

Assignment-04

Type Casting in java

Submitted by:

Name: Santhosh S

Batch: July-A2

Email: santhosh.santhosh86920@gmail.com

TYPECASTING IN JAVA:

A Process of converting one type into another type.

There are two type of conversion:

1.Implicit

2.Explicit

IMPLICIT:

A Process of converting the data of smaller into larger data type is called implicit type casting.

EXPLICIT:

A Process of converting the data of larger into smaller data type is called explicit type casting.

Data Types in Java are:

1.Byte

2.Short

3.Int

4.Long

5.Float

6.Double

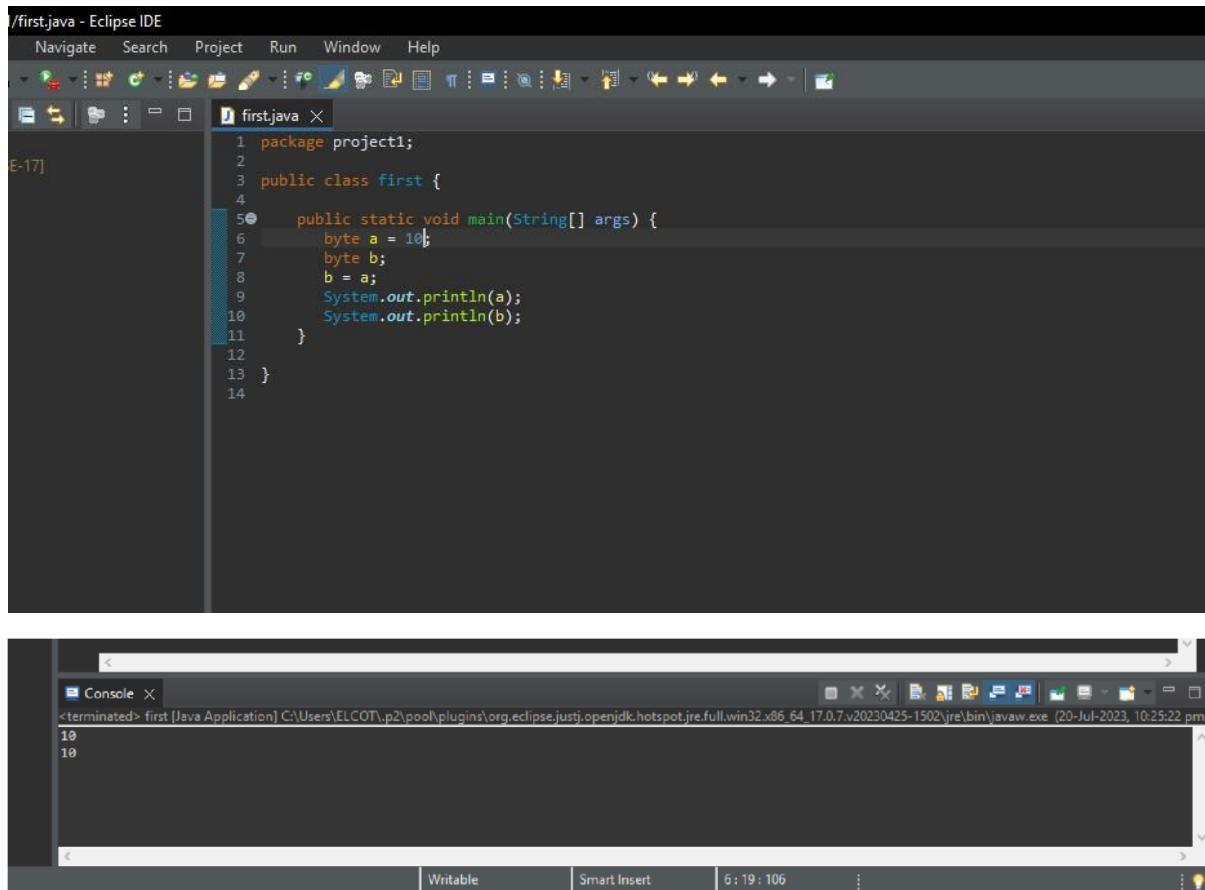
7.Char

8.Boolean

BYTE:

1. Byte to Byte:

Here, casting not required because, both a and b has an same data type.



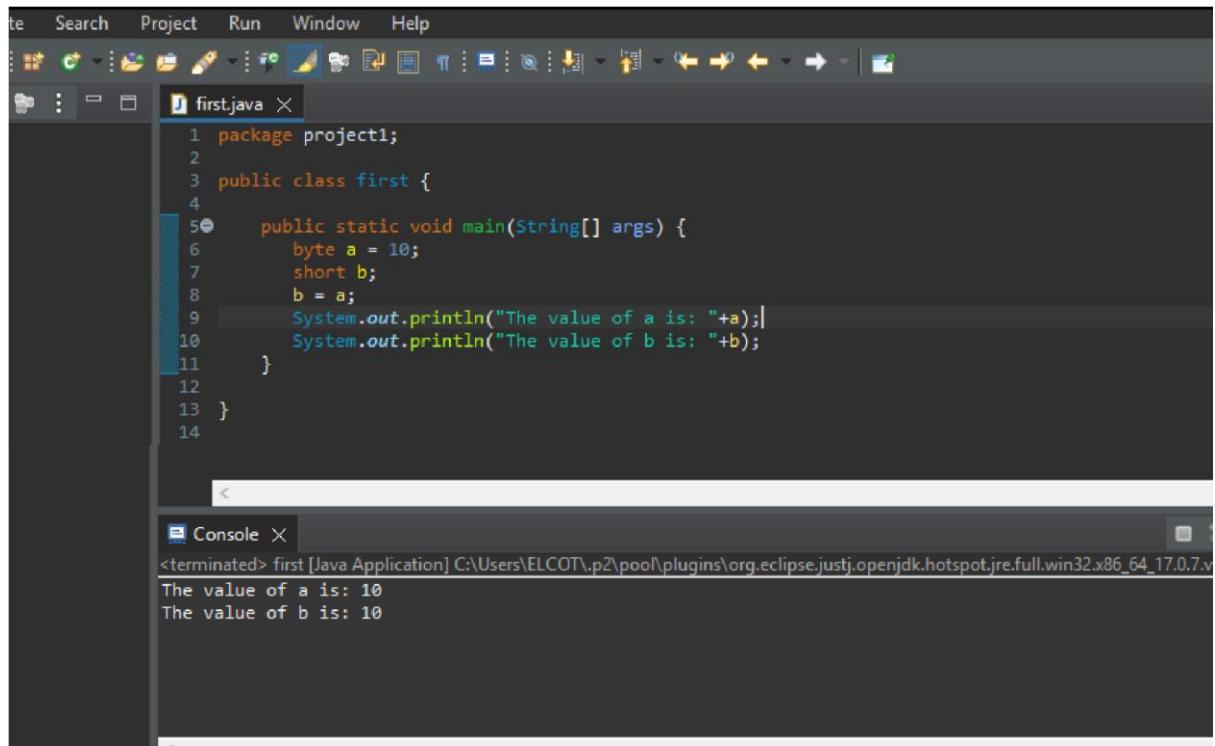
The screenshot shows the Eclipse IDE interface. The top window displays the Java code for a class named 'first' in a project called 'project1'. The code initializes two byte variables 'a' and 'b' to 10, and prints them to the console. The bottom window, titled 'Console', shows the output '10' printed twice, indicating the values of 'a' and 'b' respectively.

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         byte a = 10;
7         byte b;
8         b = a;
9         System.out.println(a);
10        System.out.println(b);
11    }
12
13 }
14
```

```
10
10
```

Implicit Type Casting is done

2.BYTE TO SHORT:



The screenshot shows the Eclipse IDE interface. The top menu bar includes File, Search, Project, Run, Window, and Help. Below the menu is a toolbar with various icons. The left sidebar shows a project structure with 'first.java' selected. The main editor window displays the following Java code:

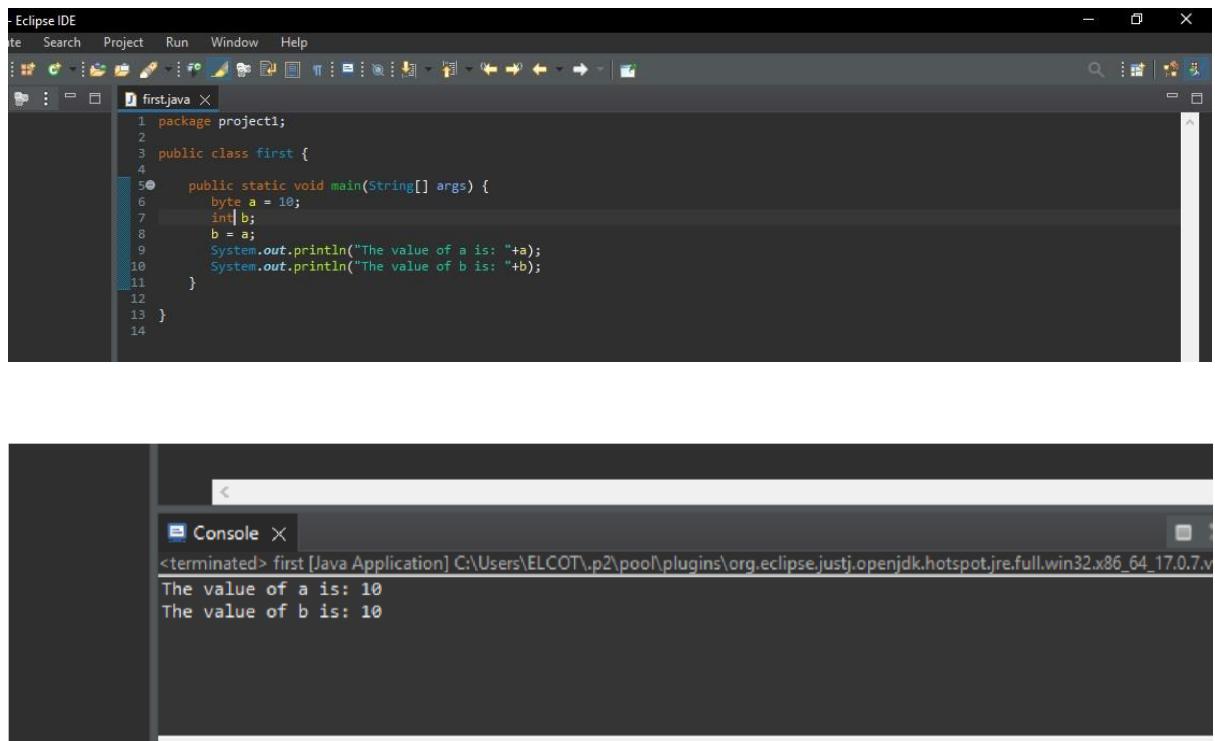
```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         byte a = 10;
7         short b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
14
```

Below the editor is a 'Console' window showing the output of the program:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v
The value of a is: 10
The value of b is: 10
```

Implicit Type Casting is done

BYTE TO INT:



The screenshot shows the Eclipse IDE interface. The top menu bar includes File, Search, Project, Run, Window, and Help. Below the menu is a toolbar with various icons. The left sidebar shows a project structure with 'first.java' selected. The main editor window displays the following Java code:

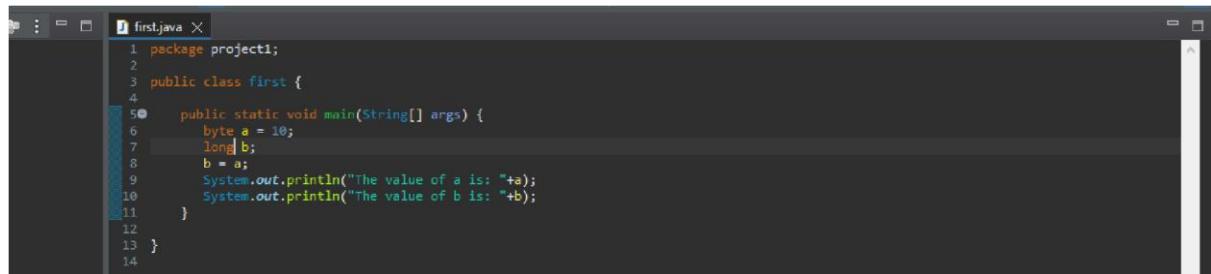
```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         byte a = 10;
7         int b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
14
```

Below the editor is a 'Console' window showing the output of the program:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v
The value of a is: 10
The value of b is: 10
```

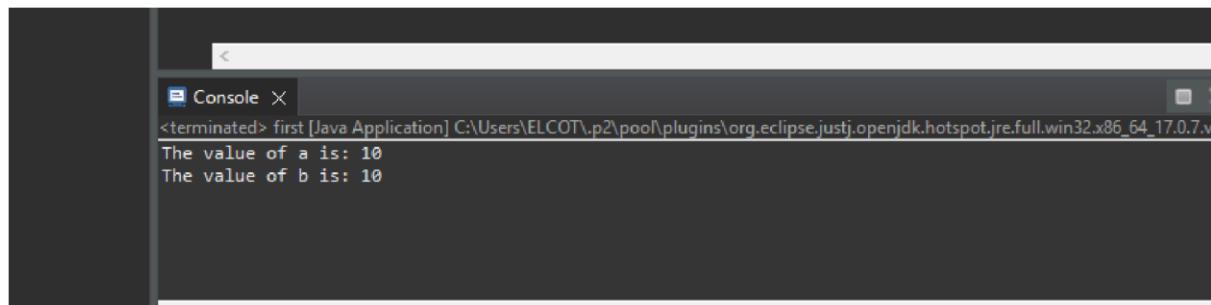
Implicit Type Casting is done

BYTE TO LONG:



A screenshot of the Eclipse IDE interface. The top bar shows "first.java X". The code editor window contains the following Java code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         byte a = 10;
7         long b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
14
```

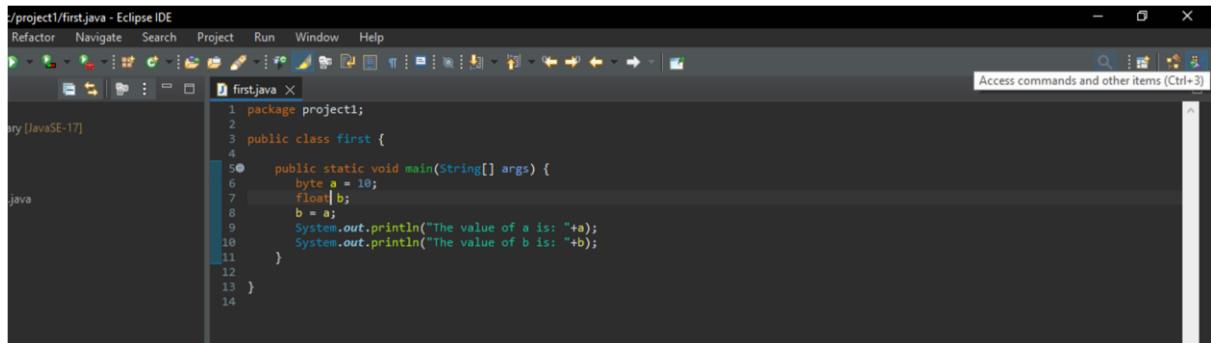


The Eclipse IDE interface showing the "Console" tab. The output window displays the following text:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v
The value of a is: 10
The value of b is: 10
```

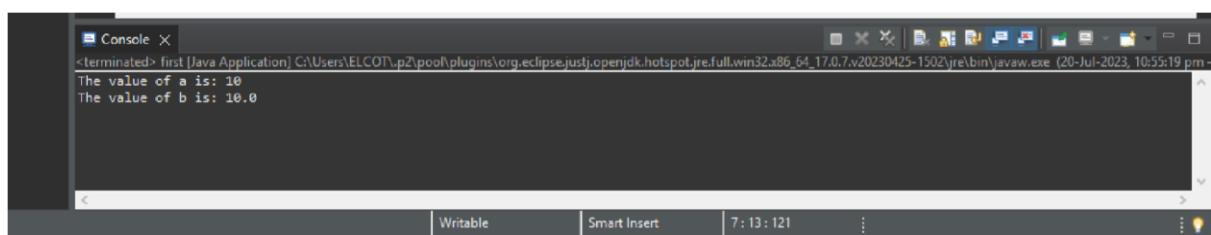
Implicit Type Casting is done

BYTE TO FLOAT:



A screenshot of the Eclipse IDE interface. The top bar shows "/project1/first.java - Eclipse IDE". The code editor window contains the following Java code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         byte a = 10;
7         float b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
14
```

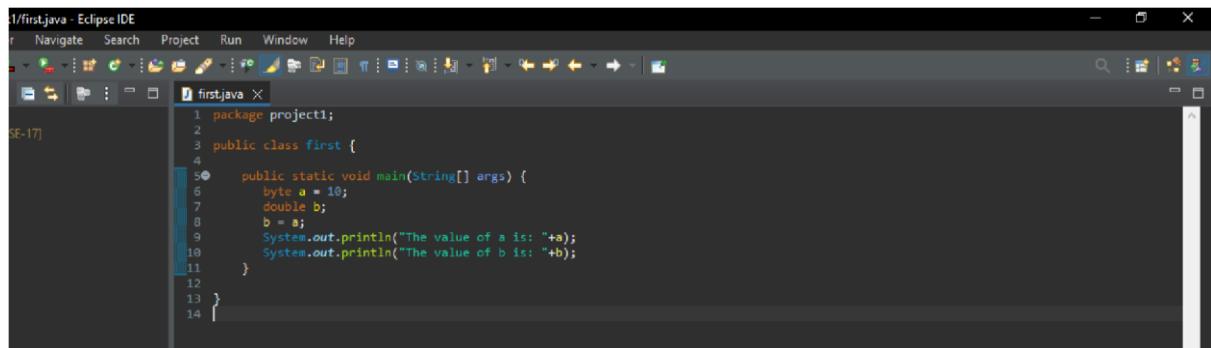


The Eclipse IDE interface showing the "Console" tab. The output window displays the following text:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 10:55:19 pm)
The value of a is: 10
The value of b is: 10.0
```

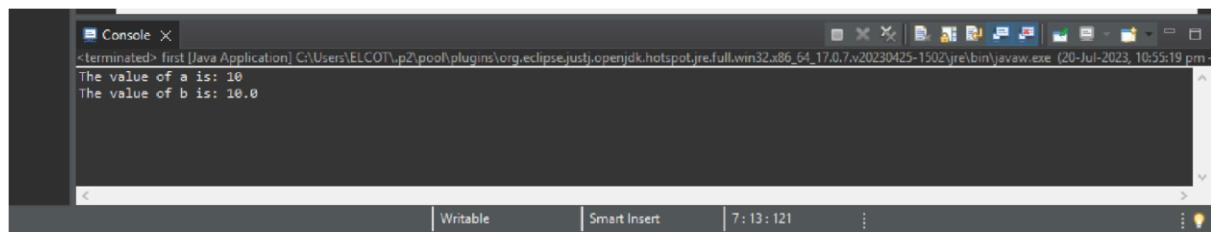
Implicit Type Casting is done

BYTE TO DOUBLE:



A screenshot of the Eclipse IDE interface. The top menu bar includes 'File', 'Navigate', 'Search', 'Project', 'Run', 'Window', and 'Help'. Below the menu is a toolbar with various icons. A left sidebar shows a project structure with 'SE-17' selected. The main workspace contains a Java file named 'first.java' with the following code:

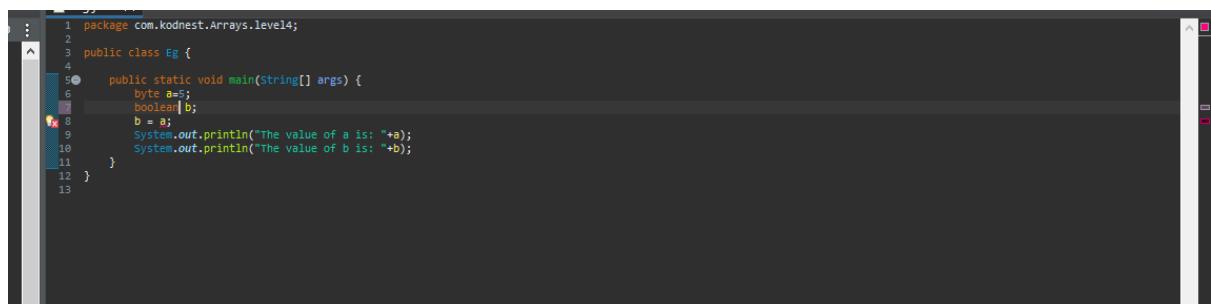
```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         byte a = 10;
7         double b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
14
```



A screenshot of the Eclipse IDE's 'Console' view. It shows the output of a terminated Java application named 'first'. The output text is:
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.core\17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 10:55:19 pm)
The value of a is: 10
The value of b is: 10.0

Implicit Type Casting is done

BYTE TO BOOLEAN:



A screenshot of the Eclipse IDE interface. The top menu bar includes 'File', 'Navigate', 'Search', 'Project', 'Run', 'Window', and 'Help'. Below the menu is a toolbar with various icons. A left sidebar shows a project structure with 'SE-17' selected. The main workspace contains a Java file named 'Eg.java' with the following code:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         byte a=5;
7         byte b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

Error: Cannot convert from byte to Boolean.

So, It is not possible.

BYTE TO CHAR:

A screenshot of the Eclipse IDE interface. The central area shows a Java code editor with the following code:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         byte a=5;
7         char b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
13
```

The line `b = a;` is highlighted in red, indicating a compilation error. A tooltip above the line says "Cannot convert from byte to Char".

Error: Cannot convert from byte to Char, Because explicit type casting should be done.

A screenshot of the Eclipse IDE interface, showing the same Java code as the previous image, but with an addition. The line `b = a;` has been replaced by `b = (char)a;`. The code now looks like this:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         byte a=5;
7         char b;
8         //b = a; --> Error. So,
9         b = (char)a; // Use Explicit Type Conversion.
10        System.out.println("The value of a is: "+a);
11        System.out.println("The value of b is: "+b);
12    }
13 }
14
```

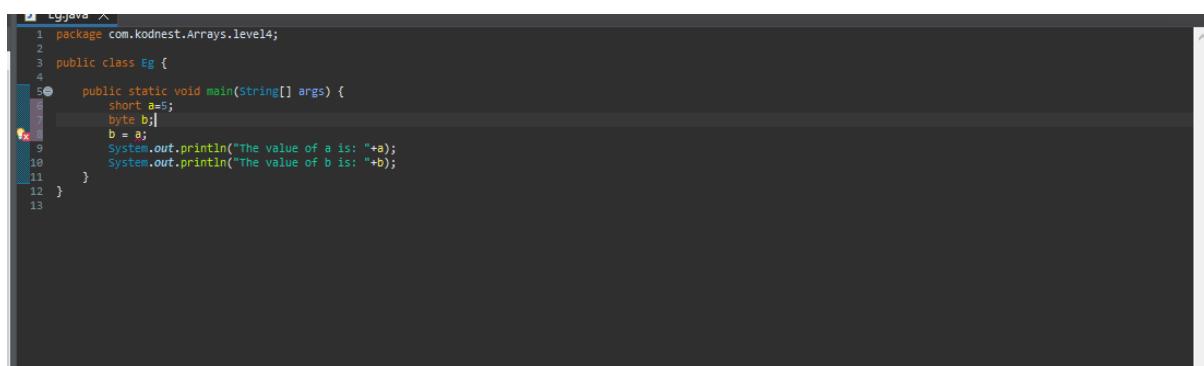
OUTPUT:

A screenshot of the Eclipse IDE interface, specifically the Console view. It displays the output of the Java application. The output shows two lines of text: "The value of a is: 5" and "The value of b is: 0".

```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 3:13:06 pm - 3:13:10 pm) [pid: 1148]
The value of a is: 5
The value of b is: 0
```

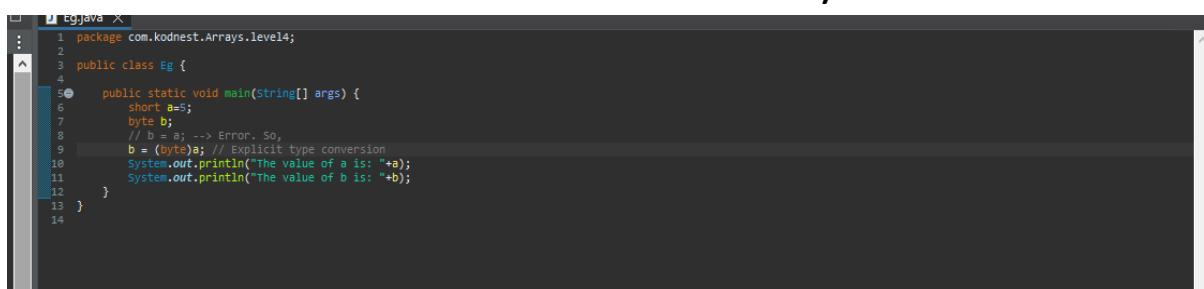
SHORT:

SHORT TO BYTE:



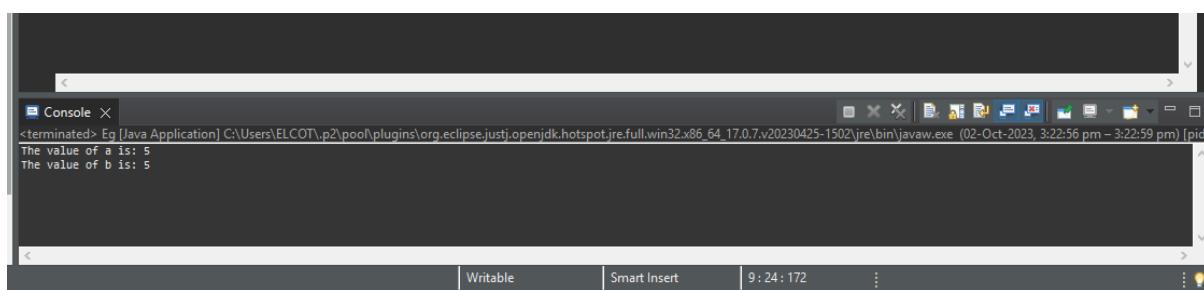
```
1 package com.kodnest.Arrays.level14;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         short a=5;
7         byte b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
13
```

Error: Cannot convert from Short to Byte.



```
1 package com.kodnest.Arrays.level14;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         short a=5;
7         byte b;
8         // b = a; --> Error. So,
9         b = (byte)a; // Explicit type conversion
10        System.out.println("The value of a is: "+a);
11        System.out.println("The value of b is: "+b);
12    }
13 }
```

Explicit type casting is done to convert from Short to Byte
OUTPUT:



```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.core\1.17.0.20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 3:22:56 pm - 3:22:59 pm) [pid: 114]
The value of a is: 5
The value of b is: 5
```

SHORT TO SHORT:

The screenshot shows the Eclipse IDE interface with the following details:

- Title Bar:** javaproj - project1/src/project1/first.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Project, Run, Window, Help
- Toolbars:** Standard toolbar with icons for New, Open, Save, Cut, Copy, Paste, Find, etc.
- Left Sidebar (Package Explorer):** Shows the project structure:
 - project1
 - JRE System Library [JavaSE-17]
 - src
 - project1
 - first.java
 - module-info.java
- Central Area (Editor):** The first.java file content is displayed:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         short a = 10;
7         short b;
8         b = a;
9         System.out.println("The value of a is: " + a);
10        System.out.println("The value of b is: " + b);
11    }
12
13 }
```
- Bottom Area (Console):** Shows the terminal output:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justmyjava\bin\javaw.exe (20-Jul-2023, 11:10:0 pm)
The value of a is: 10
The value of b is: 10
```

SHORT TO INT:

The screenshot shows the Eclipse IDE interface with the following details:

- Title Bar:** javaproj - project1/src/project1/first.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbar:** Standard Eclipse toolbar icons.
- Package Explorer:** Shows the project structure:
 - project1
 - JRE System Library [JavaSE-17]
 - src
 - project1
 - first.java
 - module-info.java
- Editor:** The first.java file is open, displaying the following code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         short a = 10;
7         int b;
8         b = a;
9         System.out.println("The value of a is: " + a);
10        System.out.println("The value of b is: " + b);
11    }
12
13 }
```
- Console:** Shows the output of the application:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.v86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:10:10 pm)
The value of a is: 10
The value of b is: 10
```
- Bottom Status Bar:** Writable, Smart Insert, 7:11:120

Implicit Type Casting is done

SHORT TO LONG:

The screenshot shows the Eclipse IDE interface with a Java project named "javaproj". The "first.java" file is open in the editor, containing the following code:

```
1 package project1;
2
3 public class First {
4
5     public static void main(String[] args) {
6         short a = 10;
7         long b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

The "Console" tab at the bottom shows the output of the program:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jst\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\java.exe (20-Jul-2023, 11:13:12 pm)
The value of a is: 10
The value of b is: 10
```

Implicit Type Casting is done

SHORT TO FLOAT:

The screenshot shows the Eclipse IDE interface with a Java project named "javaproj". The "first.java" file is open in the editor, containing the following code:

```
1 package project1;
2
3 public class First {
4
5     public static void main(String[] args) {
6         short a = 10;
7         float b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

The "Console" tab at the bottom shows the output of the program:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jst\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\java.exe (20-Jul-2023, 11:14:02 pm)
The value of a is: 10
The value of b is: 10.0
```

Implicit Type Casting is done

SHORT TO DOUBLE:

The screenshot shows the Eclipse IDE interface. The left pane displays the 'Package Explorer' with a project named 'project1' containing a 'src' folder with 'first.java' and 'module-info.java'. The right pane shows the code editor for 'first.java' with the following content:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         short a = 10;
7         double b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

Below the code editor is the 'Console' tab, which shows the output of the program execution:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:14:40 pm)
The value of a is: 10
The value of b is: 10.0
```

Implicit Type Casting is done

SHORT TO CHAR:

The screenshot shows the Eclipse IDE interface. The left pane displays the 'Package Explorer' with a project named 'com.kodnest.Arrays.level4' containing a 'src' folder with 'Eg.java'. The right pane shows the code editor for 'Eg.java' with the following content:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         short a=5;
7         char b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

A red error icon is visible next to the assignment statement 'b = a;' in the code editor.

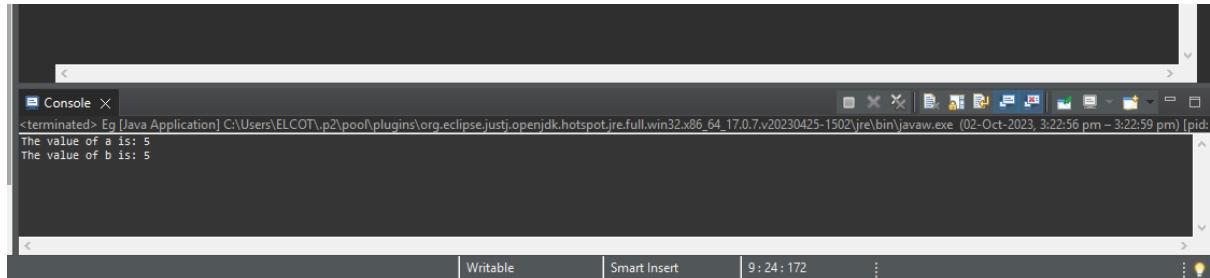
Error: Cannot convert from Short to Char.

The screenshot shows the Eclipse IDE interface. The left pane displays the 'Package Explorer' with a project named 'com.kodnest.Arrays.level4' containing a 'src' folder with 'Eg.java'. The right pane shows the code editor for 'Eg.java' with the following content:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         short a=5;
7         char b;
8         b = (char)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

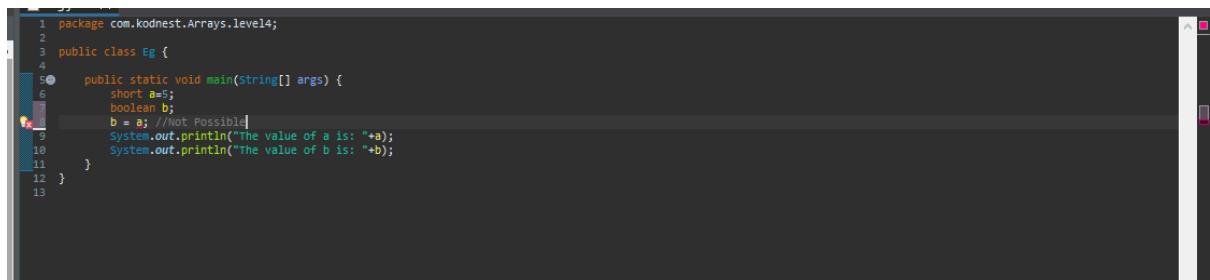
Explicit type casting is done to convert from Short to Char.

OUTPUT:



```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\plugins\org.eclipse.jdt.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 3:22:56 pm - 3:22:59 pm) [pid: 5]
The value of a is: 5
The value of b is: 5
```

SHORT TO BOOLEAN:

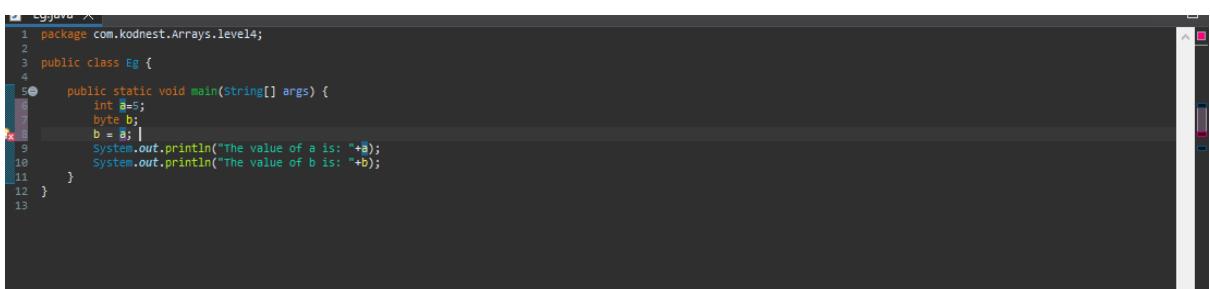


```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         short a=5;
7         boolean b;
8         b = a; //Not Possible
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
13
```

Not Possible

INT:

INT TO BYTE:



```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         int a=5;
7         byte b;
8         b = a; |
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
13
```

Error: Cannot convert from Int to Byte.

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         int a=5;
7         byte b;
8         b = [0]>ts);
9         System.out.println("The value of a is: "+a);
10        System.out.println("the value of b is: "+b);
11    }
12 }
13
```

Explicit type casting is done to convert from Int to Byte.

OUTPUT:

```
<terminated> Eq [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 3:22:56 pm - 3:22:59 pm) [pid: 1032]
The value of a is: 5
The value of b is: 5
```

INT TO SHORT:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         int a=5;
7         short b;
8         b = 8;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Error: Cannot convert from Int to Short.

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         int a=5;
7         short b;
8         b = (short)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Explicit type casting is done to convert from Int to Short.

OUTPUT:

```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 3:22:56 pm - 3:22:59 pm) [pid: 1136]
The value of a is: 5
The value of b is: 5
```

INT TO INT

Eclipse IDE interface showing a Java project named "javaproj". The "first.java" file is open in the editor, containing the following code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         int a = 10;
7         int b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

The "Console" view shows the output of the program:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:23:18 pm)
The value of a is: 10
The value of b is: 10
```

INT TO LONG:

The screenshot shows the Eclipse IDE interface with a Java project named "javaproj". The "first.java" file contains the following code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         int a = 10;
7         long b;
8         b = a;
9         System.out.println("The value of a is: " + a);
10        System.out.println("The value of b is: " + b);
11    }
12
13 }
```

The "Console" tab shows the output of the program:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:23:57 pm)
The value of a is: 10
The value of b is: 10
```

Implicit Type Casting is done

INT TO FLOAT:

The screenshot shows the Eclipse IDE interface with a Java project named "javaproj". The "first.java" file contains the following code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         int a = 10;
7         float b;
8         b = a;
9         System.out.println("The value of a is: " + a);
10        System.out.println("The value of b is: " + b);
11    }
12
13 }
```

The "Console" tab shows the output of the program:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:24:25 pm)
The value of a is: 10
The value of b is: 10.0
```

Implicit Type Casting is done

INT TO DOUBLE:

The screenshot shows the Eclipse IDE interface. The Package Explorer view on the left displays a project named 'project1' with a 'src' folder containing 'first.java' and 'module-info.java'. The first.java file contains the following Java code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         int a = 10;
7         double b;
8         b = a;
9         System.out.println("The value of a is: " + a);
10        System.out.println("The value of b is: " + b);
11    }
12
13 }
```

The Console view at the bottom shows the output of the program execution:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:24:57 pm)
The value of a is: 10
The value of b is: 10.0
```

Implicit Type Casting is done

INT TO CHAR:

The screenshot shows the Eclipse IDE interface. The Package Explorer view on the left displays a project named 'Egjava' with a 'src' folder containing 'Eg.java'. The Eg.java file contains the following Java code:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         int a=5;
7         char b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

The code is highlighted with red underlines under 'char b;' and 'b = a;', indicating compilation errors.

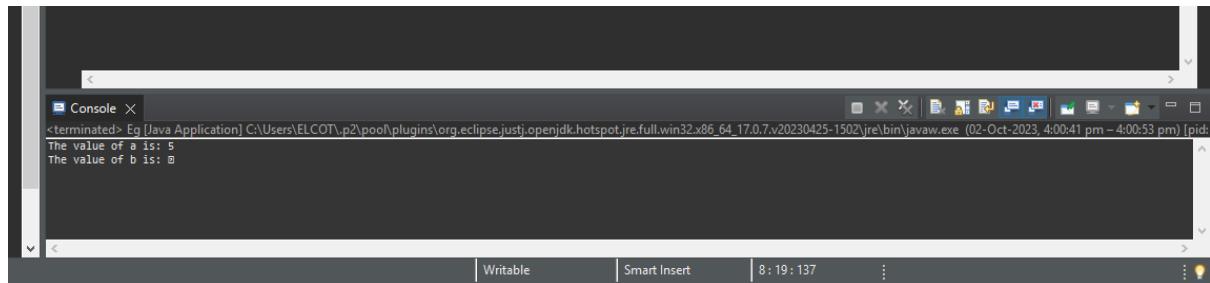
Error: Cannot convert from Int to Char.

The screenshot shows the Eclipse IDE interface. The Package Explorer view on the left displays a project named 'Egjava' with a 'src' folder containing 'Eg.java'. The Eg.java file contains the following Java code:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         int a=5;
7         char b;
8         b = (char)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

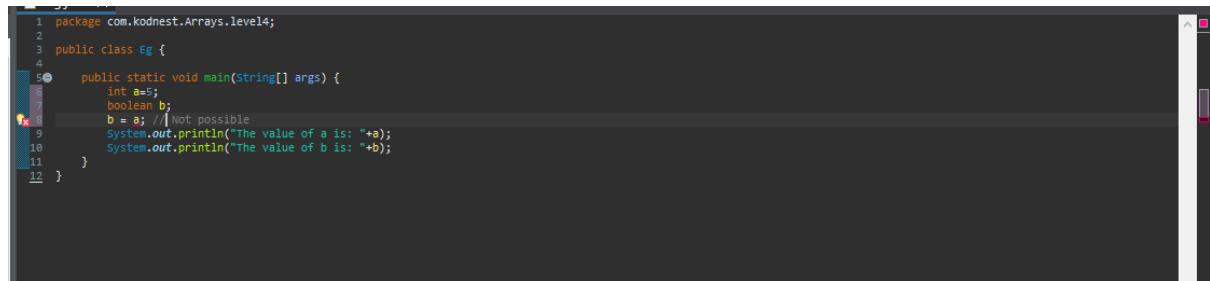
Explicit type casting is done to convert from Int to Char.

OUTPUT:



```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 4:00:41 pm - 4:00:53 pm) [pid: 1134]
The value of a is: 5
The value of b is: 0
```

INT TO BOOLEAN:

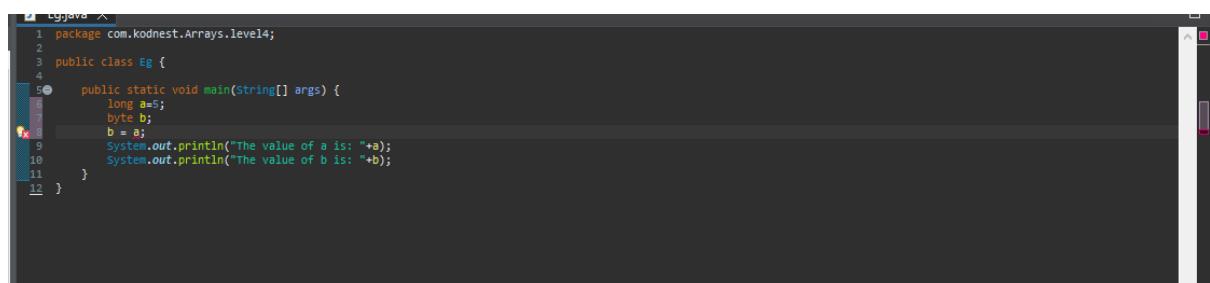


```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         int a=5;
7         boolean b;
8         b = a; //Not possible
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Not Possible

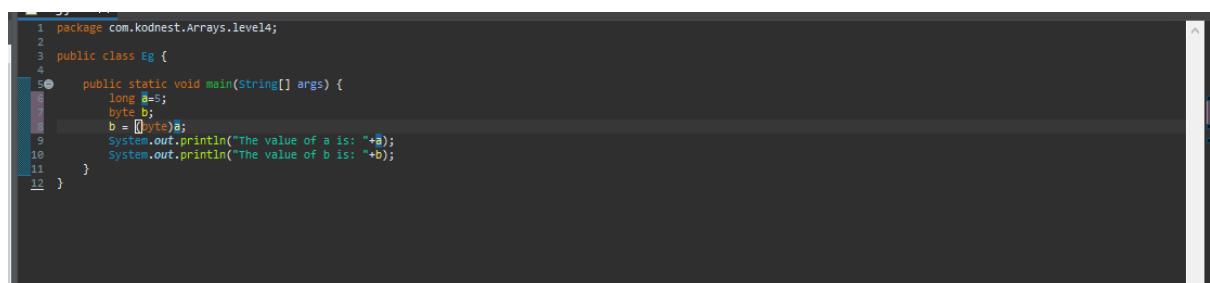
LONG:

LONG TO BYTE:



```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         long a=5;
7         byte b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Error: Cannot convert from Long to Byte.



```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         long a=5;
7         byte b;
8         b = (byte)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Explicit type casting is done to convert from Long to Byte.

OUTPUT:

```
<terminated> Eq [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 3:22:56 pm - 3:22:59 pm) [pid: 1032]
The value of a is: 5
The value of b is: 5
```

LONG TO SHORT:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         long a=5;
7         short b;
8         b = 8;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Error: Cannot convert from Long to Short.

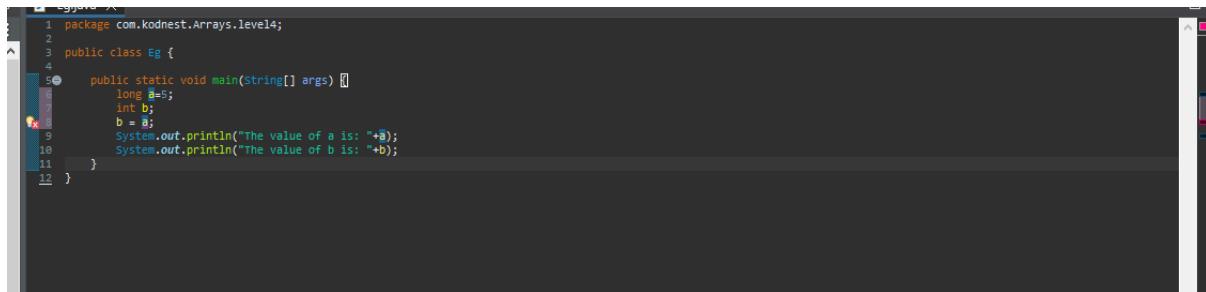
```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         long a=5;
7         short b;
8         b = (short)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Explicit type casting is done to convert from Long to Short.

OUTPUT:

```
<terminated> Eq [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 3:22:56 pm – 3:22:59 pm) [pid: 1000]
The value of a is: 5
The value of b is: 5
```

LONG TO INT:

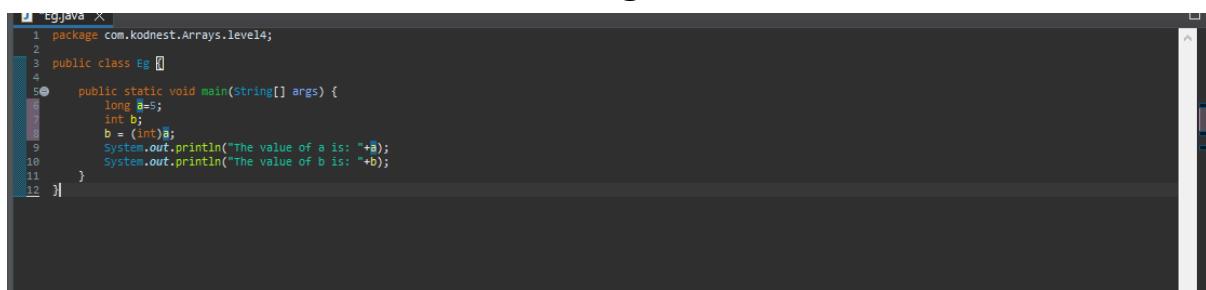


A screenshot of an IDE showing a Java code editor. The code is as follows:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         long a=5;
7         int b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

The line `b = a;` is highlighted in red, indicating a compilation error. A tooltip or status message is visible above the line, likely stating "Cannot convert from Long to Int".

Error: Cannot convert from Long to Int.



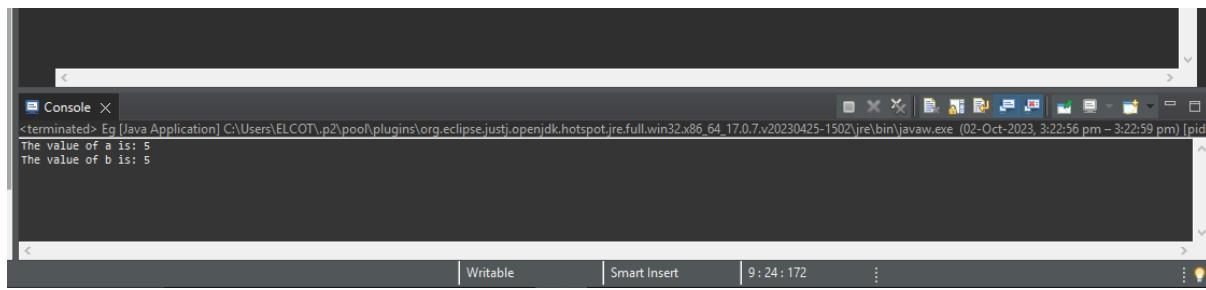
A screenshot of an IDE showing the same Java code as the previous image, but with explicit type casting added. The code is now:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         long a=5;
7         int b;
8         b = (int)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

The line `b = (int)a;` is now highlighted in green, indicating that the code has been successfully compiled.

Explicit type casting is done to convert from Long to Int.

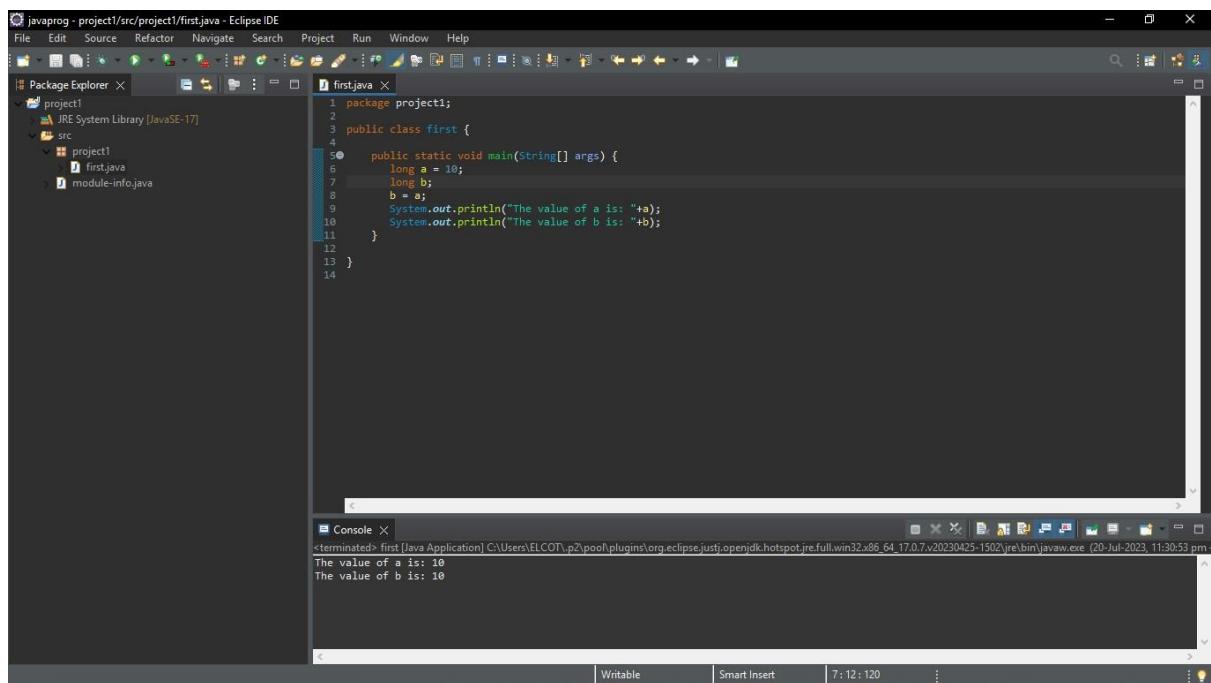
OUTPUT:



A screenshot of the Eclipse IDE showing the Console tab. The output window displays the following text:

```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 3:22:56 pm – 3:22:59 pm) [pid: 1]
The value of a is: 5
The value of b is: 5
```

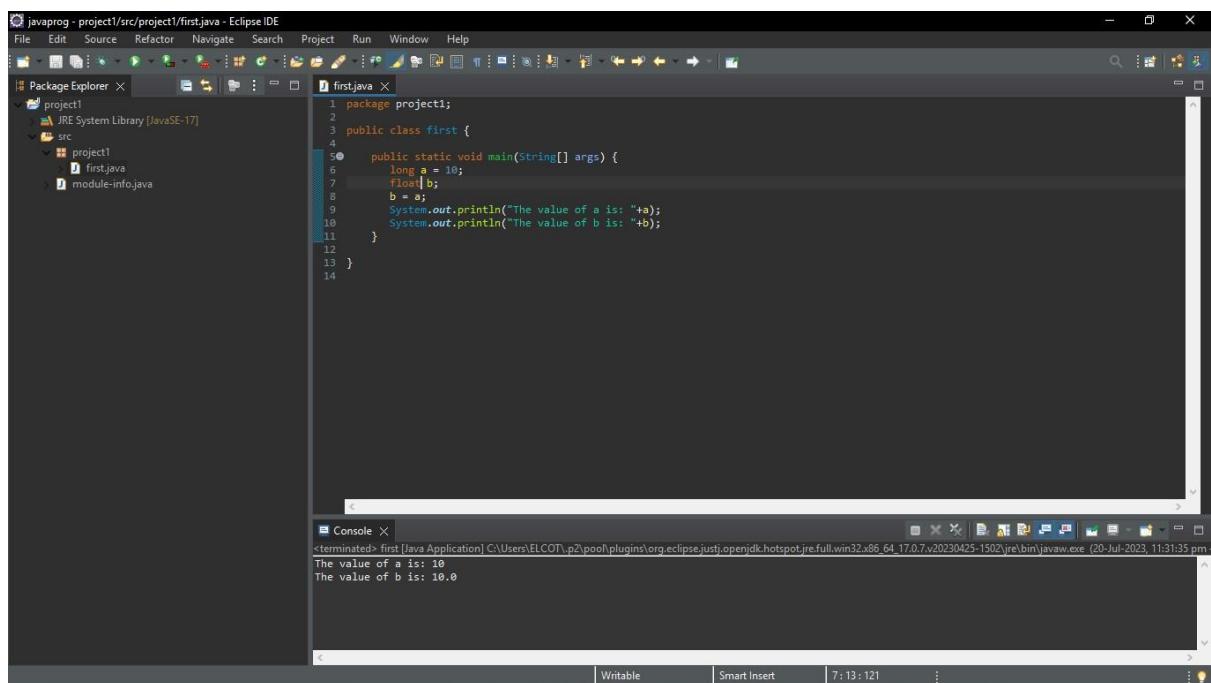
LONG TO LONG:



```
javaproj - project1/src/project1/first.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer X
project1
  JRE System Library [JavaSE-17]
src
  project1
    first.java
    module-info.java
first.java X
1 package project1;
2
3 public class first {
4
5   public static void main(String[] args) {
6     long a = 10;
7     long b;
8     b = a;
9     System.out.println("The value of a is: "+a);
10    System.out.println("The value of b is: "+b);
11  }
12
13 }
14
```

```
Console X
terminated: first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:30:53 pm)
The value of a is: 10
The value of b is: 10
```

LONG TO FLOAT:



```
javaproj - project1/src/project1/first.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer X
project1
  JRE System Library [JavaSE-17]
src
  project1
    first.java
    module-info.java
first.java X
1 package project1;
2
3 public class first {
4
5   public static void main(String[] args) {
6     long a = 10;
7     float b;
8     b = a;
9     System.out.println("The value of a is: "+a);
10    System.out.println("The value of b is: "+b);
11  }
12
13 }
14
```

```
Console X
terminated: first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:31:35 pm)
The value of a is: 10
The value of b is: 10.0
```

Implicit Type Casting is done

LONG TO DOUBLE:

The screenshot shows the Eclipse IDE interface. The left pane displays the 'Package Explorer' with a project named 'project1' containing a 'src' folder with a 'first.java' file and a 'module-info.java' file. The right pane shows the code editor for 'first.java' with the following content:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         long a = 10;
7         double b;
8         b = a;
9         System.out.println("The value of a is: " + a);
10        System.out.println("The value of b is: " + b);
11    }
12
13 }
```

Below the code editor is the 'Console' tab, which shows the output of the program:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:32:19 pm)
The value of a is: 10
The value of b is: 10.0
```

Implicit Type Casting is done

LONG TO CHAR:

The screenshot shows the Eclipse IDE interface. The left pane displays the 'Package Explorer' with a project named 'Egjava' containing a 'src' folder with a 'Eg.java' file. The right pane shows the code editor for 'Eg.java' with the following content:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         long a=5;
7         char b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

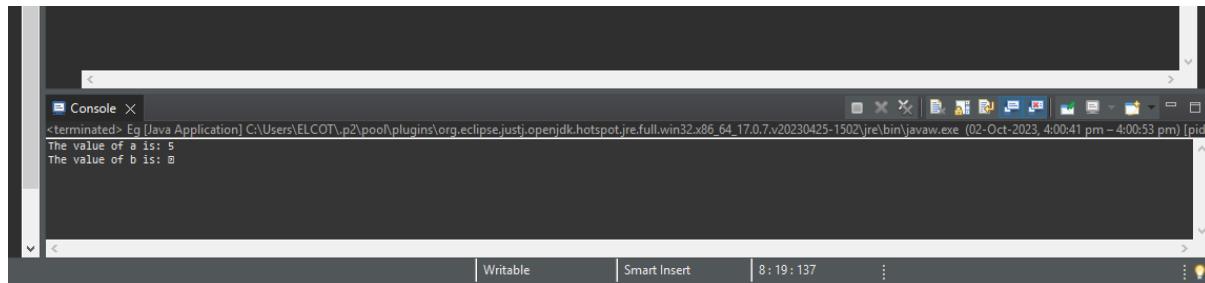
Error: Cannot convert from Long to Char.

The screenshot shows the Eclipse IDE interface. The left pane displays the 'Package Explorer' with a project named 'Egjava' containing a 'src' folder with a 'Eg.java' file. The right pane shows the code editor for 'Eg.java' with the following content:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         long a=5;
7         char b;
8         b = (char)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

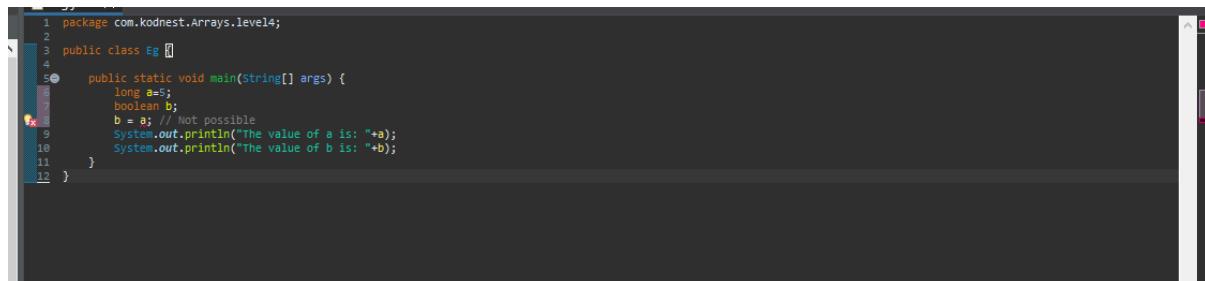
Explicit type casting is done to convert from Long to Char.

OUTPUT:



```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 4:00:41 pm - 4:00:53 pm) [pid: 11348]
The value of a is: 5
The value of b is: 0
```

LONG TO BOOLEAN:

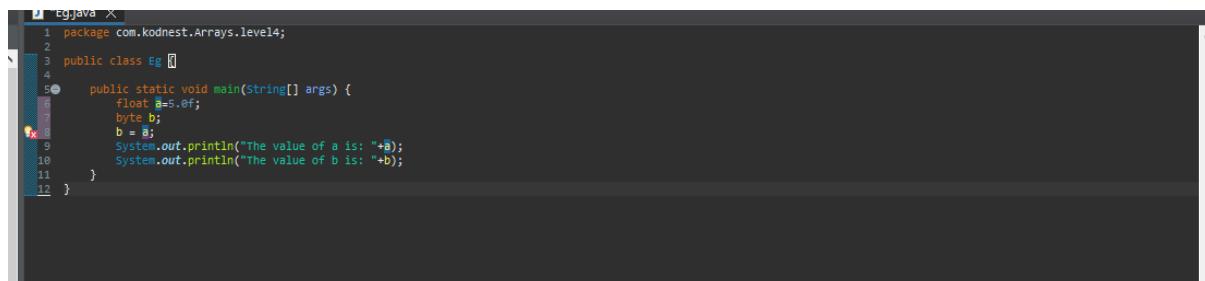


```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         long a=5;
7         boolean b;
8         b = a; // Not possible
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Not Possible

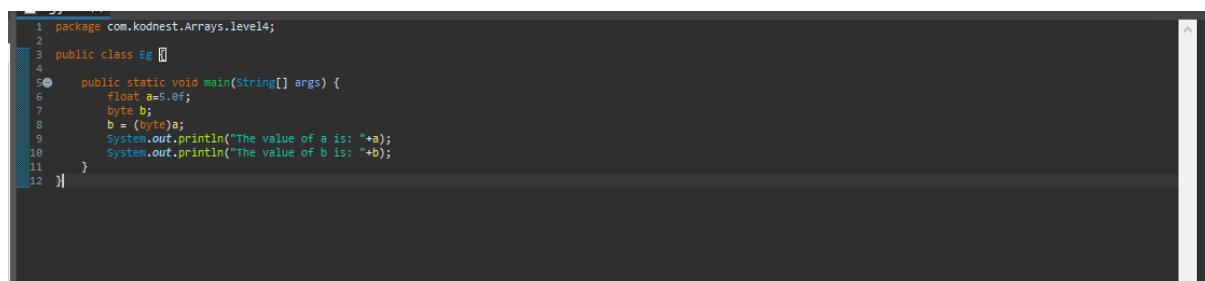
FLOAT:

FLOAT TO BYTE:



```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         float a=5.0f;
7         byte b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

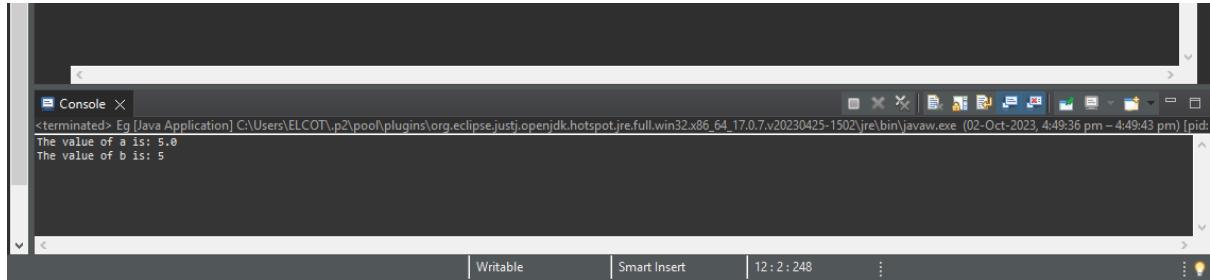
Error: Cannot convert from Float to Byte.



```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         float a=5.0f;
7         byte b;
8         b = (byte)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

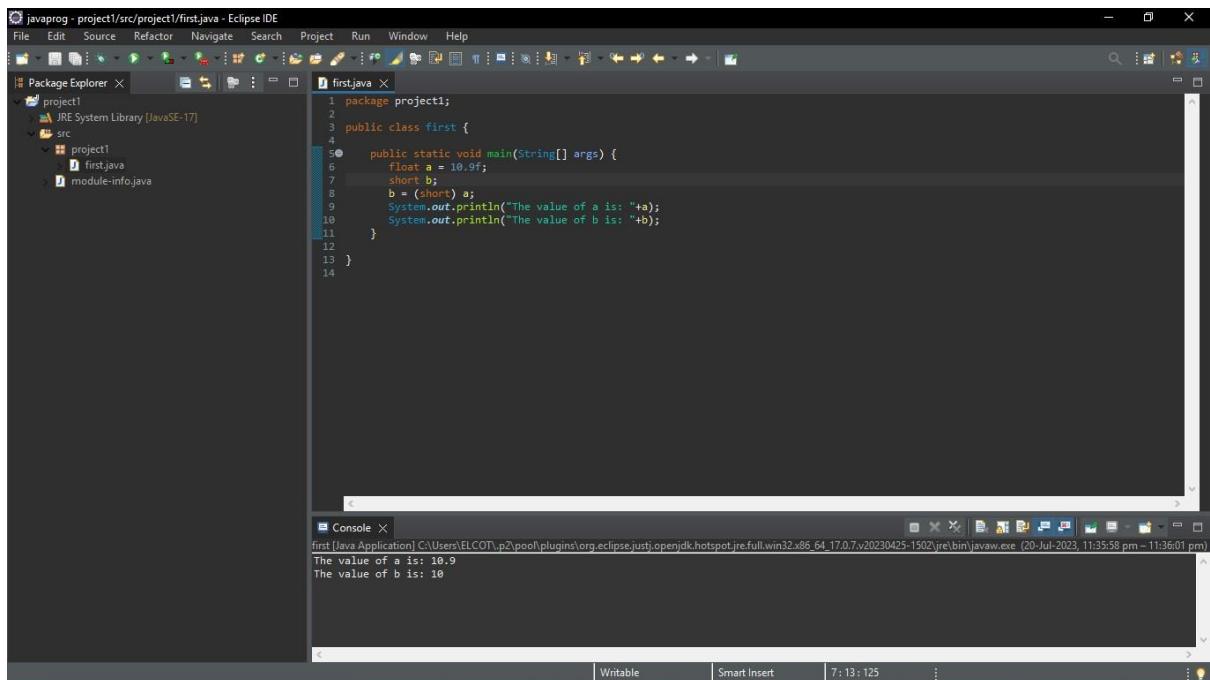
Explicit type casting is done to convert from Float to Byte.

OUTPUT:



```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 4:49:36 pm - 4:49:43 pm) [pid: 1234]
The value of a is: 5.0
The value of b is: 5
```

FLOAT TO SHORT:



```
javaproj - project1/src/project1/first.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer X
project1
  JRE System Library [JavaSE-17]
  src
    project1
      first.java
      module-info.java
first.java X
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         float a = 10.9f;
7         short b;
8         b = (short) a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

```
first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:35:58 pm - 11:36:01 pm)
The value of a is: 10.9
The value of b is: 10
```

Explicit type casting is done to convert from Float to Short.

FLOAT TO INT:

The screenshot shows the Eclipse IDE interface. The top menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The left sidebar is the Package Explorer, showing a project named 'project1' with a 'src' folder containing 'first.java' and 'module-info.java'. The main editor window displays the following Java code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         float a = 10.9f;
7         int b;
8         b = (int) a;
9         System.out.println("The value of a is: " + a);
10        System.out.println("The value of b is: " + b);
11    }
12
13 }
```

The bottom console window shows the output of the program execution:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:36:35 pm)
The value of a is: 10.9
The value of b is: 10
```

Explicit type casting is done to convert from Float to Int.

FLOAT TO LONG:

The screenshot shows the Eclipse IDE interface. The top menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The left sidebar is the Package Explorer, showing a project named 'Eg' with a 'src' folder containing 'Eg.java'. The main editor window displays the following Java code:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         float a=5.0f;
7         long b;
8         b = (long)a;
9         System.out.println("The value of a is: " + a);
10        System.out.println("The value of b is: " + b);
11    }
12 }
```

Explicit type casting is done to convert from Float to Long.

OUTPUT:

The screenshot shows the Eclipse IDE interface. The top menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The left sidebar is the Package Explorer, showing a project named 'Eg' with a 'src' folder containing 'Eg.java'. The main editor window displays the following Java code (same as above). The bottom console window shows the output of the program execution:

```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 4:49:36 pm – 4:49:43 pm) [pid: 1144]
The value of a is: 5.0
The value of b is: 5
```

FLOAT TO FLOAT:

The screenshot shows the Eclipse IDE interface with the following details:

- Title Bar:** javaproj - project1/src/project1/first.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbars:** Standard toolbar with icons for New, Open, Save, Cut, Copy, Paste, Find, etc.
- Left Sidebar (Package Explorer):** Shows the project structure:
 - project1
 - JRE System Library [JavaSE-17]
 - src
 - project1
 - first.java
 - module-info.java
- Central Editor:** The first.java file is open, displaying the following code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         float a = 10.9f;
7         float b;
8         b = a;
9         System.out.println("The value of a is: " + a);
10        System.out.println("The value of b is: " + b);
11    }
12
13 }
```
- Bottom Console:** Shows the output of the program:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt\openjdk.hotspot.jre.full.win32\x64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:38:23 pm)
The value of a is: 10.9
The value of b is: 10.9
```

FLOAT TO DOUBLE:

The screenshot shows the Eclipse IDE interface with the following details:

- Project Explorer View:** Shows a project named "project1" with a source folder "src" containing a file "first.java".
- Code Editor View:** Displays the content of "first.java". The code defines a class "first" with a main method that prints the values of variables "a" and "b" to the console.
- Console View:** Shows the output of the application's execution. The output is:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64.17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:38:23 pm)
The value of a is: 10.9
The value of b is: 10.9
```

Implicit Type Casting is done

FLOAT TO CHAR:

The screenshot shows the Eclipse IDE interface. The top menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The left sidebar is the Package Explorer, showing a project named 'project1' with a 'src' folder containing 'first.java' and 'module-info.java'. The main editor window displays the following Java code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         float a = 10.9f;
7         char b;
8         b = (char) a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

The bottom window is the Console, showing the output of the program execution:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.core\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:39:33 pm)
The value of a is: 10.9
The value of b is:
```

Explicit type casting is done to convert from Float to Char.

FLOAT TO BOOLEAN:

The screenshot shows the Eclipse IDE interface. The top menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The left sidebar is the Package Explorer, showing a project named 'eg' with a 'src' folder containing 'Eg.java'. The main editor window displays the following Java code:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         float a=5.0f;
7         boolean b;
8         b = a; // Not possible
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Not Possible

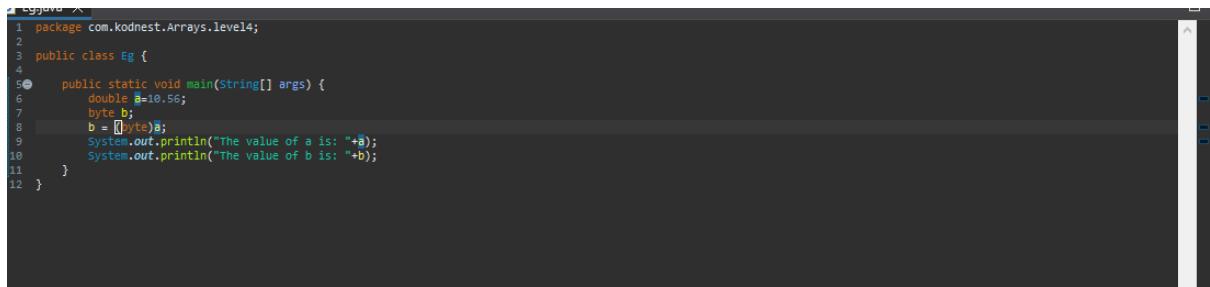
DOUBLE:

DOUBLE TO BYTE:

The screenshot shows the Eclipse IDE interface. The top menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The left sidebar is the Package Explorer, showing a project named 'egjava' with a 'src' folder containing 'Eg.java'. The main editor window displays the following Java code:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         double a=10.56;
7         byte b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

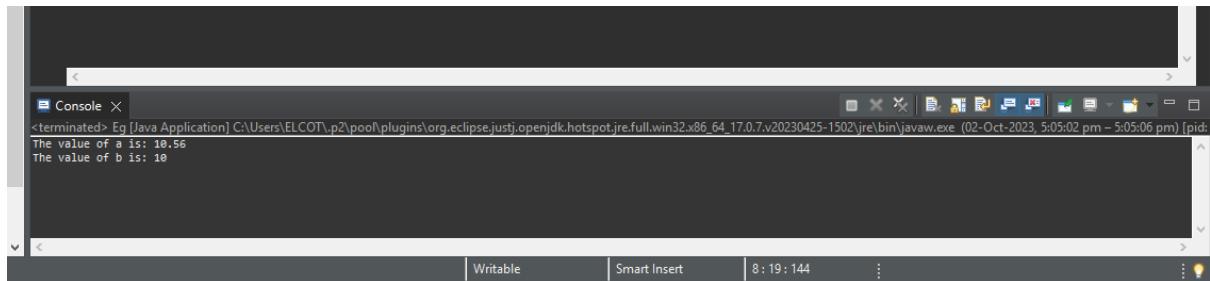
Error: Cannot convert from Double to Byte.



```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         double a=10.56;
7         byte b;
8         b = (byte)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

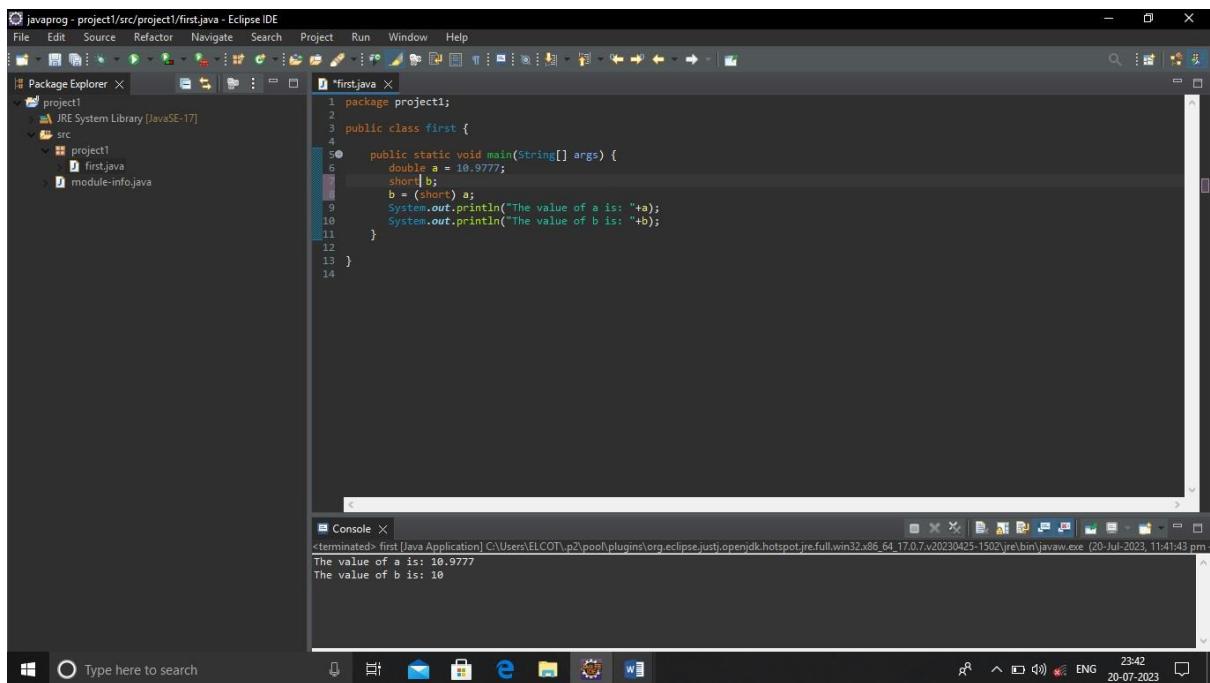
Explicit type casting is done to convert from Double to Byte.

OUTPUT:



```
The value of a is: 10.56
The value of b is: 10
```

DOUBLE TO SHORT:



```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         double a = 10.9777;
7         short b;
8         b = (short) a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

```
The value of a is: 10.9777
The value of b is: 10
```

Explicit type casting is done to convert from Double to Short.

DOUBLE TO INT:

The screenshot shows the Eclipse IDE interface with the following details:

- Title Bar:** javaproj - project1/src/project1/first.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbars:** Standard toolbar with icons for file operations, search, and run.
- Left Sidebar (Package Explorer):** Shows the project structure:
 - project1
 - JRE System Library [JavaSE-17]
 - src
 - project1
 - first.java
 - module-info.java
- Central Editor:** The first.java file is open, displaying the following code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         double a = 10.9777;
7         int b;
8         b = (int) a;
9         System.out.println("The value of a is: " + a);
10        System.out.println("The value of b is: " + b);
11    }
12 }
13
14
```
- Bottom Console:** Shows the terminal output of the application:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justmyjava.full.win32x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:41:43 pm)
The value of a is: 10.9777
The value of b is: 10
```

Explicit type casting is done to convert from Double to Int.

DOUBLE TO LONG:

The screenshot shows the Eclipse IDE interface with the following details:

- Project Explorer View:** Shows a project named "project1" with a source folder "src" containing a file "first.java".
- Code Editor View:** Displays the content of "first.java":

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         double a = 10.9777;
7         long b;
8         b = (long) a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
14
```
- Console View:** Shows the output of the Java application:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:41:43 pm)
The value of a is: 10.9777
The value of b is: 10
```

Explicit type casting is done to convert from Double to Long.

DOUBLE TO FLOAT:

The screenshot shows the Eclipse IDE interface with a Java project named "javaproj". The "first.java" file contains the following code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         double a = 10.977755555;
7         float b;
8         b = (Float) a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

The "Console" tab shows the output of the program:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:44:49 pm)
The value of a is: 10.977755555
The value of b is: 10.977756
```

Explicit type casting is done to convert from Double to Float.

DOUBLE TO DOUBLE:

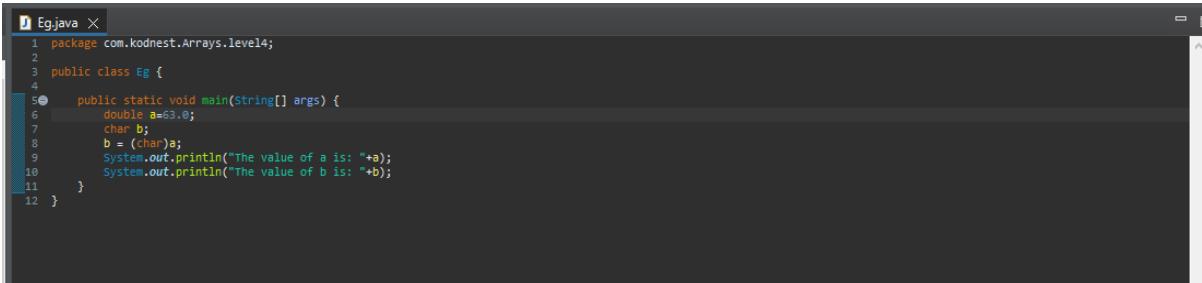
The screenshot shows the Eclipse IDE interface with a Java project named "javaproj". The "first.java" file contains the following code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         double a = 10.977755555;
7         double b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

The "Console" tab shows the output of the program:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:45:45 pm)
The value of a is: 10.977755555
The value of b is: 10.977755555
```

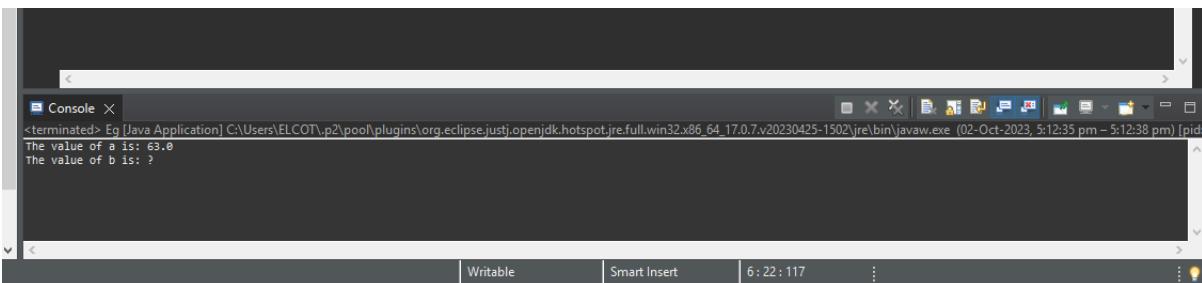
DOUBLE TO CHAR:



```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         double a=63.0;
7         char b;
8         b = (char)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Explicit type casting is done to convert from Double to Byte.

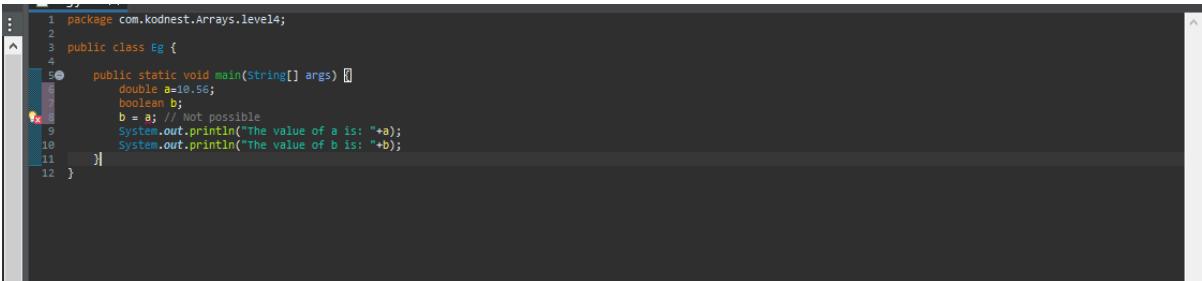
OUTPUT:



```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 5:12:35 pm – 5:12:38 pm) [pid: 1144]
The value of a is: 63.0
The value of b is: ?


```

DOUBLE TO BOOLEAN:

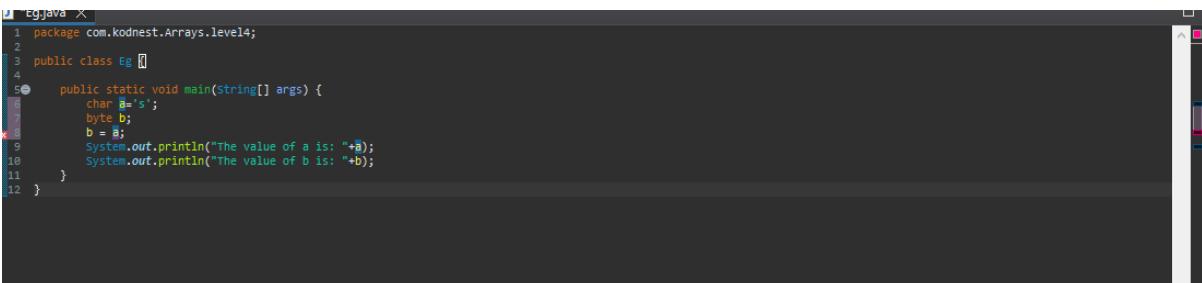


```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         double a=10.56;
7         boolean b;
8         b = a; // Not possible
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Not Possible

CHAR:

CHAR TO BYTE:



```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         char a='S';
7         byte b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Error: Cannot convert from Char to Byte.

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         char a='s';
7         byte b;
8         b = (byte)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Explicit type casting is done to convert from Char to Byte.

OUTPUT:

```
<terminated> Eg [Java Application] C:\Users\ELCOT\Desktop\plugins\org.eclipse.justj.openjdk.hotspot.ire.full.win32.x86_64.17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 5:18:48 pm – 5:18:53 pm) [pid: 1115]
The value of a is: s
The value of b is: 115
```

CHAR TO SHORT:

The screenshot shows the Eclipse IDE interface. The top half displays a Java code editor with the following content:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         char a='s';
7         short b;
8         b = (short)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

The bottom half shows a terminal window titled "Console" with the following output:

```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32\x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 5:18:48 pm – 5:18:53 pm) [pid: 1]
The value of a is: s
The value of b is: 115
```

Explicit type casting is done to convert from Char to Short.

CHAR TO INT:

The screenshot shows the Eclipse IDE interface with the following details:

- Project Explorer View:** Shows the project "EgJava" with one file, "Eg.java".
- Eg.java Content:** The code defines a class "Eg" with a main method. It initializes a character variable 'a' to '\$', creates an integer variable 'b', and prints both variables.

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         char a='$';
7         int b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

- Console View:** Displays the terminal output of the application's execution.

```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 5:20:05 pm - 5:20:09 pm) [p]
The value of a is: $
The value of b is: 115
```

Implicit Type Casting is done

CHAR TO LONG:

The screenshot shows the Eclipse IDE interface. The top part is the Java editor with a file named "Eg.java". The code defines a class "Eg" with a main method that prints the values of variables "a" and "b". The bottom part is the "Console" view, which shows the output of running the application. The output text is:
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.core\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 5:20:05 pm - 5:20:09 pm) [p]
The value of a is: s
The value of b is: 115

Implicit Type Casting is done

CHAR TO FLOAT:

The screenshot shows the Eclipse IDE interface. The top part displays a Java code editor with the following code:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         char a='s';
7         float b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

The bottom part shows the Eclipse Console window with the following output:

```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 5:21:29 pm – 5:21:32 pm) [p
The value of a is: s
The value of b is: 115.0
```

Implicit Type Casting is done

CHAR TO DOUBLE:

The screenshot shows the Eclipse IDE interface. The top part displays a Java code editor with the following code:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         char a='s';
7         double b;
8         b = a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

The bottom part shows the Eclipse Console window with the following output:

```
<terminated> Eg [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justj.openjdk.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (02-Oct-2023, 5:21:54 pm – 5:21:58 pm) [p
The value of a is: s
The value of b is: 115.0
```

Implicit Type Casting is done

CHAR TO CHAR:

The screenshot shows the Eclipse IDE interface with the following details:

- Title Bar:** javaproj - project1/src/project1/first.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbar:** Standard Eclipse toolbar icons.
- Package Explorer:** Shows the project structure:
 - project1
 - JRE System Library [JavaSE-17]
 - src
 - project1
 - first.java
 - module-info.java
- Editor:** The first.java file is open, displaying the following code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         char a = 'a';
7         char b;
8         b = a;
9         System.out.println("The value of a is: " + a);
10        System.out.println("The value of b is: " + b);
11    }
12
13 }
```
- Console:** Shows the output of the program:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.justmyjava.full.win32.x86_64.17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:52:29 pm)
The value of a is: a
The value of b is: a
```
- Status Bar:** Writable, Smart Insert, 7:12:121

CHAR TO BOOLEAN:

```
1 package com.kodnest.Arrays.level4;
2
3 public class Eg {
4
5     public static void main(String[] args) {
6         char a='s';
7         boolean b;
8         b = 8; // Not possible
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12 }
```

Not possible

BOOLEAN:

BOOLEAN TO BYTE:

The screenshot shows the Eclipse IDE interface with a Java project named "javaproj". The "first.java" file contains the following code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         boolean a = true;
7         byte b;
8         b = (byte)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

In the "Console" tab, the output is:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.core\1.1.0.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:56:59 pm)
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
        Cannot cast from boolean to byte
        at project1/project1.First.main(first.java:8)
```

Not possible

BOOLEAN TO SHORT:

The screenshot shows the Eclipse IDE interface with a Java project named "javaproj". The "first.java" file contains the following code:

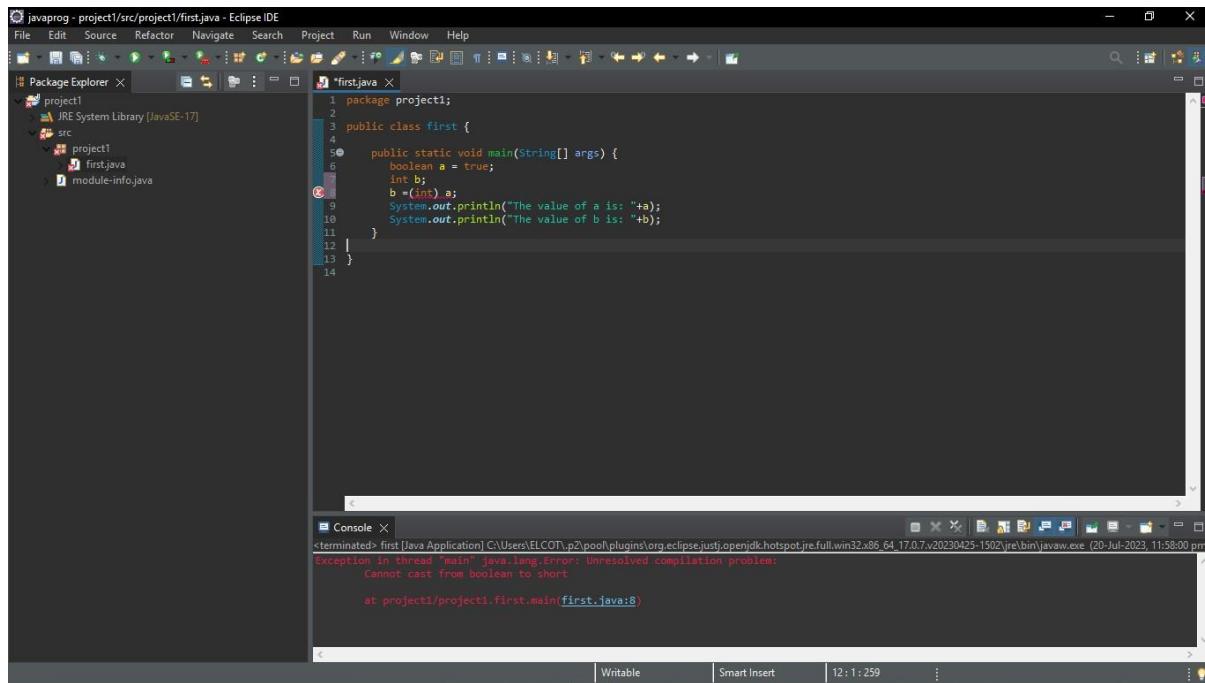
```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         boolean a = true;
7         short b;
8         b = (short)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

In the "Console" tab, the output is:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.core\1.1.0.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:58:00 pm)
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
        Cannot cast from boolean to short
        at project1/project1.First.main(first.java:8)
```

Not possible

BOOLEAN TO INT:



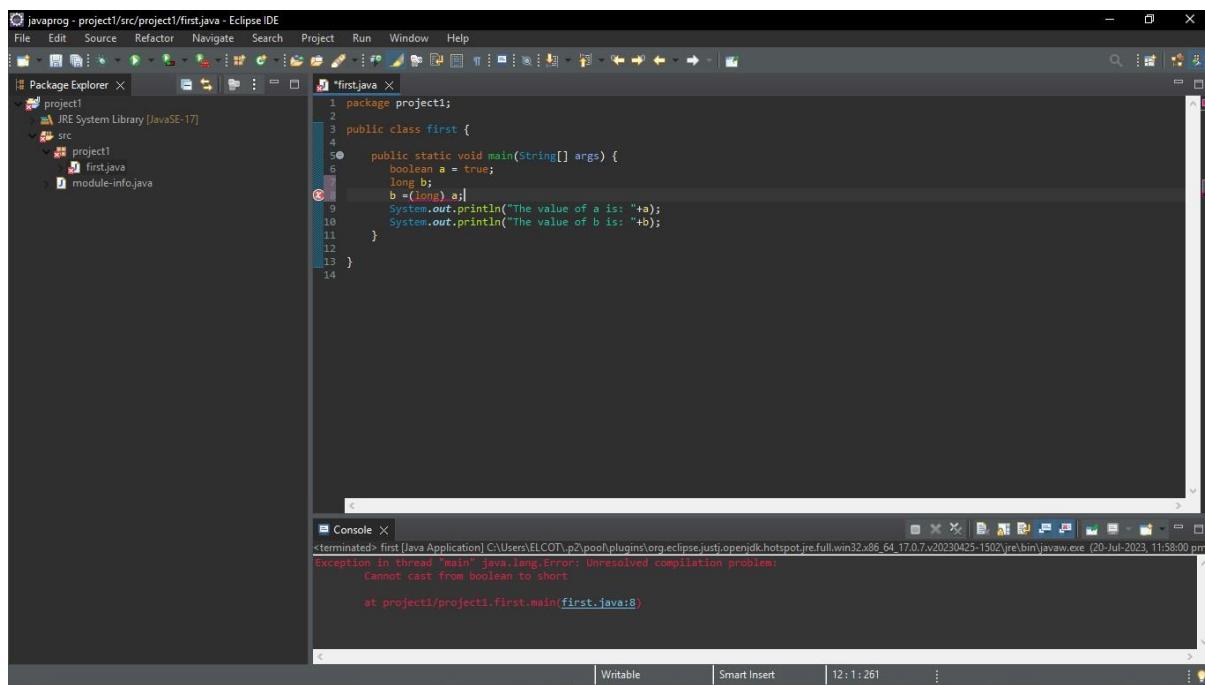
```
javaproj - project1/src/project1/first.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer X first.java X
project1
  JRE System Library [JavaSE-17]
  src
    first.java
    module-info.java
1 package project1;
2
3 public class first {
4
5   public static void main(String[] args) {
6     boolean a = true;
7     int b;
8     b =(int) a;
9     System.out.println("The value of a is: "+a);
10    System.out.println("The value of b is: "+b);
11  }
12
13 }
14

Console X
terminated: first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.core\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:58:00 pm)
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
  Cannot cast from boolean to short
    at project1.project1.first.main(first.java:8)

Writable Smart Insert 12:1:259
```

Not possible

BOOLEAN TO LONG:



```
javaproj - project1/src/project1/first.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer X first.java X
project1
  JRE System Library [JavaSE-17]
  src
    first.java
    module-info.java
1 package project1;
2
3 public class first {
4
5   public static void main(String[] args) {
6     boolean a = true;
7     long b;
8     b =(long) a;
9     System.out.println("The value of a is: "+a);
10    System.out.println("The value of b is: "+b);
11  }
12
13 }
14

Console X
terminated: first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.core\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (20-Jul-2023, 11:58:00 pm)
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
  Cannot cast from boolean to short
    at project1.project1.first.main(first.java:8)

Writable Smart Insert 12:1:261
```

Not possible

BOOLEAN TO FLOAT:

The screenshot shows the Eclipse IDE interface with a Java project named "javaproj". The "first.java" file contains the following code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         boolean a = true;
7         float b;
8         b =(float) a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

The code at line 8, `b =(float) a;`, is highlighted in red, indicating a compilation error. The "Console" tab shows the following output:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.core\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (21-Jul-2023, 12:00:58 am)
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Cannot cast from boolean to float
at project1.project1.first.main(first.java:8)
```

Not possible

BOOLEAN TO DOUBLE:

The screenshot shows the Eclipse IDE interface with a Java project named "javaproj". The "first.java" file contains the following code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         boolean a = true;
7         double b;
8         b =(double) a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

The code at line 8, `b =(double) a;`, is highlighted in red, indicating a compilation error. The "Console" tab shows the following output:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.core\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (21-Jul-2023, 12:00:58 am)
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Cannot cast from boolean to float
at project1.project1.first.main(first.java:8)
```

Not possible

BOOLEAN TO CHAR:

The screenshot shows the Eclipse IDE interface with a Java project named "javaproj". The "first.java" file contains the following code:

```
1 package project1;
2
3 public class first {
4
5     public static void main(String[] args) {
6         boolean a = true;
7         char b;
8         b =(char)a;
9         System.out.println("The value of a is: "+a);
10        System.out.println("The value of b is: "+b);
11    }
12
13 }
```

In the "Console" tab, the output is:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.core\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (21-Jul-2023, 12:00:58 am)
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Cannot cast from boolean to float
at project1.project1.first.main(first.java:8)
```

Not possible

BOOLEAN TO BOOLEAN:

The screenshot shows the Eclipse IDE interface with the same Java project and code as the previous screenshot, but the output in the "Console" tab is now successful:

```
<terminated> first [Java Application] C:\Users\ELCOT\p2\pool\plugins\org.eclipse.jdt.core\openjdk.hotspot.jre.full.win32.x86_64_17.0.7.v20230425-1502\jre\bin\javaw.exe (21-Jul-2023, 12:03:03 am)
The value of a is: true
The value of b is: true
```

TABLE:

	<u>Char</u>	<u>Byte</u>	<u>Short</u>	<u>Int</u>	<u>Long</u>	<u>Float</u>	<u>Double</u>	<u>Boolean</u>
<u>Char</u>	<u>NCR</u>	<u>IC</u>	<u>IC</u>	<u>IC</u>	<u>IC</u>	<u>IC</u>	<u>IC</u>	<u>No</u>
<u>Byte</u>	<u>EC</u>	<u>NCR</u>	<u>IC</u>	<u>IC</u>	<u>IC</u>	<u>IC</u>	<u>IC</u>	<u>No</u>
<u>Short</u>	<u>EC</u>	<u>EC</u>	<u>NCR</u>	<u>IC</u>	<u>IC</u>	<u>IC</u>	<u>IC</u>	<u>No</u>
<u>Int</u>	<u>EC</u>	<u>EC</u>	<u>EC</u>	<u>NCR</u>	<u>IC</u>	<u>IC</u>	<u>IC</u>	<u>No</u>
<u>Long</u>	<u>EC</u>	<u>EC</u>	<u>EC</u>	<u>EC</u>	<u>NCR</u>	<u>IC</u>	<u>IC</u>	<u>No</u>
<u>Float</u>	<u>EC</u>	<u>EC</u>	<u>EC</u>	<u>EC</u>	<u>EC</u>	<u>NCR</u>	<u>IC</u>	<u>No</u>
<u>Double</u>	<u>EC</u>	<u>EC</u>	<u>EC</u>	<u>EC</u>	<u>EC</u>	<u>EC</u>	<u>NCR</u>	<u>No</u>
<u>Boolean</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>NCR</u>

1.NCR – No Conversion Required

2.EC – Explicit Type Casting

3.IC – Implicit Type Casting

4.No – Can't Convert

GRAPH OF TYPE CASTING:

