Q3] Working with java.lang.Short
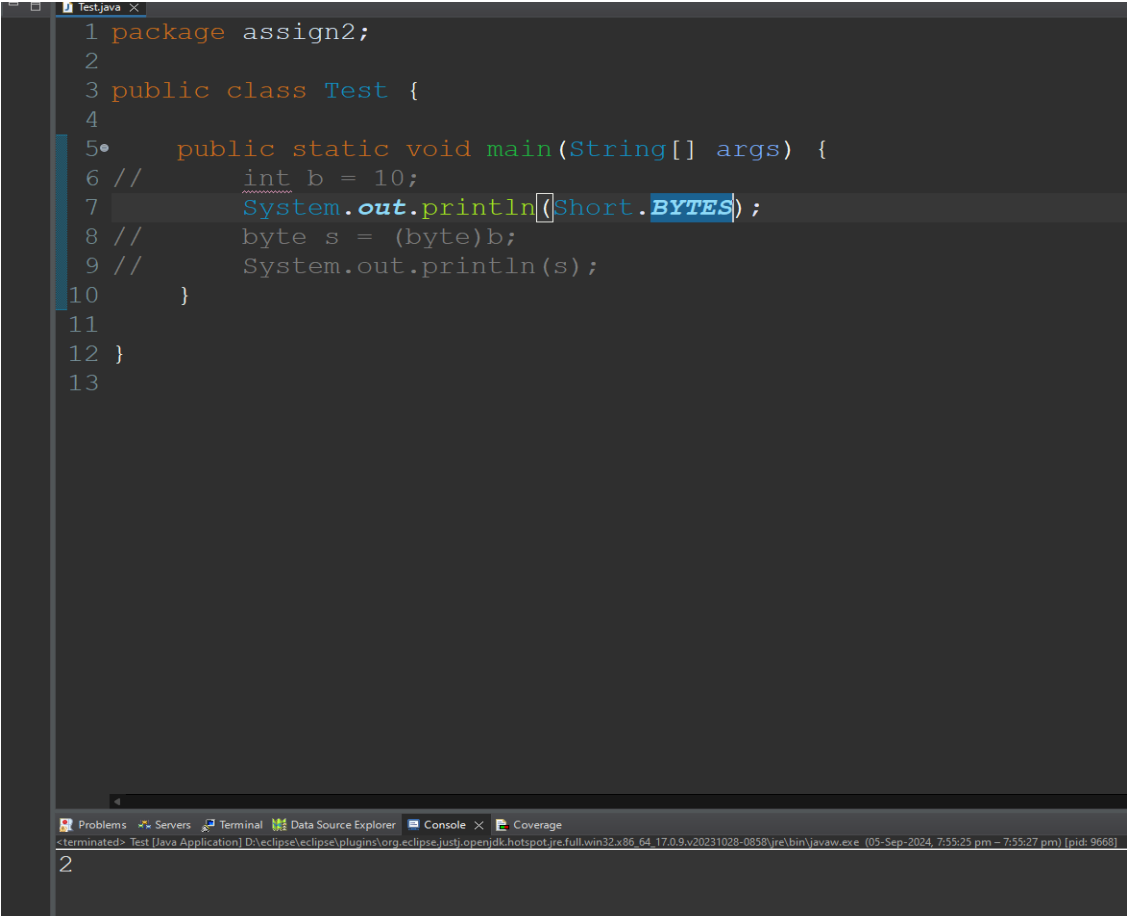
a) Explore the Java API documentation for java.lang.Short
   and observe its modifiers and super types.

   ⇒short   →   shortValue()

   static short   →   MAX_VALUE

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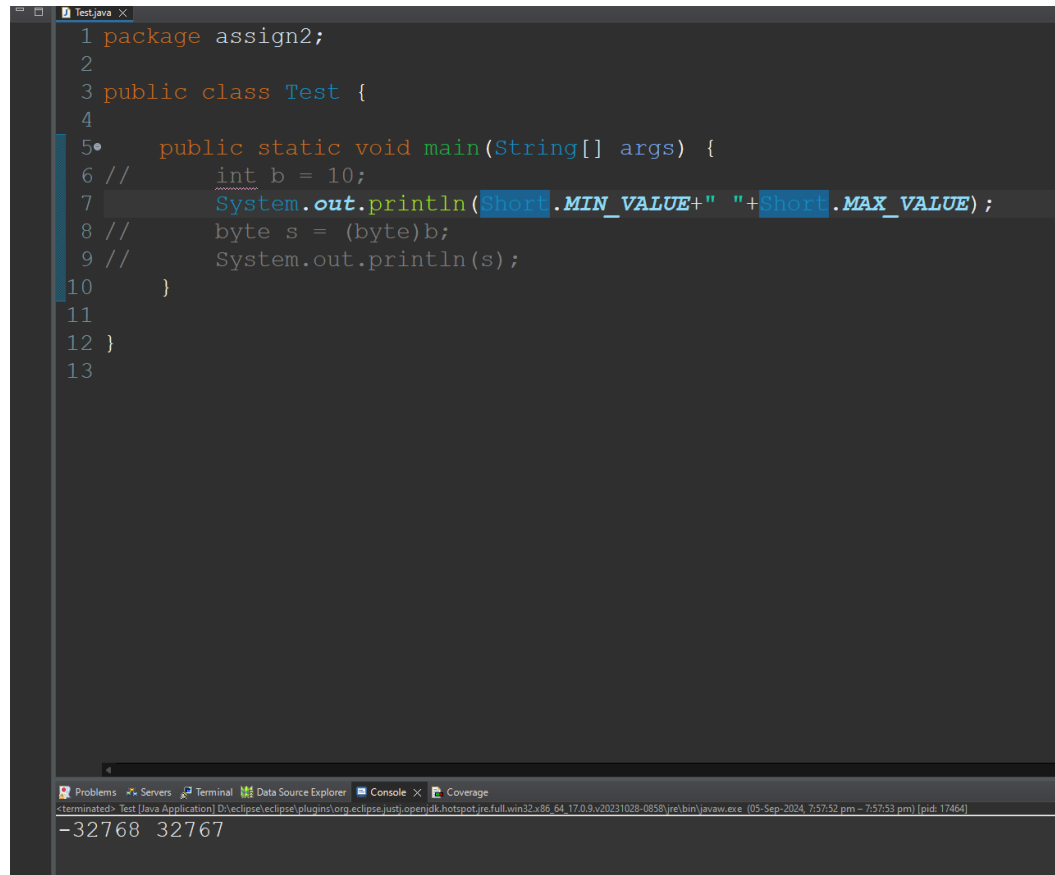   represent a short value using the BYTES field. (Hint: Use
   Short.BYTES).

   ⇒

```
  Test.java ×
 1 package assign2;
 2
 3 public class Test {
 4
 5•    public static void main(String[] args) {
 6 //        int b = 10;
 7          System.out.println(Short.BYTES);
 8 //        byte s = (byte)b;
 9 //        System.out.println(s);
10    }
11
12 }
13
```

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<terminated> Test [Java Application] D:\eclipse\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.9.v20231028-0858\jre\bin\javaw.exe (05-Sep-2024, 7:55:25 pm – 7:55:27 pm) [pid: 9668]
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).

$\Rightarrow$

```java
1 package assign2;
2
3 public class Test {
4
5    public static void main(String[] args) {
6 //        int b = 10;
7        System.out.println(Short.MIN_VALUE+" "+Short.MAX_VALUE);
8 //        byte s = (byte)b;
9 //        System.out.println(s);
10    }
11
12 }
13
```

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<terminated> Test [Java Application] D:\eclipse\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.9.v20231028-0858\jre\bin\javaw.exe (05-Sep-2024, 7:57:52 pm – 7:57:53 pm) [pid: 17464]

```
-32768 32767
```

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)).

⟹

```java
1 package assign2;
2
3 public class Test {
4
5     public static void main(String[] args) {
6         short b = 100;
7         System.out.println(b);
8         String s = Short.toString(b);
9         System.out.println(s);
10     }
11
12 }
13
```

Test.java ×

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<terminated> Test [Java Application] D:\eclipse\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.9.v20231028-0858\jre\bin\javaw.exe (05-Sep-2024, 8:05:30 pm – 8:05:31 pm) [p

100
100

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)).

$\Rightarrow$

```java
package assign2;

public class Test {

    public static void main(String[] args) {
        String strNumber = "12345";
        System.out.println(strNumber);
        short number = Short.parseShort(strNumber);
        System.out.println(number);
    }

}
```

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\<terminated\> Test [Java Application] D:\eclipse\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.9.v20231028-0858\jre\bin\javaw.exe (05-Sep-2024, 9:28:04 pm – 9:28:05 pm) [pid: 4900]

```
12345
12345
```

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).

$\Rightarrow$

```
1 package assign2;
2
3 public class Test {
4
5•    public static void main(String[] args) {
6         String strNumber = "A1b3cd2";
7         System.out.println(strNumber);
8         short number = Short.parseShort(strNumber);
9         System.out.println(number);
10    }
11
12 }
13
```

```
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<terminated> Test [Java Application] D:\eclipse\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.9.v20231028-0858\jre\bin\javaw.exe  (05-Sep-2024, 9:29:59 pm – 9:30:00 pm) [pid: 13852]
A1b3cd2
Exception in thread "main" java.lang.NumberFormatException: For input string: "A1b3cd2"
        at java.base/java.lang.NumberFormatException.forInputString(NumberFormatException.java:67)
        at java.base/java.lang.Integer.parseInt(Integer.java:668)
        at java.base/java.lang.Short.parseShort(Short.java:137)
        at java.base/java.lang.Short.parseShort(Short.java:163)
        at assign2.Test.main(Test.java:8)
```

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:UseShort.valueOf(short)).

$\Rightarrow$

```java
1 package assign2;
2
3 public class Test {
4
5     public static void main(String[] args) {
6         short number = 123;
7         System.out.println(number);
8         Short wrapperNumber = Short.valueOf(number);
9         System.out.println(wrapperNumber);
10     }
11
12 }
13
```

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<terminated> Test [Java Application] D:\eclipse\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.9.v20231028-0858\jre\bin\javaw.exe (05-Sep-2024, 9:32:14 pm – 9:32:15 pm) [pid: 9128]

```
123
123
```

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:UseShort.valueOf(String)).

$\Rightarrow$

```
 1 package assign2;
 2
 3 public class Test {
 4
 5    public static void main(String[] args) {
 6        String strNumber = "456";
 7        System.out.println(strNumber);
 8        Short wrapperNumber = Short.valueOf(strNumber);
 9        System.out.println(wrapperNumber);
10    }
11
12 }
13
```

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<terminated> Test [Java Application] D:\eclipse\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.9.v20231028-0858\jre\bin\javaw.exe (05-Sep-2024, 9:33:59 pm – 9:34:00 pm) [pid: 923

```
456
456
```

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

⟹

```java
1 package assign2;
2
3 public class Test {
4
5   public static void main(String[] args) {
6       short shortValue = 12345;
7       System.out.println(shortValue);
8       int intValue = (int) shortValue;
9       System.out.println(intValue);
10   }
11
12 }
13
```

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<terminated> Test [Java Application] D:\eclipse\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.9.v20231028-0858\jre\bin\javaw.exe (05-Sep-2024, 9:45:40 pm – 9:45:41 pm) [p
12345
12345