSION:

Error because no automatic conversion is supported from char to boolean.

CHAR-LONG



The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code is as follows:

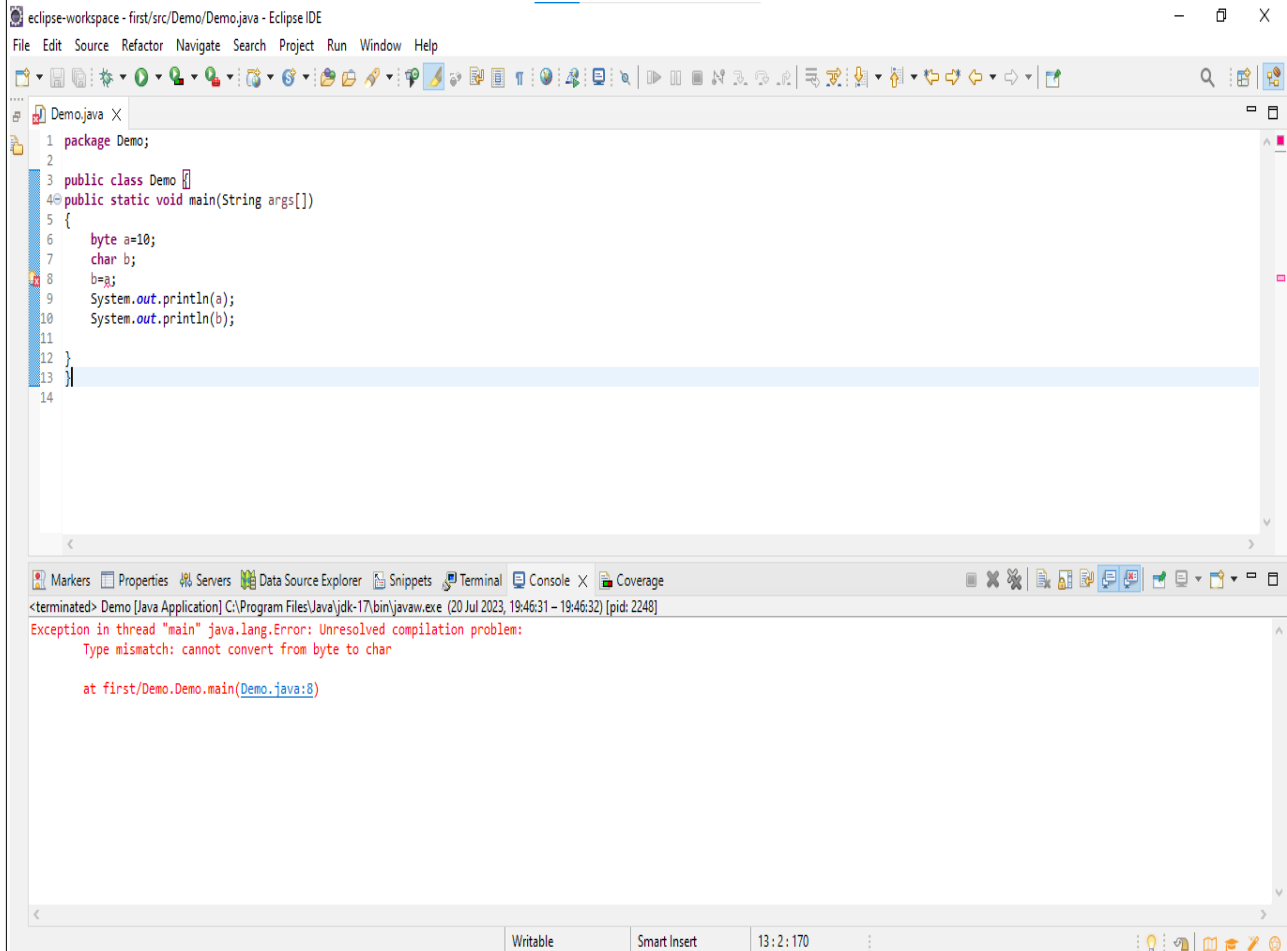
```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         char a=10;
7         long b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13
14
```

The IDE's console window shows the following error message:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 19:35:55 - 19:35:55) [pid: 7792]
10
```

BYTE SECTION

BYTE TO CHAR



The screenshot shows the Eclipse IDE interface. The top part is the editor window titled 'Demo.java', which contains the following code:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         byte a=10;
7         char b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13
14
```

The bottom part of the IDE is the 'Console' window, which displays the following error message:

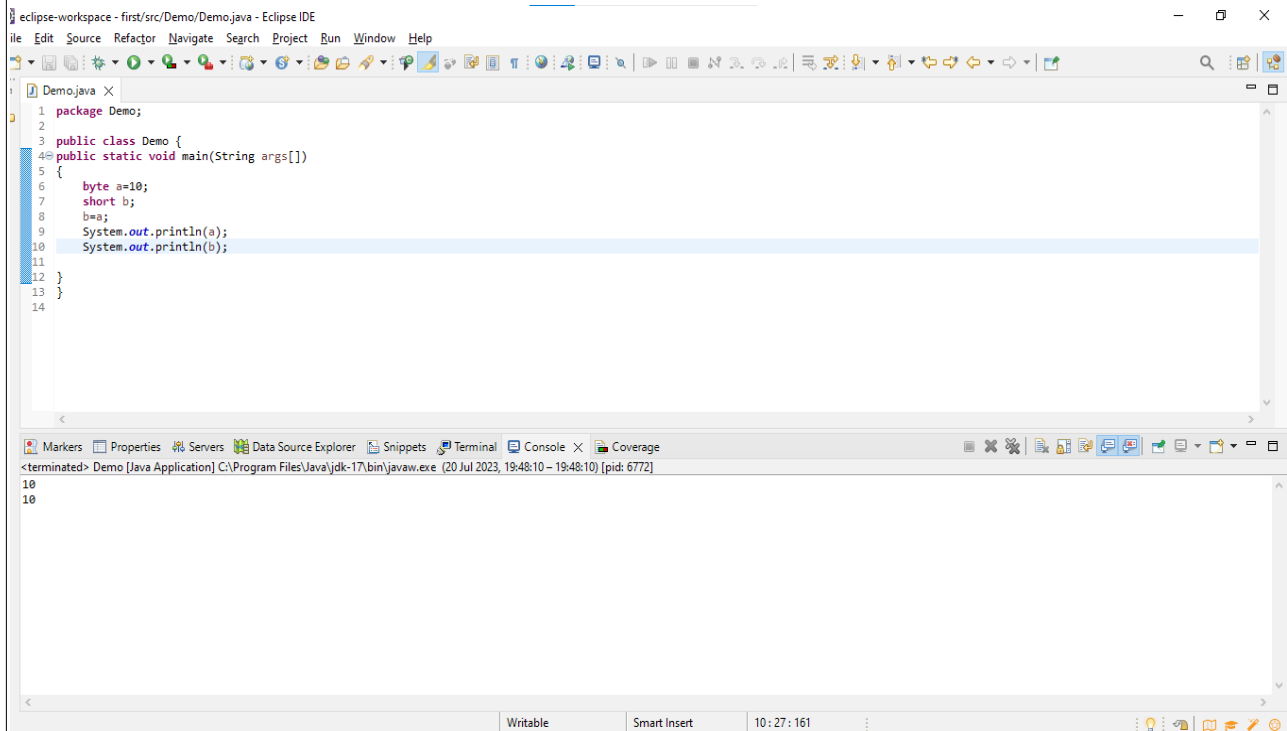
```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 19:46:31 - 19:46:32) [pid: 2248]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from byte to char

    at first/Demo.Demo.main(Demo.java:8)
```

CONCLUSION:

Error because from byte to char explicit conversion is done.

BYTE-SHORT



The screenshot shows the Eclipse IDE with a Java file named Demo.java. The code defines a package Demo and a public class Demo. Inside the class, there is a main method that takes a String array args. The main method contains a block of code where a byte variable a is initialized to 10, a short variable b is initialized to a, and both a and b are printed to the console using System.out.println. The IDE's console window at the bottom shows the output of the program, which is 10 on two separate lines. The status bar at the bottom indicates the file is writable and smart insert is enabled, with a timestamp of 10:27:161.

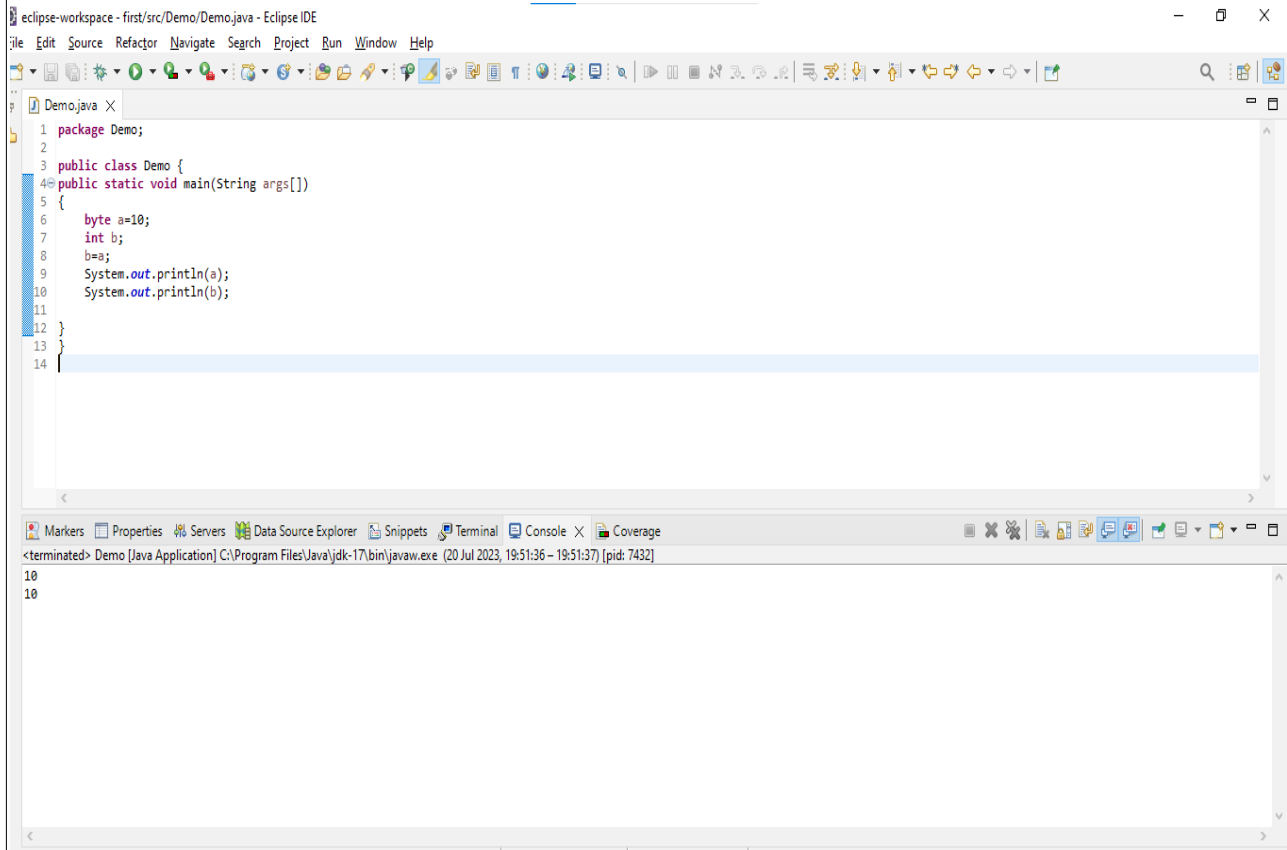
```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         byte a=10;
7         short b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 19:48:10 – 19:48:10) [pid: 6772]

10
10

Writable Smart Insert 10:27:161

BYTE-INT



The screenshot shows the Eclipse IDE with a Java file named Demo.java. The code defines a package Demo and a public class Demo. Inside the class, there is a main method that takes a String array args. The main method contains a block of code where a byte variable a is initialized to 10, an int variable b is initialized to a, and both a and b are printed to the console using System.out.println. The IDE's console window at the bottom shows the output of the program, which is 10 on two separate lines. The status bar at the bottom indicates the file is writable and smart insert is enabled, with a timestamp of 10:27:161.

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         byte a=10;
7         int b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 19:51:36 – 19:51:37) [pid: 7432]

10
10

Writable Smart Insert 10:27:161

BYTE-DOUBLE:

The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code defines a package `Demo` and a class `Demo` with a `main` method. Inside the `main` method, a `byte` variable `a` is initialized with the value 10. A `double` variable `b` is then assigned the value of `a`. Finally, both `a` and `b` are printed to the console using `System.out.println`. The console output shows the value 10 for `a` and 10.0 for `b`, indicating a successful conversion from `byte` to `double`.

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         byte a=10;
7         double b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

Console Output:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 19:55:00 - 19:55:01) [pid: 7592]
10
10.0
```

BYTE-BOOLEAN

The screenshot shows the Eclipse IDE with the same `Demo.java` file. In this version, the `double` variable `b` has been changed to a `boolean` variable. The code attempts to assign the value of `a` (a `byte`) to `b` (a `boolean`). This results in a compilation error because Java does not allow automatic conversion from `byte` to `boolean`. The console shows a `java.lang.Error: Unresolved compilation problem:` with the message `Type mismatch: cannot convert from byte to boolean`.

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         byte a=10;
7         boolean b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

Console Output:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 19:56:17 - 19:56:17) [pid: 11100]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from byte to boolean

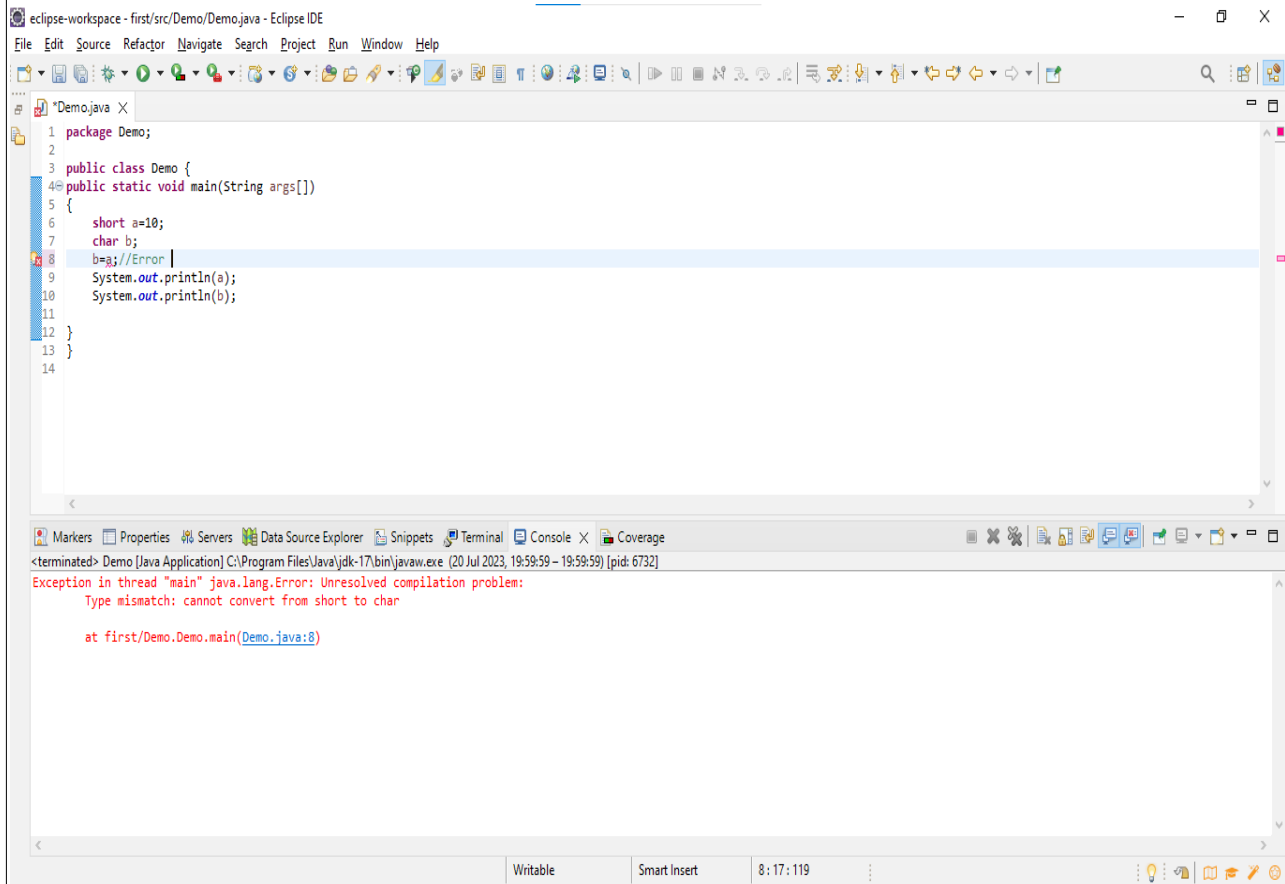
at first/Demo.Demo.main(Demo.java:8)
```

CONCLUSION:

Error because no automatic conversion from byte to boolean.

SHORT SECTION

SHORT TO CHAR



The screenshot shows the Eclipse IDE interface. The main editor window displays a Java file named `Demo.java` with the following code:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         short a=10;
7         char b;
8         b=a; //Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

The line `b=a;` is highlighted in blue, and a red error icon is visible in the left margin. The console window at the bottom shows the following output:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 19:59:59 - 19:59:59) [pid: 6732]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from short to char

    at first/Demo.Demo.main(Demo.java:8)
```

The status bar at the bottom indicates the file is `Writable`, `Smart Insert` is active, and the time is `8:17:119`.

CONCLUSION

Error because from short to char explicit conversion should done.

SHORT TO BYTE

The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code is as follows:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         short a=10;
7         byte b;
8         b=a; //Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14
```

The IDE shows a compilation error at line 8: `Type mismatch: cannot convert from short to byte`. The console output shows the exception: `Exception in thread "main" java.lang.Error: Unresolved compilation problem: Type mismatch: cannot convert from short to byte`.

CONCLUSION

Error because from short to byte explicit conversion should done.

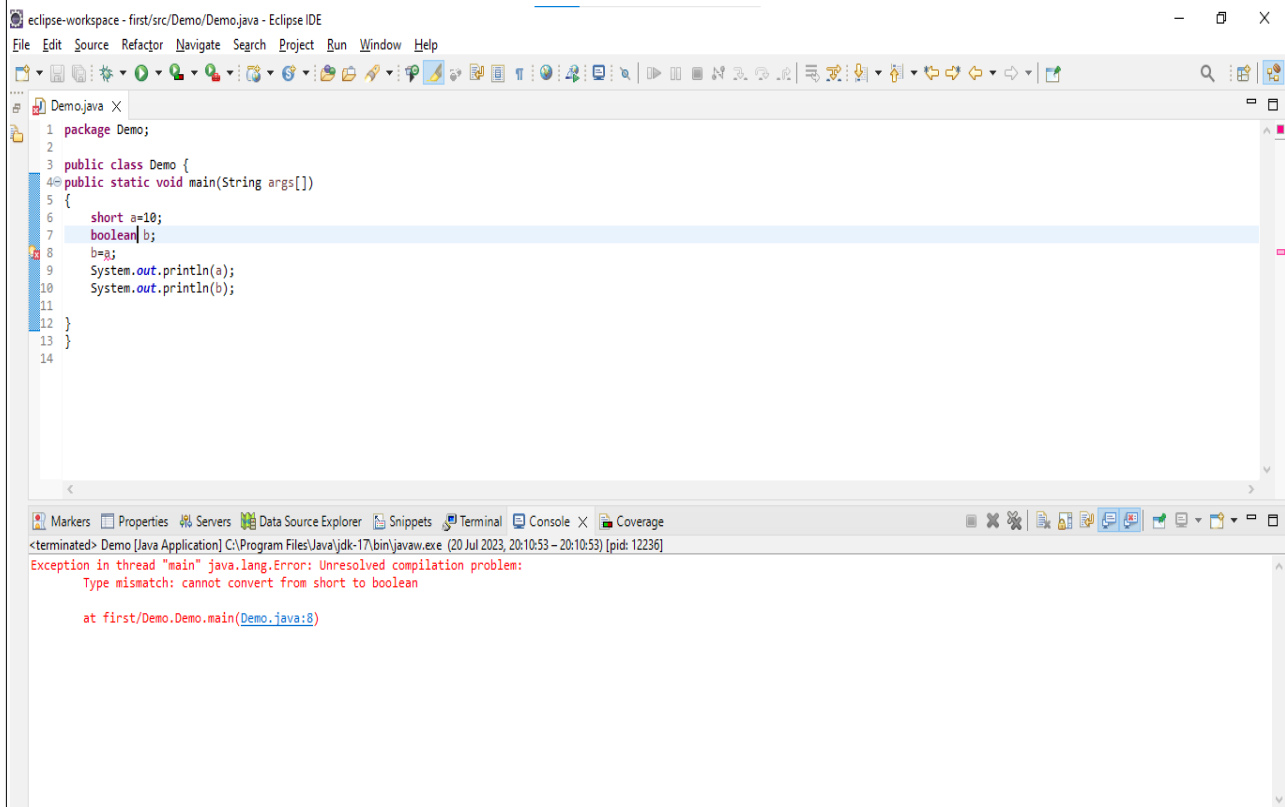
SHORT-FLOAT:

The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code is as follows:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         short a=10;
7         float b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14
```

The IDE shows successful compilation and execution. The console output shows the values: `10` and `10.0`.

SHORT-BOOLEAN



The screenshot shows the Eclipse IDE interface. The main editor window displays a Java file named `Demo.java` with the following code:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         short a=10;
7         boolean b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

The line `b=a;` on line 8 is highlighted in blue. Below the editor, the `Console` window shows the following error message:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 20:10:53 - 20:10:53) [pid: 12236]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
    Type mismatch: cannot convert from short to boolean

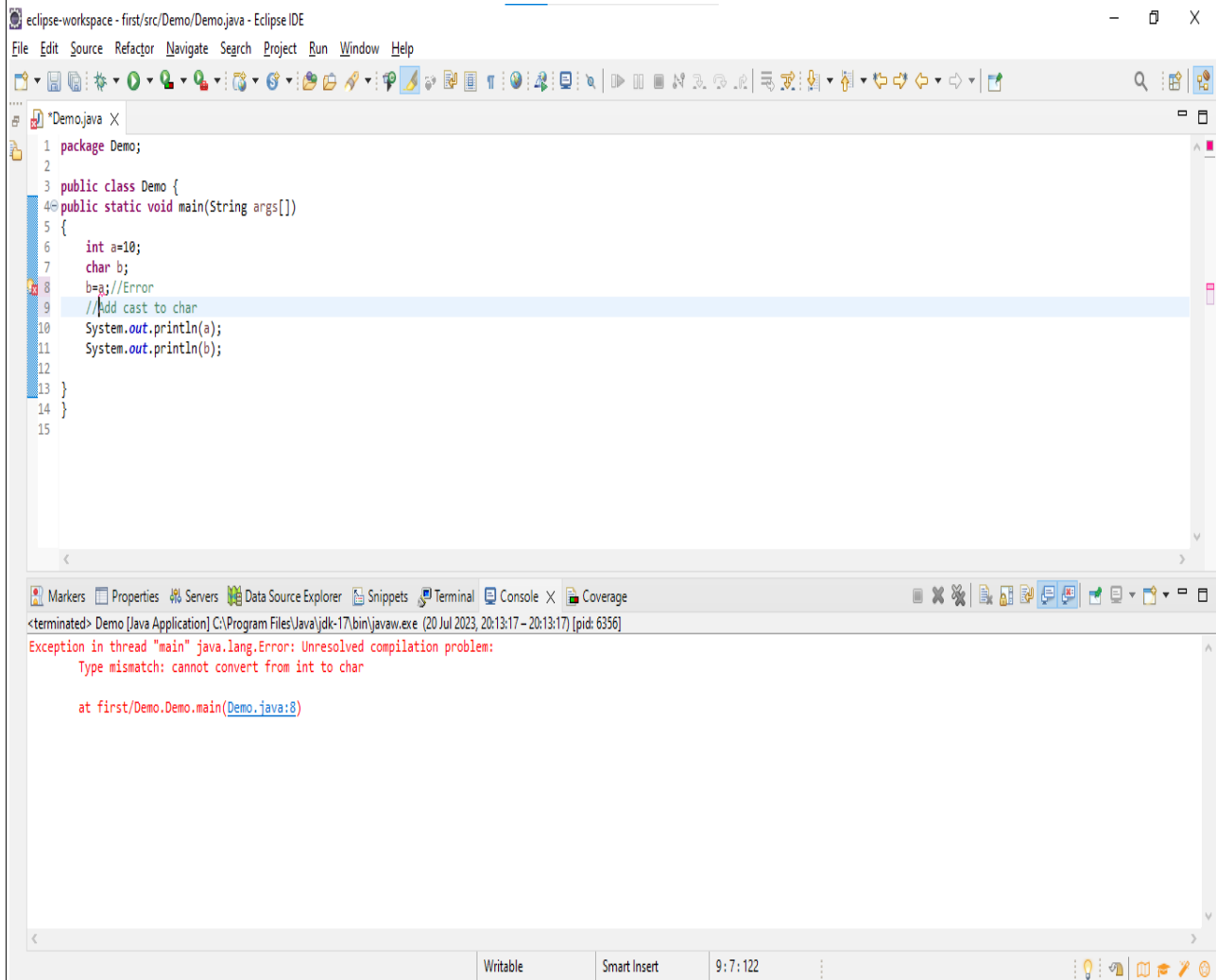
    at first/Demo.Demo.main(Demo.java:8)
```

CONCLUSION

Error because no automatic conversion is done from short to boolean.

INT SECTION

INT TO CHAR



The screenshot shows the Eclipse IDE interface. The top toolbar includes icons for File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The main editor window displays the following Java code:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         int a=10;
7         char b;
8         b=a; //Error
9         //add cast to char
10        System.out.println(a);
11        System.out.println(b);
12    }
13 }
14 }
15 }
```

The bottom console window shows the following error message:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 20:13:17 - 20:13:17) [pid: 6356]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
    Type mismatch: cannot convert from int to char

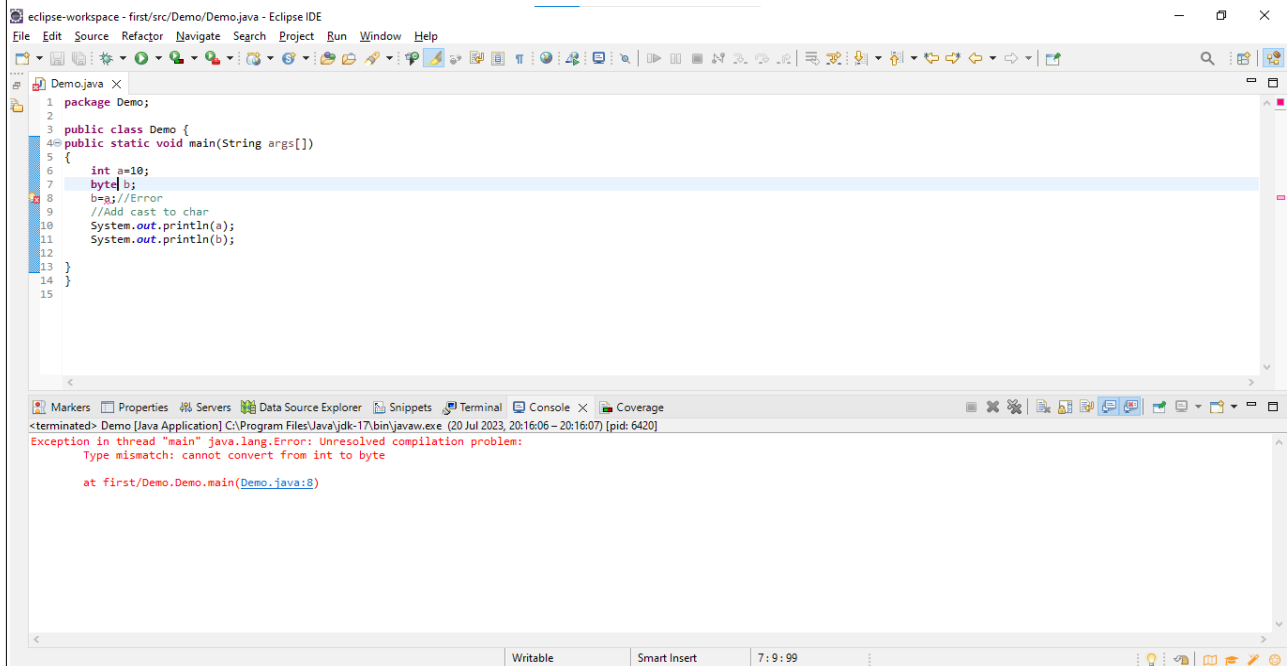
    at first/Demo.Demo.main(Demo.java:8)
```

The status bar at the bottom indicates 'Writable', 'Smart Insert', and '9:7:122'.

CONCLUSION

Error because from int to char explicit conversion should done.

INT TO BYTE



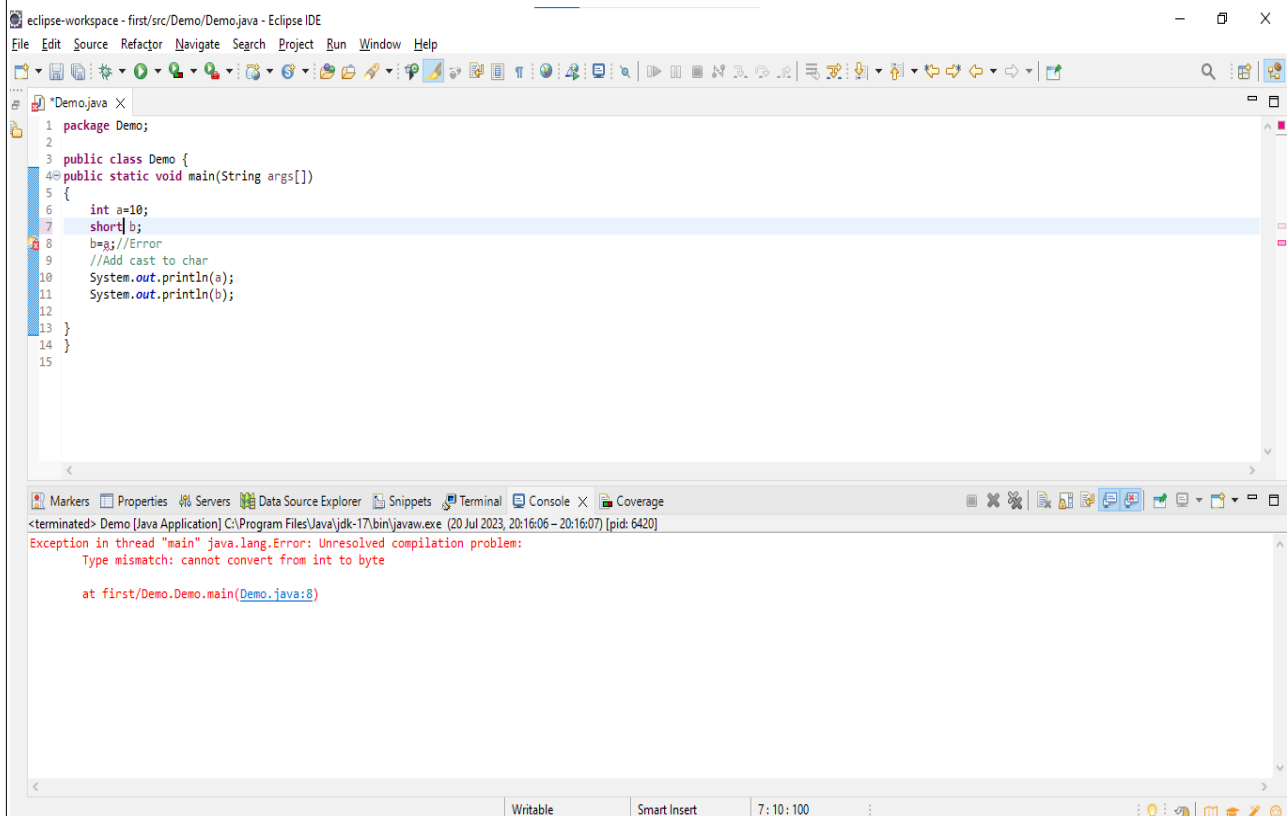
The screenshot shows the Eclipse IDE with a Java file named Demo.java. The code is as follows:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         int a=10;
7         byte b;
8         b=a;//Error
9         //Add cast to char
10        System.out.println(a);
11        System.out.println(b);
12    }
13 }
14 }
15 }
```

The console output shows the following error:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 20:16:06 - 20:16:07) [pid: 6420]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from int to byte
    at first/Demo.Demo.main(Demo.java:8)
```

INT TO SHORT



The screenshot shows the Eclipse IDE with a Java file named Demo.java. The code is as follows:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         int a=10;
7         short b;
8         b=a;//Error
9         //Add cast to char
10        System.out.println(a);
11        System.out.println(b);
12    }
13 }
14 }
15 }
```

The console output shows the following error:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 20:16:06 - 20:16:07) [pid: 6420]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from int to byte
    at first/Demo.Demo.main(Demo.java:8)
```

CONCLUSION

Error because from int to short explicit conversion should done.

INT TO LONG

The screenshot shows the Eclipse IDE with a Java project named 'Demo'. The main editor displays the following code:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         int a=10;
7         long b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

The bottom console window shows the output of the program:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 20:18:30 - 20:18:30) [pid: 580]
10
10
```

INT TO FLOAT

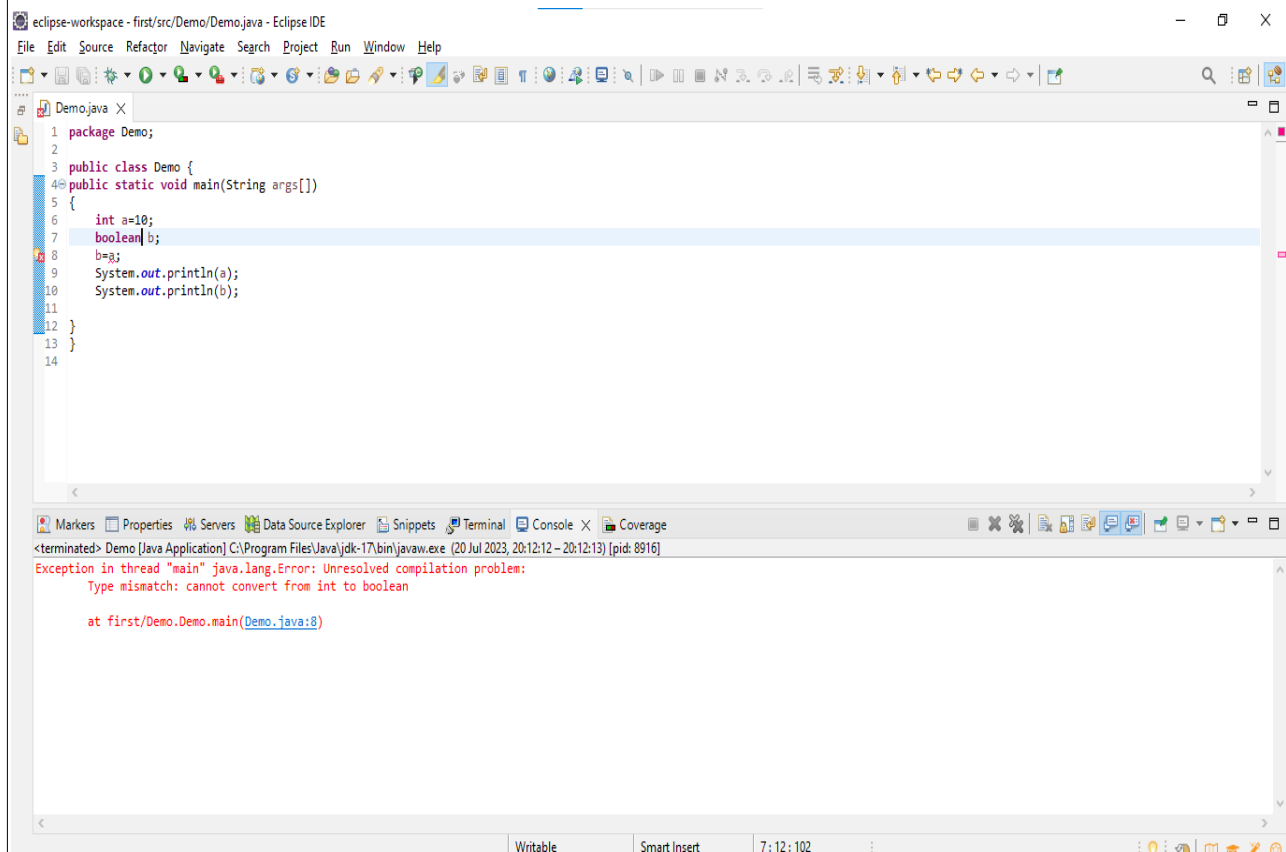
The screenshot shows the Eclipse IDE with the same Java project 'Demo'. The main editor displays the following code:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         int a=10;
7         float b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

The bottom console window shows the output of the program:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 20:20:01 - 20:20:02) [pid: 4608]
10
10.0
```

INT TO BOOLEAN



The screenshot shows the Eclipse IDE interface. The top toolbar includes icons for File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The main editor window displays a Java file named 'Demo.java' with the following code:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         int a=10;
7         boolean b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

The bottom console window shows the following error message:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20 Jul 2023, 20:12:12 - 20:12:13) [pid: 8916]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
    Type mismatch: cannot convert from int to boolean
    at first/Demo.Demo.main(Demo.java:8)
```

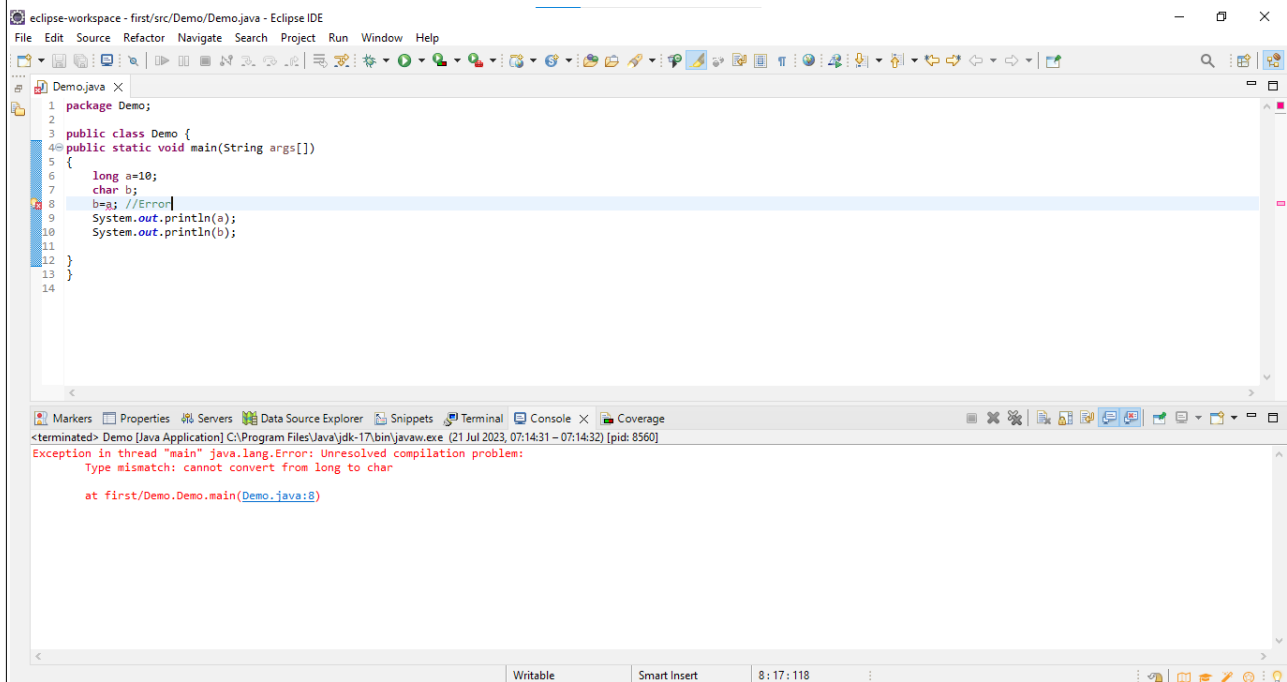
The status bar at the bottom indicates 'Writable', 'Smart Insert', and the time '7:12:102'.

CONCLUSION

Error because no automatic conversion done from int to boolean.

LONG SECTION

LONG-CHAR



The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code is as follows:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         long a=10;
7         char b;
8         b=a; //Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

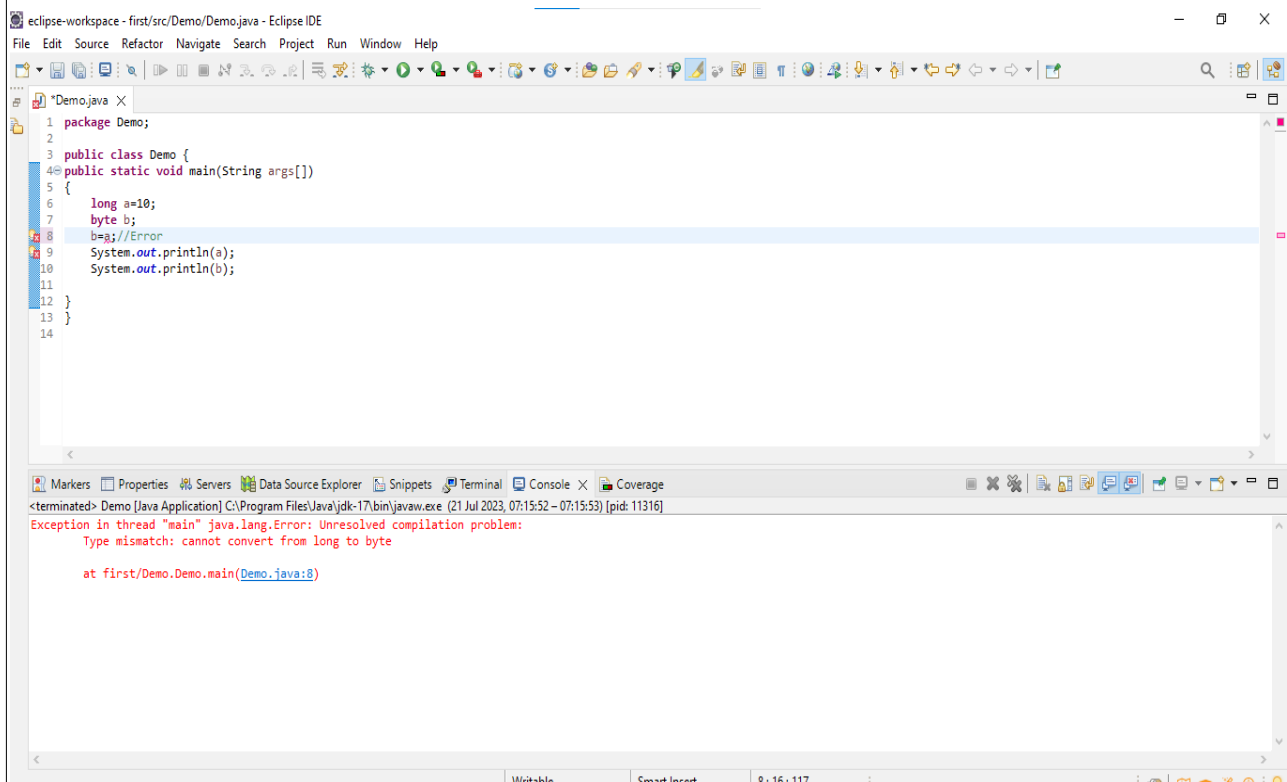
The error message in the console is:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:14:31 - 07:14:32) [pid: 8560]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from long to char
    at first/Demo.Demo.main(Demo.java:8)
```

CONCLUSION

Error because from long to char explicit conversion should done.

LONG-BYTE



The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code is as follows:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         long a=10;
7         byte b;
8         b=a; //Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

The error message in the console is:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:15:52 - 07:15:53) [pid: 11316]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from long to byte
    at first/Demo.Demo.main(Demo.java:8)
```

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         long a=10;
7         char b;
8         b=a; //Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from long to char
at first/Demo.Demo.main(Demo.java:8)

CONCLUSION

Error because from long to byte explicit conversion should done.

LONG-SHORT

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         long a=10;
7         char b;
8         b=a; //Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from long to char
at first/Demo.Demo.main(Demo.java:8)

CONCLUSION

Error because from long to chare explicit conversion should done.

LONG-SHORT


```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         long a=10;
7         short b;
8         b=a; //Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

Markers Properties Servers Data Source Explorer Snippets Terminal Console Coverage

<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:18:35 – 07:18:36) [pid: 9788]

Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from long to short

at first/Demo.Demo.main(Demo.java:8)

Writable Smart Insert 7:10:101

CONCLUSION

Error because from long to short explicit conversion should done.

LONG-INT

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         long a=10;
7         int b;
8         b=a; //Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

Markers Properties Servers Data Source Explorer Snippets Terminal Console Coverage

<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:19:55 – 07:19:55) [pid: 308]

Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from long to int

at first/Demo.Demo.main(Demo.java:8)

Writable Smart Insert 14:1:178

CONCLUSION

Error because from long to int explicit conversion should done.

LONG-FLOAT

The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code is as follows:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         long a=10;
7         float b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

The console output shows the result of the program execution:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:21:03 - 07:21:03) [pid: 3752]
10
10.0
```

LONG-DOUBLE

The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code is as follows:

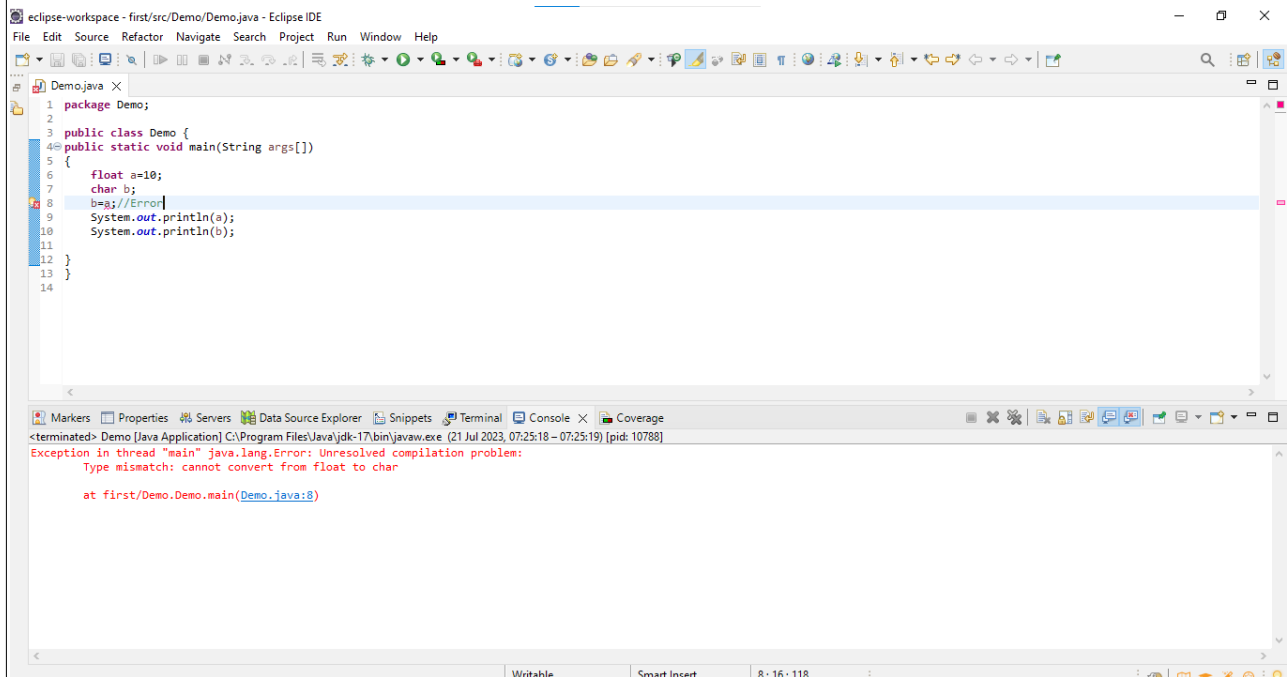
```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         long a=10;
7         double b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

The console output shows the result of the program execution:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:22:09 - 07:22:10) [pid: 8172]
10
10.0
```

FLOAT SECTION

FLOAT-CHAR



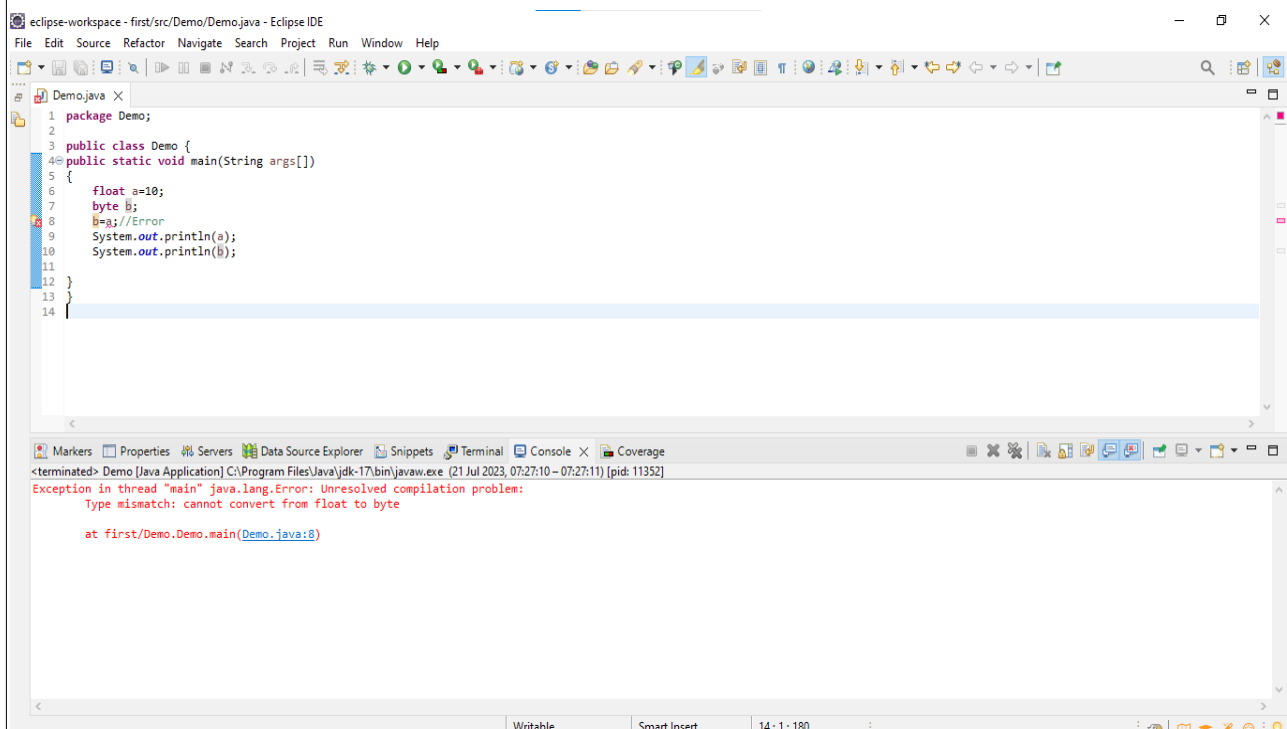
The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code defines a `public class Demo` with a `main` method. Inside the `main` method, a `float a=10;` is declared, and a `char b;` is declared. Line 8, `b=a;//Error`, is highlighted with a red squiggly line. The console at the bottom shows the following error message:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:25:18 - 07:25:19) [pid: 10788]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from float to char
    at first/Demo.Demo.main(Demo.java:8)
```

CONCLUSION

Error from float to char explicit conversion should done.

FLOAT-BYTE



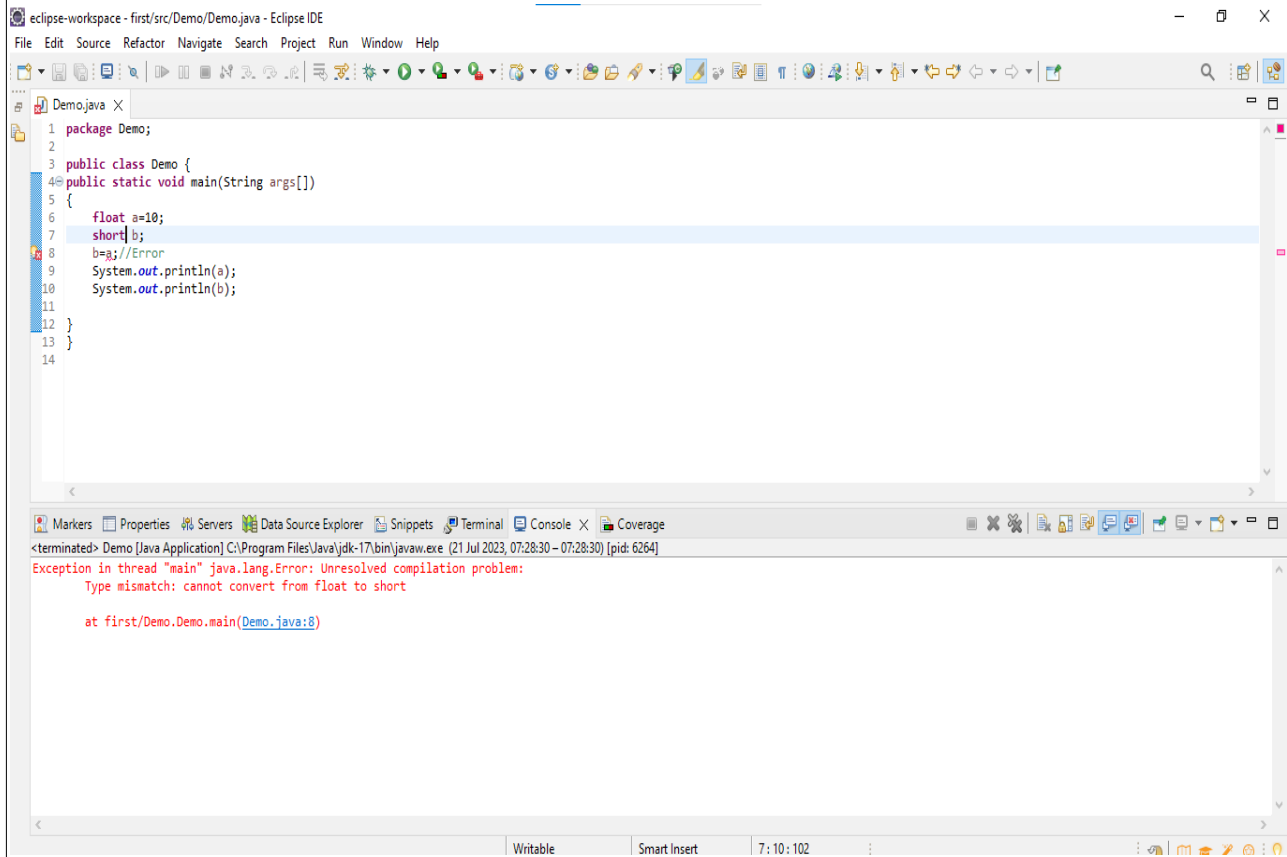
The screenshot shows the Eclipse IDE with the same `Demo.java` file. The code is modified so that `char b;` is replaced with `byte B;`. Line 8, `B=a;//Error`, is highlighted with a red squiggly line. The console at the bottom shows the following error message:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:27:10 - 07:27:11) [pid: 11352]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from float to byte
    at first/Demo.Demo.main(Demo.java:8)
```

CONCLUSION

Error because from float to byte explicit conversion should done.

FLOAT-SHORT



The screenshot shows the Eclipse IDE interface. The top toolbar includes icons for File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The main editor window displays the following Java code:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         float a=10;
7         short b;
8         b=a;//Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

The bottom console window shows the following error message:

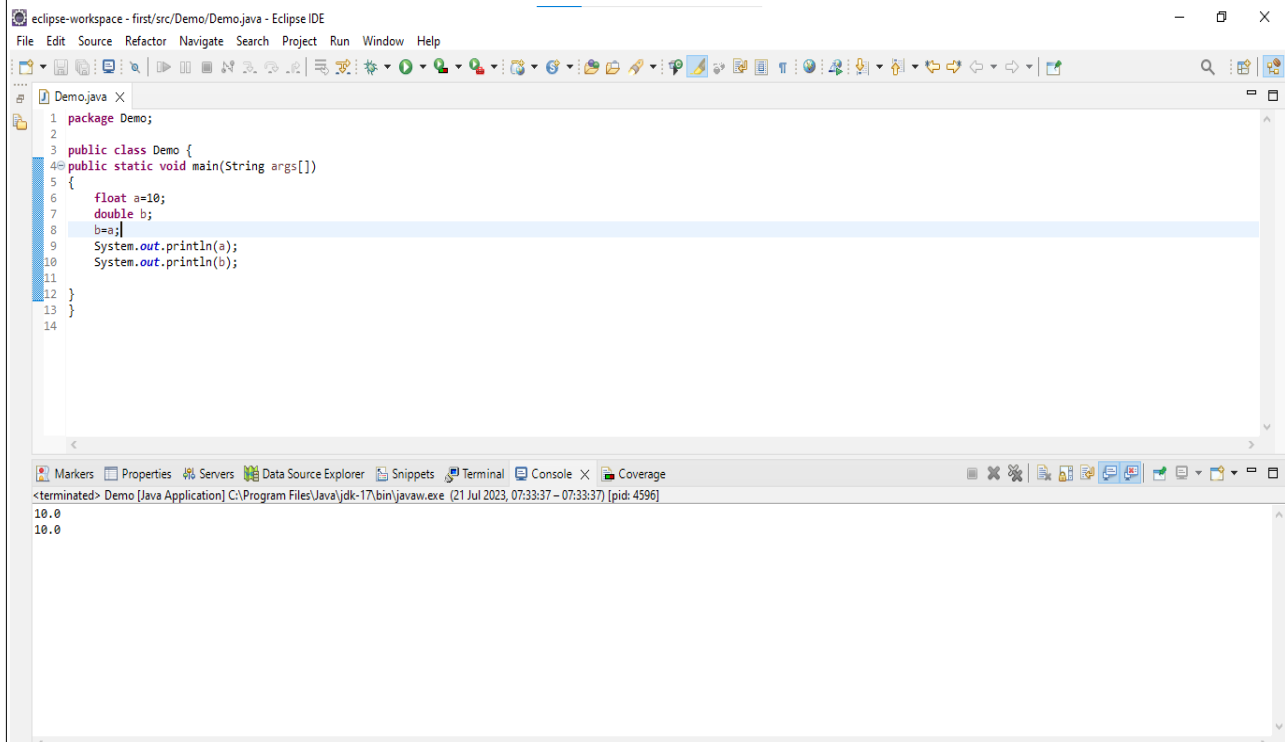
```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:28:30 - 07:28:30) [pid: 6264]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from float to short

    at first/Demo.Demo.main(Demo.java:8)
```

CONCLUSION

Error because float to short explicit conversion should done.

FLOAT-DOUBLE



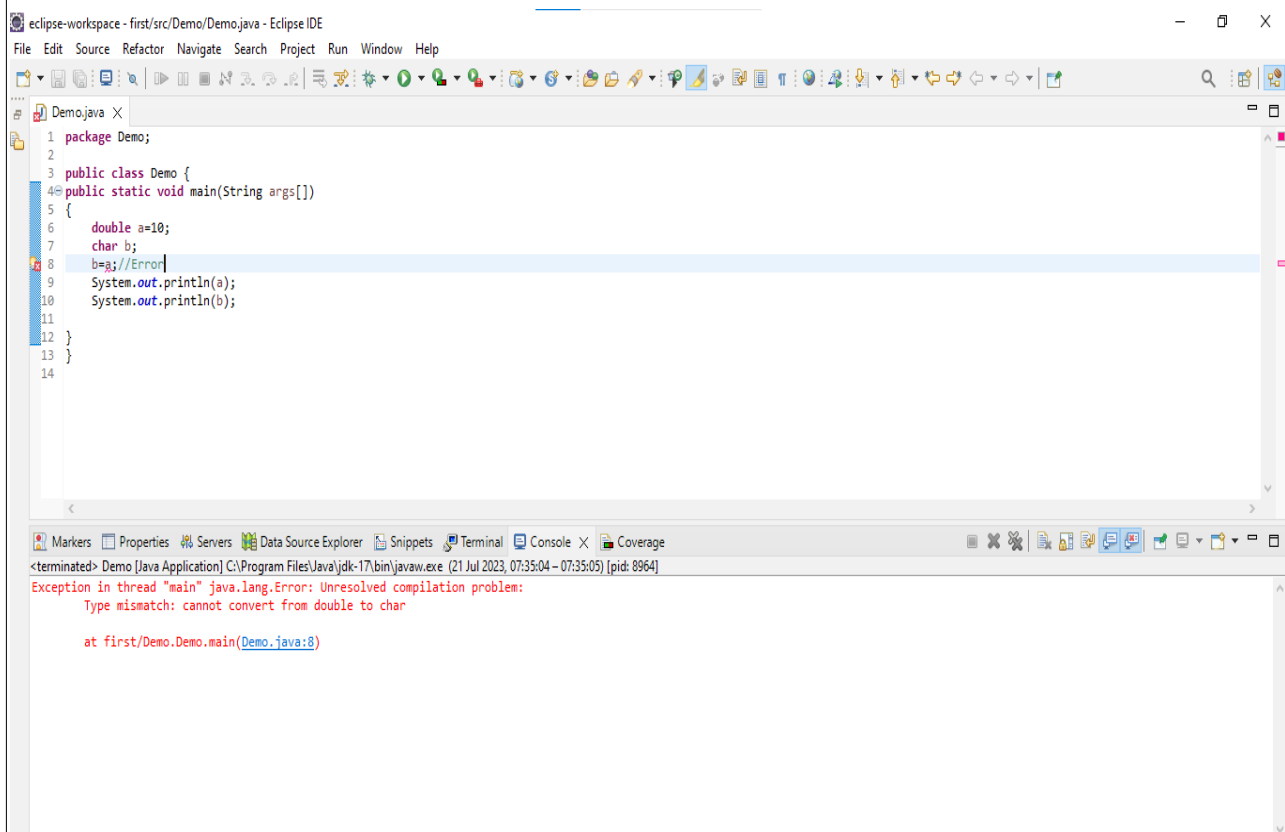
The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code defines a `Demo` class with a `main` method. Inside the `main` method, a `float` variable `a` is initialized to 10.0, and a `double` variable `b` is assigned the value of `a`. Both variables are printed to the console. The console output shows `10.0` on two separate lines.

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         float a=10;
7         double b;
8         b=a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14
```

Markers | Properties | Servers | Data Source Explorer | Snippets | Terminal | Console | Coverage
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:33:37 - 07:33:37) [pid: 4596]
10.0
10.0

DOUBLE SECTION

DOUBLE-CHAR



The screenshot shows the Eclipse IDE with the same `Demo.java` file. In this version, the `double` variable `a` is still initialized to 10.0, but the `char` variable `b` is assigned the value of `a` (line 8: `b=a; //Error`). This causes a compilation error because a `double` value cannot be converted to a `char`. The console shows the error message: `Exception in thread "main" java.lang.Error: Unresolved compilation problem: Type mismatch: cannot convert from double to char`. The stack trace points to `at first/Demo.Demo.main(Demo.java:8)`.

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         double a=10;
7         char b;
8         b=a; //Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14
```

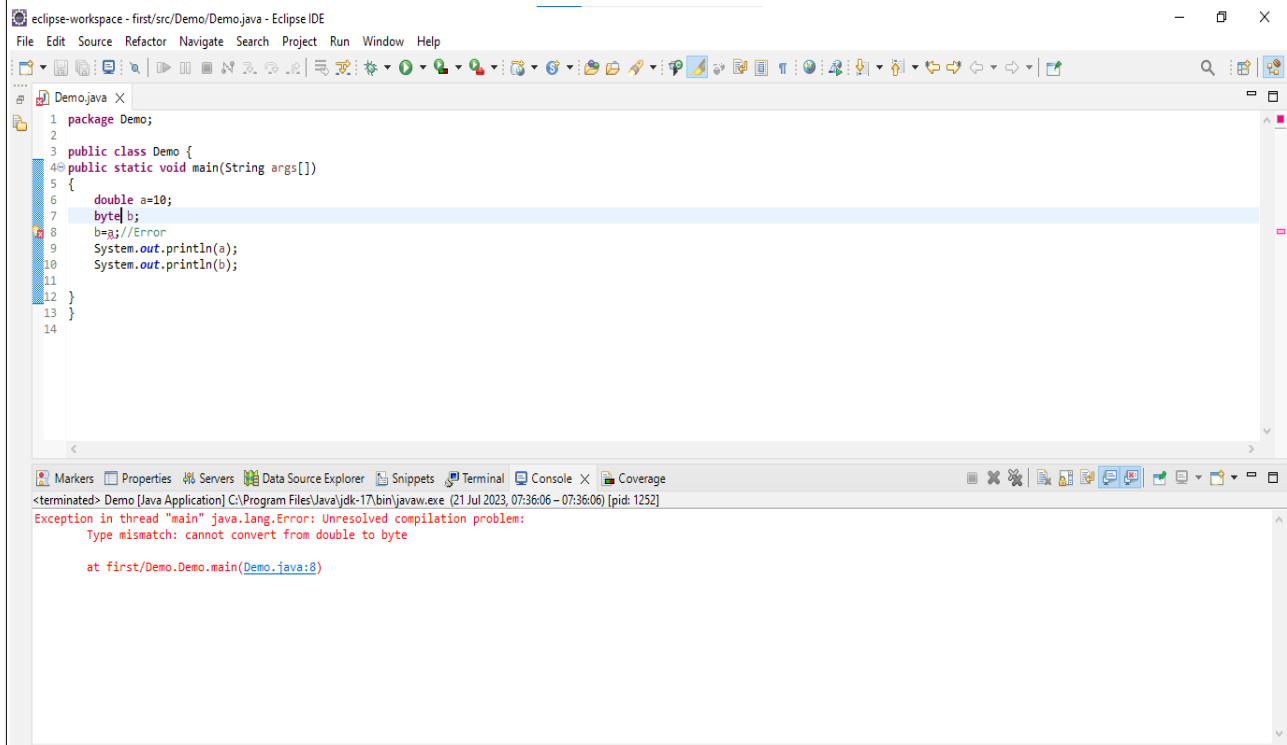
Markers | Properties | Servers | Data Source Explorer | Snippets | Terminal | Console | Coverage
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:35:04 - 07:35:05) [pid: 8964]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from double to char

at first/Demo.Demo.main(Demo.java:8)

CONCLUSION

Error because from double to char explicit conversion should done.

DOUBLE-BYTE



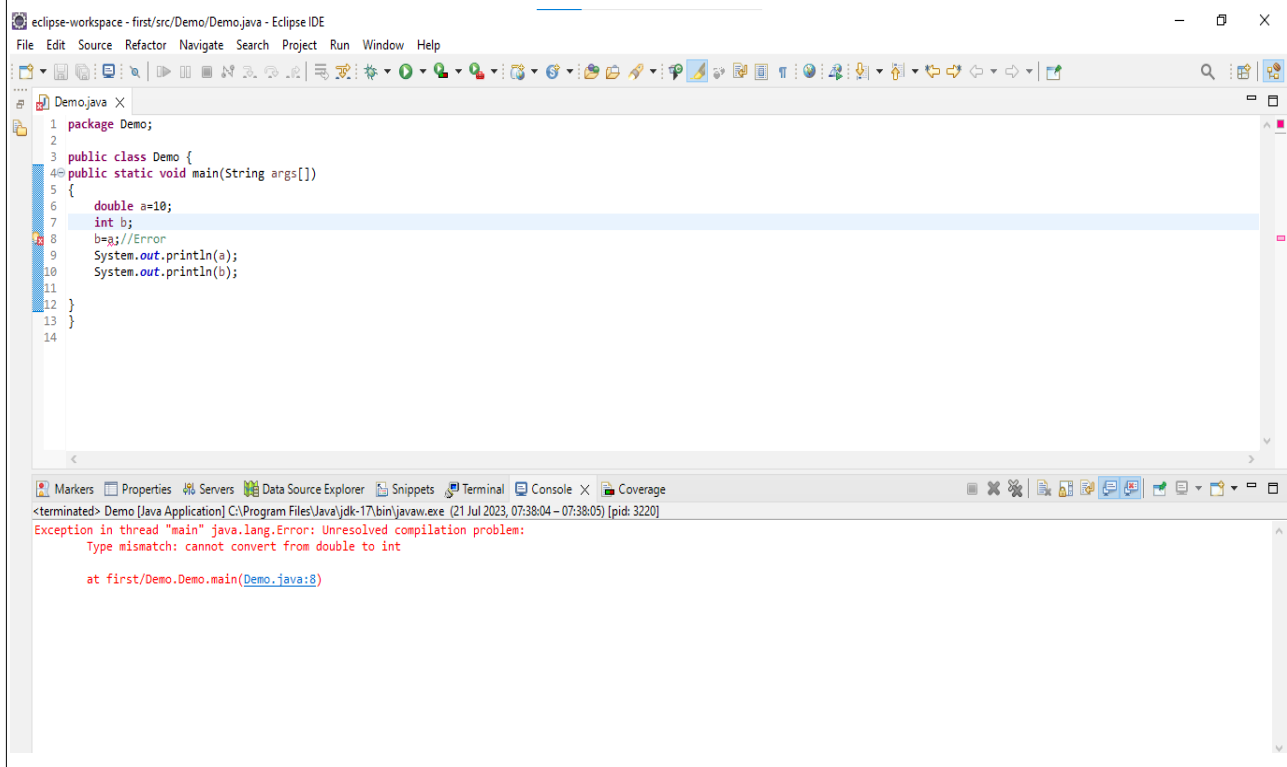
The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code is as follows:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         double a=10;
7         byte b;
8         b=a;//Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

The IDE has compiled the code, but it has failed at the runtime stage. The console output shows the following error:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:36:06 - 07:36:06) [pid: 1252]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from double to byte
    at first/Demo.Demo.main(Demo.java:8)
```

DOUBLE-INT



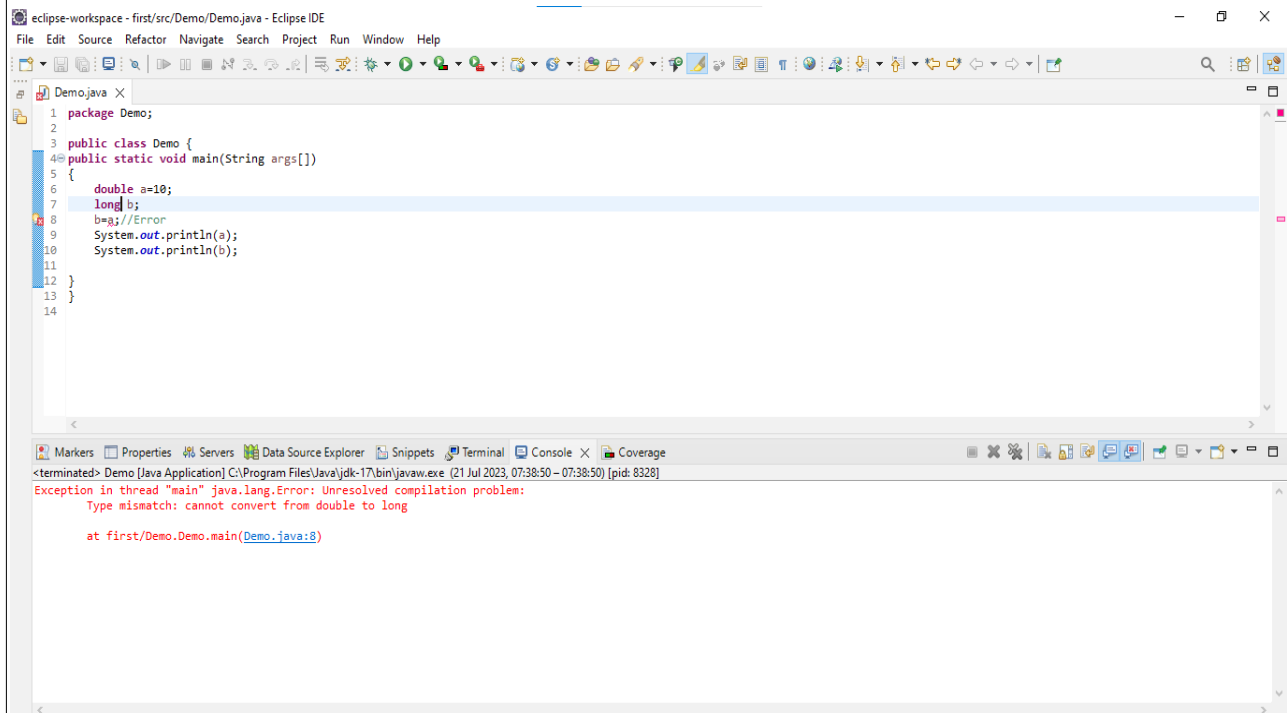
The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code is as follows:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         double a=10;
7         int b;
8         b=a;//Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13 }
14 }
```

The IDE has compiled the code, but it has failed at the runtime stage. The console output shows the following error:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:38:04 - 07:38:05) [pid: 3220]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from double to int
    at first/Demo.Demo.main(Demo.java:8)
```

DOUBLE-LONG



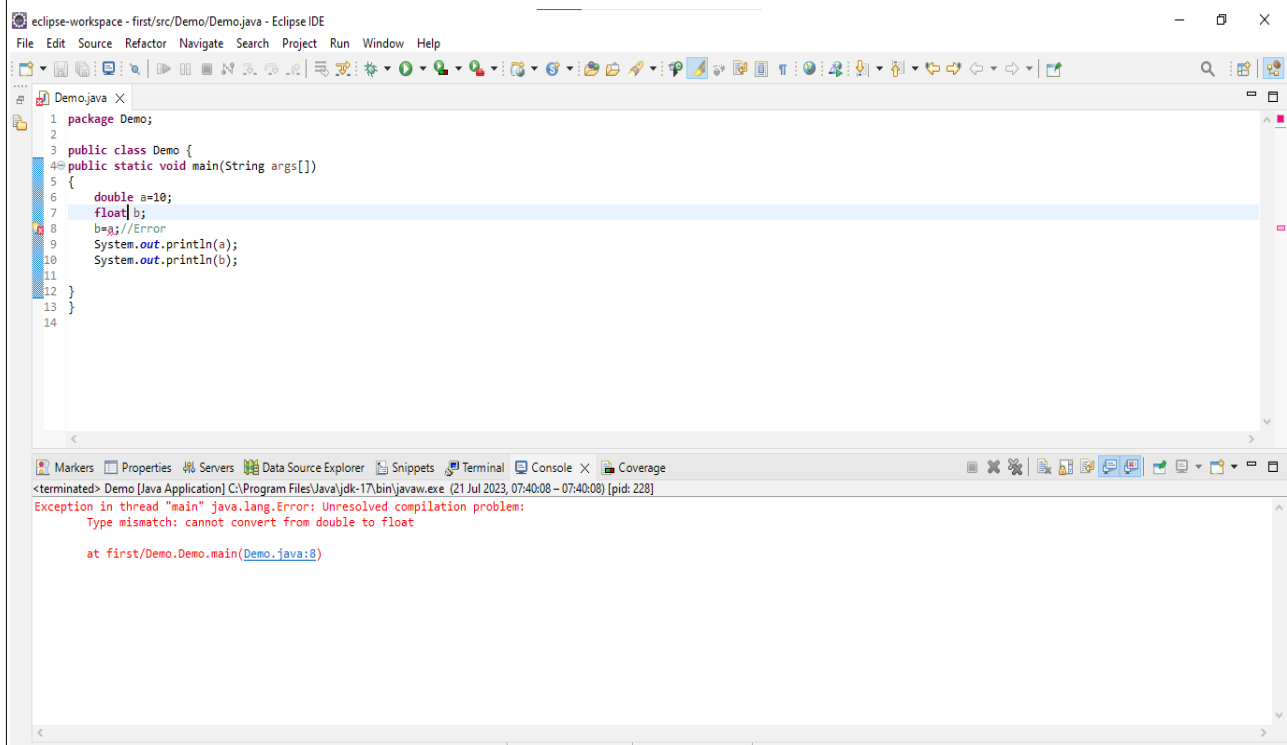
The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code is as follows:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         double a=10;
7         long b;
8         b=a; //Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13
14
```

The IDE's console window at the bottom displays the following error message:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:38:50 - 07:38:50) [pid: 8328]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from double to long
    at first/Demo.Demo.main(Demo.java:8)
```

DOUBLE-FLOAT



The screenshot shows the Eclipse IDE with a Java file named `Demo.java`. The code is as follows:

```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         double a=10;
7         float b;
8         b=a; //Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13
14
```

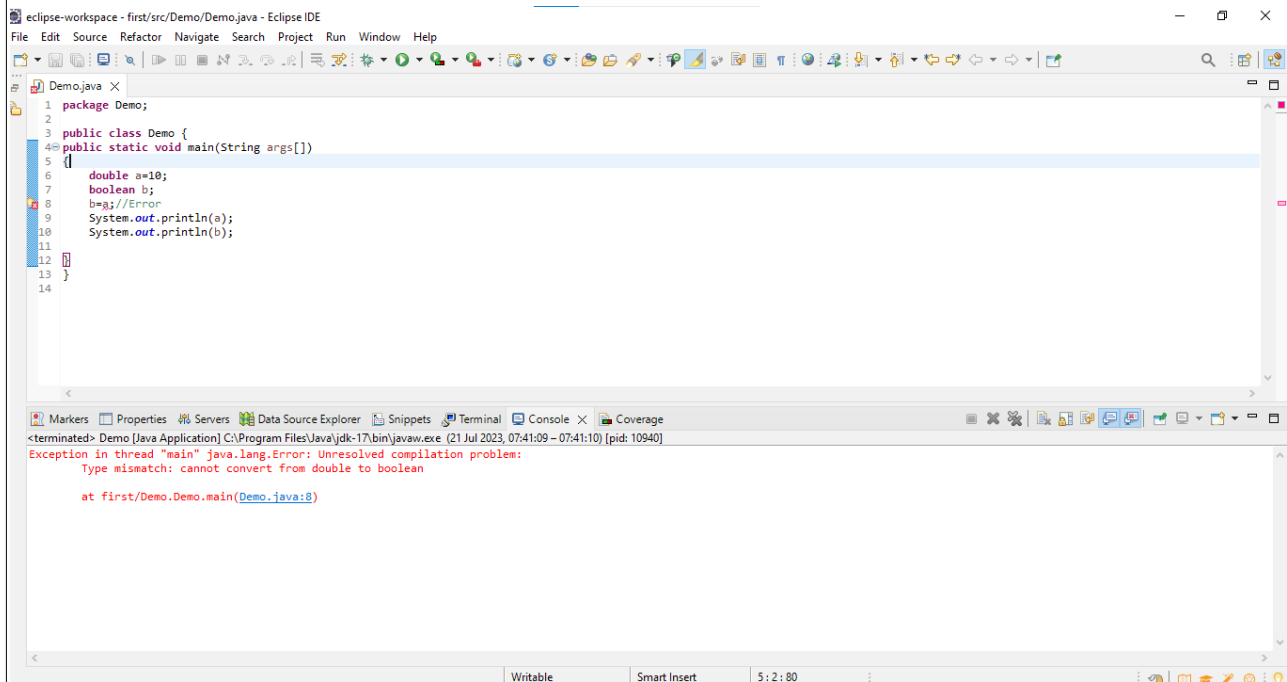
The IDE's console window at the bottom displays the following error message:

```
<terminated> Demo [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (21 Jul 2023, 07:40:08 - 07:40:08) [pid: 228]
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from double to float
    at first/Demo.Demo.main(Demo.java:8)
```

CONCLUSION

Error from double to float explicit conversion should done.

DOUBLE-BOOLEAN



```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         double a=10;
7         boolean b;
8         b=a;//Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13
14
```

Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Type mismatch: cannot convert from double to boolean
at first/Demo.Demo.main(Demo.java:8)

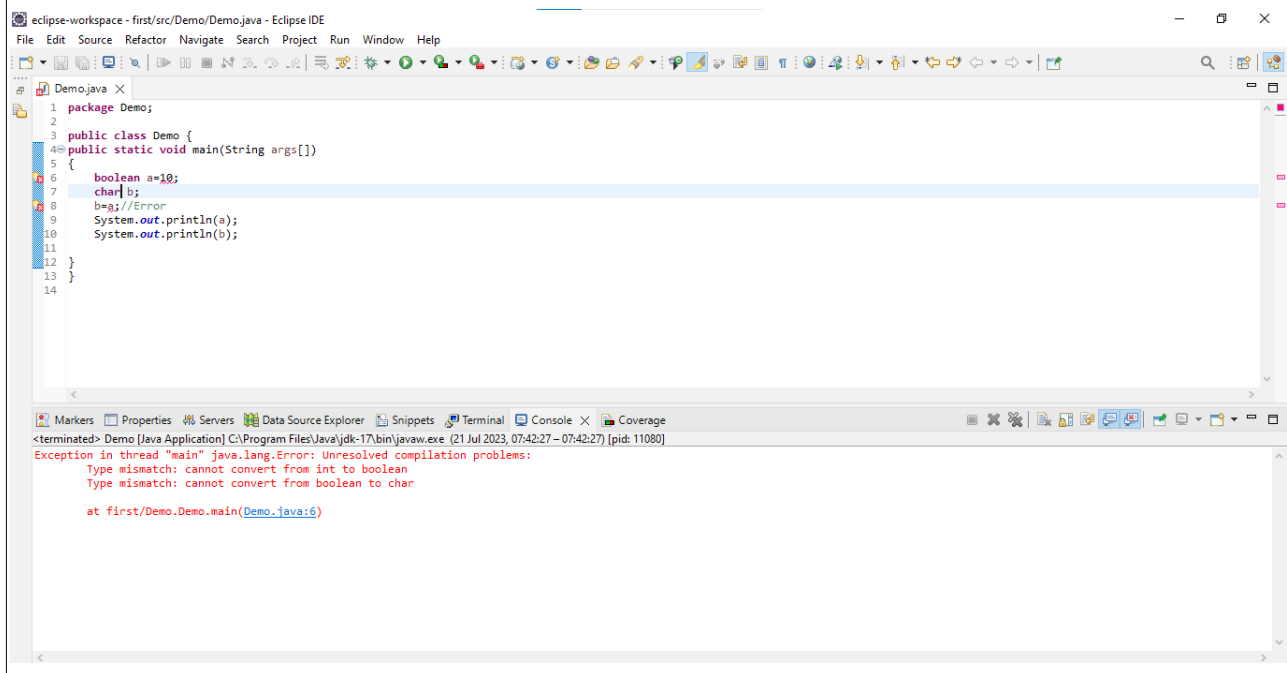
CONCLUSION

Error because no automatic conversion from double to boolean.

BOOLEAN SECTION

*A **boolean** cannot be converted to any other **data type**.*

Example:



```
1 package Demo;
2
3 public class Demo {
4     public static void main(String args[])
5     {
6         boolean a=10;
7         char b;
8         b=a;//Error
9         System.out.println(a);
10        System.out.println(b);
11    }
12 }
13
14
```

Exception in thread "main" java.lang.Error: Unresolved compilation problems:
Type mismatch: cannot convert from int to boolean
Type mismatch: cannot convert from boolean to char
at first/Demo.Demo.main(Demo.java:6)

TYPE CASTING CHART

	char	byte	short	int	long	float	double	boolean
char	NCR	✓ EC	✓ EC	✓ IC	✓ IC	✓ IC	✓ IC	X
byte	✓ EC	NCR	✓ IC	✓ IC	✓ IC	✓ IC	✓ IC	X
short	✓ EC	✓ EC	NCR	✓ IC	✓ IC	✓ IC	✓ IC	X
int	✓ EC	✓ EC	✓ EC	NCR	✓ IC	✓ IC	✓ IC	X
long	✓ EC	✓ EC	✓ EC	✓ EC	NCR	✓ IC	✓ IC	X
float	✓ EC	✓ EC	✓ EC	✓ EC	✓ EC	NCR	✓ IC	X
double	✓ EC	✓ EC	✓ EC	✓ EC	✓ EC	✓ EC	NCR	X
boolean	X	X	X	X	X	X	X	NCR

NCR- No conversion required

EC- Explicit conversion

IC- Implicit conversion

X- Conversion not possible

