

## Assignment 2

- b. Declare a method-local variable **status** of type **boolean** with the value **true** and convert it to a **String** using the **toString** method. (Hint: Use **Boolean.toString(Boolean)**).

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

- Title Bar:** eclipse-workspace - Java Practice/src/tostring.java - Eclipse IDE
- Menu Bar:** File Edit Source Refactor Navigate Search Project Run Window Help
- Package Explorer:** Java Practice (JRE System Library [JavaSE-15], src, (default package), area.java, BMI.java, challenge4.java, Leap\_switch.java, Leap.java, month.java, Pattern.java, Test.java, tostring.java, Vote.java)
- Code Editor:** tostring.java (Content: class tostring { public static void main(String[] args) { boolean status = true; String s1 = Boolean.toString(status); System.out.print(s1); } })
- Terminal:** Problems Declaration Console Terminal  
<terminated> tostring [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (08-Sep-2024, 10:51:51 pm – 10:51:52 pm)  
true
- System Tray:** Shows icons for various applications like File Explorer, Task View, and system status.

- c. Declare a method-local variable **strStatus** of type **String** with the value "true" and convert it to a **boolean** using the **parseBoolean** method. (Hint: Use **Boolean.parseBoolean(String)**).

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

- Title Bar:** eclipse-workspace - Java Practice/src/stringtoboolen.java - Eclipse IDE
- Menu Bar:** File Edit Source Refactor Navigate Search Project Run Window Help
- Package Explorer:** Java Practice (JRE System Library [JavaSE-15], src, (default package), area.java, BMI.java, challenge4.java, Leap\_switch.java, Leap.java, month.java, Pattern.java, stringtoboolen.java, Test.java, tostring.java, Vote.java)
- Code Editor:** stringtoboolen.java (Content: class stringtoboolen { public static void main(String[] args) { String strStatus = "true"; Boolean s1 = Boolean.parseBoolean(strStatus); System.out.print(s1); } })
- Terminal:** Problems Declaration Console Coverage Terminal  
<terminated> stringtoboolen [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (08-Sep-2024, 11:01:04 pm – 11:01:05 pm)  
true
- System Tray:** Shows icons for various applications like File Explorer, Task View, and system status.

d. Declare a method-local variable strStatus of type String with the value "1" or "0" and attempt to convert it to a boolean. (Hint: parseBoolean method will not work as expected with "1" or "0").

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

- Title Bar:** eclipse-workspace - Java Practice/src/stringtoboolen1.java - Eclipse IDE
- Menu Bar:** File Edit Source Refactor Navigate Search Project Run Window Help
- Toolbar:** Standard Eclipse toolbar with icons for New, Open, Save, Cut, Copy, Paste, Find, etc.
- Package Explorer:** Shows the project structure under Java Practice, including src, JRE System Library [JavaSE-15], and several source files like area.java, BMI.java, challenge4.java, Leap\_switch.java, Leap.java, month.java, Pattern.java, stringtoboolen1.java, stringtoboolen1.java, Test.java, tostring.java, and Vote.java.
- Code Editor:** Displays the stringtoboolen1.java file with the following code:

```
1 class stringtoboolen1{
2     public static void main(String[] args)
3     {
4         String strStatus = "1";
5
6         Boolean b = strStatus.equals("1");
7         System.out.println(b);
8     }
9 }
```
- Console View:** Shows the output of the program: <terminated> stringtoboolen1 [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (08-Sep-2024, 11:17:24 pm - 11:17:24 pm)  
true
- Bottom Status Bar:** Shows the system tray icons and the date/time: 08-09-2024 23:17

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

- Title Bar:** eclipse-workspace - Java Practice/src/stringtoboolen1.java - Eclipse IDE
- Menu Bar:** File Edit Source Refactor Navigate Search Project Run Window Help
- Toolbar:** Standard Eclipse toolbar with icons for New, Open, Save, Cut, Copy, Paste, Find, etc.
- Package Explorer:** Shows the project structure under Java Practice, including src, JRE System Library [JavaSE-15], and several source files like area.java, BMI.java, challenge4.java, Leap\_switch.java, Leap.java, month.java, Pattern.java, stringtoboolen1.java, stringtoboolen1.java, Test.java, tostring.java, and Vote.java.
- Code Editor:** Displays the stringtoboolen1.java file with the following code:

```
1 class stringtoboolen1{
2     public static void main(String[] args)
3     {
4         String strStatus = "0";
5
6         Boolean b = strStatus.equals("1");
7         System.out.println(b);
8     }
9 }
```
- Console View:** Shows the output of the program: <terminated> stringtoboolen1 [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (08-Sep-2024, 11:18:13 pm - 11:18:14 pm)  
false
- Bottom Status Bar:** Shows the system tray icons and the date/time: 08-09-2024 23:18

e. Declare a method-local variable status of type boolean with the value true and convert it to the corresponding wrapper class using Boolean.valueOf(). (Hint: Use Boolean.valueOf(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 Package Explorer view on the left shows a Java Practice project with several source files: tostring.java, stringtoboolen.java, stringtoboolen1.java, wrapper.java, and wrapper1.java. The wrapper.java file is open in the editor, containing the following code:

```
1 class wrapper {
2     public static void main(String[] args)
3     {
4         boolean status = true;
5         boolean b = Boolean.valueOf(status);
6         System.out.println(b);
7     }
8 }
```

The bottom right corner of the screen shows a taskbar with various icons and the system clock indicating 23:51 on 08-09-2024.

f. Declare a method-local variable strStatus of type String with the value "true" and convert it to the corresponding wrapper class using Boolean.valueOf(). (Hint: Use Boolean.valueOf(String)).

The screenshot shows the Eclipse IDE interface. The top menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The Package Explorer view on the left shows a Java Practice project with several source files: tostring.java, stringtoboolen.java, stringtoboolen1.java, wrapper.java, and wrapper1.java. The wrapper1.java file is open in the editor, containing the following code:

```
1 class wrapper1 {
2     public static void main(String[] args)
3     {
4         String status = "true";
5         boolean b = Boolean.valueOf(status);
6         System.out.println(b);
7     }
8 }
```

The bottom right corner of the screen shows a taskbar with various icons and the system clock indicating 23:58 on 08-09-2024.

g. Experiment with converting a boolean value into other primitive types or vice versa and observe the results.

```

eclipse-workspace - Java Practice/src/wrapper1.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer JRE System Library [JavaSE-15]
src (default package)
  area.java
  BMI.java
  challenge4.java
  Leap_switch.java
  Leap.java
  month.java
  Pattern.java
  stringtoboolen.java
  stringtoboolen1.java
  Test.java
  tostring.java
  Vote.java
  wrapper.java
  wrapper1.java

1 class wrapper1 {
2     public static void main(String[] args)
3     {
4         boolean b = true;
5         int i = Boolean.compare(b,true);
6         System.out.println(i);
7     }
8 }

Problems Javadoc Declaration Console Terminal Coverage
<terminated> wrapper1 [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 12:30:56 am – 12:30:57 am)
0

```

## 2. Working with java.lang.Byte

- Explore the Java API documentation for `java.lang.Byte` and observe its modifiers and super types.
- Write a program to test how many bytes are used to represent a byte value using the `BYTES` field. (Hint: Use `Byte.BYTES`).

```

eclipse-workspace - Java Practice/src/Byte1.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer JRE System Library [JavaSE-15]
src (default package)
  area.java
  BMI.java
  Byte1.java
  challenge4.java
  Leap_switch.java
  Leap.java
  month.java
  Pattern.java
  stringtoboolen.java
  stringtoboolen1.java
  Test.java
  tostring.java
  Vote.java
  wrapper.java
  wrapper1.java

1 class Byte1 {
2     public static void main(String[] args)
3     {
4         int i = Byte.BYTES;
5         System.out.println(i);
6     }
7 }
8

Problems Javadoc Declaration Console Terminal Coverage
<terminated> Byte1 [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 12:58:53 am – 12:58:54 am)
1

```

- Write a program to find the minimum and maximum values of byte using the `MIN_VALUE` and `MAX_VALUE` fields. (Hint: Use `Byte.MIN_VALUE` and `Byte.MAX_VALUE`).

eclipse-workspace - Java Practice/src/Byte1.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

Java Practice

JRE System Library [JavaSE-15]

src

(default package)

area.java

BMI.java

Byte1.java

challenge4.java

Leap\_switch.java

Leap.java

month.java

Pattern.java

stringtoboolen.java

stringtoboolen1.java

Test.java

tostring.java

Vote.java

wrapper.java

wrapper1.java

Byte1.java

```
1 class Byte1 {
2     public static void main(String[] args)
3     {
4         byte max_value =Byte.MAX_VALUE;
5         System.out.println(max_value);
6     }
7 }
```

Problems Javadoc Declaration Console Terminal Coverage

<terminated> Byte1 [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 1:03:23 am – 1:03:23 am)

127

Writable Smart Insert 6 : 37 : 127

ENG IN 01:03 09-09-2024

eclipse-workspace - Java Practice/src/Byte1.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

Java Practice

JRE System Library [JavaSE-15]

src

(default package)

area.java

BMI.java

Byte1.java

challenge4.java

Leap\_switch.java

Leap.java

month.java

Pattern.java

stringtoboolen.java

stringtoboolen1.java

Test.java

tostring.java

Vote.java

wrapper.java

wrapper1.java

Byte1.java

```
1 class Byte1 {
2     public static void main(String[] args)
3     {
4         byte min_value =Byte.MIN_VALUE;
5         System.out.println(min_value);
6     }
7 }
```

Problems Javadoc Declaration Console Terminal Coverage

<terminated> Byte1 [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 1:04:15 am – 1:04:15 am)

-128

Writable Smart Insert 8 : 2 : 136

ENG IN 01:04 09-09-2024

d. Declare a method-local variable number of type byte with some value and convert it to a String using the `toString` method. (Hint: Use `Byte.toString(byte)`).

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

- Project Explorer:** Shows a Java Practice project with a src folder containing various files like area.java, BMI.java, Byte1.java, challenge4.java, Leap\_switch.java, Leap.java, month.java, Pattern.java, stringtoboolen.java, stringtoboolen1.java, Test.java, tostring.java, Vote.java, wrapper.java, and wrapper1.java.
- Code Editor:** Displays the Byte1.java file with the following code:

```
1 class Byte1 {
2     public static void main(String[] args)
3     {
4         byte number = 10;
5         String s = Byte.toString(number);
6         System.out.println(s);
7     }
8 }
```
- Terminal:** Shows the output of the run command: "Byte1 [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 1:06:52 am - 1:06:52 am)  
10"
- System Tray:** Shows standard Windows icons for search, task view, file explorer, browser, and system settings, along with a date and time indicator (01:07 09-09-2024).

e. Declare a method-local variable strNumber of type String with some value and convert it to a byte value using the parseByte method. (Hint: Use Byte.parseByte(String)).

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

- Project Explorer:** Shows a Java Practice project with a src folder containing various files like area.java, BMI.java, Byte1.java, challenge4.java, Leap\_switch.java, Leap.java, month.java, Pattern.java, stringtoboolen.java, stringtoboolen1.java, Test.java, tostring.java, Vote.java, wrapper.java, and wrapper1.java.
- Code Editor:** Displays the Byte1.java file with the following code:

```
1 class Byte1 {
2     public static void main(String[] args)
3     {
4         String strNumber = "25";
5         Byte b = Byte.parseByte(strNumber);
6         System.out.println(b);
7     }
8 }
```
- Terminal:** Shows the output of the run command: "Byte1 [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 1:14:49 am - 1:14:49 am)  
25"
- System Tray:** Shows standard Windows icons for search, task view, file explorer, browser, and system settings, along with a date and time indicator (01:14 09-09-2024).

f. Declare a method-local variable strNumber of type String with the value "Ab12Cd3" and attempt to convert it to a byte value. (Hint: parseByte method will throw a NumberFormatException).

```
1 class Byte1 {
2     public static void main(String[] args)
3     {
4
5         String strNumber = "Ab12Cd3";
6         Byte b = Byte.parseByte(strNumber);
7         System.out.println(b);
8     }
9 }
```

```
Exception in thread "main" java.lang.NumberFormatException: For input string: "Ab12Cd3"
at java.base/java.lang.NumberFormatException.forInputString(NumberFormatException.java:68)
at java.base/java.lang.Integer.parseInt(Integer.java:652)
at java.base/java.lang.Byte.parseDouble(Byte.java:186)
at java.base/java.lang.Byte.parseDouble(Byte.java:212)
at Byte1.main(Byte1.java:6)
```

g. Declare a method-local variable number of type byte with some value and convert it to the corresponding wrapper class using Byte.valueOf(). (Hint: Use Byte.valueOf(byte)).

```
1 class Byte1 {
2     public static void main(String[] args)
3     {
4
5         byte number = 20;
6         Byte b = Byte.valueOf(number);
7         System.out.println(b);
8     }
9 }
```

```
20
```

h. Declare a method-local variable strNumber of type String with some byte value and convert it to the corresponding wrapper class using Byte.valueOf(). (Hint: Use Byte.valueOf(String)).

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

- Title Bar:** eclipse-workspace - Java Practice/src/Byte1.java - Eclipse IDE
- Menu Bar:** 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 under "Java Practice".
- Editor:** Displays the Java code for `Byte1.java`. The code converts a string to a byte and prints it.

```
1 class Byte1 {
2     public static void main(String[] args)
3     {
4
5         String strNumber = "125";
6         Byte b = Byte.valueOf(strNumber);
7         System.out.println(b);
8     }
9 }
```

- Console:** Shows the output of the program: `125`.
- Bottom Status Bar:** Shows the date and time: 09-09-2024, 01:21.

i. Experiment with converting a byte value into other primitive types or vice versa and observe the results.

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

- Title Bar:** eclipse-workspace - Java Practice/src/Byte1.java - Eclipse IDE
- Menu Bar:** 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 under "Java Practice".
- Editor:** Displays the Java code for `Byte1.java`. The code attempts to convert a byte to a boolean using `Boolean.valueOf()`.

```
1 class Byte1 {
2     public static void main(String[] args)
3     {
4
5         byte b = 125;
6         boolean i = Boolean.valueOf(b);
7         System.out.println(i);
8     }
9 }
```

- Console:** Shows the error output: `Exception in thread "main" java.lang.Error: Unresolved compilation problem:  
The method valueOf(boolean) in the type Boolean is not applicable for the arguments (byte)  
at Byte1.main(Byte1.java:6)`.
- Bottom Status Bar:** Shows the date and time: 09-09-2024, 01:27.

eclipse-workspace - Java Practice/src/Byte1.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

Java Practice

JRE System Library [JavaSE-15]

src

(default package)

Byte1.java

challenge4.java

Leap\_switch.java

Leap.java

month.java

Pattern.java

stringtoboolen.java

stringtoboolen1.java

Test.java

tostring.java

Vote.java

wrapper.java

wrapper1.java

```
1 class Byte1 {
2     public static void main(String[] args)
3     {
4         byte b = 125;
5         int i = Integer.valueOf(b);
6         System.out.println(i);
7     }
8 }
```

Problems Javadoc Declaration Console Terminal Coverage

<terminated> Byte1 [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 1:28:27 am - 1:28:27 am)

125

eclipse-workspace - Java Practice/src/Byte1.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

Java Practice

JRE System Library [JavaSE-15]

src

(default package)

Byte1.java

challenge4.java

Leap\_switch.java

Leap.java

month.java

Pattern.java

stringtoboolen.java

stringtoboolen1.java

Test.java

tostring.java

Vote.java

wrapper.java

wrapper1.java

```
1 class Byte1 {
2     public static void main(String[] args)
3     {
4         byte b = 125;
5         long i = Long.valueOf(b);
6         System.out.println(i);
7     }
8 }
```

Problems Javadoc Declaration Console Terminal Coverage

<terminated> Byte1 [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 1:29:19 am - 1:29:20 am)

125

### 3. Working with java.lang.Short

- Explore the Java API documentation for `java.lang.Short` and observe its modifiers and super types.
- Write a program to test how many bytes are used to represent a short value using the `BYTES` field. (Hint: Use `Short.BYTES`).

```
1 class Shortclass {  
2 public static void main(String[] args)  
3 {  
4  
5 int s =Short.BYTES;  
6 System.out.println(s);  
7 }  
8 }
```

2

c. Write a program to find the minimum and maximum values of short using the MIN\_VALUE and MAX\_VALUE fields. (Hint: Use Short.MIN\_VALUE and Short.MAX\_VALUE).

```
1 class Shortclass {  
2 public static void main(String[] args)  
3 {  
4  
5 int max =Short.MAX_VALUE;  
6 int mini =Short.MIN_VALUE;  
7 System.out.println(max);  
8 System.out.println(mini);  
9 }  
10 }
```

32767  
-32768

d. Declare a method-local variable number of type short with some value and convert it to a String using the toString method. (Hint: Use Short.toString(short)).

eclipse-workspace - Java Practice/src/Shortclass.java - Eclipse IDE

```
1 class Shortclass {
2     public static void main(String[] args)
3     {
4         short s = 2;
5         String s1 = Short.toString(s);
6         System.out.println(s1);
7     }
8 }
```

The screenshot shows the Eclipse IDE interface. The title bar says "eclipse-workspace - Java Practice/src/Shortclass.java - Eclipse IDE". The menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help. The Package Explorer view on the left shows a project named "Java Practice" with a "src" folder containing various Java files like "area.java", "BMI.java", etc. The Java code editor window displays the "Shortclass.java" file with the code provided above. A red squiggly underline is under the word "out", indicating a syntax error. The Problems view at the bottom shows one error: "2". The status bar at the bottom right shows the date and time as "09-09-2024 02:47".

e. Declare a method-local variable strNumber of type String with some value and convert it to a short value using the parseShort method. (Hint: Use Short.parseShort(String)).

eclipse-workspace - Java Practice/src/Shortclass.java - Eclipse IDE

```
1 class Shortclass {
2     public static void main(String[] args)
3     {
4         String strNumber = "20";
5         Short s1 = Short.parseShort(strNumber);
6         System.out.println(s1);
7     }
8 }
```

The screenshot shows the Eclipse IDE interface. The title bar says "eclipse-workspace - Java Practice/src/Shortclass.java - Eclipse IDE". The menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help. The Package Explorer view on the left shows a project named "Java Practice" with a "src" folder containing various Java files like "area.java", "BMI.java", etc. The Java code editor window displays the "Shortclass.java" file with the code provided above. The code runs successfully, and the output "20" is shown in the Console view at the bottom. The status bar at the bottom right shows the date and time as "09-09-2024 02:52".

f. Declare a method-local variable strNumber of type String with the value "Ab12Cd3" and attempt to convert it to a short value. (Hint: parseShort method will throw a NumberFormatException).

```
1 class Shortclass {
2     public static void main(String[] args)
3     {
4
5         String strNumber = "Ab12Cd3";
6         Short s1 = Short.parseShort(strNumber);
7         System.out.println(s1);
8     }
9 }
```

Console output:

```
Exception in thread "main" java.lang.NumberFormatException: For input string: "Ab12Cd3"
at java.base/java.lang.NumberFormatException.forInputString(NumberFormatException.java:68)
at java.base/java.lang.Integer.parseInt(Integer.java:652)
at java.base/java.lang.Short.parseShort(Short.java:130)
at java.base/java.lang.Short.parseShort(Short.java:156)
at Shortclass.main(Shortclass.java:6)
```

g. Declare a method-local variable number of type short with some value and convert it to the corresponding wrapper class using Short.valueOf(). (Hint: Use Short.valueOf(short)).

```
1 class Shortclass {
2     public static void main(String[] args)
3     {
4
5         short number = 25;
6         Short s1 = Short.valueOf(number);
7         System.out.println(s1);
8     }
9 }
```

h. Declare a method-local variable strNumber of type String with some short value and convert it to the corresponding wrapper class using Short.valueOf(). (Hint: Use Short.valueOf(String)).

```

eclipse-workspace - Java Practice/src/Shortclass.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer Java Practice JRE System Library [JavaSE-15] src
  (default package)
    areajava
    BMI.java
    Byte1.java
    challenge4.java
    Leap_switch.java
    Leap.java
    month.java
    Pattern.java
    Shortclass.java
    stringtoboolen.java
    stringtoboolen1.java
    Test.java
    tostring.java
    Vote.java
    wrapper.java
    wrapper1.java
  tostring.java stringtoboolen.java stringtoboolen1.java wrapper.java wrapper1.java Byte1.java Shortclass.java
1 class Shortclass {
2     public static void main(String[] args)
3     {
4
5         short number = 25;
6         Short s1 = Short.valueOf(number);
7         System.out.println(s1);
8     }
9 }

Problems Javadoc Declaration Console Terminal Coverage
<terminated> Shortclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 2:57:28 am - 2:57:28 am)
25

```

i. Experiment with converting a short value into other primitive types or vice versa and observe the results.

```

eclipse-workspace - Java Practice/src/Shortclass.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer Java Practice JRE System Library [JavaSE-15] src
  (default package)
    areajava
    BMI.java
    Byte1.java
    challenge4.java
    Leap_switch.java
    Leap.java
    month.java
    Pattern.java
    Shortclass.java
    stringtoboolen.java
    stringtoboolen1.java
    Test.java
    tostring.java
    Vote.java
    wrapper.java
    wrapper1.java
  tostring.java stringtoboolen.java stringtoboolen1.java wrapper.java wrapper1.java Byte1.java Shortclass.java
1 class Shortclass {
2     public static void main(String[] args)
3     {
4
5         short number = 25;
6         int s1 = Integer.valueOf(number);
7         System.out.println(s1);
8     }
9 }

Problems Javadoc Declaration Console Terminal Coverage
<terminated> Shortclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 3:00:24 am - 3:00:24 am)
25

```

#### 4. Working with java.lang.Integer

- Explore the Java API documentation for `java.lang.Integer` and observe its modifiers and super types.
- Write a program to test how many bytes are used to represent an `int` value using the `BYTES` field. (Hint: Use `Integer.BYTES`).

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

- Title Bar:** eclipse-workspace - Java Practice/src/integerclass.java - Eclipse IDE
- Menu Bar:** 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 under "Java Practice".
- Editor:** Displays the code for `integerclass.java`. The code prints the value of `Integer.BYTES`.

```
1 class integerclass {
2     public static void main(String[] args)
3     {
4         int s1 = Integer.BYTES;
5         System.out.println(s1);
6     }
7 }
```

- Console:** Shows the output of the application running in the terminal.

```
<terminated> integerclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 3:05:39 am – 3:05:39 am)
4
```

- Bottom Status Bar:** Shows the date and time (09-09-2024), battery level (03:05), and language (ENG IN).

c. Write a program to find the minimum and maximum values of int using the `MIN_VALUE` and `MAX_VALUE` fields. (Hint: Use `Integer.MIN_VALUE` and `Integer.MAX_VALUE`).

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

- Title Bar:** eclipse-workspace - Java Practice/src/integerclass.java - Eclipse IDE
- Menu Bar:** 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 under "Java Practice".
- Editor:** Displays the code for `integerclass.java`. It uses `Integer.MAX_VALUE` and `Integer.MIN_VALUE` to print the maximum and minimum integer values.

```
1 class integerclass {
2     public static void main(String[] args)
3     {
4         int MAX = Integer.MAX_VALUE;
5         int MIN = Integer.MIN_VALUE;
6         System.out.println(MAX);
7         System.out.println(MIN);
8     }
9 }
```

- Console:** Shows the output of the application running in the terminal.

```
<terminated> integerclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 3:08:01 am – 3:08:01 am)
2147483647
-2147483648
```

- Bottom Status Bar:** Shows the date and time (09-09-2024), battery level (03:08), and language (ENG IN).

d. Declare a method-local variable number of type int with some value and convert it to a String using the `toString` method. (Hint: Use `Integer.toString(int)`).

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

- File Menu:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help.
- Toolbar:** Standard Eclipse toolbar icons.
- Package Explorer:** Shows a project named "Java Practice" with a "src" folder containing various Java files like tostring.java, stringtoboolen.java, stringtoboolen1.java, wrapper.java, wrapper1.java, Byte1.java, Shortclass.java, integerclass.java, Leap\_switch.java, Leap.java, month.java, Pattern.java, challenge4.java, Test.java, tostring.java, Vote.java, and wrapper.java.
- Code Editor:** Displays the content of integerclass.java:

```
1 class integerclass {
2     public static void main(String[] args)
3     {
4         int number = 100;
5         String s = Integer.toString(number);
6         System.out.println(s);
7     }
8 }
```
- Console:** Shows the output of the application run: "100".
- Bottom Bar:** Shows the Windows taskbar with various pinned icons and the system tray indicating the date and time as 09-09-2024 at 03:10.

e. Declare a method-local variable strNumber of type String with some value and convert it to an int value using the parseInt method. (Hint: Use Integer.parseInt(String)).

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

- File Menu:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help.
- Toolbar:** Standard Eclipse toolbar icons.
- Package Explorer:** Shows a project named "Java Practice" with a "src" folder containing various Java files like tostring.java, stringtoboolen.java, stringtoboolen1.java, wrapper.java, wrapper1.java, Byte1.java, Shortclass.java, integerclass.java, Leap\_switch.java, Leap.java, month.java, Pattern.java, challenge4.java, Test.java, tostring.java, Vote.java, and wrapper.java.
- Code Editor:** Displays the content of integerclass.java:

```
1 class integerclass {
2     public static void main(String[] args)
3     {
4         String strNumber = "100";
5         int s = Integer.parseInt(strNumber);
6         System.out.println(s);
7     }
8 }
```
- Console:** Shows the output of the application run: "100".
- Bottom Bar:** Shows the Windows taskbar with various pinned icons and the system tray indicating the date and time as 09-09-2024 at 03:12.

f. Declare a method-local variable strNumber of type String with the value "Ab12Cd3" and attempt to convert it to an int value. (Hint: parseInt method will throw a NumberFormatException).

```

eclipse-workspace - Java Practice/src/integerclass.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer src
  JRE System Library [JavaSE-15]
  (default package)
    area.java
    BMI.java
    Byte1.java
    challenge4.java
    integerclass.java
    Leap_switch.java
    Leap.java
    month.java
    Pattern.java
    Shortclass.java
    stringtoboolen.java
    stringtoboolen1.java
    Test.java
    tostring.java
    Vote.java
    wrapper.java
    wrapper1.java
integerclass.java
  1 class integerclass {
  2     public static void main(String[] args)
  3     {
  4         String strNumber = "Ab12Cd3";
  5         int s = Integer.parseInt(strNumber);
  6         System.out.println(s);
  7     }
  8 }

Problems Declaration Console Terminal Coverage
<terminated> integerclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 3:13:35 am - 3:13:36 am)
Exception in thread "main" java.lang.NumberFormatException: For input string: "Ab12Cd3"
        at java.base/java.lang.NumberFormatException.forInputString(NumberFormatException.java:68)
        at java.base/java.lang.Integer.parseInt(Integer.java:652)
        at java.base/java.lang.Integer.parseInt(Integer.java:770)
        at integerclass.main(integerclass.java:5)

Writable Smart Insert 4 : 39 : 99
ENG IN 03:13 09-09-2024

```

g. Declare a method-local variable number of type int with some value and convert it to the corresponding wrapper class using Integer.valueOf(). (Hint: Use Integer.valueOf(int)).

```

eclipse-workspace - Java Practice/src/integerclass.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer src
  JRE System Library [JavaSE-15]
  (default package)
    area.java
    BMI.java
    Byte1.java
    challenge4.java
    integerclass.java
    Leap_switch.java
    Leap.java
    month.java
    Pattern.java
    Shortclass.java
    stringtoboolen.java
    stringtoboolen1.java
    Test.java
    tostring.java
    Vote.java
    wrapper.java
    wrapper1.java
integerclass.java
  1 class integerclass {
  2     public static void main(String[] args)
  3     {
  4         int number = 500;
  5         Integer s = Integer.valueOf(number);
  6         System.out.println(s);
  7     }
  8 }

Problems Declaration Console Terminal Coverage
<terminated> integerclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 3:19:13 am - 3:19:13 am)
500

Writable Smart Insert 7 : 6 : 156
ENG IN 03:19 09-09-2024

```

h. Declare a method-local variable strNumber of type String with some integer value and convert it to the corresponding wrapper class using Integer.valueOf(). (Hint: Use Integer.valueOf(String)).

```

eclipse-workspace - Java Practice/src/integerclass.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer JRE System Library [JavaSE-15] src (default package)
  > areajava
  > BMI.java
  > Byte1.java
  > challenge4.java
  > integerclass.java
  > Leap_switch.java
  > Leap.java
  > month.java
  > Pattern.java
  > Shortclass.java
  > stringtoboolen.java
  > stringtoboolen1.java
  > Test.java
  > tostring.java
  > Vote.java
  > wrapper.java
  > wrapper1.java
1 class integerclass {
2     public static void main(String[] args)
3     {
4         int number = 500;
5         Integer s = Integer.valueOf(number);
6         System.out.println(s);
7     }
8 }
```

Problems Javadoc Declaration Console Terminal Coverage  
<terminated> integerclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 3:19:13 am – 3:19:13 am)  
500

i. Declare two integer variables with values 10 and 20, and add them using a method from the Integer class. (Hint: Use Integer.sum(int, int)).

```

eclipse-workspace - Java Practice/src/integerclass.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer JRE System Library [JavaSE-15] src (default package)
  > areajava
  > BMI.java
  > Byte1.java
  > challenge4.java
  > integerclass.java
  > Leap_switch.java
  > Leap.java
  > month.java
  > Pattern.java
  > Shortclass.java
  > stringtoboolen.java
  > stringtoboolen1.java
  > Test.java
  > tostring.java
  > Vote.java
  > wrapper.java
  > wrapper1.java
1 class integerclass {
2     public static void main(String[] args)
3     {
4         int num1 = 10;
5         int num2 = 20;
6         int sum = Integer.sum(num1,num2);
7         System.out.println(sum);
8     }
9 }
```

Problems Javadoc Declaration Console Terminal Coverage  
<terminated> integerclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 3:24:03 am – 3:24:03 am)  
30

j. Declare two integer variables with values 10 and 20, and find the minimum and maximum values using the Integer class. (Hint: Use Integer.min(int, int) and Integer.max(int, int)).

eclipse-workspace - Java Practice/src/integerclass.java - Eclipse IDE

```

1 class integerclass {
2     public static void main(String[] args)
3     {
4         int num1 = 10;
5         int num2 = 20;
6         int min = Integer.min(num1,num2);
7         int max = Integer.max(num1,num2);
8         System.out.println(min);
9         System.out.println(max);
10    }
11 }

```

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

- JRE System Library [JavaSE-15]
- src
  - (default package)
  - area.java
  - BMI.java
  - Byte1.java
  - challenge4.java
  - integerclass.java
  - Leap\_switch.java
  - Leap.java
  - month.java
  - Pattern.java
  - Shortclass.java
  - stringtoboolen.java
  - stringtoboolen1.java
  - Test.java
  - tostring.java
  - Vote.java
  - wrapper.java
  - wrapper1.java

Problems Javadoc Declaration Console Terminal Coverage

<terminated> integerclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 3:28:08 am – 3:28:09 am)

10  
20

Writable Smart Insert 9:31 : 229

ENG IN 03:28 09-09-2024

k. Declare an integer variable with the value 7. Convert it to binary, octal, and hexadecimal strings using methods from the Integer class. (Hint: Use Integer.toBinaryString(int), Integer.toOctalString(int), and Integer.toHexString(int)).

eclipse-workspace - Java Practice/src/integerclass.java - Eclipse IDE

```

1 class integerclass {
2     public static void main(String[] args)
3     {
4         int num1 = 7;
5         String b = Integer.toBinaryString(num1);
6         String h = Integer.toHexString(num1);
7         String o = Integer.toOctalString(num1);
8         System.out.println(b);
9         System.out.println(h);
10        System.out.println(o);
11    }
12 }

```

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

- JRE System Library [JavaSE-15]
- src
  - (default package)
  - area.java
  - BMI.java
  - Byte1.java
  - challenge4.java
  - integerclass.java
  - Leap\_switch.java
  - Leap.java
  - month.java
  - Pattern.java
  - Shortclass.java
  - stringtoboolen.java
  - stringtoboolen1.java
  - Test.java
  - tostring.java
  - Vote.java
  - wrapper.java
  - wrapper1.java

Problems Javadoc Declaration Console Terminal Coverage

<terminated> integerclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 3:36:54 am – 3:36:54 am)

11  
7  
7

Writable Smart Insert 10:31 : 288

ENG IN 03:37 09-09-2024

l. Experiment with converting an int value into other primitive types or vice versa and observe the results.

```

1 public class integerclass {
2     public static void main(String[] args) {
3         int intValue = 130;
4         byte byteValue = (byte) intValue;
5
6         System.out.println("int to byte: " + byteValue);
7     }
8 }
```

## 5. Working with java.lang.Long

- Explore the Java API documentation for `java.lang.Long` and observe its modifiers and super types.
- Write a program to test how many bytes are used to represent a long value using the `BYTES` field. (Hint: Use `Long.BYTES`).

```

1 public class longclass {
2     public static void main(String[] args) {
3         int l = Long.BYTES;
4         System.out.println(l);
5     }
6 }
```

- Write a program to find the minimum and maximum values of long using the `MIN_VALUE` and `MAX_VALUE` fields. (Hint: Use `Long.MIN_VALUE` and `Long.MAX_VALUE`).

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

- Title Bar:** eclipse-workspace - Java Practice/src/longclass.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 a Java System Library [JavaSE-15] and a src folder containing various files like area.java, BMI.java, Byte1.java, challenge4.java, integerclass.java, Leap\_switch.java, Leap.java, longclass.java, month.java, Pattern.java, Shortclass.java, stringtoboolen.java, stringtoboolen1.java, Test.java, tostring.java, Vote.java, wrapper.java, and wrapper1.java.
- Code Editor:** Displays the longclass.java code:

```
1 public class longclass {
2     public static void main(String[] args) {
3         long max = Long.MAX_VALUE;
4         long min = Long.MIN_VALUE;
5
6         System.out.println(max);
7         System.out.println(min);
8     }
9 }
```
- Console:** Shows the output of the run command: "terminated> longclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 3:52:02 am – 3:52:02 am)  
9223372036854775807  
-9223372036854775808".
- Bottom Status Bar:** Shows Writable, Smart Insert, 7:33 : 220, ENG IN, 03:52, and 09-09-2024.

d. Declare a method-local variable number of type long with some value and convert it to a String using the `toString` method. (Hint: Use `Long.toString(long)`).

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

- Title Bar:** eclipse-workspace - Java Practice/src/longclass.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 a Java System Library [JavaSE-15] and a src folder containing various files like area.java, BMI.java, Byte1.java, challenge4.java, integerclass.java, Leap\_switch.java, Leap.java, longclass.java, month.java, Pattern.java, Shortclass.java, stringtoboolen.java, stringtoboolen1.java, Test.java, tostring.java, Vote.java, wrapper.java, and wrapper1.java.
- Code Editor:** Displays the longclass.java code:

```
1 public class longclass {
2     public static void main(String[] args) {
3         long number = 100000;
4         String s = Long.toString(number);
5
6         System.out.println(s);
7     }
8 }
```
- Console:** Shows the output of the run command: "terminated> longclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 3:57:20 am – 3:57:21 am)  
100000".
- Bottom Status Bar:** Shows Writable, Smart Insert, 6 : 31 : 186, ENG IN, 03:57, and 09-09-2024.

e. Declare a method-local variable strNumber of type String with some value and convert it to a long value using the `parseLong` method. (Hint: Use `Long.parseLong(String)`).

```

public class longclass {
    public static void main(String[] args) {
        String strNumber = "100000";
        long l = Long.parseLong(strNumber);
        System.out.println(l);
    }
}

```

f. Declare a method-local variable strNumber of type String with the value "Ab12Cd3" and attempt to convert it to a long value. (Hint: parseLong method will throw a NumberFormatException).

```

public class longclass {
    public static void main(String[] args) {
        String strNumber = "Ab12Cd3";
        long l = Long.parseLong(strNumber);
        System.out.println(l);
    }
}

```

The console output shows an exception:

```

Exception in thread "main" java.lang.NumberFormatException: For input string: "Ab12Cd3"
    at java.base/java.lang.NumberFormatException.forInputString(NumberFormatException.java:68)
    at java.base/java.lang.Long.parseLong(Long.java:707)
    at java.base/java.lang.Long.parseLong(Long.java:832)
    at longclass.main(longclass.java:4)

```

g. Declare a method-local variable number of type long with some value and convert it to the corresponding wrapper class using Long.valueOf(). (Hint: Use Long.valueOf(long)).

The screenshot shows the Eclipse IDE interface. The title bar reads "eclipse-workspace - Java Practice/src/longclass.java - Eclipse IDE". The menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help. The Package Explorer view on the left shows a project named "Java Practice" with a "src" folder containing various Java files like area.java, BMI.java, Byte1.java, challenge4.java, integerclass.java, Leap\_switch.java, Leap.java, longclass.java, month.java, Pattern.java, Shortclass.java, stringtoboolen1.java, stringtoboolen1.java, Test.java, tostring.java, Vote.java, wrapper.java, and wrapper1.java. The main editor window displays the following Java code:

```
1 public class longclass {
2     public static void main(String[] args) {
3         long number = 40000;
4         Long l = Long.valueOf(number);
5
6         System.out.println(l);
7     }
8 }
```

The Problems view at the bottom shows the output of the run command: <terminated> longclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 4:05:24 am – 4:05:24 am)  
40000

h. Declare a method-local variable strNumber of type String with some long value and convert it to the corresponding wrapper class using Long.valueOf(). (Hint: Use Long.valueOf(String)).

The screenshot shows the Eclipse IDE interface. The title bar reads "eclipse-workspace - Java Practice/src/longclass.java - Eclipse IDE". The menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help. The Package Explorer view on the left shows a project named "Java Practice" with a "src" folder containing various Java files like area.java, BMI.java, Byte1.java, challenge4.java, integerclass.java, Leap\_switch.java, Leap.java, longclass.java, month.java, Pattern.java, Shortclass.java, stringtoboolen1.java, stringtoboolen1.java, Test.java, tostring.java, Vote.java, wrapper.java, and wrapper1.java. The main editor window displays the same Java code as the previous screenshot.

i. Declare two long variables with values 1123 and 9845, and add them using a method from the Long class. (Hint: Use Long.sum(long, long)).

The screenshot shows the Eclipse IDE interface with a Java project named "Java Practice". The "src" folder contains several files, including "longclass.java". The code in "longclass.java" is as follows:

```
1 public class longclass {
2     public static void main(String[] args) {
3         Long l = Long.sum(1123, 9845);
4         System.out.println(l);
5     }
6 }
```

The "Console" tab at the bottom shows the output of the run command: "10968". The system tray at the bottom right indicates the date as 09-09-2024 and the time as 04:14.

j. Declare two long variables with values 1122 and 5566, and find the minimum and maximum values using the Long class. (Hint: Use Long.min(long, long) and Long.max(long, long)).

The screenshot shows the Eclipse IDE interface with the same Java project "Java Practice". The "src" folder contains "longclass.java" with the following code:

```
1 public class longclass {
2     public static void main(String[] args) {
3         Long l1 = Long.min(1122, 5566);
4         System.out.println(l1);
5     }
6 }
```

The "Console" tab shows the output "1122". The system tray at the bottom right indicates the date as 09-09-2024 and the time as 04:16.

```

eclipse-workspace - Java Practice/src/longclass.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer JRE System Library [JavaSE-15] src (default package)
  area.java
  BMI.java
  Byte1.java
  challenge4.java
  integerclass.java
  Leap_switch.java
  Leap.java
  longclass.java
  month.java
  Pattern.java
  Shortclass.java
  stringtoboolen.java
  stringtoboolen1.java
  Test.java
  tostring.java
  Vote.java
  wrapper.java
  wrapper1.java
  longclass.java
  Problems Javadoc Declaration Console Terminal Coverage
<terminated> longclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 4:16:37 am - 4:16:37 am)
5566

```

k. Declare a long variable with the value 7. Convert it to binary, octal, and hexadecimal strings using methods from the Long class. (Hint: Use Long.toBinaryString(long), Long.toOctalString(long), and Long.toHexString(long)).

```

eclipse-workspace - Java Practice/src/longclass.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer JRE System Library [JavaSE-15] src (default package)
  area.java
  BMI.java
  Byte1.java
  challenge4.java
  integerclass.java
  Leap_switch.java
  Leap.java
  longclass.java
  month.java
  Pattern.java
  Shortclass.java
  stringtoboolen.java
  stringtoboolen1.java
  Test.java
  tostring.java
  Vote.java
  wrapper.java
  wrapper1.java
  longclass.java
  Problems Javadoc Declaration Console Terminal Coverage
<terminated> longclass [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 4:33:34 am - 4:33:34 am)
Binary representation: 111
Octal representation: 7
Hexadecimal representation: 7

```

l. Experiment with converting a long value into other primitive types or vice versa and observe the results.

## 6. Working with java.lang.Float

- Explore the Java API documentation for `java.lang.Float` and observe its modifiers and super types.
- Write a program to test how many bytes are used to represent a float value using the `BYTES` field. (Hint: Use `Float.BYTES`).

- Write a program to find the minimum and maximum values of float using the `MIN_VALUE` and `MAX_VALUE` fields. (Hint: Use `Float.MIN_VALUE` and `Float.MAX_VALUE`).

```
public class Main {
    public static void main(String[] args) {
        float minValue = Float.MIN_VALUE;
        float maxValue = Float.MAX_VALUE;
        System.out.println(minValue);
        System.out.println(maxValue);
    }
}
```

Output window:

```
1.4E-45
3.4028235E38
```

d. Declare a method-local variable number of type float with some value and convert it to a String using the `toString` method. (Hint: Use `Float.toString(float)`).

```
public class Main {
    public static void main(String[] args) {
        float number = 123.45f;
        String numberStr = Float.toString(number);
        System.out.println(numberStr);
    }
}
```

Output window:

```
123.45
```

e. Declare a method-local variable strNumber of type String with some value and convert it to a float value using the `parseFloat` method. (Hint: Use `Float.parseFloat(String)`).

eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE

```

1 public class Main {
2     public static void main(String[] args) {
3         String strNumber = "456.78";
4         float floatValue = Float.parseFloat(strNumber);
5         System.out.println(floatValue);
6     }
7 }

```

Package Explorer

- JRE System Library [JavaSE-15]
- src
  - (default package)
    - area.java
    - BMI.java
    - Byte1.java
    - challenge4.java
    - integerclass.java
    - Leap\_switch.java
    - Leap.java
    - longclass.java
    - Main.java
    - month.java
    - Pattern.java
    - Shortclass.java
    - stringtobool.java
    - stringtobool1.java
    - Test.java
    - tostring.java
    - Vote.java
    - wrapper.java
    - wrapper1.java

Problems Javadoc Declaration Console Terminal Coverage

456.78

04:39 09-09-2024

f. Declare a method-local variable strNumber of type String with the value "Ab12Cd3" and attempt to convert it to a float value. (Hint: parseFloat method will throw a NumberFormatException).

eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE

```

1 public class Main {
2     public static void main(String[] args) {
3         try {
4             String strNumber = "Ab12Cd3";
5             float floatValue = Float.parseFloat(strNumber);
6         } catch (NumberFormatException e) {
7             System.out.println("Invalid string format: " + e.getMessage());
8         }
9     }
10 }

```

Package Explorer

- JRE System Library [JavaSE-15]
- src
  - (default package)
    - area.java
    - BMI.java
    - Byte1.java
    - challenge4.java
    - integerclass.java
    - Leap\_switch.java
    - Leap.java
    - longclass.java
    - Main.java
    - month.java
    - Pattern.java
    - Shortclass.java
    - stringtobool.java
    - stringtobool1.java
    - Test.java
    - tostring.java
    - Vote.java
    - wrapper.java
    - wrapper1.java

Problems Javadoc Declaration Console Terminal Coverage

Invalid string format: For input string: "Ab12Cd3"

04:42 09-09-2024

g. Declare a method-local variable number of type float with some value and convert it to the corresponding wrapper class using Float.valueOf(). (Hint: Use Float.valueOf(float)).

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

- Title Bar:** eclipse-workspace - Java Practice/src/Main.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 a package named "Java Practice" containing several source files like stringtoboo..., wrapperjava, wrapper1.java, Byte1.java, etc.
- Editor:** Displays the Main.java code:

```
1 public class Main {  
2     public static void main(String[] args) {  
3         float number = 789.01f;  
4         Float floatWrapper = Float.valueOf(number);  
5         System.out.println(floatWrapper);  
6     }  
7 }
```
- Terminal:** Shows the command-line output:

```
789.01
```
- Bottom Status Bar:** Shows the date and time (09-09-2024), battery level (04:44), and system status (ENG IN).

h. Declare a method-local variable strNumber of type String with some float value and convert it to the corresponding wrapper class using `Float.valueOf()`. (Hint: Use `Float.valueOf(String)`).

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

- Title Bar:** eclipse-workspace - Java Practice/src/Main.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 a package named "Java Practice" containing several source files like stringtoboo..., wrapperjava, wrapper1.java, Byte1.java, etc.
- Editor:** Displays the Main.java code:

```
1 public class Main {  
2     public static void main(String[] args) {  
3         String strNumber = "234.56";  
4         Float floatWrapper = Float.valueOf(strNumber);  
5         System.out.println(floatWrapper);  
6     }  
7 }
```
- Terminal:** Shows the command-line output:

```
789.01
```
- Bottom Status Bar:** Shows the date and time (09-09-2024), battery level (04:45), and system status (ENG IN).

i. Declare two float variables with values 112.3 and 984.5, and add them using a method from the `Float` class. (Hint: Use `Float.sum(float, float)`).

The screenshot shows the Eclipse IDE interface with a Java project named "Java Practice". The "src" folder contains several files, including Main.java. The code in Main.java is:

```
1 public class Main {
2     public static void main(String[] args) {
3         float num1 = 112.3f;
4         float num2 = 556.6f;
5         float sum = Float.sum(num1, num2);
6         System.out.println(sum);
7     }
8 }
```

The output window shows the result: 668.9

j. Declare two float variables with values 112.2 and 556.6, and find the minimum and maximum values using the Float class. (Hint: Use `Float.min(float, float)` and `Float.max(float, float)`).

The screenshot shows the Eclipse IDE interface with a Java project named "Java Practice". The "src" folder contains several files, including Main.java. The code in Main.java is:

```
1 public class Main {
2     public static void main(String[] args) {
3         float num1 = 112.2f;
4         float num2 = 556.6f;
5         float minValue = Float.min(num1, num2);
6         float maxValue = Float.max(num1, num2);
7         System.out.println(minValue);
8         System.out.println(maxValue);
9     }
10 }
```

The output window shows the result: 112.2 556.6

k. Declare a float variable with the value -25.0f. Find the square root of this value. (Hint: Use `Math.sqrt()` method).

```
public class Main {
    public static void main(String[] args) {
        float number = -25.0f;
        double sqrtValue = Math.sqrt(number);
        System.out.println(sqrtValue);
    }
}
```

Output: NaN

I. Declare two float variables with the same value, 0.0f, and divide them. (Hint: Observe the result and any special floating-point behavior).

```
public class Main {
    public static void main(String[] args) {
        float num1 = 0.0f;
        float num2 = 0.0f;
        float result = num1 / num2;
        System.out.println(result);
    }
}
```

Output: NaN

m. Experiment with converting a float value into other primitive types or vice versa and observe the results.

```

eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
Java Practice
JRE System Library [JavaSE-15]
src
(stringtoboo... wrapperjava wrapper1java Byte1.java Shortclass.java integerclass... longclass.java Main.java)
public class Main {
    public static void main(String[] args) {
        float floatValue = 123.45f;
        int intValue = (int) floatValue;
        System.out.println(intValue);
        long longValue = (long) floatValue;
        System.out.println(longValue);
        double doubleValue = floatValue;
        System.out.println(doubleValue);
        short shortValue = (short) floatValue;
        System.out.println(shortValue);
        byte byteValue = (byte) floatValue;
        System.out.println(byteValue);
    }
}
Problems Javadoc Declaration Console Terminal Coverage
<terminated> Main (1) [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 4:54:27 am - 4:54:27 am)
123
123
123.44999694824219
123
123

```

## 7. Working with java.lang.Double

- Explore the Java API documentation for `java.lang.Double` and observe its modifiers and super types.
- Write a program to test how many bytes are used to represent a double value using the `BYTES` field. (Hint: Use `Double.BYTES`).

```

eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
Java Practice
JRE System Library [JavaSE-15]
src
(stringtoboo... wrapperjava wrapper1java Byte1.java Shortclass.java integerclass... longclass.java Main.java)
public class Main {
    public static void main(String[] args) {
        int doubleSize = Double.BYTES;
        System.out.println(doubleSize);
    }
}
Problems Javadoc Declaration Console Terminal Coverage
<terminated> Main (1) [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 4:57:05 am - 4:57:05 am)
8

```

- Write a program to find the minimum and maximum values of double using the `MIN_VALUE` and `MAX_VALUE` fields. (Hint: Use `Double.MIN_VALUE` and `Double.MAX_VALUE`).

eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE

```
1 public class Main {  
2     public static void main(String[] args) {  
3         double minValue = Double.MIN_VALUE;  
4         double maxValue = Double.MAX_VALUE;  
5         System.out.println(minValue);  
6         System.out.println(maxValue);  
7     }  
8 }
```

Package Explorer

- JRE System Library [JavaSE-15]
- src
  - (default package)
    - area.java
    - BMI.java
    - Byte1.java
    - challenge4.java
    - integerclass.java
    - Leap\_switch.java
    - Leap.java
    - longclass.java
    - Main.java
    - month.java
    - Pattern.java
    - Shortclass.java
    - stringtobool.java
    - stringtobool1.java
    - Test.java
    - toString.java
    - Vote.java
    - wrapper.java
    - wrapper1.java

Problems Javadoc Declaration Console Terminal Coverage

<terminated> Main (1) [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 4:58:03 am – 4:58:04 am)

4.9E-324  
1.7976931348623157E308

Writable Smart Insert 6 : 29 [1]

04:58 IN 09-09-2024

d. Declare a method-local variable number of type double with some value and convert it to a String using the `toString` method. (Hint: Use `Double.toString(double)`).

eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE

```
1 public class Main {  
2     public static void main(String[] args) {  
3         double number = 12345.6789;  
4         String numberStr = Double.toString(number);  
5         System.out.println(numberStr);  
6     }  
7 }
```

Package Explorer

- JRE System Library [JavaSE-15]
- src
  - (default package)
    - area.java
    - BMI.java
    - Byte1.java
    - challenge4.java
    - integerclass.java
    - Leap\_switch.java
    - Leap.java
    - longclass.java
    - Main.java
    - month.java
    - Pattern.java
    - Shortclass.java
    - stringtobool.java
    - stringtobool1.java
    - Test.java
    - toString.java
    - Vote.java
    - wrapper.java
    - wrapper1.java

Problems Javadoc Declaration Console Terminal Coverage

<terminated> Main (1) [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 4:58:53 am – 4:58:53 am)

12345.6789

Writable Smart Insert 5 : 28 : 184

04:58 IN 09-09-2024

e. Declare a method-local variable strNumber of type String with some value and convert it to a double value using the `parseDouble` method. (Hint: Use `Double.parseDouble(String)`).

```

eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer JRE System Library [JavaSE-15] stringtoboo... wrapperjava wrapper1java Byte1.java Shortclass.java integerclass... longclass.java Main.java
src (default package)
area.java BMI.java Byte1.java challenge4.java integerclass.java Leap_switch.java Leap.java longclass.java Main.java month.java Pattern.java Shortclass.java stringtobool... stringtobool... Test.java tostring.java Vote.java wrapper.java wrapper1.java
1 public class Main {
2     public static void main(String[] args) {
3         String strNumber = "45678.9";
4         double doubleValue = Double.parseDouble(strNumber);
5         System.out.println(doubleValue);
6     }
7 }
8

```

Problems Javadoc Declaration Console Terminal Coverage <terminated> Main (1) [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 5:00:33 am – 5:00:33 am)  
45678.9

f. Declare a method-local variable strNumber of type String with the value "Ab12Cd3" and attempt to convert it to a double value. (Hint: parseDouble method will throw a NumberFormatException).

```

eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer JRE System Library [JavaSE-15] stringtoboo... wrapperjava wrapper1java Byte1.java Shortclass.java integerclass... longclass.java Main.java
src (default package)
area.java BMI.java Byte1.java challenge4.java integerclass.java Leap_switch.java Leap.java longclass.java Main.java month.java Pattern.java Shortclass.java stringtobool... stringtobool... Test.java tostring.java Vote.java wrapper.java wrapper1.java
1 public class Main {
2     public static void main(String[] args) {
3         try {
4             String strNumber = "Ab12Cd3";
5             double doubleValue = Double.parseDouble(strNumber);
6         } catch (NumberFormatException e) {
7             System.out.println(e.getMessage());
8         }
9     }
10 }
11

```

Problems Javadoc Declaration Console Terminal Coverage <terminated> Main (1) [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 5:01:10 am – 5:01:10 am)  
For input string: "Ab12Cd3"

g. Declare a method-local variable number of type double with some value and convert it to the corresponding wrapper class using Double.valueOf(). (Hint: Use Double.valueOf(double)).

The screenshot shows the Eclipse IDE interface with the title "eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE". The menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help. The Package Explorer view shows a project named "Java Practice" with a "src" folder containing various Java files like stringtoboo..., wrapperjava, wrapper1.java, Byte1.java, etc. The main editor window displays the following Java code:

```
1 public class Main {  
2     public static void main(String[] args) {  
3         double number = 7890.12;  
4         Double doubleWrapper = Double.valueOf(number);  
5         System.out.println(doubleWrapper);  
6     }  
7 }
```

The Problems view at the bottom shows the output of the run: "7890.12". The system tray at the bottom right indicates the date and time as 09-09-2024 05:02.

h. Declare a method-local variable strNumber of type String with some double value and convert it to the corresponding wrapper class using Double.valueOf(). (Hint: Use Double.valueOf(String)).

The screenshot shows the Eclipse IDE interface with the title "eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE". The menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help. The Package Explorer view shows a project named "Java Practice" with a "src" folder containing various Java files like stringtoboo..., wrapperjava, wrapper1.java, Byte1.java, etc. The main editor window displays the following Java code:

```
1 public class Main {  
2     public static void main(String[] args) {  
3         String strNumber = "23456.78";  
4         Double doubleWrapper = Double.valueOf(strNumber);  
5         System.out.println(doubleWrapper);  
6     }  
7 }
```

The Problems view at the bottom shows the output of the run: "23456.78". The system tray at the bottom right indicates the date and time as 09-09-2024 05:02.

i. Declare two double variables with values 112.3 and 984.5, and add them using a method from the Double class. (Hint: Use Double.sum(double, double)).

eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer JRE System Library [JavaSE-15] src (default package) area.java BMI.java Byte1.java challenge4.java integerclass.java Leap\_switch.java Leap.java longclass.java Main.java month.java Pattern.java Shortclass.java stringtobool... wrapper.java wrapper1.java

```
1 public class Main {  
2     public static void main(String[] args) {  
3         double num1 = 112.3;  
4         double num2 = 984.5;  
5         double sum = Double.sum(num1, num2);  
6         System.out.println(sum);  
7     }  
8 }
```

Problems Javadoc Declaration Console Terminal Coverage <terminated> Main (1) [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 5:03:20 am – 5:03:20 am)  
1096.8

Writable Smart Insert 6:28:200 ENG IN 05:03 09-09-2024

j. Declare two double variables with values 112.2 and 556.6, and find the minimum and maximum values using the Double class. (Hint: Use Double.min(double, double) and Double.max(double, double)).

eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer JRE System Library [JavaSE-15] src (default package) area.java BMI.java Byte1.java challenge4.java integerclass.java Leap\_switch.java Leap.java longclass.java Main.java month.java Pattern.java Shortclass.java stringtobool... wrapper.java wrapper1.java

```
1 public class Main {  
2     public static void main(String[] args) {  
3         double num1 = 112.2;  
4         double num2 = 556.6;  
5         double minValue = Double.min(num1, num2);  
6         double maxValue = Double.max(num1, num2);  
7         System.out.println(minValue);  
8         System.out.println(maxValue);  
9     }  
10 }  
11
```

Problems Javadoc Declaration Console Terminal Coverage <terminated> Main (1) [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 5:03:58 am – 5:03:58 am)  
112.2  
556.6

Writable Smart Insert 11:1:317 ENG IN 05:04 09-09-2024

k. Declare a double variable with the value -25.0. Find the square root of this value. (Hint: Use Math.sqrt() method).

The screenshot shows the Eclipse IDE interface. The title bar reads "eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE". The menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help. The Package Explorer view on the left shows a project named "Java Practice" with several source files listed under "src". The main editor window displays the following Java code:

```
1 public class Main {  
2     public static void main(String[] args) {  
3         double number = -25.0;  
4         double sqrtValue = Math.sqrt(number);  
5         System.out.println(sqrtValue);  
6     }  
7 }  
8
```

The line "System.out.println(sqrtValue);" is highlighted in blue, indicating a syntax error. The status bar at the bottom right shows the date and time as "09-09-2024 05:06".

I. Declare two double variables with the same value, 0.0, and divide them. (Hint: Observe the result and any special floating-point behavior).

The screenshot shows the Eclipse IDE interface. The title bar reads "eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE". The menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help. The Package Explorer view on the left shows a project named "Java Practice" with several source files listed under "src". The main editor window displays the following Java code:

```
1 public class Main {  
2     public static void main(String[] args) {  
3         double num1 = 0.0;  
4         double num2 = 0.0;  
5         double result = num1 / num2;  
6         System.out.println(result);  
7     }  
8 }
```

The line "double result = num1 / num2;" is highlighted in blue. The status bar at the bottom right shows the date and time as "09-09-2024 05:07".

m. Experiment with converting a double value into other primitive types or vice versa and observe the results.

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

- Title Bar:** eclipse-workspace - Java Practice/src/Main.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 under "Java Practice".
- Code Editor:** Displays the following Java code in Main.java:
 

```
1 public class Main {
2     public static void main(String[] args) {
3         int intValue = 123;
4         String intStr1 = Integer.toString(intValue);
5         String intStr2 = String.valueOf(intValue);
6         System.out.println(intStr1);
7         System.out.println(intStr2);
8     }
9 }
```
- Terminal:** Shows the output of the program:
 

```
123
123
123
123
```
- Bottom Status Bar:** Shows the date and time: 09-09-2024 05:13.

## 8. Conversion between Primitive Types and Strings

Initialize a variable of each primitive type with a user-defined value and convert it into String:

First, use the `toString` method of the corresponding wrapper class. (e.g., `Integer.toString()`).

Then, use the `valueOf` method of the `String` class. (e.g., `String.valueOf()`).

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

- Title Bar:** eclipse-workspace - Java Practice/src/Main.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 under "Java Practice".
- Code Editor:** Displays the following Java code in Main.java:
 

```
1 public class Main {
2     public static void main(String[] args) {
3         int intValue = 123;
4         String intStr1 = Integer.toString(intValue);
5         String intStr2 = String.valueOf(intValue);
6         System.out.println(intStr1);
7         System.out.println(intStr2);
8     }
9 }
```
- Terminal:** Shows the output of the program:
 

```
123
123
```
- Bottom Status Bar:** Shows the date and time: 09-09-2024 05:15.

## 9. Default Values of Primitive Types

Declare variables of each primitive type as fields of a class and check their default values.

(Note: Default values depend on whether the variables are instance variables or static variables).

eclipse-workspace - Java Practice/src/Main.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

Java Practice

JRE System Library [JavaSE-15]

src

(default package)

area.java

BMI.java

Byte1.java

challenge4.java

integerclass.java

Leap\_switch.java

Leap.java

longclass.java

Main.java

month.java

Pattern.java

Shortclass.java

stringtobool.java

stringtobool1.java

Test.java

tostring.java

Vote.java

wrapper.java

wrapper1.java

```
1 public class Main {  
2     int intVar;  
3     double doubleVar;  
4     boolean boolVar;  
5  
6     public static void main(String[] args) {  
7         Main obj = new Main();  
8         System.out.println(obj.intVar);  
9         System.out.println(obj.doubleVar);  
10        System.out.println(obj.boolVar);  
11    }  
12 }  
13 }
```

Problems Javadoc Declaration Console Terminal Coverage

<terminated> Main (1) [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (09-Sep-2024, 5:19:47 am – 5:19:48 am)

0  
0.0  
false

Writable Smart Insert 13 : 1 : 309

ENG IN 05:19 09-09-2024