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ASSIGNMENT ON TYPE CASTING IN JAVA

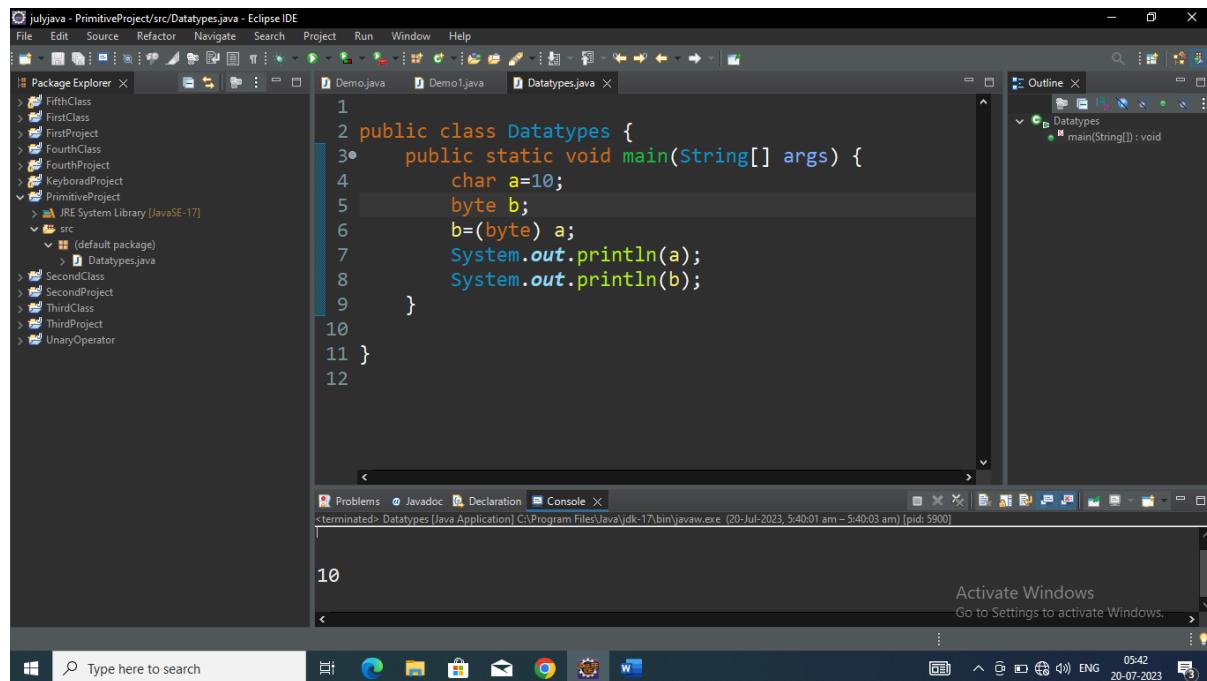
Type casting in java:

In Type Casting The process of converting the data of one type to another is technically called as type casting.

There are two types of casting:

- Implicit type casting: (automatically)- converting a smaller type to a larger type size.
- Explicit type casting:(manually)- converting a larger type to a smaller size type

Char to Byte:



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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbar:** Standard Eclipse toolbar icons.
- Package Explorer:** Shows various Java projects like FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, JRE System Library [JavaSE-17], SecondClass, SecondProject, ThirdClass, ThirdProject, and UnaryOperator. The PrimitiveProject is expanded to show a src folder containing Datatypes.java.
- Editor:** Displays the Java code for the Datatypes class:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         char a=10;
5         byte b;
6         b=(byte) a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10
11 }
```
- Outline View:** Shows the class structure: Datatypes and its main method.
- Console:** Shows the output of the program: 10
- Bottom Status Bar:** Activate Windows, Go to Settings to activate Windows.
- Taskbar:** Shows the Windows taskbar with various application icons.

Conclusion: char to byte explicit should be done

Char to Short:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbar:** Standard Eclipse toolbar icons.
- Package Explorer:** Shows various Java projects like FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, JRE System Library [JavaSE-17], SecondClass, SecondProject, ThirdClass, ThirdProject, and UnaryOperator. A file named Datatypes.java is selected.
- Editor:** Displays the Java code:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         char a=10;
5         short b;
6         b=(short) a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10
11 }
12
```
- Outline View:** Shows the class Datatypes and its main method.
- Console:** Displays the output of the program:

```
10
```
- Bottom Status Bar:** Shows the date and time: 20-07-2023 05:45
- Taskbar:** Shows the Windows taskbar with various pinned icons.

Conclusion: char to short explicit should be done

Char to Char:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbar:** Standard Eclipse toolbar icons.
- Package Explorer:** Shows various Java projects like FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, JRE System Library [JavaSE-17], SecondClass, SecondProject, ThirdClass, ThirdProject, and UnaryOperator. A file named Datatypes.java is selected.
- Editor:** Displays the Java code:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         char a=10;
5         char b;
6         b=a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10
11 }
12
```
- Outline View:** Shows the class Datatypes and its main method.
- Console:** Displays the output of the program:

```
<terminated> Datatypes [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20-Jul-2023, 5:29:23 am – 5:29:24 am) [pid: 7040]
```
- Bottom Status Bar:** Shows the date and time: 20-07-2023 05:45
- Taskbar:** Shows the Windows taskbar with various pinned icons.

Conclusion: char to char not applicable

Char to Int:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Package Explorer:** Shows various Java projects like FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, and src.
- Editor:** Displays the Java code for Datatypes.java:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         char a=10;
5         int b;
6         b=a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10
11 }
12
```
- Outline View:** Shows the class structure: Datatypes and its main method.
- Console:** Shows the output of the program: 10
- Bottom Bar:** Includes a search bar, taskbar icons (File, Home, Task View, Start), and system status (Activate Windows, Go to Settings to activate Windows, 05:46, 20-07-2023).

Conclusion: Char to int implicit should be done

Char to Long:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Package Explorer:** Shows various Java projects like FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, and src.
- Editor:** Displays the Java code for Datatypes.java:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         char a=10;
5         long b;
6         b=a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10
11 }
12
```
- Outline View:** Shows the class structure: Datatypes and its main method.
- Console:** Shows the output of the program: 10
- Bottom Bar:** Includes a search bar, taskbar icons, and system status (Activate Windows, Go to Settings to activate Windows, 05:47, 20-07-2023).

Conclusion: Char to long implicit should be done

Char to Double:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Package Explorer:** Shows various Java projects like FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, JRE System Library [JavaSE-17], and src.
- Editor:** Displays the Datatypes.java file with the following code:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         char a=10;
5         double b;
6         b=a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10
11 }
12
```
- Outline View:** Shows the class Datatypes and its main method.
- Console:** Displays the output "10.0".
- Bottom Status Bar:** Shows the date and time: 20-07-2023, 05:49.

Conclusion: Char to double implicit should be done

Byte to Char:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Package Explorer:** Shows various Java projects like FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, JRE System Library [JavaSE-17], and src.
- Editor:** Displays the Datatypes.java file with the following code:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         byte a=10;
5         char b;
6         b=(char) a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10
11 }
12
```
- Outline View:** Shows the class Datatypes and its main method.
- Console:** Displays the output "10".
- Bottom Status Bar:** Shows the date and time: 20-07-2023, 05:55.

Conclusion: Byte to char explicit should be done

Byte to short:

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

- Project Explorer:** Shows a Java project named "PrimitiveProject" with several source files like Demo.java, Demo1.java, and Datatypes.java.
- Code Editor:** Displays the following Java code in the Datatypes.java file:

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

- Console:** Shows the output of the Java application:

```
10
10
```

- Bottom Bar:** Includes a search bar, taskbar icons, and system status information (Windows 10, ENG, 05:56, 20-07-2023).

Conclusion: Byte to short implicit should be done

Byte to int:

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

- Project Explorer:** Shows a Java project named "PrimitiveProject" with several source files like Demo.java, Demo1.java, and Datatypes.java.
- Code Editor:** Displays the following Java code in the Datatypes.java file:

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

- Console:** Shows the output of the Java application:

```
10
10
```

- Bottom Bar:** Includes a search bar, taskbar icons, and system status information (Windows 10, ENG, 05:57, 20-07-2023).

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbar:** Standard Eclipse toolbar icons.
- Package Explorer:** Shows a project named "PrimitiveProject" with several source files like FifthClass, FirstClass, etc., and a "src" folder containing "Datatypes.java".
- Editor:** Displays the Java code for "Datatypes.java":

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         byte a=10;
5         short b;
6         b= a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10
11 }
12
```
- Outline View:** Shows the class "Datatypes" and its method "main(String[])".
- Console:** Shows the output of the application:

```
10
10
```
- Bottom Status Bar:** Writable, Smart Insert, 12:1:197, Activate Windows, Go to Settings to activate Windows.
- Taskbar:** Shows the Start button, search bar, and pinned application icons (File Explorer, Edge, File Manager, Mail, Google Chrome, Task View).
- System Tray:** Shows the date (20-07-2023), time (05:56), and battery status.

Conclusion: Byte to short implicit should be done

Byte to Long:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbar:** Standard Eclipse toolbar icons.
- Package Explorer:** Shows a project named "PrimitiveProject" with several source files like FifthClass, FirstClass, etc., and a "src" folder containing "Datatypes.java".
- Editor:** Displays the Java code for "Datatypes.java":

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         byte a=10;
5         long b;
6         b= a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10
11 }
12
```
- Outline View:** Shows the class "Datatypes" and its method "main(String[])".
- Console:** Shows the output of the application:

```
10
10
```
- Bottom Status Bar:** Writable, Smart Insert, 7:31:153, Activate Windows, Go to Settings to activate Windows.
- Taskbar:** Shows the Start button, search bar, and pinned application icons (File Explorer, Edge, File Manager, Mail, Google Chrome, Task View).
- System Tray:** Shows the date (20-07-2023), time (05:59), and battery status.

Conclusion: Byte to long implicit should be done

Byte to Float:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbar:** Standard Eclipse toolbar icons.
- Package Explorer:** Shows various Java projects like FifthClass, FirstClass, etc., and a JRE System Library [JavaSE-17].
- Editor:** Displays the `Datatypes.java` file with the following code:

```
1 public class Datatypes {  
2     public static void main(String[] args) {  
3         byte a=10;  
4         float b;  
5         b= a;  
6         System.out.println(a);  
7         System.out.println(b);  
8     }  
9 }  
10  
11 }
```
- Outline View:** Shows the class `Datatypes` and its method `main(String[])`.
- Console:** Shows the output of the Java application:

```
10  
10.0
```
- System Tray:** Shows standard Windows system tray icons.
- Taskbar:** Shows the Windows taskbar with the search bar and pinned icons.

Conclusion: Byte to float implicit should be done

Byte to Double:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbar:** Standard Eclipse toolbar icons.
- Package Explorer:** Shows various Java projects like FifthClass, FirstClass, etc., and a JRE System Library [JavaSE-17].
- Editor:** Displays the `Datatypes.java` file with the following code:

```
1 public class Datatypes {  
2     public static void main(String[] args) {  
3         byte a=10;  
4         double b;  
5         b= a;  
6         System.out.println(a);  
7         System.out.println(b);  
8     }  
9 }  
10  
11 }
```
- Outline View:** Shows the class `Datatypes` and its method `main(String[])`.
- Console:** Shows the output of the Java application:

```
10  
10.0
```
- System Tray:** Shows standard Windows system tray icons.
- Taskbar:** Shows the Windows taskbar with the search bar and pinned icons.

Conclusion: Byte to double implicit should be done

Byte to Boolean:

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

- Project Explorer:** Shows multiple Java projects: FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, JRE System Library [JavaSE-17], and src. Inside the src folder, there is a package named (default package) containing a file named Datatypes.java.
- Code Editor:** Displays the following Java code in Datatypes.java:

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

- Outline View:** Shows the class `Datatypes` and its method `main(String[])`.
- Console:** Shows the output of the program:
10
10.0
- Taskbar:** Shows the Windows taskbar with various pinned icons like File Explorer, Edge, and File Manager.

Conclusion: Byte to Boolean no should be done

Short to Char:

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

- Project Explorer:** Shows the same set of Java projects as the previous screenshot.
- Code Editor:** Displays the following Java code in Datatypes.java:

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

- Outline View:** Shows the class `Datatypes` and its method `main(String[])`.
- Console:** Shows the output of the program:
10
10
- Taskbar:** Shows the Windows taskbar with various pinned icons.

Conclusion: short to char explicit should be done

Short to Byte:

The screenshot shows the Eclipse IDE interface with a Java project named "julyjava". In the "src" folder, there is a file named "Datatypes.java". The code contains the following:

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

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

```
10
10
```

The status bar at the bottom right indicates the date and time as 20-07-2023 06:10.

Conclusion: short to byte explicit should be done

Short to Short:

The screenshot shows the Eclipse IDE interface with a Java project named "julyjava". In the "src" folder, there is a file named "Datatypes.java". The code contains the following:

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

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

```
10
10
```

The status bar at the bottom right indicates the date and time as 20-07-2023 06:12.

Conclusion: short to short not applicable should be done

Short to Int:

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

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

The "Console" tab in the bottom right shows the output of the program:

```
10
10
```

Conclusion: short to int implicit should be done

Short to Long:

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

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

The "Console" tab in the bottom right shows the output of the program:

```
10
10
```

Conclusion: short to long implicit should be done

Short to Float:

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

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

The "Console" tab in the bottom right shows the output of the program:

```
10
10.0
```

Conclusion: short to float implicit should be done

Short to Double:

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

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

The "Console" tab in the bottom right shows the output of the program:

```
10
10.0
```

Conclusion: short to double implicit should be done

Short to Boolean:

The screenshot shows the Eclipse IDE interface with a Java project named "julyjava". In the "src" folder, there is a file named "Datatypes.java" containing the following code:

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

The code is run in the "Console" tab, which displays the output:

```
10
10.0
```

The status bar at the bottom right indicates the date and time as 20-07-2023 07:32.

Conclusion: short to boolean no should be done

Int to Char:

The screenshot shows the Eclipse IDE interface with a Java project named "julyjava". In the "src" folder, there is a file named "Datatypes.java" containing the following code:

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

The code is run in the "Console" tab, which displays the output:

```
10
```

The status bar at the bottom right indicates the date and time as 20-07-2023 06:19.

Conclusion: int to char explicit should be done

Int to Byte:

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

- Project Explorer:** Shows multiple Java projects: FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, JRE System Library [JavaSE-17], and src (default package). Inside src, there are files like SecondClass, SecondProject, ThirdClass, ThirdProject, and UnaryOperator.
- Code Editor:** The active file is Datatypes.java. The code contains a main method that prints the value of variable 'a' (an int) and variable 'b' (a byte). The output in the Console tab shows both values as 10.
- Console Tab:** Displays the output of the Java application: 10 and 10.
- Bottom Bar:** Shows the Windows taskbar with various icons and the system clock indicating 06:20 20-07-2023.

Conclusion: int to byte explicit should be done

Int to Short:

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

- Project Explorer:** Shows the same set of Java projects as the previous screenshot.
- Code Editor:** The active file is Datatypes.java. The code contains a main method that prints the value of variable 'a' (an int) and variable 'b' (a short). The output in the Console tab shows both values as 10.
- Console Tab:** Displays the output of the Java application: 10 and 10.
- Bottom Bar:** Shows the Windows taskbar with various icons and the system clock indicating 06:20 20-07-2023.

Conclusion: int to short explicit should be done

Int to Float:

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

- Project Explorer:** Shows a Java project named "PrimitiveProject" with several source files like "FifthClass", "FirstClass", etc.
- Code Editor:** Displays the following Java code in the file "Datatypes.java":

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

- Console:** Shows the output of the Java application:

```
10
10.0
```

Conclusion: int to float explicit should be done

Int to Double:

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

- Project Explorer:** Shows a Java project named "PrimitiveProject" with several source files like "FifthClass", "FirstClass", etc.
- Code Editor:** Displays the following Java code in the file "Datatypes.java":

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

- Console:** Shows the output of the Java application:

```
10
10.0
```

Conclusion: int to double implicit should be done

Int to Boolean:

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

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

The "Console" tab shows the output:

```
true
true
```

The status bar at the bottom right indicates the date and time as 20-07-2023 07:28.

Conclusion: int to boolean no should be done

Long to Char:

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

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

The "Console" tab shows the output:

```
10
```

The status bar at the bottom right indicates the date and time as 20-07-2023 06:27.

Conclusion: long to char explicit should be done

Long to Byte:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbars:** Standard, Java, Java Editor, Java Outline, Java Problems, Java Javadoc, Java Declaration, Java Console
- Left Sidebar:** Package Explorer (containing FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, JRE System Library [JavaSE-17], src, Datatypes.java)
- Central Area:** Java Editor showing the following code:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         long a=10;
5         byte b;
6         b= (byte) a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10}
11
12
```
- Right Sidebar:** Outline (showing Datatypes and main(String[]))
- Bottom Area:** Problems, Javadoc, Declaration, Console (Output: 10, 10)
- System Tray:** Activate Windows, Go to Settings to activate Windows.
- Taskbar:** Type here to search, Start button, Task View, File Explorer, Microsoft Edge, Microsoft Store, Mail, Google Chrome, File Explorer, WPS Office, 06:28, ENG, 20-07-2023

Conclusion: long to byte explicit should be done

Long to Short:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Menu Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbars:** Standard, Java, Java Editor, Java Outline, Java Problems, Java Javadoc, Java Declaration, Java Console
- Left Sidebar:** Package Explorer (containing FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, JRE System Library [JavaSE-17], src, Datatypes.java)
- Central Area:** Java Editor showing the following code:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         long a=10;
5         short b;
6         b=(short) a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10}
11
12
```
- Right Sidebar:** Outline (showing Datatypes and main(String[]))
- Bottom Area:** Problems, Javadoc, Declaration, Console (Output: 10, 10)
- System Tray:** Activate Windows, Go to Settings to activate Windows.
- Taskbar:** Type here to search, Start button, Task View, File Explorer, Microsoft Edge, Microsoft Store, Mail, Google Chrome, File Explorer, WPS Office, 06:39, ENG, 20-07-2023

Conclusion: long to short explicit should be done

Long to Int:

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

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

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

```
10
10
```

The status bar at the bottom right indicates the date and time as 20-07-2023 06:39.

Conclusion: long to int explicit should be done

Long to Float:

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

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

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

```
10
10.0
```

The status bar at the bottom right indicates the date and time as 20-07-2023 06:41.

Conclusion: long to float implicit should be done

Long to Double:

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

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

The "Console" tab in the bottom right shows the output of the program:

```
10
10.0
```

Conclusion: long to double implicit should be done

Long to Boolean:

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

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

The "Console" tab in the bottom right shows the output of the program:

```
10
10.0
```

Conclusion: long to Boolean no should be done

Float to Char:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Package Explorer:** Shows various Java projects like FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, JRE System Library [JavaSE-17], and src.
- Editor:** The Datatypes.java file contains the following code:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         float a=3.1f;
5         char b;
6         b=(char) a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10
11 }
12
```
- Outline View:** Shows the class structure and the main method.
- Console:** Displays the output of the program:

```
3.1
3
```
- Bottom Status Bar:** Shows the date and time: 20-07-2023, 06:47.

Conclusion: float to char explicit should be done

Float to Byte:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- Package Explorer:** Shows various Java projects like FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, JRE System Library [JavaSE-17], and src.
- Editor:** The Datatypes.java file contains the following code:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         float a=3.147f;
5         byte b;
6         b=(byte) a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10
11 }
12
```
- Outline View:** Shows the class structure and the main method.
- Console:** Displays the output of the program:

```
3.147
3
```
- Bottom Status Bar:** Shows the date and time: 20-07-2023, 06:49.

Conclusion: float to byte explicit should be done

Float to Short:

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

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

The "Console" tab in the bottom right shows the output of the program:

```
3.147
3
```

The status bar at the bottom right indicates the date and time as "20-07-2023 06:50".

Conclusion: float to short explicit should be done

Float to Int:

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

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

The "Console" tab in the bottom right shows the output of the program:

```
3.147
3
```

The status bar at the bottom right indicates the date and time as "20-07-2023 06:51".

Conclusion: float to int explicit should be done

Float to Long:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.java - Eclipse IDE
- File Menu:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help
- Toolbar:** Standard Eclipse toolbar with icons for file operations.
- Package Explorer:** Shows the project structure with packages like FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, JRE System Library [JavaSE-17], and a src folder containing Datatypes.java.
- Editor:** The main editor window displays the Java code for Datatypes.java:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         float a=3.147f;
5         long b;
6         b=(long) a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10}
11
12
```
- Outline View:** Shows the outline of the current class, including the main method.
- Console:** Shows the output of the program execution:

```
3.147
3
```
- Bottom Status Bar:** Writable, Smart Insert, 10 : 1 : 202, and a Windows activation message: "Activate Windows Go to Settings to activate Windows."
- Taskbar:** Shows the Start button, task switcher, and pinned application icons for File Explorer, Edge, File Manager, Mail, Google Chrome, and Word.
- System Tray:** Shows the date (20-07-2023), time (06:52), and language (ENG).

Conclusion: float to long explicit should be done

Float to Double:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.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 with several Java projects and source files listed.
- Central Area (Editor):** The file `Datatypes.java` is open, containing the following code:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         float a=3.147f;
5         double b;
6         b=a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10}
11}
```
- Right Sidebar (Outline):** Shows the outline of the current file, including the class definition and the main method.
- Bottom Status Bar:** Shows the status "Activate Windows" and "Go to Settings to activate Windows."
- Taskbar:** Shows the operating system taskbar with various pinned application icons.

Conclusion: float to double Implicit should be done

Float to Boolean:

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

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

The "Console" tab in the bottom right shows the output of the program:

```
true
true
```

The status bar at the bottom right indicates the date and time as 20-07-2023 07:25.

Conclusion: float to boolean no should be done

Double to Char:

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

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

The "Console" tab in the bottom right shows the output of the program:

```
3.147
?
```

The status bar at the bottom right indicates the date and time as 20-07-2023 06:55.

Conclusion: double to char explicit should be done

Double to Byte:

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

- Title Bar:** juljava - PrimitiveProject/src/Datatypes.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 with packages like FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, JRE System Library [JavaSE-17], and src containing Datatypes.java.
- Central Editor Area:** Displays the Java code for Datatypes.java:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         double a=3.147;
5         byte b;
6         b=(byte) a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10
11 }
```
- Right Sidebar (Outline):** Shows the outline of the current file, listing the class Datatypes and its main method.
- Bottom Status Bar:** Shows the status "Activate Windows Go to Settings to activate Windows."
- Bottom Taskbar:** Shows the operating system taskbar with icons for File Explorer, Start, Task View, Edge, Mail, Photos, Chrome, File Explorer, Word, and a search bar.

Conclusion: double to byte explicit should be done

Double to Short:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.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 with packages like FifthClass, FirstClass, FirstProject, FourthClass, FourthProject, KeyboardProject, PrimitiveProject, SecondClass, SecondProject, ThirdClass, ThirdProject, and UnaryOperator, along with source files like Demo.java, Demo1.java, and Datatypes.java.
- Central Area (Editor):** Displays the Java code for `Datatypes.java`. The code defines a class `Datatypes` with a `main` method that prints the value of `a` and `b` to the console.
- Right Sidebar (Outline):** Shows the outline of the current file, listing the class `Datatypes` and its `main` method.
- Bottom Status Bar:** Shows the status `<terminated> Datatypes [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20-Jul-2023, 6:58:00 am - 6:58:01 am) [pid: 468]`.
- Bottom Console Tab:** Shows the output of the program: `3.147` and `3`.
- Bottom Activation Bar:** Shows the message `Activate Windows` and `Go to Settings to activate Windows.`
- Taskbar:** Shows the Start button, a search bar with placeholder `Type here to search`, and pinned application icons for File Explorer, Edge, Task View, Mail, Google Chrome, and Word.
- System Tray:** Shows the date and time as `06:58 20-07-2023` and the language as `ENG`.

Conclusion: double to short explicit should be done

Double to Int:

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

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

The "Console" tab in the bottom right shows the output of the program:

```
3.147
3
```

The status bar at the bottom right indicates the date and time as 20-07-2023 07:00.

Conclusion: double to int explicit should be done

Double to Long:

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

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

The "Console" tab in the bottom right shows the output of the program:

```
3.147
3
```

The status bar at the bottom right indicates the date and time as 20-07-2023 07:01.

Conclusion: double to long explicit should be done

Double to int:

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

```
1 public class Datatypes {
2     public static void main(String[] args) {
3         double a=3.147;
4         int b;
5         b=(int) a;
6         System.out.println(a);
7         System.out.println(b);
8     }
9 }
10
11 }
```

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

```
3.147
3
```

Conclusion: double to int explicit should be done

Double to Float:

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

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

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

```
3.147
3.147
```

Conclusion: double to double explicit should be done

Double to Boolean:

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

```
1 public class Datatypes {
2     public static void main(String[] args) {
3         double a=3.147;
4         boolean b;
5         b=a;
6         System.out.println(a);
7         System.out.println(b);
8     }
9 }
10 }
11 }
```

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

```
true
true
```

The status bar at the bottom right indicates the date and time as 20-07-2023 07:27.

Conclusion: double to Boolean no should be done

Boolean to Char:

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

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

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

```
No consoles to display at this time.
```

The status bar at the bottom right indicates the date and time as 20-07-2023 07:10.

Boolean to Byte:

The screenshot shows the Eclipse IDE interface with a Java project named "julyjava - PrimitiveProject". The "src/Datatypes.java" file is open in the editor. The code defines a class "Datatypes" with a main method that prints the values of boolean variables "a" and "b" to the console. The "Outline" view on the right shows the class definition and the main method.

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

Boolean to Short:

The screenshot shows the Eclipse IDE interface with a Java project named "julyjava - PrimitiveProject". The "src/Datatypes.java" file is open in the editor. The code defines a class "Datatypes" with a main method that prints the values of boolean variables "a" and "b" to the console. The "Outline" view on the right shows the class definition and the main method.

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

Boolean to Int:

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

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

The code defines a class named "Datatypes" with a main method. Inside the main method, it declares a boolean variable "a" and an integer variable "b". It then assigns the value of "a" to "b" and prints both values to the console.

Boolean to Long:

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

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

The code defines a class named "Datatypes" with a main method. Inside the main method, it declares a boolean variable "a" and a long variable "b". It then assigns the value of "a" to "b" and prints both values to the console.

Boolean to Float:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.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 with several Java files like FifthClass, FirstClass, etc., and a primitive project folder containing Datatypes.java.
- Editor:** Displays the Java code for Datatypes.java:

```
1 public class Datatypes {
2     public static void main(String[] args) {
3         boolean a=true;
4         float b;
5         b=a;
6         System.out.println(a);
7         System.out.println(b);
8     }
9 }
10 }
11 }
```
- Outline View:** Shows the class structure and the main method.
- Console:** Displays the output of the program:

```
at Datatypes.main(Datatypes.java:6)
```
- Bottom Status Bar:** Shows the date and time: 20-07-2023 07:17
- Taskbar:** Shows the Windows taskbar with various pinned icons.

Boolean to Double:

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

- Title Bar:** julyjava - PrimitiveProject/src/Datatypes.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 with several Java files like FifthClass, FirstClass, etc., and a primitive project folder containing Datatypes.java.
- Editor:** Displays the Java code for Datatypes.java:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         boolean a=true;
5         double b;
6         b=a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10 }
11 }
```
- Outline View:** Shows the class structure and the main method.
- Console:** Displays the output of the program:

```
true
true
```
- Bottom Status Bar:** Shows the date and time: 20-07-2023 07:21
- Taskbar:** Shows the Windows taskbar with various pinned icons.

Boolean to Boolean:

The screenshot shows the Eclipse IDE interface. In the center, there is a code editor window titled "Datatypes.java" with the following content:

```
1
2 public class Datatypes {
3     public static void main(String[] args) {
4         boolean a=10; // error
5         boolean b;
6         b=a;
7         System.out.println(a);
8         System.out.println(b);
9     }
10
11 }
```

A red error marker is present on the line "boolean a=10;". Below the code editor is a "Console" tab showing the output of the program:

```
10
10.0
```

The status bar at the bottom right indicates the date and time as "20-07-2023 10:34".

Boolean to char

We can't any type of conversion from boolean to char

Boolean to byte

We can't any type of conversion from boolean to byte

Boolean to short

We can't any type of conversion from boolean to short

Boolean to int

We can't any type of conversion from boolean to int

Boolean to long

We can't any type of conversion from boolean to long

Boolean to float

We can't any type of conversion from boolean to float

Boolean to double

We can't any type of conversion from boolean to double

THE REQUIRED TABLE:

	char	byte	short	int	long	float	double	boolean
char	<u>CNR</u>	<u>Y/EC</u>	<u>Y/EC</u>	<u>Y/IC</u>	<u>Y/IC</u>	<u>Y/IC</u>	<u>Y/IC</u>	
byte	<u>Y/EC</u>	<u>CNR</u>	<u>Y/IC</u>	<u>Y/IC</u>	<u>Y/IC</u>	<u>Y/IC</u>	<u>Y/IC</u>	
short	<u>Y/EC</u>	<u>Y/EC</u>	<u>CNR</u>	<u>Y/EC</u>	<u>Y/IC</u>	<u>Y/IC</u>	<u>Y/IC</u>	
Int	<u>Y/EC</u>	<u>Y/EC</u>	<u>Y/EC</u>	<u>CNR</u>	<u>Y/IC</u>	<u>Y/IC</u>	<u>Y/IC</u>	
long	<u>Y/EC</u>	<u>Y/EC</u>	<u>Y/EC</u>	<u>Y/EC</u>	<u>CNR</u>	<u>Y/IC</u>	<u>Y/IC</u>	
float	<u>Y/EC</u>	<u>Y/EC</u>	<u>Y/EC</u>	<u>Y/EC</u>	<u>Y/EC</u>	<u>CNR</u>	<u>Y/IC</u>	
double	<u>Y/EC</u>	<u>Y/EC</u>	<u>Y/EC</u>	<u>Y/EC</u>	<u>Y/EC</u>	<u>Y/EC</u>	<u>CNR</u>	
boolean								<u>CNR</u>

Type Casting in java

