

# ASSIGNMENT 2

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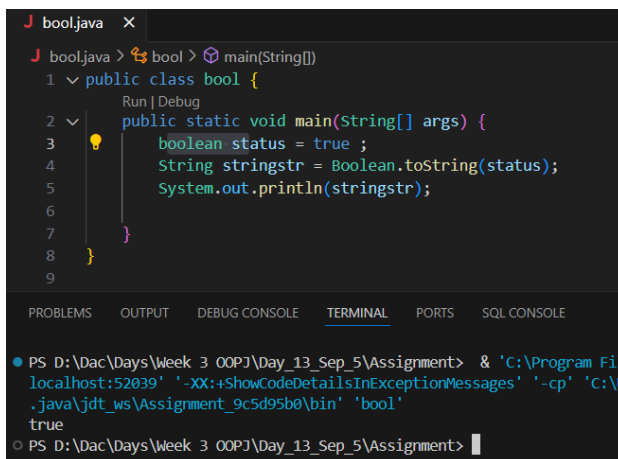
## 1. Working with `java.lang.Boolean`

a. Explore the [Java API documentation for `java.lang.Boolean`](#) and observe its modifiers and super types.

`Boolean` , `static int` , `int` , `Boolean` , `static Boolean` , `int` , `static int`

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)` ).

```
public class bool {  
    public static void main(String[] args) {  
        boolean status = true ;  
        String stringstr = Boolean.toString(status);  
        System.out.println(stringstr);  
    }  
}
```



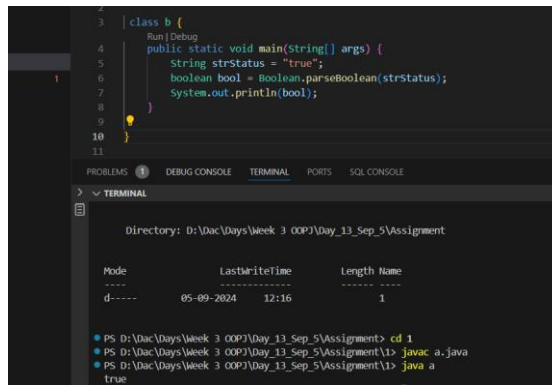
```
J bool.java x  
J bool.java > bool > main(String[])  
1 public class bool {  
    Run | Debug  
2 public static void main(String[] args) {  
3     boolean status = true ;  
4     String stringstr = Boolean.toString(status);  
5     System.out.println(stringstr);  
6 }  
7 }  
8 }  
9 }  
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE  
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment> & 'C:\Program Files  
localhost:52039' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\U  
.java\jdt_ws\Assignment_9c5d95b0\bin' 'bool'  
true  
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment>
```

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)` ).

```
class b {  
    public static void main(String[] args) {  
        String strStatus = "true";  
        boolean bool = Boolean.parseBoolean(strStatus);  
        System.out.println(bool);  
    }  
}
```

# ASSIGNMENT 2

```
}  
  
}
```



The screenshot shows an IDE with a Java class named 'b'. The code in the class is as follows:

```
class b {  
    public static void main(String[] args) {  
        String strStatus = "true";  
        boolean bool = Boolean.parseBoolean(strStatus);  
        System.out.println(bool);  
    }  
}
```

Below the code editor, the 'TERMINAL' tab is active, showing the directory 'D:\Dac\Days\Week 3 OOP\Day\_13\_Sep\_5\Assignment' and the output of the command 'java a', which is 'true'.

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").

```
public class c {  
    public static void main(String[] args) {  
        String strStatus = "0";  
        Boolean bool = Boolean.parseBoolean(strStatus);  
        System.out.println(bool);  
    }  
}
```

## ASSIGNMENT 2

```
2
3 public class c {
4     Run | Debug
5     public static void main(String[] args) {
6         String strStatus = "0";
7         Boolean bool = Boolean.parseBoolean(strStatus);
8         System.out.println(bool);
9     }
10 }
```

PROBLEMS    DEBUG CONSOLE    TERMINAL    PORTS    SQL CONSOLE

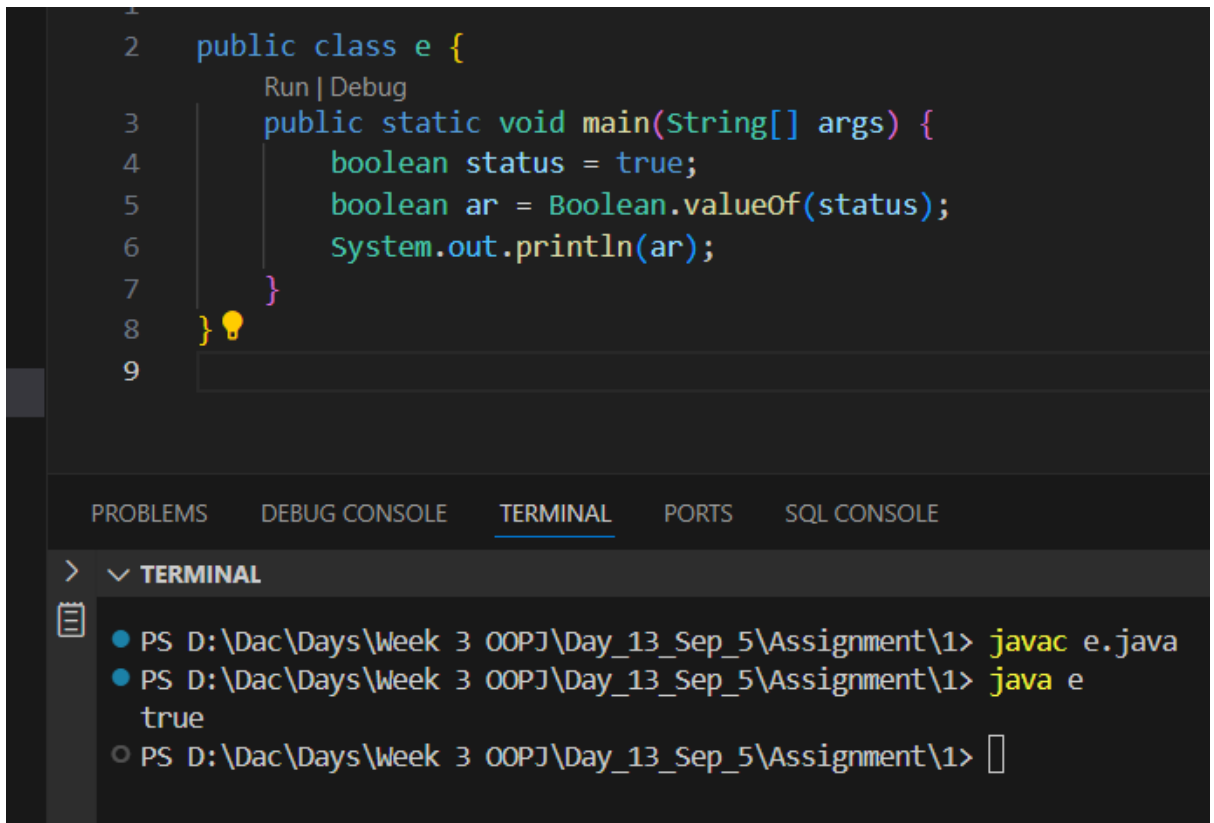
> ▾ **TERMINAL**

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\1> javac c.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\1> java c  
false
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\1>

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)`).

```
public class e {
    public static void main(String[] args) {
        boolean status = true;
        boolean ar = Boolean.valueOf(status);
        System.out.println(ar);
    }
}
```

## ASSIGNMENT 2



The screenshot shows an IDE with a Java class named `e`. The code defines a `main` method that sets a `boolean` variable `status` to `true`, converts it to a `boolean` variable `ar` using `Boolean.valueOf(status)`, and prints `ar`. The terminal output shows the successful compilation and execution of the program, resulting in the output `true`.

```
1 public class e {  
2     Run | Debug  
3     public static void main(String[] args) {  
4         boolean status = true;  
5         boolean ar = Boolean.valueOf(status);  
6         System.out.println(ar);  
7     }  
8 }  
9
```

PROBLEMS    DEBUG CONSOLE    TERMINAL    PORTS    SQL CONSOLE

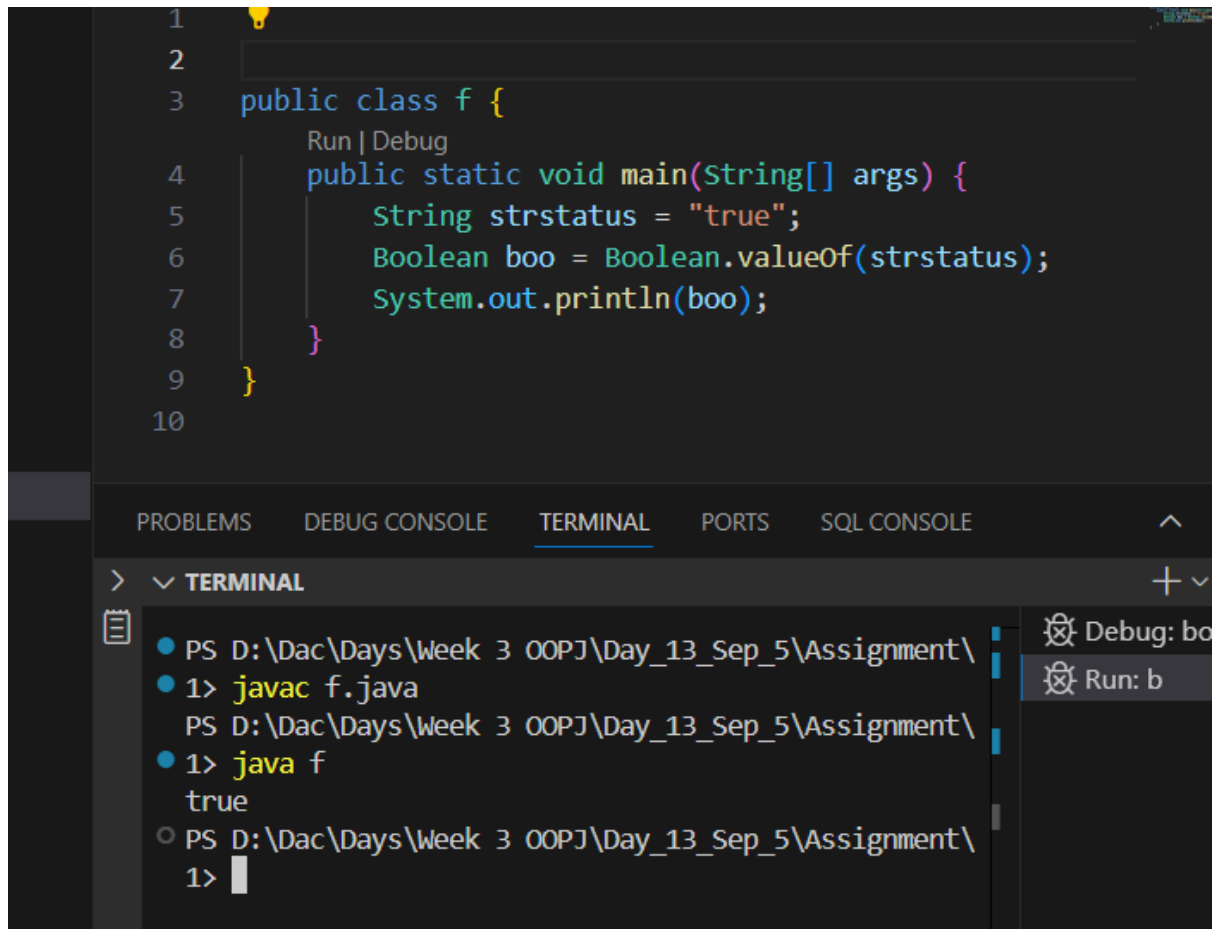
> **TERMINAL**

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\1> javac e.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\1> java e  
true
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\1>

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)`).

```
public class f {  
    public static void main(String[] args) {  
        String strstatus = "true";  
        Boolean boo = Boolean.valueOf(strstatus);  
        System.out.println(boo);  
    }  
}
```

# ASSIGNMENT 2



The screenshot shows an IDE with a Java class named `f`. The code defines a `main` method that takes a `String[] args` array, sets a `String` variable `strstatus` to `"true"`, converts it to a `Boolean` variable `boo` using `Boolean.valueOf(strstatus)`, and prints the value of `boo` using `System.out.println(boo)`. The terminal output shows the command `javac f.java` being executed, followed by `java f`, which results in the output `true`. The terminal also shows the command prompt `PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\` and the prompt `1>` for the next command.

```
1
2
3 public class f {
4     public static void main(String[] args) {
5         String strstatus = "true";
6         Boolean boo = Boolean.valueOf(strstatus);
7         System.out.println(boo);
8     }
9 }
10
```

PROBLEMS DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\  
1> javac f.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\  
1> java f  
true
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\  
1>

Debug: bo  
Run: b

## 2. Working with `java.lang.Byte`

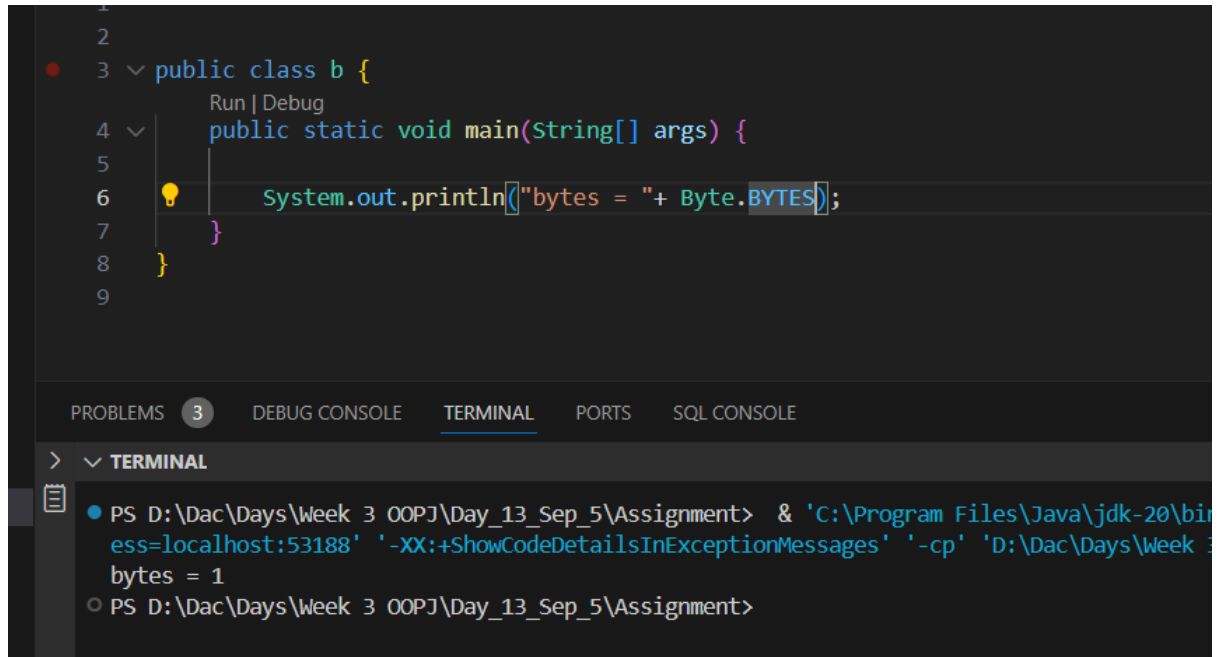
- Explore the [Java API documentation for `java.lang.Byte`](#) and observe its modifiers and super types.
- Write a program to test how many bytes are used to represent a `byte` value using the `BYTES` field. (Hint: Use `Byte.BYTES`).

```
public class b {  
    public static void main(String[] args) {  
  
        System.out.println("bytes = " + Byte.BYTES);  
    }  
}
```

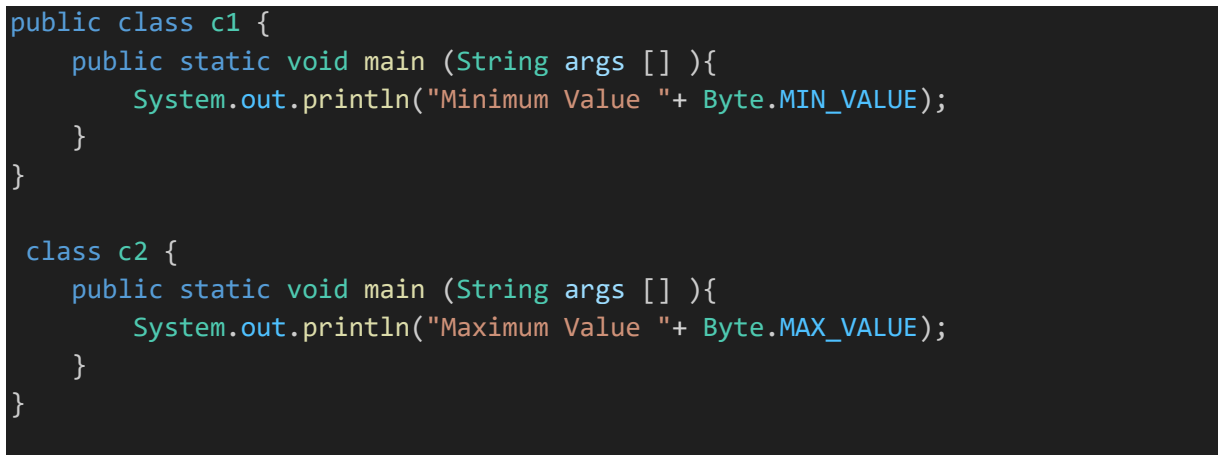
```

    }
}

```



**c.** 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`).



## ASSIGNMENT 2

```
1 public class c1 {
    Run | Debug
2     public static void main (String args [] ){
3         System.out.println("Minimum Value "+ Byte.MIN_VALUE);
4     }
5 }
6
7 class c2 {
    Run | Debug
8     public static void main (String args [] ){
9         System.out.println("Maximum Value "+ Byte.MAX_VALUE);
10    }

```

PROBLEMS 3 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

✓ **TERMINAL**

```
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\2> java c1
Minimum Value -128
● PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\2> java c2
Maximum Value 127
○ PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\2> 
```

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)`).

```
public class d1 {
    public static void main(String[] args) {
        byte number = 2 ;

        System.out.println("Convert to string "+Byte.toString(number));
    }
}
```

## ASSIGNMENT 2

```
1 public class d1 {
    Run | Debug
2     public static void main(String[] args) {
3         byte number = 2 ;
4
5         System.out.println("Convert to string "+Byte.toString(number));
6     }
7 }
8
```

PROBLEMS 3 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

```
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment> & 'C:\Program Files\Java\jdk-20\bin\java.exe' -Djava.class.path=. -Djava.class.path=localhost:54774' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment>
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment>
```

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)`).

```
public class e1 {
    public static void main(String[] args) {
        String strNumber = "5" ;
        System.out.println("Byte =" + Byte.parseByte(strNumber));
    }
}
```

```
1 public class e1 {
    Run | Debug
2     public static void main(String[] args) {
3         String strNumber = "5" ;
4         System.out.println("Byte =" + Byte.parseByte(strNumber));
5     }
6 }
7
```

PROBLEMS 2 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

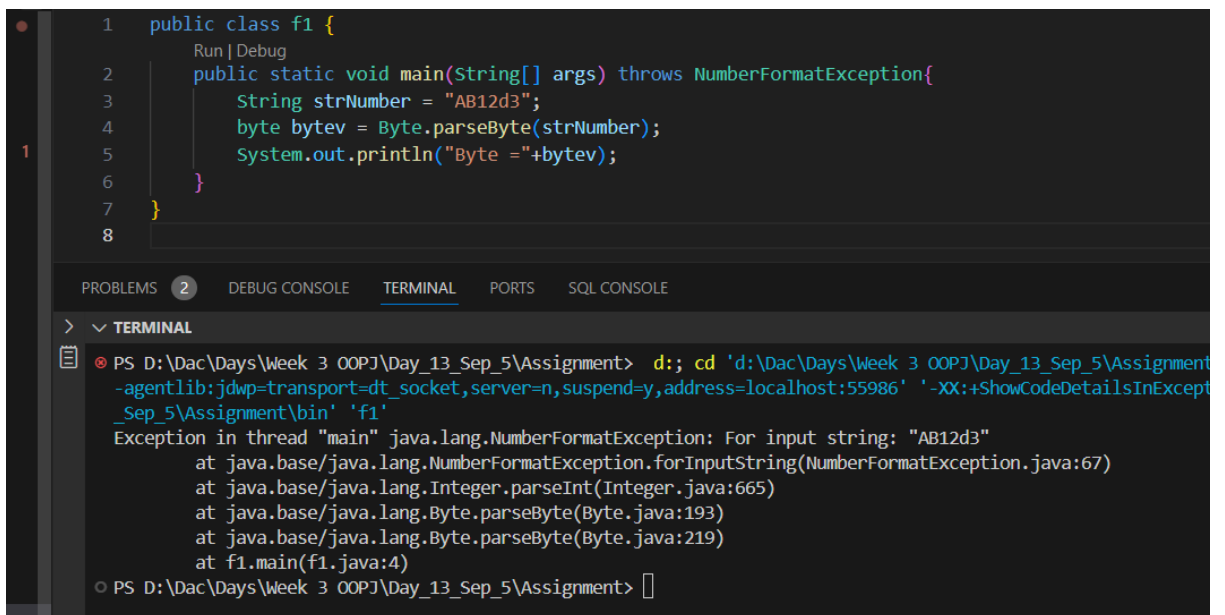
```
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment> & 'C:\Program Files\Java\jdk-20\bin\java.exe' -Djava.class.path=. -Djava.class.path=localhost:55279' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment>
Byte =5
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment>
```



## ASSIGNMENT 2

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`).

```
public class f1 {  
    public static void main(String[] args) throws NumberFormatException{  
        String strNumber = "AB12d3";  
        byte bytev = Byte.parseByte(strNumber);  
        System.out.println("Byte =" + bytev);  
    }  
}
```



The screenshot shows an IDE with a Java file named `f1.java`. The code is as follows:

```
1 public class f1 {  
2     public static void main(String[] args) throws NumberFormatException{  
3         String strNumber = "AB12d3";  
4         byte bytev = Byte.parseByte(strNumber);  
5         System.out.println("Byte =" + bytev);  
6     }  
7 }  
8
```

The IDE's terminal window shows the output of running the program. It displays a `NumberFormatException` for the input string `"AB12d3"`. The stack trace indicates the exception was thrown from `Byte.parseByte` at line 4 of `f1.java`.

```
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment> d;; cd 'd:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment'  
-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:55986' '-XX:+ShowCodeDetailsInExcept  
_Sep_5\Assignment\bin' 'f1'  
Exception in thread "main" java.lang.NumberFormatException: For input string: "AB12d3"  
    at java.base/java.lang.NumberFormatException.forInputString(NumberFormatException.java:67)  
    at java.base/java.lang.Integer.parseInt(Integer.java:665)  
    at java.base/java.lang.Byte.parseByte(Byte.java:193)  
    at java.base/java.lang.Byte.parseByte(Byte.java:219)  
    at f1.main(f1.java:4)  
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment>
```

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(byteAte)`).

```
public class g1 {  
    public static void main(String[] args) {  
  
        byte number = 1 ;  
        byte bytewrap = Byte.valueOf(number);  
        System.out.println("Byte :"+bytewrap);  
    }  
}
```

## ASSIGNMENT 2

```
1 public class g1 {
    Run | Debug
2     public static void main(String[] args) {
3
4         byte number = 1 ;
5         byte bytewrap = Byte.valueOf(number);
6         System.out.println("Byte :"+bytewrap);
7     }
8
9 }
```

PROBLEMS 3 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment> & 'C:\Program Files\Java\jdk-9.0.4\bin\java.exe' -cp .;C:\Program Files\Java\jdk-9.0.4\lib\jrt.jar;C:\Program Files\Java\jdk-9.0.4\lib\jrt.jar\classes;C:\Program Files\Java\jdk-9.0.4\lib\jrt.jar\classes\com\example\g1\Byte1
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment>

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)`).

```
public class h1 {
    public static void main(String[] args) {
        String strNumber = "25";
        Byte mind = Byte.valueOf(strNumber);
        System.out.println("Byte from string :"+mind);
    }
}
```

```
1 public class h1 {
    Run | Debug
2     public static void main(String[] args) {
3         String strNumber = "25";
4         Byte mind = Byte.valueOf(strNumber);
5         System.out.println("Byte from string :"+mind);
6     }
7 }
8
```

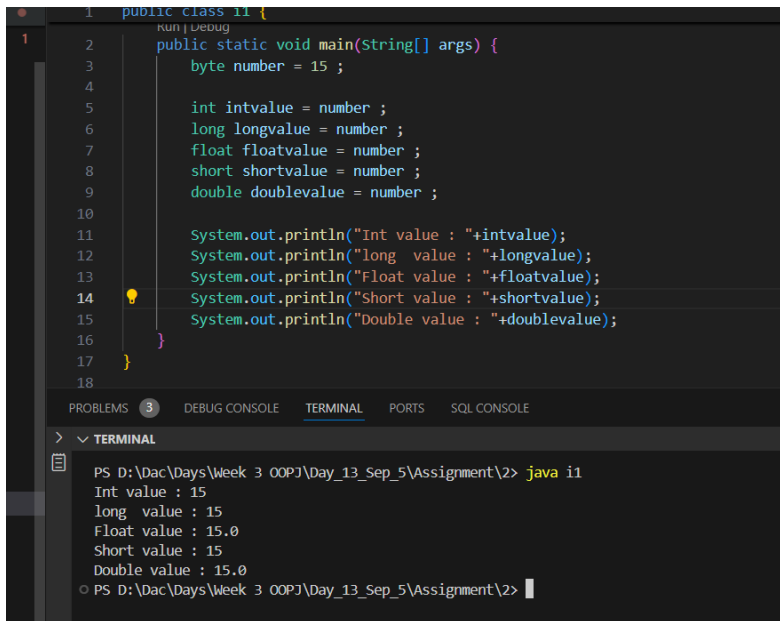
PROBLEMS 3 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment> ^C
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment>
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment> d.; cd 'd:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\bin' 'h1'
- Byte from string :25
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment>

# ASSIGNMENT 2

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



```
1 public class i1 {
2     public static void main(String[] args) {
3         byte number = 15 ;
4
5         int intvalue = number ;
6         long longvalue = number ;
7         float floatvalue = number ;
8         short shortvalue = number ;
9         double doublevalue = number ;
10
11         System.out.println("Int value : "+intvalue);
12         System.out.println("long  value : "+longvalue);
13         System.out.println("Float value : "+floatvalue);
14         System.out.println("Short value : "+shortvalue);
15         System.out.println("Double value : "+doublevalue);
16     }
17 }
18
```

PROBLEMS 3 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

TERMINAL

```
PS D:\Dac\Days\Week 3 OOP\Day_13_Sep_5\Assignment\2> java i1
Int value : 15
long  value : 15
Float value : 15.0
Short value : 15
Double value : 15.0
PS D:\Dac\Days\Week 3 OOP\Day_13_Sep_5\Assignment\2>
```

```
public static void main(String[] args) {
    byte number = 15 ;

    int intvalue = number ;
    long longvalue = number ;
    float floatvalue = number ;
    short shortvalue = number ;
    double doublevalue = number ;

    System.out.println("Int value : "+intvalue);
    System.out.println("long  value : "+longvalue);
    System.out.println("Float value : "+floatvalue);
    System.out.println("Short value : "+shortvalue);
    System.out.println("Double value : "+doublevalue);
}
}
```

## 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`).

## ASSIGNMENT 2

```
3 > J b1.java > ...
1 public class b1 {
2     public static void main(String[] args) {
3         int byt = Short.BYTES;
4
5         System.out.println("Number of bytes in short : "+byt );
6     }
7 }
8
```

PROBLEMS 4 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment> cd 3
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\3> javac b1.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\3> ls

Directory: D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\3

Mode	LastWriteTime	Length	Name
-a----	09-09-2024 13:22	880	b1.class
-a----	09-09-2024 13:22	182	b1.java

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\3> java b1

Number of bytes in short : 2

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\3> |

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).

```
class c1 {
    public static void main (String[] args){

        System.out.println("Short Max : "+Short.MAX_VALUE);
    }
}
class c2{
    public static void main(String [] args){
        System.out.println("Short Min : "+Short.MIN_VALUE);
    }
}
```

## ASSIGNMENT 2

```
3 > J c1.java
1  class c1 {
2      public static void main (String[] args){
3
4          System.out.println("Short Max : "+Short.MAX_VALUE);
5      }
6  }
7  class c2{
8      public static void main(String []args){
9          System.out.println("Short Min : "+Short.MIN_VALUE);
10     }
11 }
```

PROBLEMS 4 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> TERMINAL

```
PS D:\Dac\Days\Week 3 OOP\Day_13_Sep_5\Assignment\3> java c1
Short Max : 32767
PS D:\Dac\Days\Week 3 OOP\Day_13_Sep_5\Assignment\3> java c2
Short Min : -32768
PS D:\Dac\Days\Week 3 OOP\Day_13_Sep_5\Assignment\3> |
```

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)`).

```
public class d1 {
    public static void main(String[] args) {
        short number = 5 ;
        String hello = Short.toString(number);
        System.out.println("Short "+number);
    }
}
```

```
3 > J d1.java > d1 > main(String[])
1  public class d1 {
2      Run | Debug
3      public static void main(String[] args) {
4          short number = 5 ;
5          String hello = Short.toString(number);
6          System.out.println("Short "+number);
7      }
8  }
```

PROBLEMS 6 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

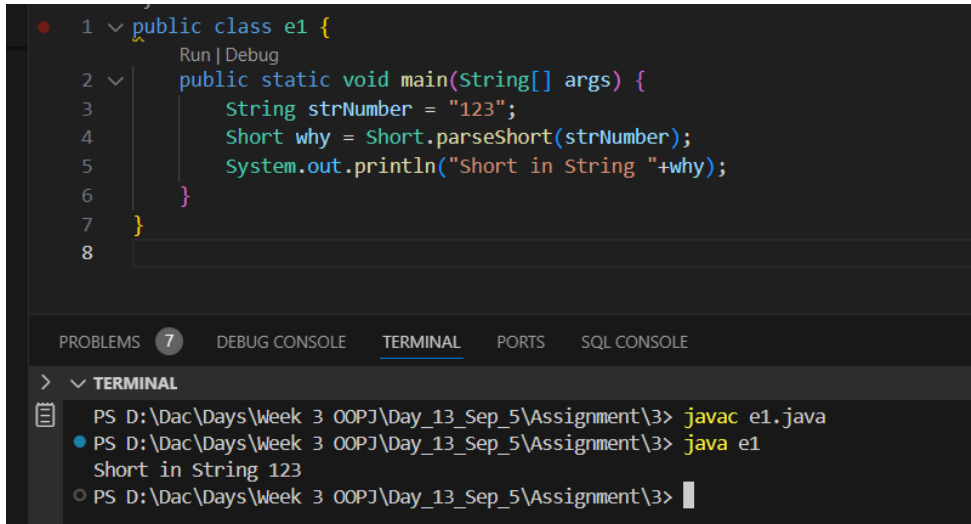
> TERMINAL

```
PS D:\Dac\Days\Week 3 OOP\Day_13_Sep_5\Assignment\3> java d1
Short 5
PS D:\Dac\Days\Week 3 OOP\Day_13_Sep_5\Assignment\3> |
```

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)`).

## ASSIGNMENT 2

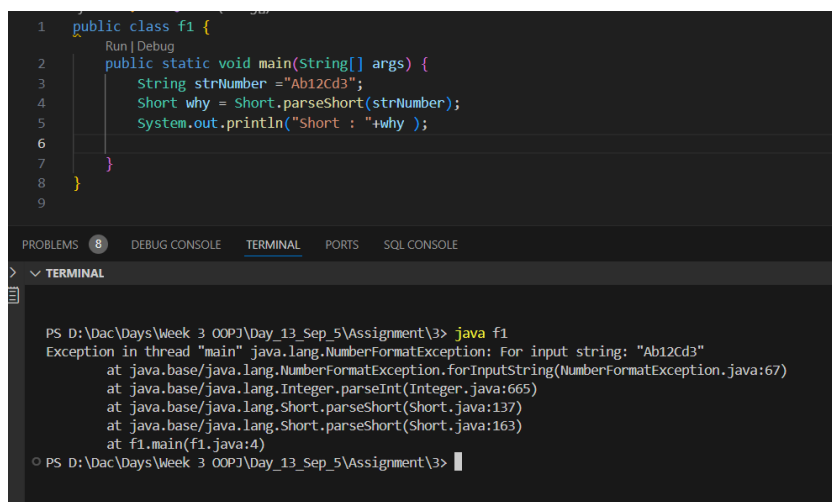
```
public class e1 {  
    public static void main(String[] args) {  
        String strNumber = "123";  
        Short why = Short.parseShort(strNumber);  
        System.out.println("Short in String "+why);  
    }  
}
```



```
1  public class e1 {  
    Run | Debug  
2  public static void main(String[] args) {  
3      String strNumber = "123";  
4      Short why = Short.parseShort(strNumber);  
5      System.out.println("Short in String "+why);  
6  }  
7  }  
8  
PROBLEMS 7  DEBUG CONSOLE  TERMINAL  PORTS  SQL CONSOLE  
>  TERMINAL  
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3> javac e1.java  
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3> java e1  
Short in String 123  
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3> |
```

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`).

```
public class f1 {  
    public static void main(String[] args) {  
        String strNumber = "Ab12Cd3";  
        Short why = Short.parseShort(strNumber);  
        System.out.println("Short : "+why );  
    }  
}
```

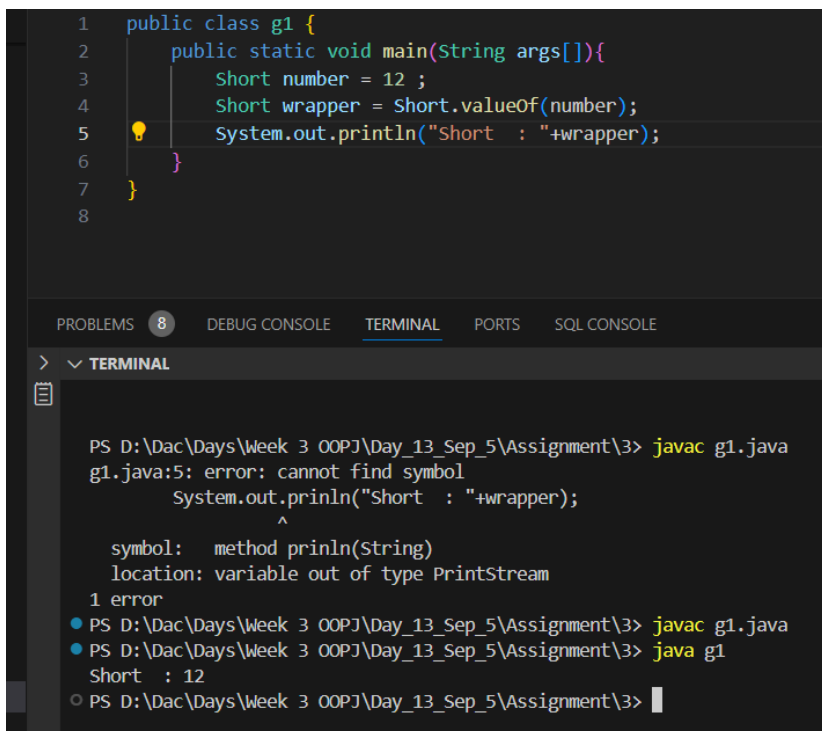


```
1  public class f1 {  
    Run | Debug  
2  public static void main(String[] args) {  
3      String strNumber = "Ab12Cd3";  
4      Short why = Short.parseShort(strNumber);  
5      System.out.println("Short : "+why );  
6  }  
7  }  
8  }  
9  
PROBLEMS 8  DEBUG CONSOLE  TERMINAL  PORTS  SQL CONSOLE  
>  TERMINAL  
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3> java f1  
Exception in thread "main" java.lang.NumberFormatException: For input string: "Ab12Cd3"  
    at java.base/java.lang.NumberFormatException.forInputString(NumberFormatException.java:67)  
    at java.base/java.lang.Integer.parseInt(Integer.java:665)  
    at java.base/java.lang.Short.parseShort(Short.java:137)  
    at java.base/java.lang.Short.parseShort(Short.java:163)  
    at f1.main(f1.java:4)  
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3> |
```

## ASSIGNMENT 2

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)`).

```
public class g1 {  
    public static void main(String args[]){  
        Short number = 12 ;  
        Short wrapper = Short.valueOf(number);  
        System.out.println("Short : "+wrapper);  
    }  
}
```



```
1 public class g1 {  
2     public static void main(String args[]){  
3         Short number = 12 ;  
4         Short wrapper = Short.valueOf(number);  
5         System.out.println("Short : "+wrapper);  
6     }  
7 }  
8
```

PROBLEMS 8 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

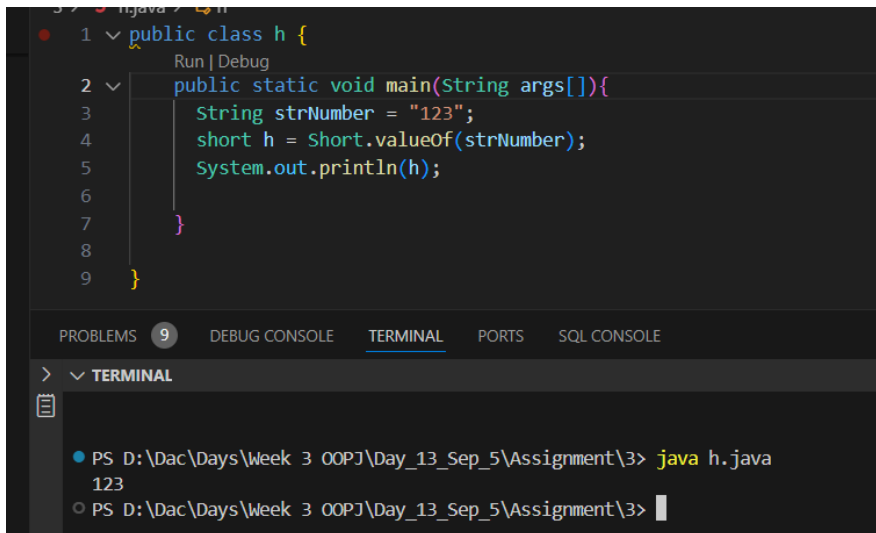
> ▼ TERMINAL

```
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3> javac g1.java  
g1.java:5: error: cannot find symbol  
    System.out.println("Short : "+wrapper);  
                        ^  
    symbol:   method println(String)  
    location: variable out of type PrintStream  
1 error  
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3> javac g1.java  
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3> java g1  
Short : 12  
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3> |
```

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)`).

```
public class h {  
    public static void main(String args[]){  
        String strNumber = "123";  
        short h = Short.valueOf(strNumber);  
        System.out.println(h);  
    }  
}
```

## ASSIGNMENT 2



```
1 public class h {
2     public static void main(String args[]){
3         String strNumber = "123";
4         short h = Short.valueOf(strNumber);
5         System.out.println(h);
6     }
7 }
8
9
```

PROBLEMS 9 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

TERMINAL

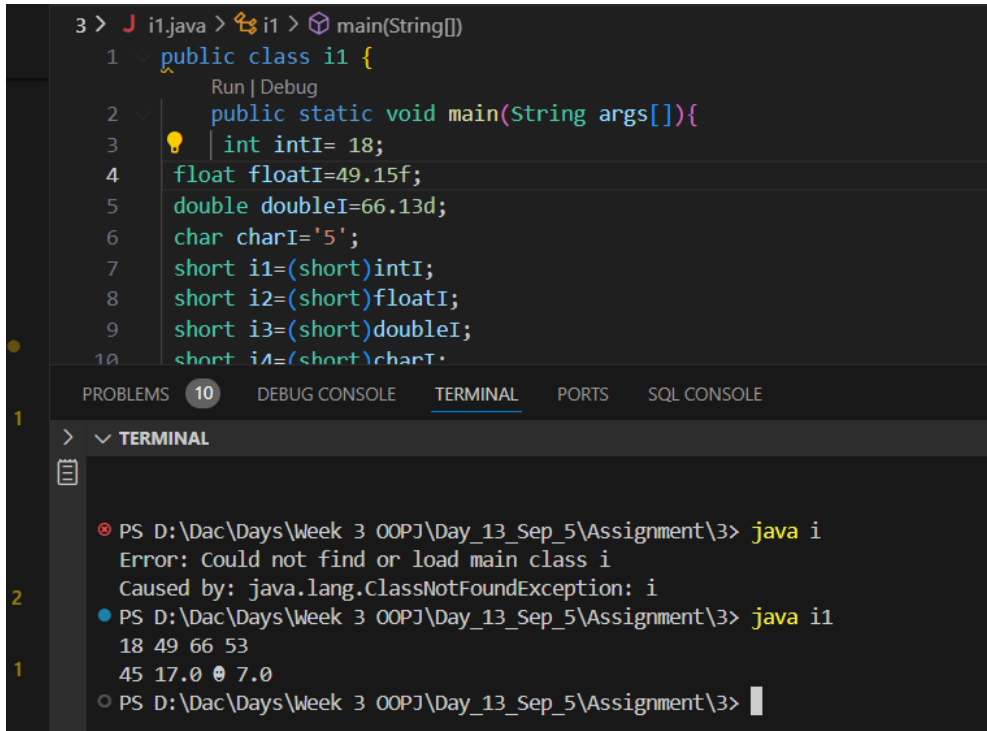
```
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3> java h.java
123
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3>
```

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

```
public class i1 {
    public static void main(String args[]){
        int intI= 18;
        float floatI=49.15f;
        double doubleI=66.13d;
        char charI='5';
        short i1=(short)intI;
        short i2=(short)floatI;
        short i3=(short)doubleI;
        short i4=(short)charI;
        System.out.println(i1+" "+i2+" "+i3+" "+i4+" ");
        short I1=45;
        short I2=17;
        short I3=7;
        short I4=2;
        int i=(int)I1;
        float f=(float)I2;
        double di=(double)I3;
        char c=(char)I4;
        System.out.println(i+" "+f+" "+c+" "+di+" ");
    }
}
```



## ASSIGNMENT 2

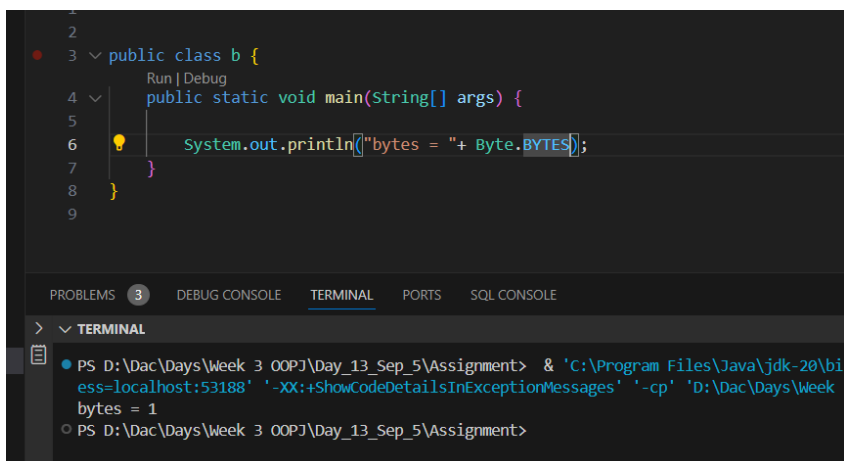


```
3 > J i1.java > i1 > main(String[])
1 public class i1 {
    Run | Debug
2     public static void main(String args[]){
3         int intI= 18;
4         float floatI=49.15f;
5         double doubleI=66.13d;
6         char charI='5';
7         short i1=(short)intI;
8         short i2=(short)floatI;
9         short i3=(short)doubleI;
10        short i4=(short)charI;
    }
}

PROBLEMS 10 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE
> v TERMINAL
[icon]
• PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3> java i
Error: Could not find or load main class i
Caused by: java.lang.ClassNotFoundException: i
• PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3> java i1
18 49 66 53
45 17.0 7.0
• PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\3>
```

### 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`).



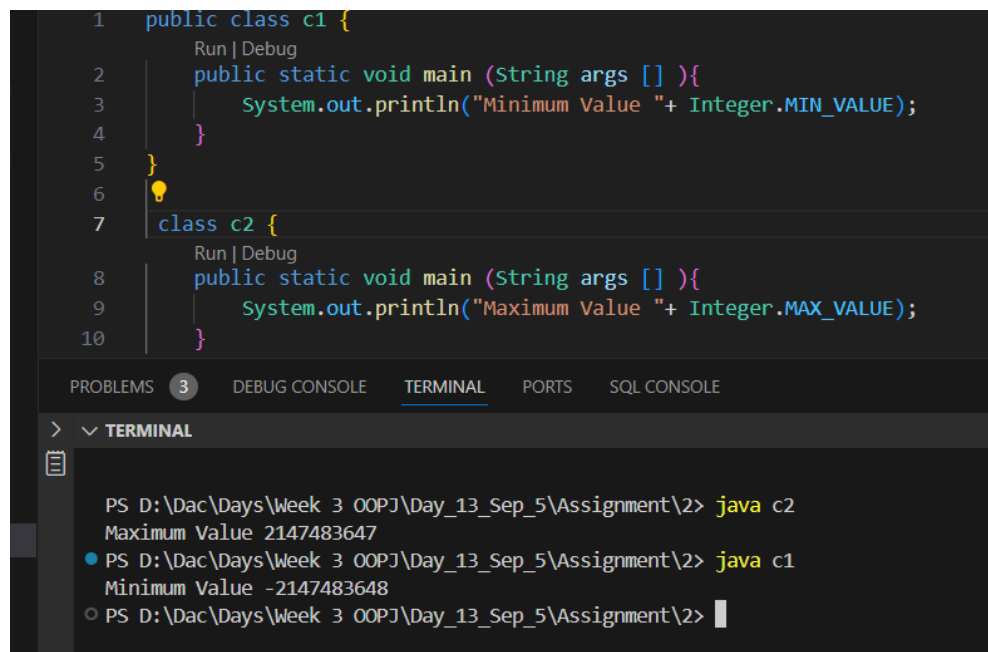
```
1
2
3 public class b {
    Run | Debug
4     public static void main(String[] args) {
5
6         System.out.println("bytes = " + Byte.BYTES);
7     }
8 }
9

PROBLEMS 3 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE
> v TERMINAL
[icon]
• PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment> & 'C:\Program Files\Java\jdk-20\bin\java.exe' -cp 'D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\bin' -XX:+ShowCodeDetailsInExceptionMessages -cp 'D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\bin' b
bytes = 1
• PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment>
```

- 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`).

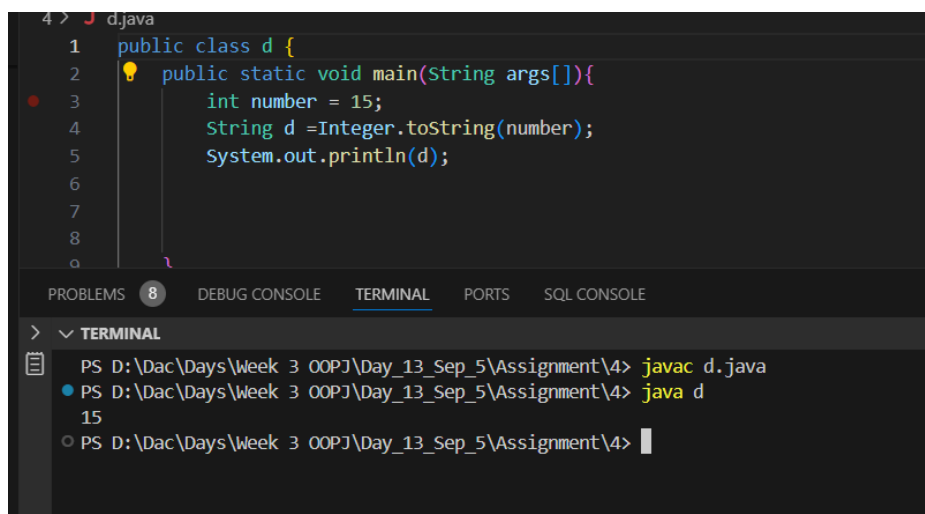
## ASSIGNMENT 2

```
public class c1 {  
    public static void main (String args [] ){  
        System.out.println("Minimum Value "+ Integer.MIN_VALUE);  
    }  
}  
  
class c2 {  
    public static void main (String args [] ){  
        System.out.println("Maximum Value "+ Integer.MAX_VALUE);  
    }  
}
```



```
1 public class c1 {  
    Run | Debug  
2     public static void main (String args [] ){  
3         System.out.println("Minimum Value "+ Integer.MIN_VALUE);  
4     }  
5 }  
6  
7 class c2 {  
    Run | Debug  
8     public static void main (String args [] ){  
9         System.out.println("Maximum Value "+ Integer.MAX_VALUE);  
10    }  
    PROBLEMS 3 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE  
    > ▼ TERMINAL  
    [icon]  
    PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\2> java c2  
    Maximum Value 2147483647  
    ● PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\2> java c1  
    Minimum Value -2147483648  
    ○ PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\2> |
```

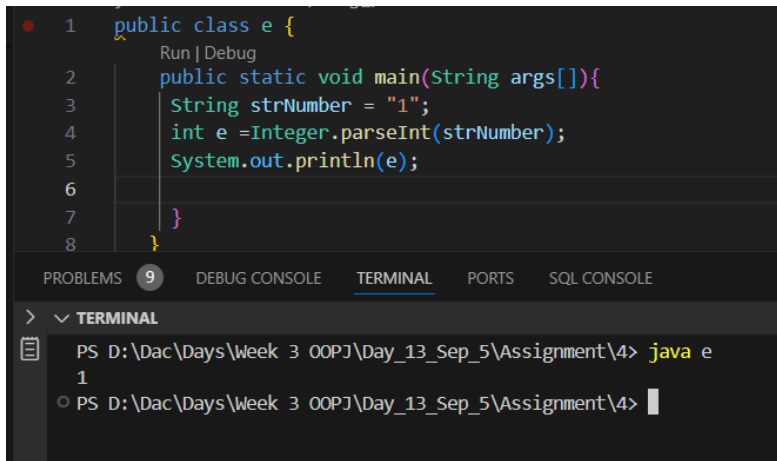
d. Declare a method-local variable `number` of type `int` with some value and convert it to a `String` using the `toString` method. (Hint: Use `Integer.toString(int)` ).



```
4 > J d.java  
1 public class d {  
2     public static void main(String args[]){  
3         int number = 15;  
4         String d =Integer.toString(number);  
5         System.out.println(d);  
6     }  
7 }  
8  
9  
    PROBLEMS 8 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE  
    > ▼ TERMINAL  
    [icon]  
    PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\4> javac d.java  
    ● PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\4> java d  
    15  
    ○ PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\4> |
```

## ASSIGNMENT 2

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)`).



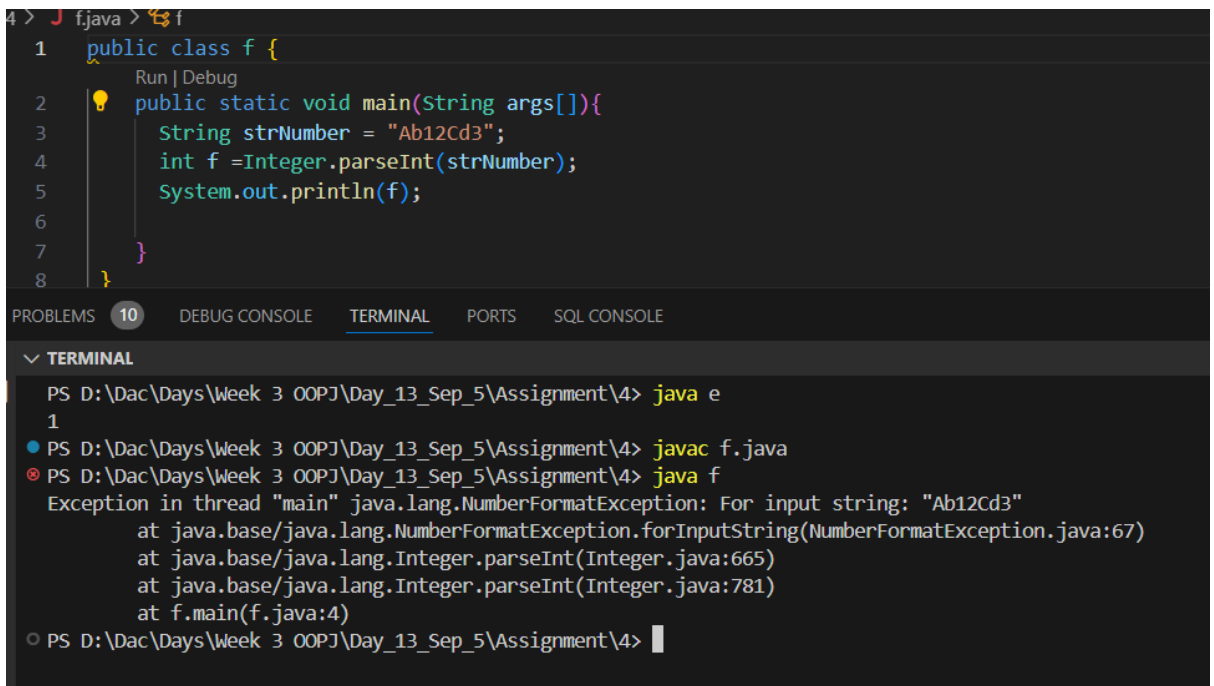
```
1 public class e {  
2     public static void main(String args[]){  
3         String strNumber = "1";  
4         int e =Integer.parseInt(strNumber);  
5         System.out.println(e);  
6     }  
7 }  
8
```

PROBLEMS 9 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> TERMINAL

PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> java e  
1  
PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4>

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`).



```
1 public class f {  
2     public static void main(String args[]){  
3         String strNumber = "Ab12Cd3";  
4         int f =Integer.parseInt(strNumber);  
5         System.out.println(f);  
6     }  
7 }  
8
```

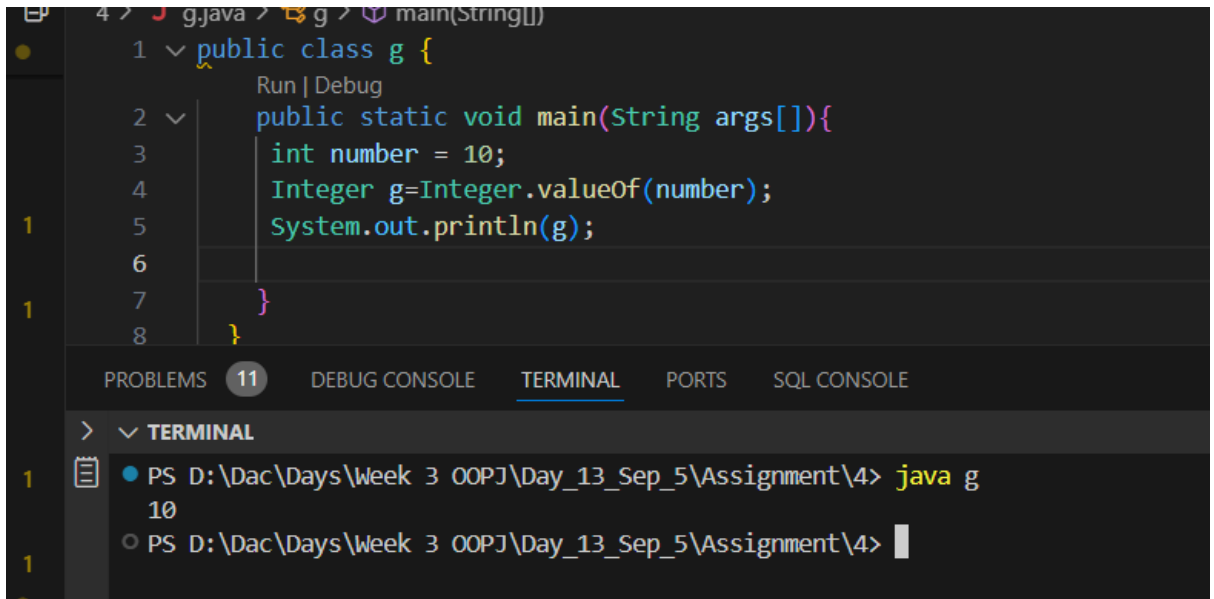
PROBLEMS 10 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> TERMINAL

PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> java e  
1  
PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> javac f.java  
PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> java f  
Exception in thread "main" java.lang.NumberFormatException: For input string: "Ab12Cd3"  
 at java.base/java.lang.NumberFormatException.forInputString(NumberFormatException.java:67)  
 at java.base/java.lang.Integer.parseInt(Integer.java:665)  
 at java.base/java.lang.Integer.parseInt(Integer.java:781)  
 at f.main(f.java:4)  
PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4>

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)`).

## ASSIGNMENT 2



The screenshot shows an IDE with a Java file named `g.java`. The code defines a public class `g` with a `main` method. The `main` method declares an integer variable `number` with the value 10, converts it to an `Integer` object `g` using `Integer.valueOf(number)`, and prints it. The terminal shows the command `java g` being executed, resulting in the output `10`.

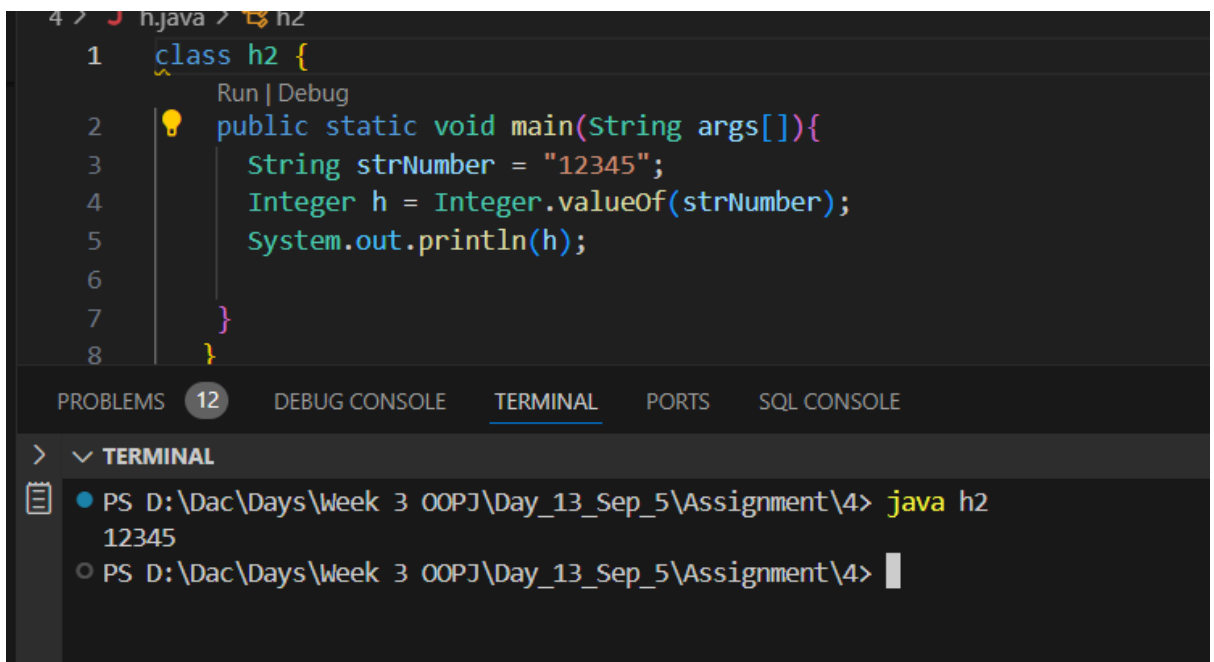
```
4 > g.java > g > main(String[] args)
1 public class g {
    Run | Debug
2     public static void main(String args[]){
3         int number = 10;
4         Integer g=Integer.valueOf(number);
5         System.out.println(g);
6     }
7 }
8 }
```

PROBLEMS 11 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> TERMINAL

PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> java g  
10  
PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4>

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)`).



The screenshot shows an IDE with a Java file named `h2.java`. The code defines a class `h2` with a `main` method. The `main` method declares a `String` variable `strNumber` with the value "12345", converts it to an `Integer` object `h` using `Integer.valueOf(strNumber)`, and prints it. The terminal shows the command `java h2` being executed, resulting in the output `12345`.

```
4 > h.java > h2
1 class h2 {
    Run | Debug
2     public static void main(String args[]){
3         String strNumber = "12345";
4         Integer h = Integer.valueOf(strNumber);
5         System.out.println(h);
6     }
7 }
8 }
```

PROBLEMS 12 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> TERMINAL

PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> java h2  
12345  
PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4>

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)`).

## ASSIGNMENT 2

```
4 > J j4.java > j4
1 public class i4 {
2     public static void main(String args[]){
3
4
5
6         Integer i =Integer.sum( a,b );
7         System.out.println("The sum of "+a+" and "+ b +" is "+ i+".");
8
9
10    }

```

PROBLEMS 13 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> v TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> javac i4.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> java i4  
The sum of 10 and 20 is 30.
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> |

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)`).

```
4 > J jjava > j
1 public class j {
2     public static void main(String args[]){
3
4         Integer j1=Integer.min(a:10,b:20);
5         Integer j2=Integer.max(a:10,b:20);
6         System.out.println("The minimum value is " +j1+"." );
7         System.out.println("The maximum value is " +j2+"." );
8     }

```

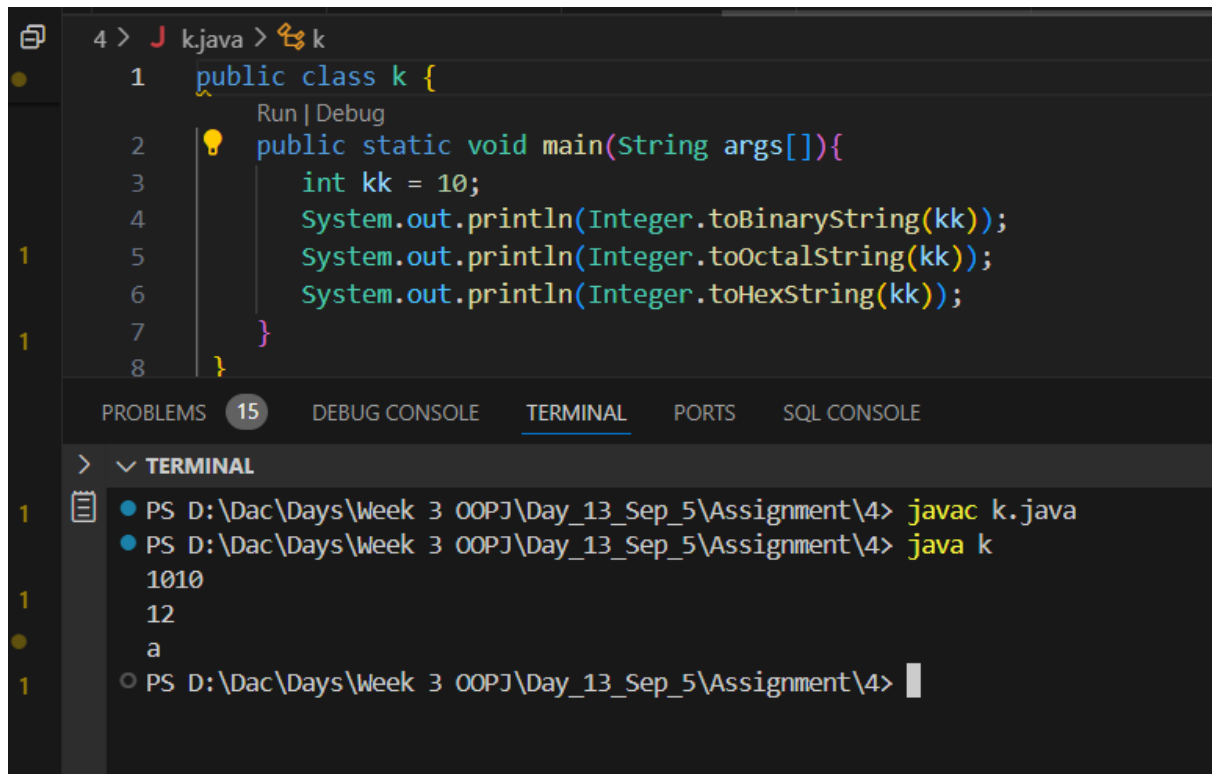
PROBLEMS 14 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> v TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> java j  
The minimum value is 10.  
The maximum value is 20.
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> |

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)`).

## ASSIGNMENT 2



```
4 > J k.java > k
1 public class k {
    Run | Debug
2     public static void main(String args[]){
3         int kk = 10;
4         System.out.println(Integer.toBinaryString(kk));
5         System.out.println(Integer.toOctalString(kk));
6         System.out.println(Integer.toHexString(kk));
7     }
8 }
```

PROBLEMS 15 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

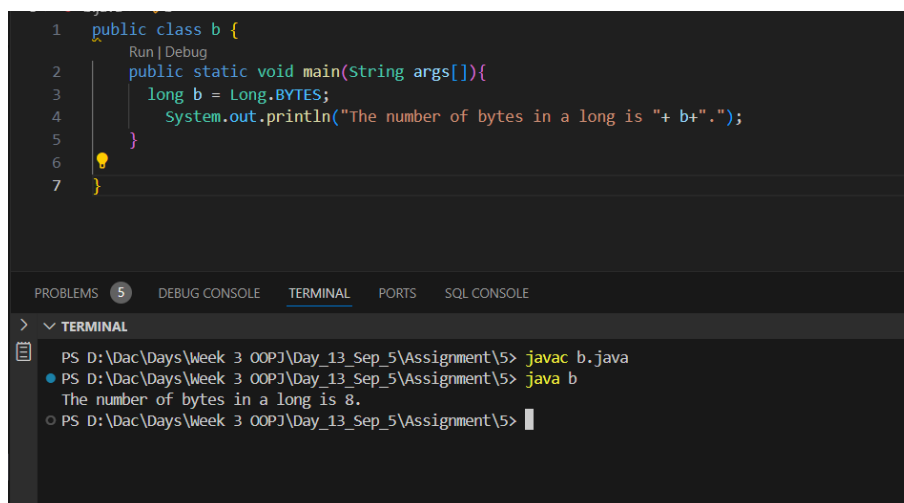
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> javac k.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> java k  
1010  
12  
a
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\4> █

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

### 5. Working with `java.lang.Long`

a. Explore the [Java API documentation for `java.lang.Long`](#) and observe its modifiers and super types.

b. 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 b {
    Run | Debug
2     public static void main(String args[]){
3         long b = Long.BYTES;
4         System.out.println("The number of bytes in a long is " + b + ".");
5     }
6 }
7 }
```

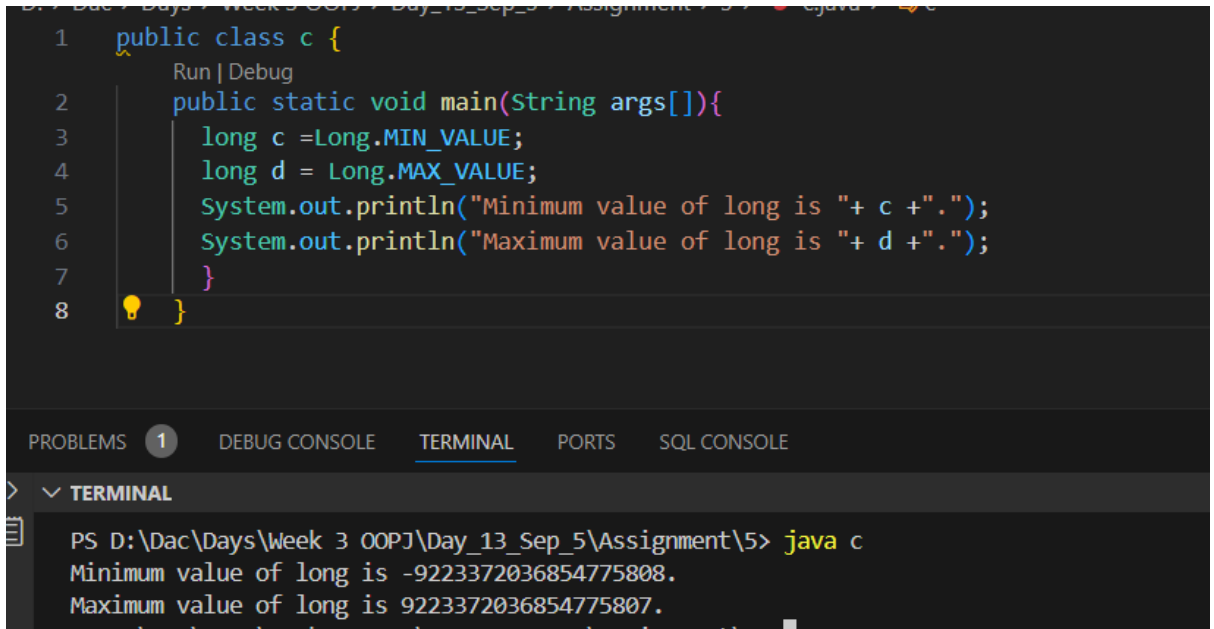
PROBLEMS 5 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> javac b.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> java b  
The number of bytes in a long is 8.
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> █

## ASSIGNMENT 2

c. 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`).

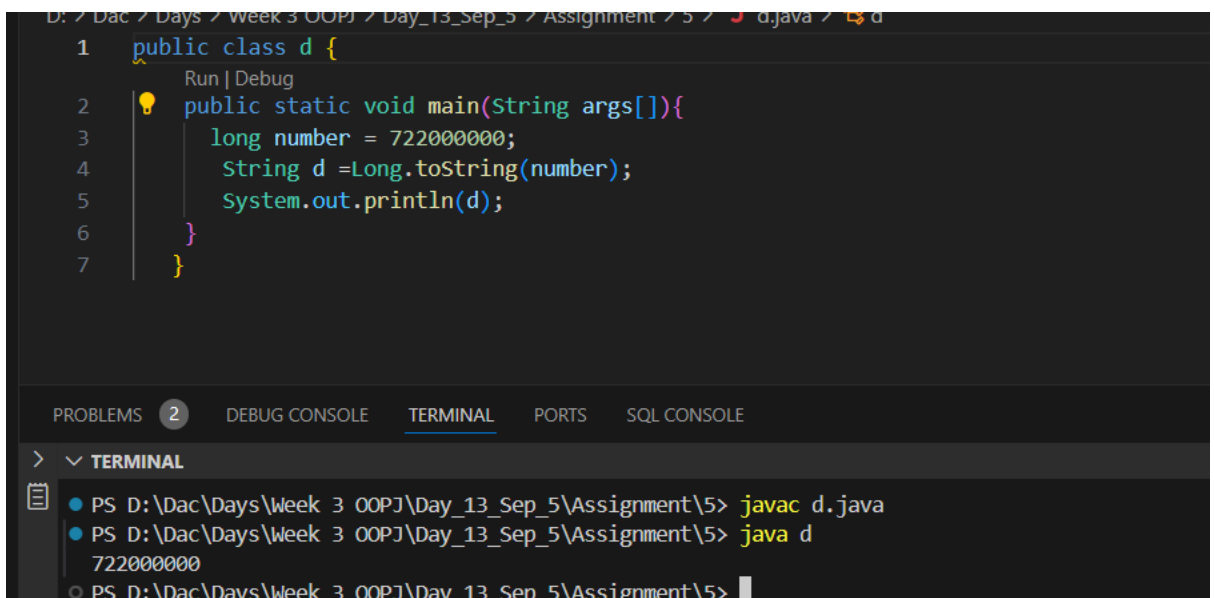


```
1 public class c {
2     public static void main(String args[]){
3         long c = Long.MIN_VALUE;
4         long d = Long.MAX_VALUE;
5         System.out.println("Minimum value of long is "+ c + ".");
6         System.out.println("Maximum value of long is "+ d + ".");
7     }
8 }
```

PROBLEMS 1 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> java c  
Minimum value of long is -9223372036854775808.  
Maximum value of long is 9223372036854775807.

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)`).



```
1 public class d {
2     public static void main(String args[]){
3         long number = 722000000;
4         String d = Long.toString(number);
5         System.out.println(d);
6     }
7 }
```

PROBLEMS 2 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> javac d.java  
PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> java d  
722000000  
PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5>

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)`).

## ASSIGNMENT 2

```
1 public class e {
2     Run | Debug
3     public static void main(String args[]){
4         String strNumber= "1000";
5         Long e =Long.parseLong(strNumber);
6         System.out.println(e);
7     }
8 }
```

PROBLEMS 3 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> javac e.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> java e  
1000
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> █

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`).

```
1 public class f {
2     Run | Debug
3     public static void main(String args[]){
4         String strNumber = "A12Cd3";
5         Long f =Long.parseLong(strNumber);
6         System.out.println(f);
7     }
8 }
```

PROBLEMS 4 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

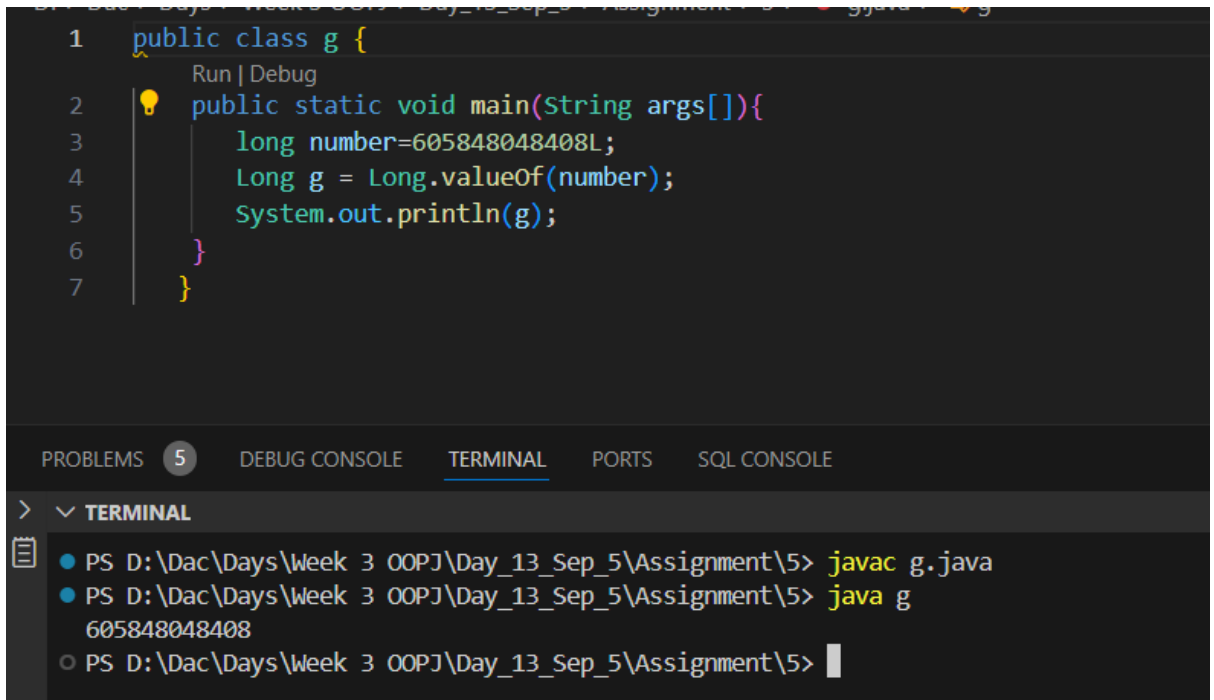
▼ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> javac f.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> java f  
Exception in thread "main" java.lang.NumberFormatException: For input string: "A12Cd3"  
at java.base/java.lang.NumberFormatException.forInputString(NumberFormatException.java:67)  
at java.base/java.lang.Long.parseLong(Long.java:708)  
at java.base/java.lang.Long.parseLong(Long.java:831)  
at f.main(f.java:4)
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> █

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)`).



## ASSIGNMENT 2



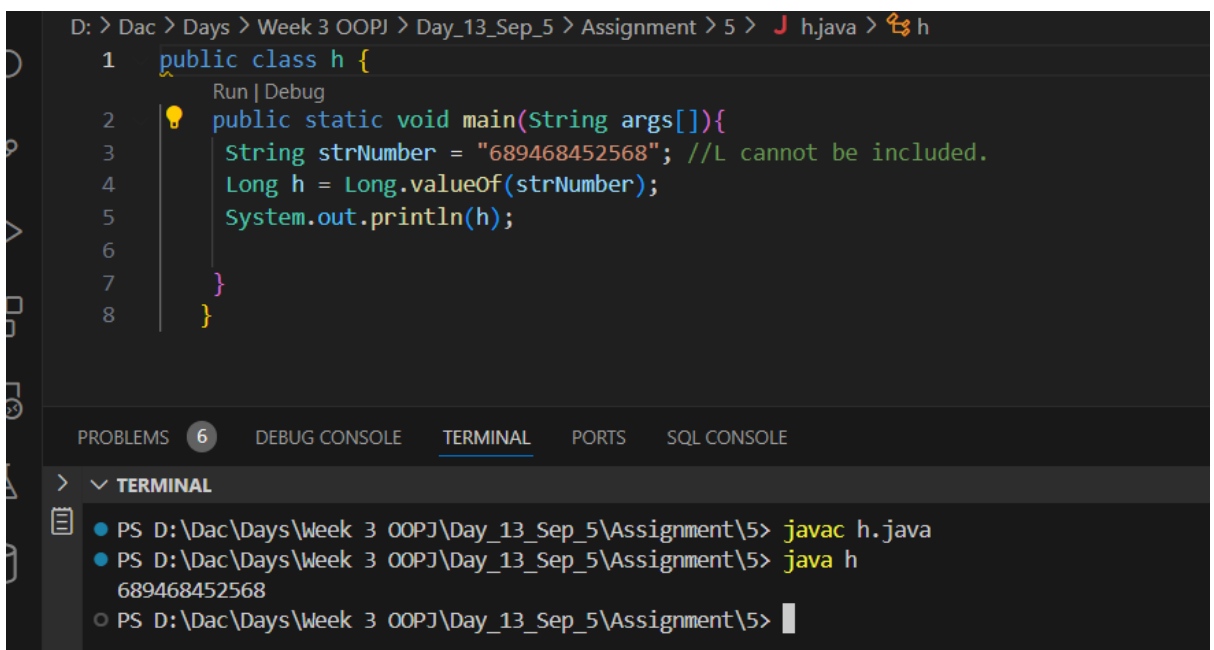
```
1 public class g {
2     public static void main(String args[]){
3         long number=605848048408L;
4         Long g = Long.valueOf(number);
5         System.out.println(g);
6     }
7 }
```

PROBLEMS 5 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> javac g.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> java g  
605848048408
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> |

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)`).



```
1 public class h {
2     public static void main(String args[]){
3         String strNumber = "689468452568"; //L cannot be included.
4         Long h = Long.valueOf(strNumber);
5         System.out.println(h);
6     }
7 }
8 }
```

PROBLEMS 6 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> javac h.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> java h  
689468452568
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> |

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)`).

## ASSIGNMENT 2

```
D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\5> javac i.java
1 public class i {
2     public static void main(String args[]){
3         Long i1 = 1123L;
4         Long i2 = 9845L;
5         Long res = Long.sum(i1,i2);
6         System.out.println("The sum of " +i1+ " and " +i2+ " is "+res+".");
7     }
8 }
9
10
```

PROBLEMS 7 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

```
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\5> javac i.java
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\5> java i
The sum of 1123 and 9845 is 10968.
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\5>
```

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)`).

```
D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\5> javac j.java
1 public class j {
2     public static void main(String args[]){
3         long j1 = 1122L;
4         long j2 = 5566L;
5         System.out.println((Long.min(j1,j2)+" "+Long.max(j1,j2)));
6     }
7 }
8
```

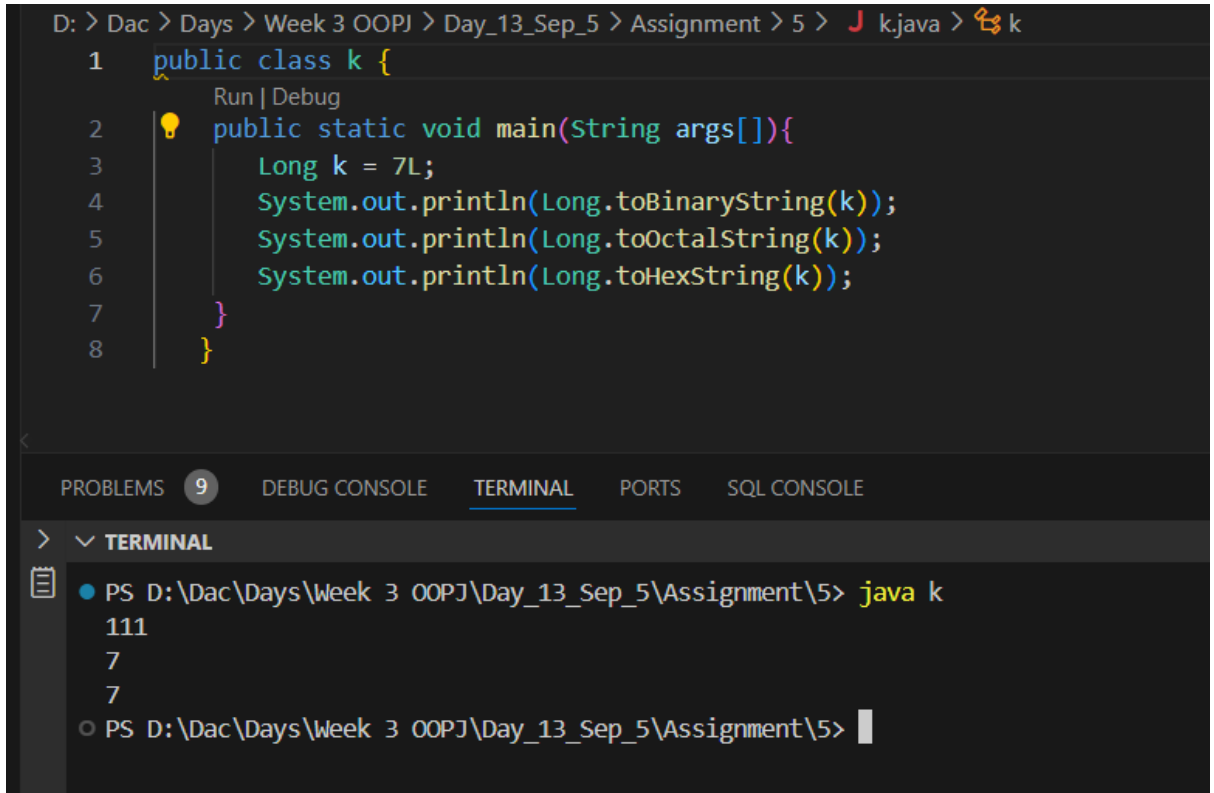
PROBLEMS 8 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

```
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\5> javac j.java
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\5> java j
1122 5566
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\5>
```

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)`).

## ASSIGNMENT 2



The screenshot shows an IDE with a Java file named `k.java`. The code defines a class `k` with a `main` method that prints the binary, octal, and hexadecimal representations of the long value 7. The terminal output shows the results of running `java k`.

```
D: > Dac > Days > Week 3 OOPJ > Day_13_Sep_5 > Assignment > 5 > J k.java > k

1 public class k {
    Run | Debug
2     public static void main(String args[]){
3         Long k = 7L;
4         System.out.println(Long.toBinaryString(k));
5         System.out.println(Long.toOctalString(k));
6         System.out.println(Long.toHexString(k));
7     }
8 }
```

PROBLEMS 9 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5> java k  
111  
7  
7
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\5>

I. 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`).

## ASSIGNMENT 2

```
D: > Dac > Days > Week 3 OOPJ > Day_13_Sep_5 > Assignment > 6 > J b.java > b
1 public class b {
    Run | Debug
2     public static void main(String args[]){
3         System.out.println(Float.BYTES);
4     }
5 }
6
```

PROBLEMS 11 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> javac b.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> java b
- 4
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6>

c. 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).

```
1 public class ccl {
    Run | Debug
2     public static void main(String args[]){
3         System.out.println(Float.MIN_VALUE+" "+Float.MAX_VALUE);
4     }
5 }
6
7
```

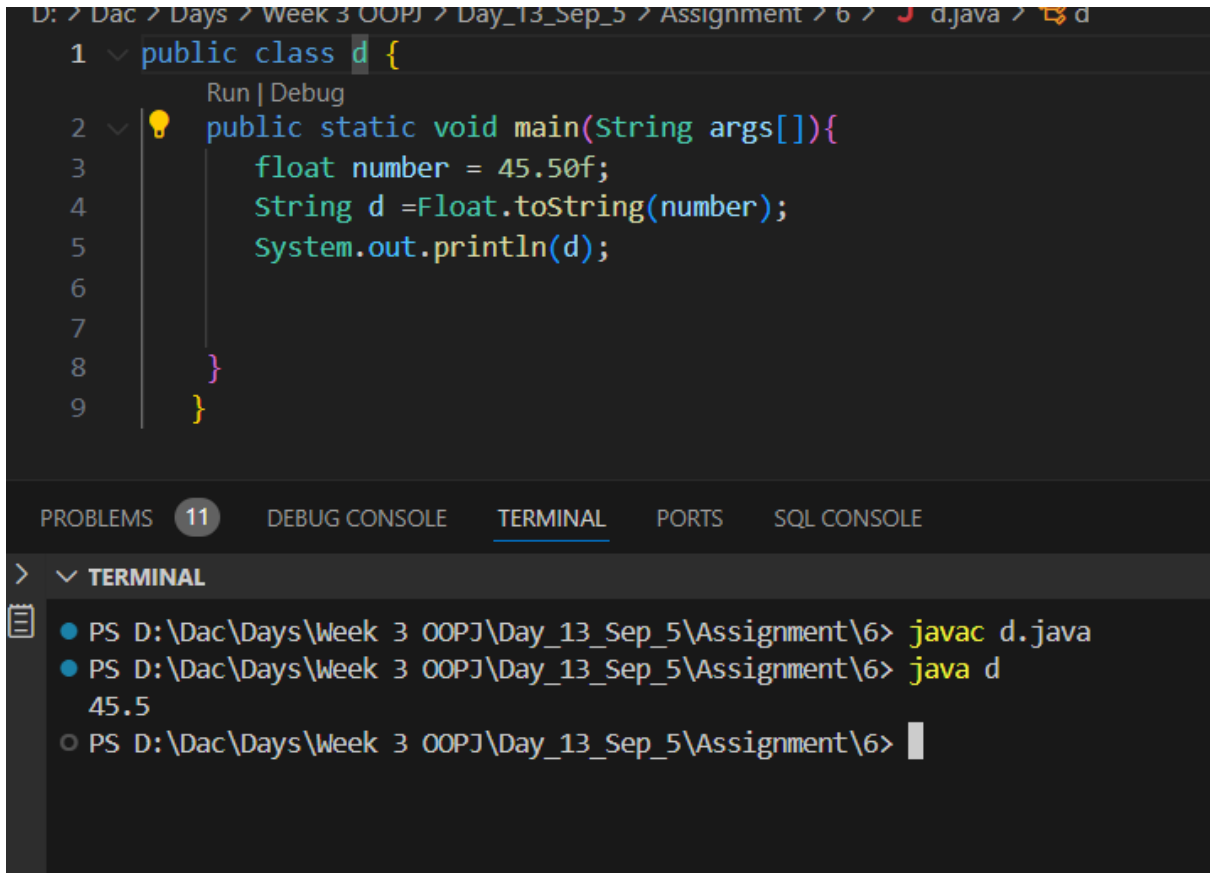
PROBLEMS 11 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> javac c.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> java c
- 1.4E-45 3.4028235E38
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6>

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)).

## ASSIGNMENT 2



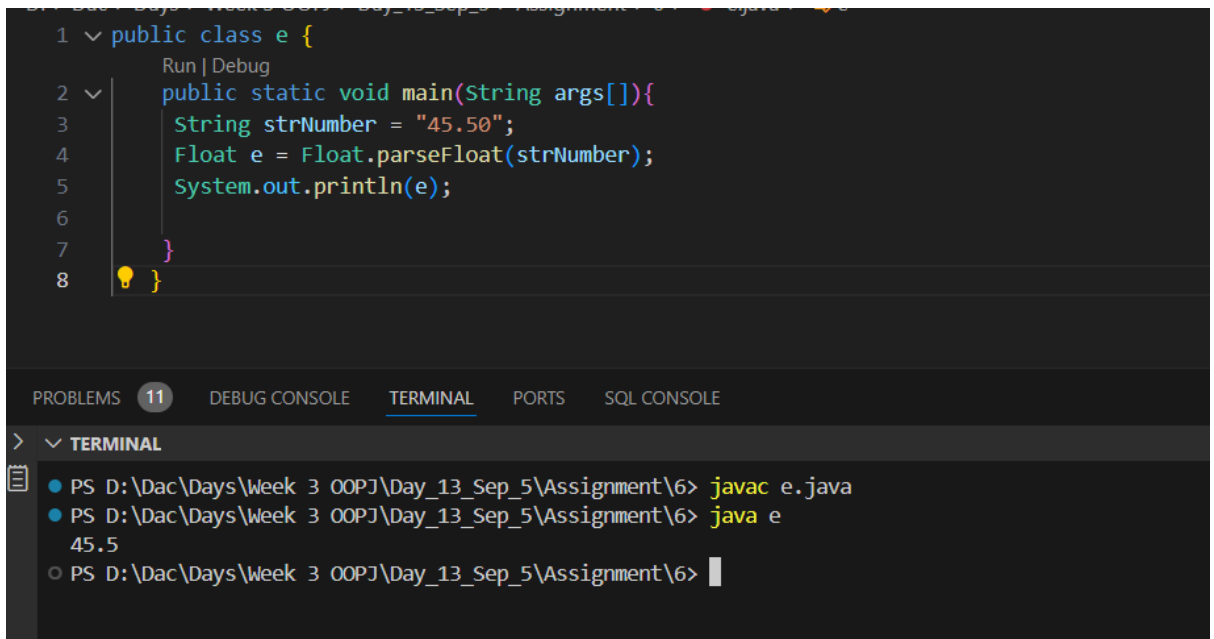
```
D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\6> javac d.java
1 public class d {
    Run | Debug
2 public static void main(String args[]){
3     float number = 45.50f;
4     String d =Float.toString(number);
5     System.out.println(d);
6
7
8 }
9 }
```

PROBLEMS 11 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> javac d.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> java d  
45.5
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6>

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)`).



```
D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\6> javac e.java
1 public class e {
    Run | Debug
2 public static void main(String args[]){
3     String strNumber = "45.50";
4     Float e = Float.parseFloat(strNumber);
5     System.out.println(e);
6
7 }
8 }
```

PROBLEMS 11 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> javac e.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> java e  
45.5
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6>

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`).

## ASSIGNMENT 2

```
1 public class f {
2     public static void main(String args[]){
3         String strNumber = "Ab12Cd3";
4         float f = Float.parseFloat(strNumber);
5         System.out.println(f);
6     }
7 }
8 }
```

PROBLEMS 11 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

▼ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> javac f.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> java f  
Exception in thread "main" java.lang.NumberFormatException: For input string: "Ab12Cd3"  
at java.base/jdk.internal.math.FloatingDecimal.readJavaFormatString(FloatingDecimal.java:2054)  
at java.base/jdk.internal.math.FloatingDecimal.parseFloat(FloatingDecimal.java:122)  
at java.base/java.lang.Float.parseFloat(Float.java:556)  
at f.main(f.java:4)
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> █

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)`).

```
1 public class g {
2     Run | Debug
3     public static void main(String args[]){
4         float number = 45.7f;
5         Float g = Float.valueOf(number);
6         System.out.println(g);
7     }
8 }
```

PROBLEMS 11 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

▼ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> javac g.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> java g  
45.7
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> █

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)`).

## ASSIGNMENT 2

```
D: > Dac > Days > Week 3 OOPJ > Day_13_Sep_5 > Assignment > 6 > h.java > h > main(String[])
1 public class h {
    Run | Debug
2     public static void main(String args[]){
3         String strNumber = "50.25f";
4         Float h = Float.valueOf(strNumber);
5         System.out.println(h);
6
7
8     }
9
10 }
```

PROBLEMS 11 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> javac h.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> java h  
50.25
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6>

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)`).

```
1 public class i {
    Run | Debug
2     public static void main(String args[]){
3         float i1=112.3f;
4         float i2=984.5f;
5         System.out.println(Float.sum(i1,i2));
6
7
8     }
9 }
```

PROBLEMS 11 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> javac i.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> java i  
1096.8
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6>

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)`).

## ASSIGNMENT 2

```
D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\6> javac j.java
1 public class j {
    Run | Debug
2 public static void main(String args[]){
3     float j1=112.2f;
4     float j2=556.6f;
5     System.out.println(Float.min(j1,j2)+" "+Float.max(j1,j2));
6
7 }
8 }
```

PROBLEMS 11 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> javac j.java  
error: Class names, 'j.java', are only accepted if annotation processing is explicitly requested  
1 error
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> javac j.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> java j  
112.2 556.6
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6>

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

```
1 public class k {
    Run | Debug
2 public static void main(String args[]){
3     float k = -0.25f;
4     System.out.println(Math.sqrt(k));
5     // op - NaN
6
7 }
8 }
9 }
```

PROBLEMS 11 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> javac k.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> java k  
NaN
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6>

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



## ASSIGNMENT 2

```
. / Dac / Days / Week 3 OOPJ / Day_13_Sep_5 / Assignment / 6 / 1.java / 1 / main(String
1 public class l {
3 public static void main(String[] args) {
4     float l1 = 0.0f;
5     float l2 = 0.0f;
6     float res = l1/l2;
7     System.out.println(res);
8
9 }
10 }
```

PROBLEMS 11 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

✓ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> javac l.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> java l  
NaN
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\6> █

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

### 7. Working with `java.lang.Double`

a. Explore the [Java API documentation for `java.lang.Double`](#) and observe its modifiers and super types.

b. Write a program to test how many bytes are used to represent a `double` value using the `BYTES` field. (Hint: Use `Double.BYTES`).

```
1
2 public class b {
3     Run | Debug
4     public static void main(String[] args) {
5         System.out.println(Double.BYTES);
6     }
7 }
```

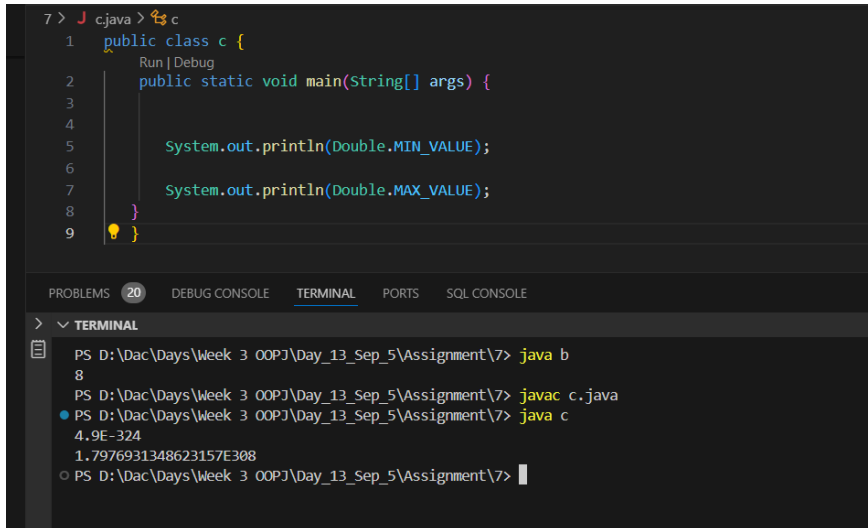
PROBLEMS 19 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ✓ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\7> java b  
8
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\7> █

c. 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`).

## ASSIGNMENT 2



```
7 > J c.java > c
1 public class c {
    Run | Debug
2     public static void main(String[] args) {
3
4
5         System.out.println(Double.MIN_VALUE);
6
7         System.out.println(Double.MAX_VALUE);
8     }
9 }
```

PROBLEMS 20 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> TERMINAL

```
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> java b
8
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> javac c.java
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> java c
4.9E-324
1.7976931348623157E308
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> |
```

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)`).



```
7 > J d.java > d
1 public class d {
    Run | Debug
2     public static void main(String[] args) {
3         double number = 54.546851869469841D;
4         String d = Double.toString(number);
5         System.out.println(d);
6     }
7 }
```

PROBLEMS 21 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> TERMINAL

```
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> javac d.java
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> java d
54.54685186946984
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> |
```

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)`).

## ASSIGNMENT 2

```
1 public class e {
    Run | Debug
2     public static void main(String[] args) {
3         String strNumber="50.05";
4         double e = Double.parseDouble(strNumber);
5         System.out.println(e);
6     }
7 }
```

PROBLEMS 22 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▼ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\7> javac e.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\7> java e  
50.05
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\7> █

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`).

```
1 public class f {
    Run | Debug
2     public static void main(String args[]){
3         String strNumber = "Ab12Cd3";
4         Double f = Double.parseDouble(strNumber);
5         System.out.println(f);
6     }
7 }
8 }
```

PROBLEMS 23 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

▼ TERMINAL

- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\7> java f  
Exception in thread "main" java.lang.NumberFormatException: For input string: "Ab12Cd3"  
at java.base/jdk.internal.math.FloatingDecimal.readJavaFormatString(FloatingDecimal.java:2054)  
at java.base/jdk.internal.math.FloatingDecimal.parseDouble(FloatingDecimal.java:110)  
at java.base/java.lang.Double.parseDouble(Double.java:792)  
at f.main(f.java:4)
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\7> █

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)`).

## ASSIGNMENT 2

```
1 public class g {
2     public static void main(String args[]){
3         double number = 50.05D;
4         Double g = Double.valueOf(number);
5         System.out.println(g);
6     }
7 }
8 }
```

Run | Debug

PROBLEMS 24 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> TERMINAL

```
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> javac g.java
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> java g
50.05
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> |
```

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)`).

```
1 public class h {
2     public static void main(String args[]){
3         String strNumber = "50.55555D";
4         Double h = Double.valueOf(strNumber);
5         System.out.println(h);
6     }
7 }
8 }
```

h.java

PROBLEMS 24 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> TERMINAL

```
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> javac h.java
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> java h
50.55555
PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> |
```

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)`).

## ASSIGNMENT 2

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)`).

```
1 public class j {
    Run | Debug
2     public static void main(String args[]){
3         Double j1 = 112.2D;
4         Double j2 = 556.6D;
5         System.out.println(Double.min(j1,j2)+" "+Double.max(j1,j2) );
6     }
7 }
8
```

PROBLEMS 25 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

TERMINAL

```
● PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> javac j.java
● PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> java j
112.2 556.6
○ PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> |
```

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

```
1 public class k {
    Run | Debug
2     public static void main(String args[]){
3         Double k = -25.0;
4         System.out.println(Math.sqrt(k));
5     }
6 }
7
```

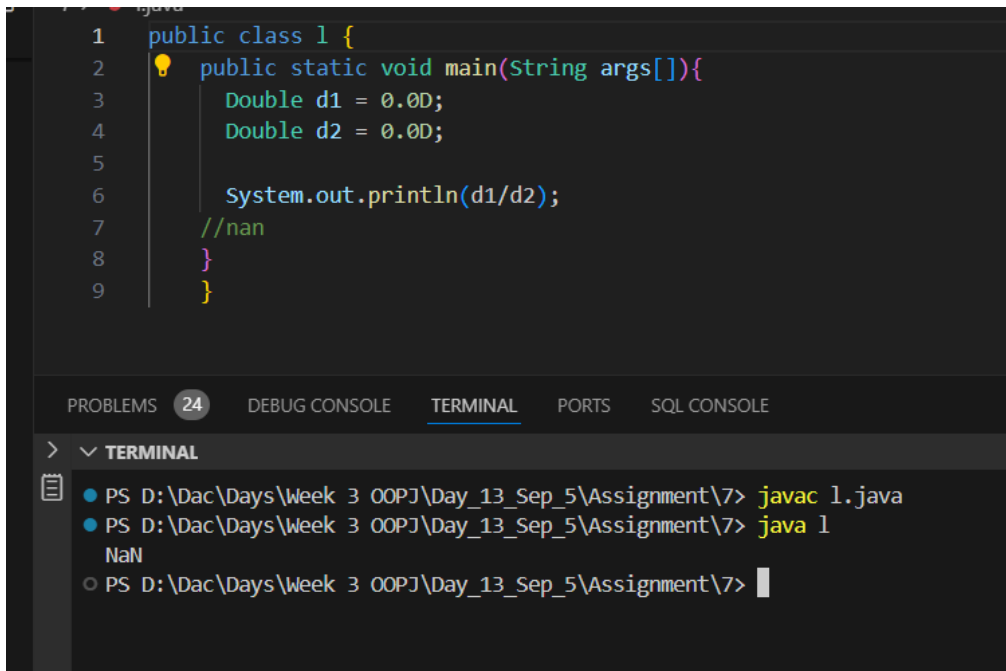
PROBLEMS 26 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

TERMINAL

```
● PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> java k
NaN
○ PS D:\Dac\Days\Week 3 OOPJ\Day_13_Sep_5\Assignment\7> |
```

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

## ASSIGNMENT 2



The screenshot shows an IDE with a Java file named `l.java`. The code defines a public class `l` with a `main` method. Inside `main`, two `Double` variables, `d1` and `d2`, are both initialized to `0.0D`. The program then prints the result of `d1/d2` to the console. The IDE's terminal window shows the compilation and execution commands: `javac l.java` and `java l`. The output of the program is `NaN`, which is displayed in the terminal.

```
1 public class l {
2     public static void main(String args[]){
3         Double d1 = 0.0D;
4         Double d2 = 0.0D;
5
6         System.out.println(d1/d2);
7         //nan
8     }
9 }
```

PROBLEMS 24 DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

> ▾ TERMINAL

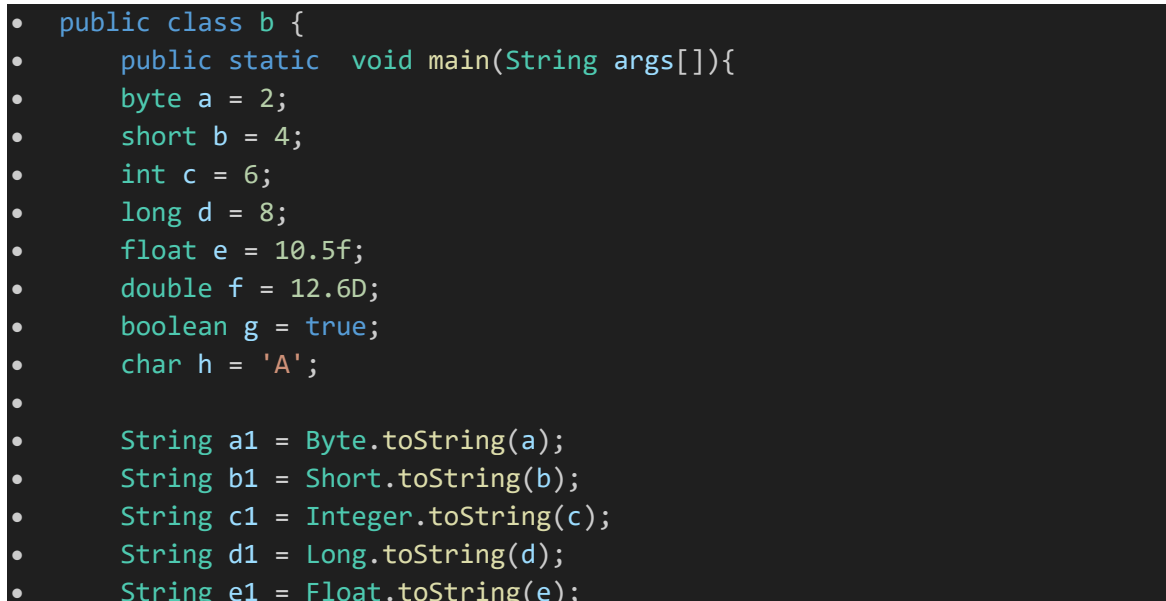
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\7> javac l.java
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\7> java l
- NaN
- PS D:\Dac\Days\Week 3 OOPJ\Day\_13\_Sep\_5\Assignment\7> █

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

### 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()`).



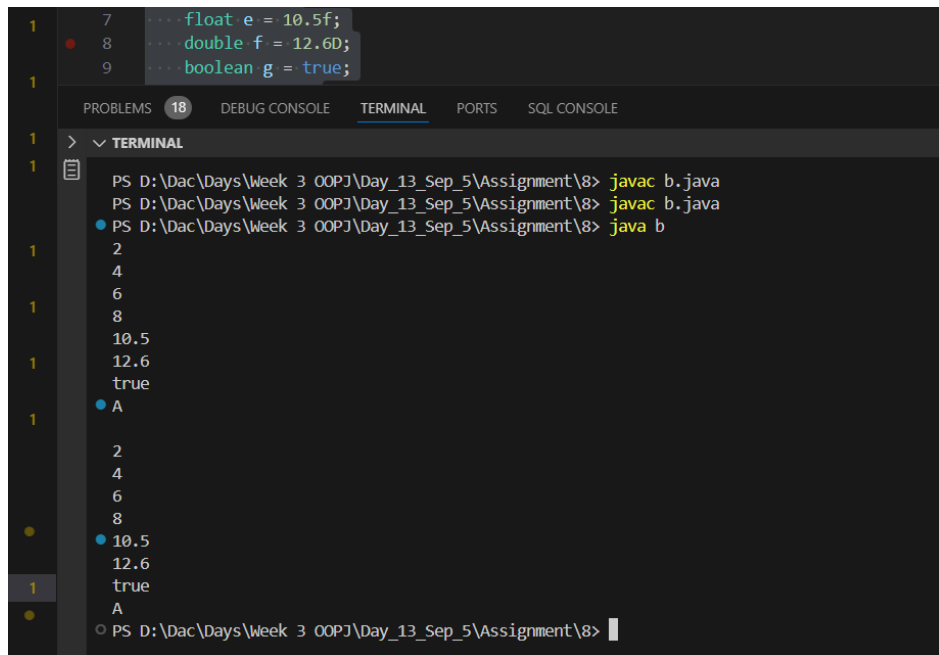
The screenshot shows a Java code snippet within a class `b`. The `main` method initializes variables of various primitive types: `byte`, `short`, `int`, `long`, `float`, `double`, `boolean`, and `char`. Below these, it demonstrates how to convert each of these primitive values into a `String` using the `toString` method of the respective wrapper class (e.g., `Byte.toString(a)`).

```
• public class b {
•     public static void main(String args[]){
•         byte a = 2;
•         short b = 4;
•         int c = 6;
•         long d = 8;
•         float e = 10.5f;
•         double f = 12.6D;
•         boolean g = true;
•         char h = 'A';
•
•         String a1 = Byte.toString(a);
•         String b1 = Short.toString(b);
•         String c1 = Integer.toString(c);
•         String d1 = Long.toString(d);
•         String e1 = Float.toString(e);
```

## ASSIGNMENT 2

```
• String f1 = Double.toString(f);
• String g1 = Boolean.toString(g);
• String h1 = Character.toString(h);
•
• System.out.println(a1);
• System.out.println(b1);
• System.out.println(c1);
• System.out.println(d1);
• System.out.println(e1);
• System.out.println(f1);
• System.out.println(g1);
• System.out.println(h1);
• System.out.println();
•
• String s1 =String.valueOf(a);
• String s2 =String.valueOf(b);
• String s3 =String.valueOf(c);
• String s4 =String.valueOf(d);
• String s5 =String.valueOf(e);
• String s6 =String.valueOf(f);
• String s7 =String.valueOf(g);
• String s8 =String.valueOf(h);
•
• System.out.println(s1);
• System.out.println(s2);
• System.out.println(s3);
• System.out.println(s4);
• System.out.println(s5);
• System.out.println(s6);
• System.out.println(s7);
• System.out.println(s8);
•
• }
•
• }
```

# ASSIGNMENT 2



The screenshot shows an IDE with a Java file containing three lines of code: `float e = 10.5f;`, `double f = 12.6D;`, and `boolean g = true;`. The terminal window below shows the execution of `javac b.java` and `java b`. The output of the program is: `2`, `4`, `6`, `8`, `10.5`, `12.6`, `true`, and `A`.

## 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).

```
public class b {  
    boolean boolInstance;  
    byte byteInstance;  
    short shortInstance;  
    char charInstance;  
    int intInstance;  
    long longInstance;  
    float floatInstance;  
    double doubleInstance;  
  
    static boolean boolStatic;  
    static byte byteStatic;  
    static short shortStatic;  
    static char charStatic;  
    static int intStatic;  
    static long longStatic;  
    static float floatStatic;  
    static double doubleStatic;  
  
    public static void main(String args[]) {  
        b obj = new b();  
        System.out.println("Instance variables:");  
        System.out.println("boolInstance: " + obj.boolInstance);  
        System.out.println("byteInstance: " + obj.byteInstance);  
    }  
}
```



## ASSIGNMENT 2

```
System.out.println("shortInstance: " + obj.shortInstance);
System.out.println("charInstance: " + obj.charInstance);
System.out.println("intInstance: " + obj.intInstance);
System.out.println("longInstance: " + obj.longInstance);
System.out.println("floatInstance: " + obj.floatInstance);
System.out.println("doubleInstance: " + obj.doubleInstance);

System.out.println("\nStatic variables:");
System.out.println("boolStatic: " + boolStatic);
System.out.println("byteStatic: " + byteStatic);
System.out.println("shortStatic: " + shortStatic);
System.out.println("charStatic: " + charStatic);
System.out.println("intStatic: " + intStatic);
System.out.println("longStatic: " + longStatic);
System.out.println("floatStatic: " + floatStatic);
System.out.println("doubleStatic: " + doubleStatic);
}
```

The screenshot shows an IDE with a Java file containing the code from the previous block. The code is numbered 1 to 42. The terminal output is as follows:

```
intInstance: 0
longInstance: 0
floatInstance: 0.0
doubleInstance: 0.0

Static variables:
boolStatic: false
byteStatic: 0
shortStatic: 0
charStatic: 
intStatic: 0
longStatic: 0
floatStatic: 0.0
doubleStatic: 0.0
PS D:\Dac\Days\Week 3 OOP\Day_13_Sep_5\Assignment\9>
```