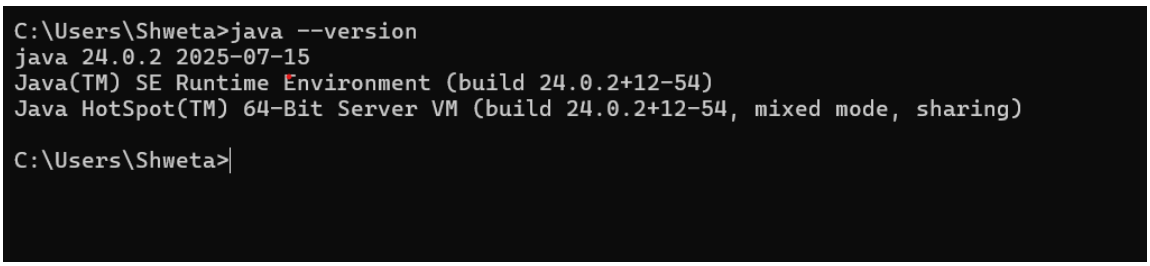
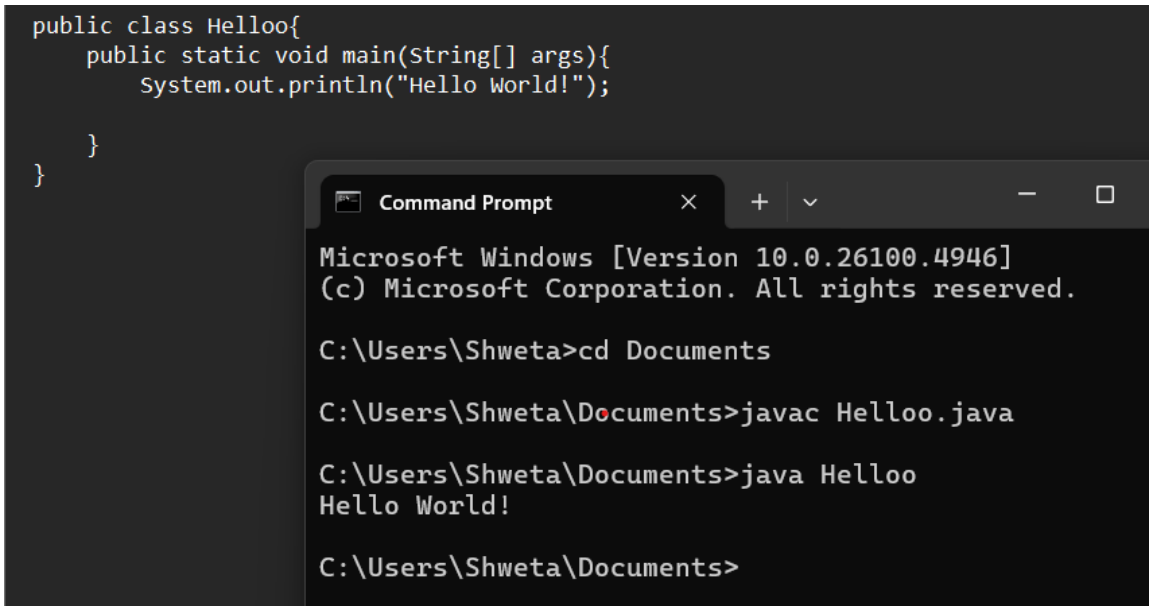
Core Java Assignment 1

1.Download and install oracle JDK on your machine and explore JDK home & JRE home directory.
Reference:https://docs.oracle.com/javase/8/docs/technotes/tools/windows/jdkfiles.html



2.Copy src.zip and rt.jar on desktop. Extract them and observe the directories as well as files & their extensions.

3.Write a simple "Hello World!" application in any text editor and compile & run it from terminal.



4.Set path permanently in environment variable and test "Hello World!" application again.
Reference:https://docs.oracle.com/javase/8/docs/technotes/tools/windows/jdkfiles.html

```java
public class Helloo{
    public static void main(String[] args){
        System.out.println("Hello World!");

    }
}
```

```
Command Prompt
Microsoft Windows [Version 10.0.26100.4946]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Shweta>cd Documents

C:\Users\Shweta\Documents>javac Helloo.java

C:\Users\Shweta\Documents>java Helloo
Hello World!

C:\Users\Shweta\Documents>
```

5.Use Java disassembler and its switches to observe bytecode.

```
Êþº%   D
 
 
 java/lang/Object  <init>  ()V   


 java/lang/System out Ljava/io/PrintStream;
Hello World!
 
 
 java/io/PrintStream println (Ljava/lang/String;)V  Helloo Code LineNumberTable main ([Ljava/lang/String;)V
SourceFile
Helloo.java !          *·          %          ²
¶ ±
 
```

6.Write a program to perform below operations on Boolean type to convert:

a. boolean value into String
b. boolean value into Boolean instance.
c. String value into boolean value
d. String value into Boolean instance.

Reference:https://docs.oracle.com/javase/8/docs/api/java/lang/Boolean.html

```java
class BoolString{
    public static void main(String[] args){
        //a. boolean value into String
        boolean bolvar = true;
        String bolstr = Boolean.toString(bolvar);
        System.out.println("boolean value into String  : " + bolstr);
        //b. boolean value into Boolean instance.
        Boolean bolvar1 = false;
        Boolean bolins = Boolean.valueOf(bolvar1);
        System.out.println("boolean value into Boolean instance : " + bolins);
        //c. String value into boolean value
        String str1 = "true";
        String str2 = "false";
        boolean bolstr1 = Boolean.valueOf(str1);
        boolean bolstr2 = Boolean.valueOf(str2);
        System.out.println("String value into boolean value : " + bolstr1);
        System.out.println("String value into boolean value : " + bolstr2);
        //d. String value into Boolean instance.
        String str3 = "true";
        String str4 = "false";
        Boolean bolstr3 = Boolean.valueOf(str3);
        Boolean bolstr4 = Boolean.valueOf(str4);
        System.out.println("String value into Boolean instance : " + bolstr3);
        System.out.println("String value into Boolean instance : " + bolstr4);
    }}
```

```
Command Promp  Windows PowerS
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvem
ents! https://aka.ms/PSWindows

PS C:\Users\Shweta> cd Documents
PS C:\Users\Shweta\Documents> javac BoolString.java
PS C:\Users\Shweta\Documents> java BoolString
boolean value into String  : true
boolean value into Boolean instance : false
String value into boolean value : true
String value into boolean value : false
String value into Boolean instance : true
String value into Boolean instance : false
PS C:\Users\Shweta\Documents>
```

StrBol.java

```java
class StrBol {

    public static void main(String[] args) {
        //a. boolean value into String
        boolean bolvar = true;
        String bolstr = Boolean.toString(bolvar);
        System.out.println("boolean value into String  : " + bolstr);
        //b. boolean value into Boolean instance.
        Boolean bolvar1 = false;
        Boolean bolins = Boolean.valueOf(bolvar1);
        System.out.println("boolean value into Boolean instance : " + bolins);
        //c. String value into boolean value
        String str1 = "true";
        String str2 = "false";
        boolean bolstr1 = Boolean.valueOf(str1);
        boolean bolstr2 = Boolean.valueOf(str2);
        System.out.println("String value into boolean value : " + bolstr1);
        System.out.println("String value into boolean value : " + bolstr2);
        //d. String value into Boolean instance.
        String str3 = "true";
        String str4 = "false";
        Boolean bolstr3 = Boolean.valueOf(str3);
        Boolean bolstr4 = Boolean.valueOf(str4);
        System.out.println("String value into Boolean instance : " + bolstr3);
        System.out.println("String value into Boolean instance : " + bolstr4);
    }
}
```

Console

```
<terminated> StrBol [Java Application] C:\Program Files\Java\jdk-24\bin\javaw.exe  (04-Sept-2025, 9:20:57 pm – 9:21:03 pm
boolean value into String  : true
boolean value into Boolean instance : false
String value into boolean value : true
String value into boolean value : false
String value into Boolean instance : true
String value into Boolean instance : false
```

7.Write a program to perform below operations on byte type to get:

a. The number of bits used to represent a byte value
b. The number of bytes used to represent a byte value
c. The minimum value a byte
d. The maximum value a byte

Reference:https://docs.oracle.com/javase/8/docs/api/java/lang/ Byte.html

```java
class ByteeJava{
    public static void main(String[] args) {
        // a. The number of bits used to represent a byte value
        System.out.println("Number of bits: " +Byte.SIZE);
        // b. The number of bytes used to represent a byte value
        System.out.println("Number of bytes: " +Byte.BYTES);
        // c. The minimum value a byte
        System.out.println("Min val byte: " +Byte.MIN_VALUE);
        // d. The maximum value a byte
        System.out.println("Max val byte: " +Byte.MAX_VALUE);
    }
}
```

```
Command Prompt
Microsoft Windows [Version 10.0.26100.4946]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Shweta>cd Documents

C:\Users\Shweta\Documents>javac ByteeJava.java

C:\Users\Shweta\Documents>java ByteeJava
Number of bits: 8
Number of bytes: 1
Min val byte: -128
Max val byte: 127

C:\Users\Shweta\Documents>
```

ByteeJava.java

```java
class ByteeJava{
    public static void main(String[] args) {
        // a. The number of bits used to represent a byte value
        System.out.println("Number of bits: " + Byte.SIZE);
        // b. The number of bytes used to represent a byte value
        System.out.println("Number of bytes: " + Byte.BYTES);
        // c. The minimum value a byte
        System.out.println("Min val byte: " + Byte.MIN_VALUE);
        // d. The maximum value a byte
        System.out.println("Max val byte: " + Byte.MAX_VALUE);
    }
}
```

Console

```
<terminated> ByteeJava [Java Application] C:\Program Files\Java\jdk-24\bin\javaw.exe (04-Sept-2025,
Number of bits: 8
Number of bytes: 1
Min val byte: -128
Max val byte: 127
```

8.Write a program to convert:

a. byte value into String

b. byte value into Byte instance.

c. String instance into Byte instance.

C: > Users > Shweta > Documents > ByteeStr.java

```
4   c. String instance into Byte instance.
5   */
6   public class ByteeStr{
7       public static void main(String[] args) {
8           byte bytvar = 76;
9           String bytStr = "99";
10          System.out.println("byte value: " + bytvar);
11          System.out.println("String value: " + bytStr);
12          //a. byte value into a String
13          String conbytStr = "" + bytvar;
14          System.out.println("Byte to String: " + conbytStr);
15          //b. byte value into a Byte instance
16          Byte bytins = bytvar;
17          System.out.println("byte to Byte instance: " + bytins);
18          //c. String instance into Byte instance
19          Byte bByteIns = Byte.valueOf(bytStr);
20          System.out.println("String to Byte instance: " + bByteIns);
21      }
22  }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Shweta\Documents> java ByteeStr
byte value: 76
String value: 99
Byte to String: 76
byte to Byte instance: 76
String to Byte instance: 99
PS C:\Users\Shweta\Documents>
```

9.Write a program to convert state of Byte instance into byte, short, int. long, float and double.

C: > Users > Shweta > Documents > JavaAssign1code > ByteToPrimitives.java

```java
public class ByteToPrimitives{
    public static void main(String[] args) {
        byte byteVal = byteIns.byteValue();
        System.out.println("Converted to byte: " + byteVal);
        //short
        short shortVal = byteIns.shortValue();
        System.out.println("Converted to short: " + shortVal);
        //int
        int intVal = byteIns.intValue();
        System.out.println("Converted to int: " + intVal);
        //long
        long longVal = byteIns.longValue();
        System.out.println("Converted to long: " + longVal);
        //float
        float floatVal = byteIns.floatValue();
        System.out.println("Converted to float: " + floatVal);
        //double
        double doubleVal = byteIns.doubleValue();
        System.out.println("Converted to double: " + doubleVal);
    }
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Shweta> cd Documents
PS C:\Users\Shweta\Documents> cd JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac ByteToPrimitives.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java ByteToPrimitives
Byte instance value: 101
Converted to byte: 101
Converted to short: 101
Converted to int: 101
Converted to long: 101
Converted to float: 101.0
Converted to double: 101.0
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

10. Write a program to perform below operations on char type to get:
    a. The number of bits used to represent a char value
    b. The number of bytes used to represent a char value c. The minimum value a char
    d. The maximum value a char

Reference:https://docs.oracle.com/javase/8/docs/api/java/lang/Character.html

C: > Users > Shweta > Documents > JavaAssign1code > CharInfo.java

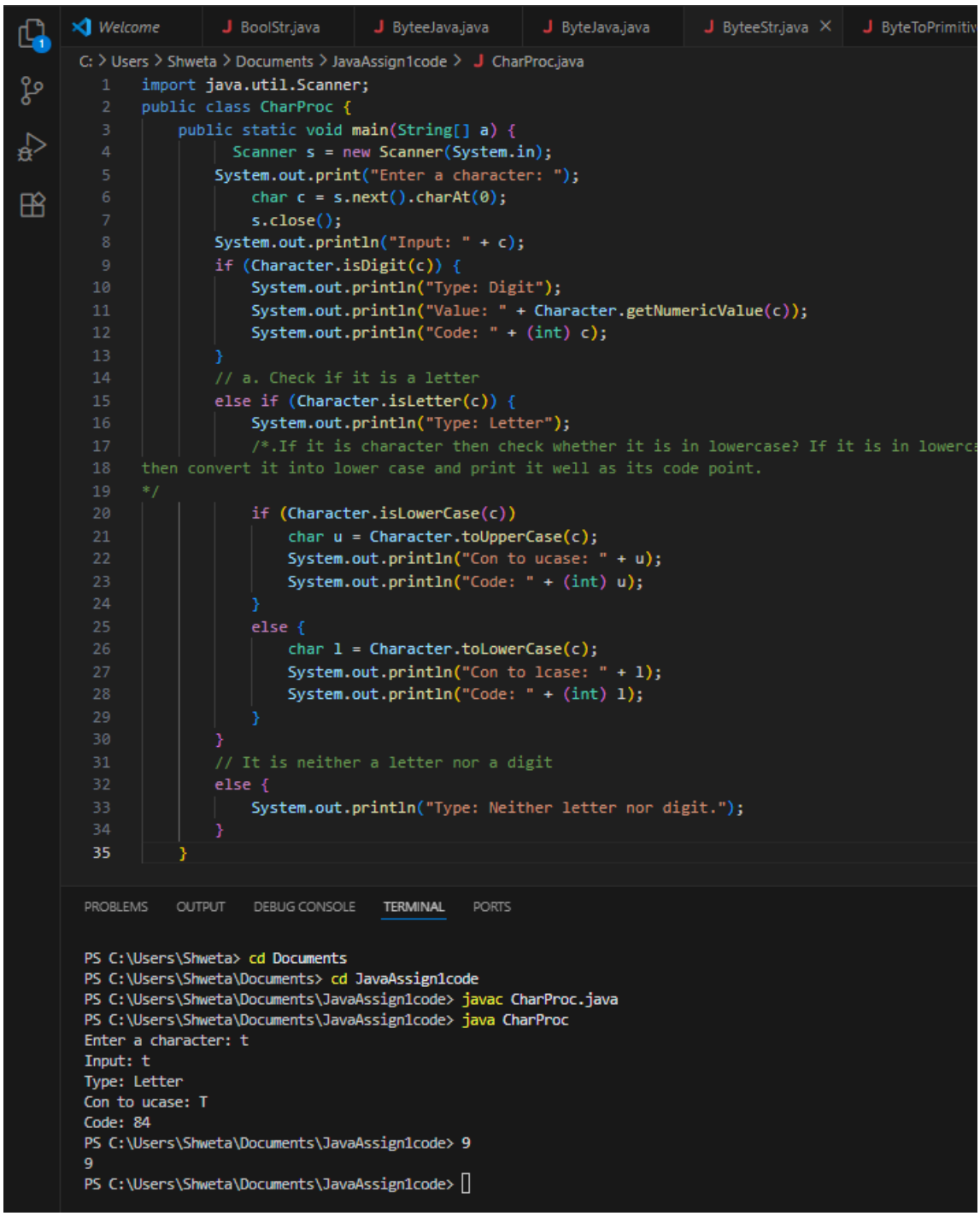
```java
public class CharInfo {
    public static void main(String[] args) {
        int bits = Character.SIZE;
        int bytes = Character.BYTES;
        char minVal = Character.MIN_VALUE;
        char maxVal = Character.MAX_VALUE;
        System.out.println("Character Info:");
        System.out.println("Bits: " + bits);
        System.out.println("Bytes: " + bytes);
        System.out.println("Min Value (char): " + minVal);
        System.out.println("Min Value (int): " + (int)minVal);
        System.out.println("Max Value (char): " + maxVal);
        System.out.println("Max Value (int): " + (int)maxVal);
    }
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Shweta> cd Documents
PS C:\Users\Shweta\Documents> cd JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac CharInfo.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java CharInfo
Character Info:
Bits: 16
Bytes: 2
Min Value (char):
Min Value (int): 0
Max Value (char): ?
Max Value (int): 65535
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

11. Accept character from command line and perform below operations. Here you can use charAt() method to extract character:
    a. Check whether entered character is letter or digit. If it is digit then print its values as well as code point.
    b. If it is character then check whether it is in

lowercase? If it is in lowercase then convert it into upper case and print it well as its code point. If it is in uppercase
then convert it into lower case and print it well as its code point.



```
Welcome | BoolStr.java | ByteeJava.java | ByteJava.java | ByteeStr.java | ByteToPrimitiv
C: > Users > Shweta > Documents > JavaAssign1code > CharProc.java
```

```java
import java.util.Scanner;
public class CharProc {
    public static void main(String[] a) {
        Scanner s = new Scanner(System.in);
        System.out.print("Enter a character: ");
        char c = s.next().charAt(0);
        s.close();
        System.out.println("Input: " + c);
        if (Character.isDigit(c)) {
            System.out.println("Type: Digit");
            System.out.println("Value: " + Character.getNumericValue(c));
            System.out.println("Code: " + (int) c);
        }
        // a. Check if it is a letter
        else if (Character.isLetter(c)) {
            System.out.println("Type: Letter");
            /*.If it is character then check whether it is in lowercase? If it is in lowerca
then convert it into lower case and print it well as its code point.
*/
            if (Character.isLowerCase(c))
                char u = Character.toUpperCase(c);
                System.out.println("Con to ucase: " + u);
                System.out.println("Code: " + (int) u);
            }
            else {
                char l = Character.toLowerCase(c);
                System.out.println("Con to lcase: " + l);
                System.out.println("Code: " + (int) l);
            }
        }
        // It is neither a letter nor a digit
        else {
            System.out.println("Type: Neither letter nor digit.");
        }
    }
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Shweta> cd Documents
PS C:\Users\Shweta\Documents> cd JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac CharProc.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java CharProc
Enter a character: t
Input: t
Type: Letter
Con to ucase: T
Code: 84
PS C:\Users\Shweta\Documents\JavaAssign1code> 9
9
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

12. Write a program to perform below operations on short type to get:
    a. The number of bits used to represent a short value
    b. The number of bytes used to represent a short value c. The minimum value a short
    d. The maximum value a short

Reference:https://docs.oracle.com/javase/8/docs/api/java/lang

/ Short.html

```java
public class ShortSize{
    public static void main(String[] args) {
        int bits = Short.SIZE;
        int bytes = Short.BYTES;
        short minVal = Short.MIN_VALUE;
        short maxVal = Short.MAX_VALUE;
        System.out.println("Short Type ");
        System.out.println("Bits: " + bits);
        System.out.println("Bytes: " + bytes);
        System.out.println("MinValue: " + minVal);
        System.out.println("Max Value: " + maxVal);
    }
}
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Shweta> cd Documents
PS C:\Users\Shweta\Documents> cd JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac ShortSize.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java ShortSize
Short Type
Bits: 16
Bytes: 2
MinValue: -32768
Max Value: 32767
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

13. Write a program to convert:
    a. short value into String
    b. short value into Short instance.
    c. String instance into Short instance.

C: > Users > Shweta > Documents > JavaAssign1code > J ShortCon.java

```java
public class ShortCon{
    public static void main(String[] args) {
        //a. short value into a String
        short sVal = 99;
        String s = "" + sVal;
        System.out.println("Short to String: " + s);
        //b. short value into Short instance
        short pVal = 100;
        Short SInst = pVal;
        System.out.println("Short to Short instance: " + SInst);
        //c. String instance into Short instance
        String str = "999";
        Short S2Inst = Short.valueOf(str);
        System.out.println("String to Short instance: " + S2Inst);
    }
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Shweta> cd Documents
PS C:\Users\Shweta\Documents> cd JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac ShortCon.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java ShortCon
Short to String: 99
Short to Short instance: 100
String to Short instance: 999
```

14.Write a program to convert state of Short instance into byte, short, int, long, float and double.

C: > Users > Shweta > Documents > JavaAssign1code > ShortIns.java

```java
public class ShortIns{
    public static void main(String[] args) {
        Short sObj = 9999;
        System.out.println("Short object =" + sObj);
        // a. to byte
        byte b = sObj.byteValue();
        System.out.println("Con to byte: " + b);
        // b. to short
        short s = sObj.shortValue();
        System.out.println("Con to short: " + s);
        // c. to int
        int i = sObj.intValue();
        System.out.println("Con to int: " + i);
        // d. to long
        long l = sObj.longValue();
        System.out.println("Con to long: " + l);
        // e. to float
        float f = sObj.floatValue();
        System.out.println("Con to float: " + f);
        // f. to double
        double d = sObj.doubleValue();
        System.out.println("Con to double: " + d);
    }
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Shweta\Documents\JavaAssign1code> javac ShortIns.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java ShortIns
Short object =9999
Con to byte: 15
Con to short: 9999
Con to int: 9999
Con to long: 9999
Con to float: 9999.0
Con to double: 9999.0
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

15. Write a program to perform below operations on int type to get:
    a. The number of bits used to represent a integer value
    b. The number of bytes used to represent a integer value
    c. The minimum value a integer
    d. The maximum value a integer

    Reference:https://docs.oracle.com/javase/8/docs/api/java/lang/Integer.html

C: > Users > Shweta > Documents > JavaAssign1code > IntOperation.java

```java
public class IntOperation{
    public static void main(String[] args) {
        int bits = Integer.SIZE;
        System.out.println("The number of bits used to represent a integer value : " + bits);
        int bytes = Integer.BYTES;
        System.out.println("The number of bytes used to represent a integer value is: " + bytes);
        int min = Integer.MIN_VALUE;
        System.out.println("The minimum value a integer can have is: " + min);
        int max = Integer.MAX_VALUE;
        System.out.println("The maximum value a integer can have is: " + max);
    }
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Shweta> cd Documents
PS C:\Users\Shweta\Documents> cd JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac IntOperation.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java IntOperation
The number of bits used to represent a integer value : 32
The number of bytes used to represent a integer value is: 4
The minimum value a integer can have is: -2147483648
The maximum value a integer can have is: 2147483647
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

16. Write a program to convert:
    a. int value into String
    b. int value into Integer instance.
    c. String instance into Integer instance.
    d. int value into binary, octal and hexadecimal string.

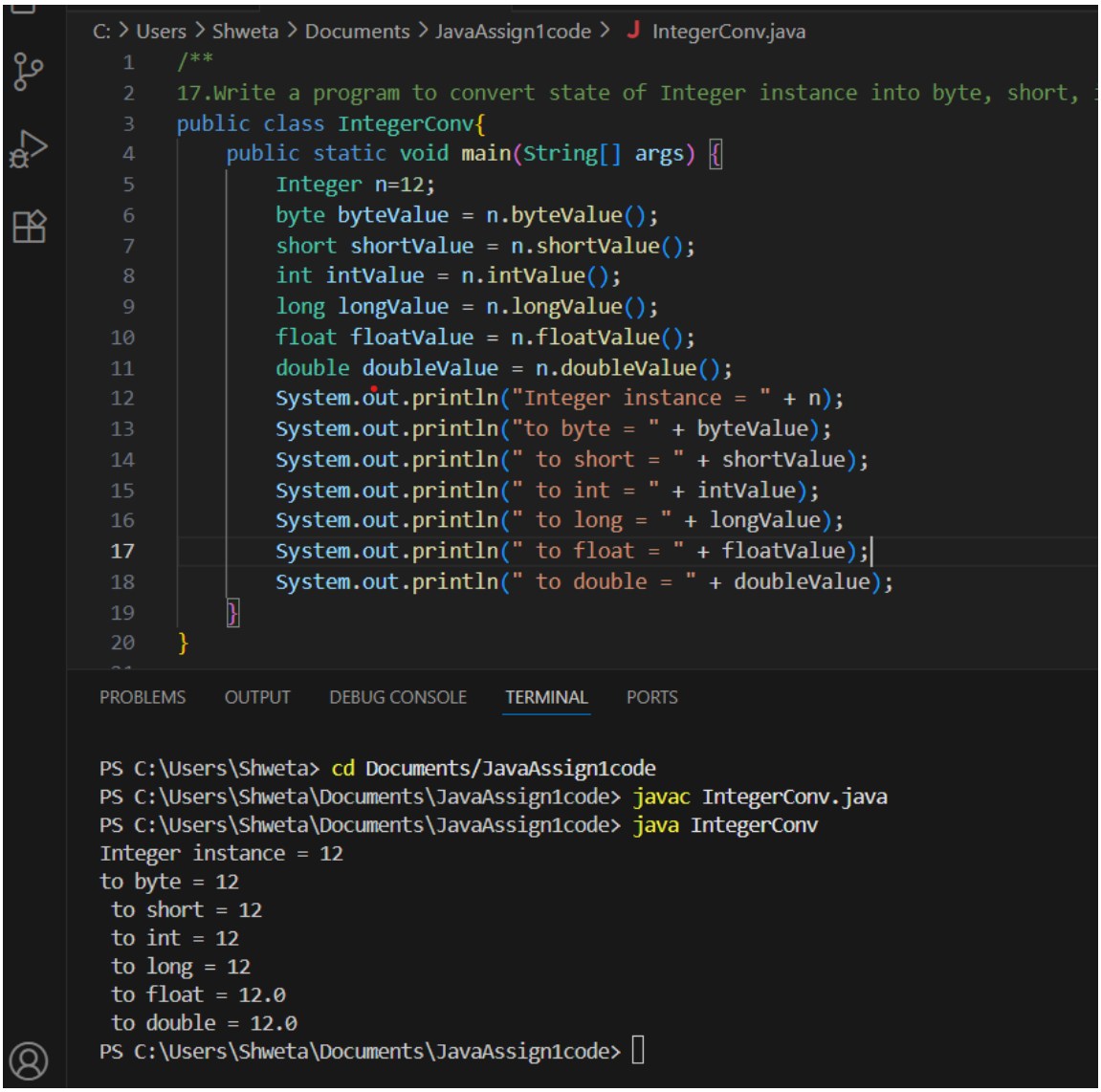
C: > Users > Shweta > Documents > JavaAssign1code > VarChange.java

```java
class VarChange{
    public static void main(String[] args) {
        // a.int value into String
        int i =999;
        String s = String.valueOf(i);
        System.out.println("int to String: " + s);
        // b. int value into Integer instance
        int a = 789;
        Integer b = a;
        System.out.println("int to Integer instance: " + b);
        // c. String instance into Integer instance
        String c = "789";
        Integer d = Integer.valueOf(c);
        System.out.println("String instance into Integer instance: " + d);
        // d. int value into binary, octal, and hexadecimal strings
        int num = 222;
        String bin = Integer.toBinaryString(num);
        String oct = Integer.toOctalString(num);
        String hex = Integer.toHexString(num);
        System.out.println("int value: " + num);
        System.out.println("to Binary: " + bin);
        System.out.println("to Octal: " + oct);
        System.out.println("to Hexadecimal: " + hex);
    }
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Shweta> cd Documents
PS C:\Users\Shweta\Documents> cd JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac VarChange.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java VarChange
int to String: 999
int to Integer instance: 789
String instance into Integer instance: 789
int value: 222
to Binary: 11011110
to Octal: 336
to Hexadecimal: de
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

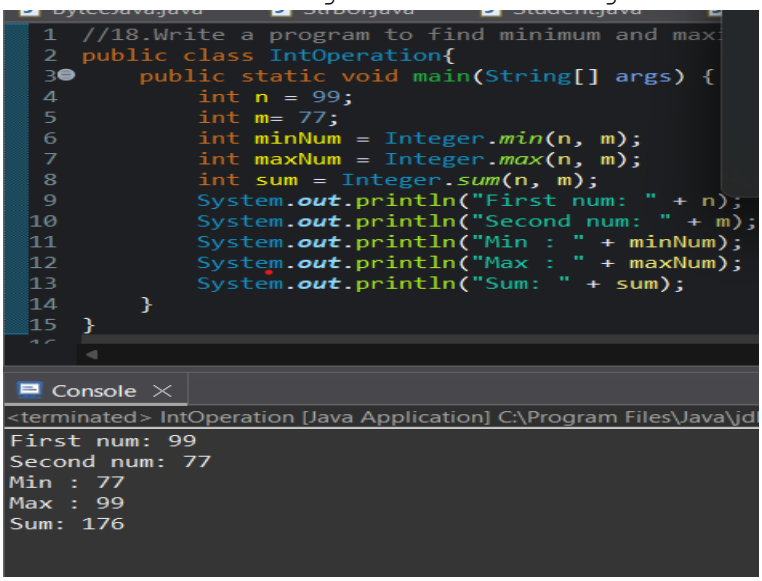
17.Write a program to convert state of Integer instance into byte, short, int, long, float and double.



```
C: > Users > Shweta > Documents > JavaAssign1code > J IntegerConv.java
/**
17.Write a program to convert state of Integer instance into byte, short,
public class IntegerConv{
    public static void main(String[] args) {
        Integer n=12;
        byte byteValue = n.byteValue();
        short shortValue = n.shortValue();
        int intValue = n.intValue();
        long longValue = n.longValue();
        float floatValue = n.floatValue();
        double doubleValue = n.doubleValue();
        System.out.println("Integer instance = " + n);
        System.out.println("to byte = " + byteValue);
        System.out.println(" to short = " + shortValue);
        System.out.println(" to int = " + intValue);
        System.out.println(" to long = " + longValue);
        System.out.println(" to float = " + floatValue);
        System.out.println(" to double = " + doubleValue);
    }
}
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Shweta> cd Documents/JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac IntegerConv.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java IntegerConv
Integer instance = 12
to byte = 12
 to short = 12
 to int = 12
 to long = 12
 to float = 12.0
 to double = 12.0
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

18.Write a program to find minimum and maximum number as well as to add two integer numbers using methods of Integer.



```
//18.Write a program to find minimum and max
public class IntOperation{
    public static void main(String[] args) {
        int n = 99;
        int m= 77;
        int minNum = Integer.min(n, m);
        int maxNum = Integer.max(n, m);
        int sum = Integer.sum(n, m);
        System.out.println("First num: " + n);
        System.out.println("Second num: " + m);
        System.out.println("Min : " + minNum);
        System.out.println("Max : " + maxNum);
        System.out.println("Sum: " + sum);
    }
}
```

```
Console
<terminated> IntOperation [Java Application] C:\Program Files\Java\jd
First num: 99
Second num: 77
Min : 77
Max : 99
Sum: 176
```

19.Write a program to perform below operations on long type to get:

a. The number of bits used to represent a long value
b. The number of bytes used to represent a long value
c. The minimum value a long
d. The maximum value a long

Reference:https://docs.oracle.com/javase/8/docs/api/java/lang/Long.html

C: > Users > Shweta > Documents > JavaAssign1code > LongDT.java

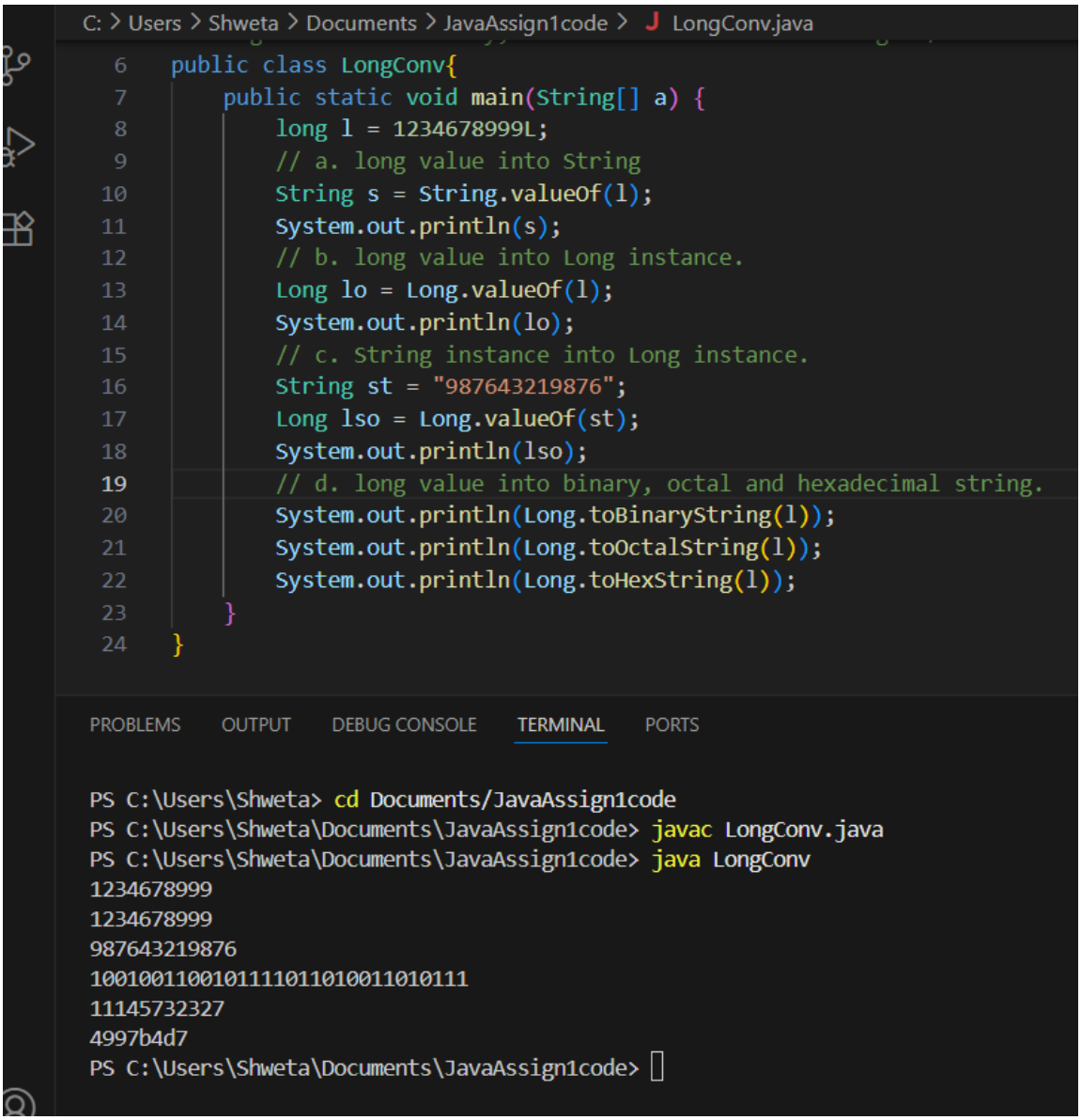
```java
/* 19.Write a program to perform below operations on long type
   a. The number of bits used to represent a long value
   b. The number of bytes used to represent a long value
   c. The minimum value a long
   d. The maximum value a long
   */
   public class LongDT{
       public static void main(String[] args) {
           int bits = Long.SIZE;
           int bytes = Long.BYTES;
           long minval = Long.MIN_VALUE;
           long maxval = Long.MAX_VALUE;
           System.out.println("Info of 'long' data type:");
           System.out.println("bits used: " + bits);
           System.out.println("bytes used: " + bytes);
           System.out.println("Min value: " + minval);
           System.out.println("Max value: " + maxval);
       }
   }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Shweta> cd Documents/JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac LongDT.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java LongDT
Info of 'long' data type:
bits used: 64
bytes used: 8
Min value: -9223372036854775808
Max value: 9223372036854775807
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

20. Write a program to convert:

a. long value into String
b. long value into Long instance.
c. String instance into Long instance.
d. long value into binary, octal and hexadecimal string.



21.Write a program to convert state of Long instance into byte, short, int, long, float and double.

C: > Users > Shweta > Documents > JavaAssign1code > LongIns.java

```java
//21.Write a program to convert state of Long instance into byte,
public class LongIns{
    public static void main(String[] a) {
        Long lo = 1234998912348L;
        System.out.println(lo.byteValue());
        System.out.println(lo.shortValue());
        System.out.println(lo.intValue());
        System.out.println(lo.longValue());
        System.out.println(lo.floatValue());
        System.out.println(lo.doubleValue());
    }
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Shweta> cd Documents/JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac LongIns.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java LongIns
92
-6820
-1951668900
1234998912348
1.2349989E12
1.234998912348E12
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

22. Write a program to find minimum and maximum number as well as to add two long numbers using methods of Long.

```java
//Write a program to find minimum and maximum number as well as to
public class LongOp{
    public static void main(String[] a) {
        long l1 = 900L;
        long l2 = 700L;
        System.out.println(Long.MIN_VALUE);
        System.out.println(Long.MAX_VALUE);
        System.out.println(Long.sum(l1, l2));
    }
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Shweta> cd Documents/JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac LongOp.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java LongOp
-9223372036854775808
9223372036854775807
1600
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

23.Write a program to perform below operations on float type to get:

a. The number of bits used to represent a float value
b. The number of bytes used to represent a float value c. The minimum value a float
d. The maximum value a float

Reference:https://docs.oracle.com/javase/8/docs/api/java/lang/Float.html

```
*/
public class FloatOp{
    public static void main(String[] a) {
        //a. The number of bits used to represent a float value
        System.out.println(Float.SIZE);
        //b. The number of bytes used to represent a float value
        System.out.println(Float.BYTES);
        //c. The minimum value a float
        System.out.println(Float.MIN_VALUE);
        //d. The maximum value a float
        System.out.println(Float.MAX_VALUE);
    }
}
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Shweta> cd Documents/JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac FloatOp.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java FloatOp
32
4
1.4E-45
3.4028235E38
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

24.Write a program to convert:
a. float value into String
b. float value into Float instance.
c. String instance into Float instance.
d. float value into hexadecimal string.

```
C: > Users > Shweta > Documents > JavaAssign1code > J FloatConv.java
public class FloatConv{
    public static void main(String[] args) {
        // a. float value into String
        float fval = 8967.89f;
        String sval = Float.toString(fval);
        System.out.println("float " + fval + " into String: " + sval);

        // b. float value into Float instance.
        float fval2 = 99.89f;
        Float finst = Float.valueOf(fval2);
        System.out.println("float " + fval2 + " into Float instance: " + finst);
        // c. String instance into Float instance.
        String sval2 = "99.76";
        Float finst2 = Float.valueOf(sval2);
        System.out.println("String" + sval2 + " into Float instance: " + finst2);
        // d. float value into hexadecimal string.
        float fval3 = 9.9f;
        String hexval = Float.toHexString(fval3);
        System.out.println("d. float " + fval3 + " converted to hexadecimal string: " + hexval);
    }
}
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Shweta> cd Documents/JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac FloatConv.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java FloatConv
float 8967.89 into String: 8967.89
float 99.89 into Float instance: 99.89
String99.76 into Float instance: 99.76
d. float 9.9 converted to hexadecimal string: 0x1.3cccccp3
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

25.Write a program to convert state of Float instance into byte, short, int, long, float and double.

```java
//Write a program to convert state of Float instance into byte, short
public class FloatInst{
    public static void main(String[] args) {
        Float finst = Float.valueOf(111.78f);
        byte bval = finst.byteValue();
        short shval = finst.shortValue();
        int ival = finst.intValue();
        long lval = finst.longValue();
        float fv = finst.floatValue();
        double dval = finst.doubleValue();
        System.out.println("Float instance value is : " + finst);
        System.out.println("to byte : " + bval);
        System.out.println("to short : " + shval);
        System.out.println("to int : " + ival);
        System.out.println("to long : " + lval);
        System.out.println("to float : " + fv);
        System.out.println("to double : " + dval);
    }
}
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Shweta> cd Documents/JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac FloatInst.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java FloatInst
Float instance value is : 111.78
to byte : 111
to short : 111
to int : 111
to long : 111
to float : 111.78
to double : 111.77999877929688
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

26.Write a program to find minimum and maximum number as well as to add two float numbers using methods of Float.

C: > Users > Shweta > Documents > JavaAssign1code > FloatNum.java

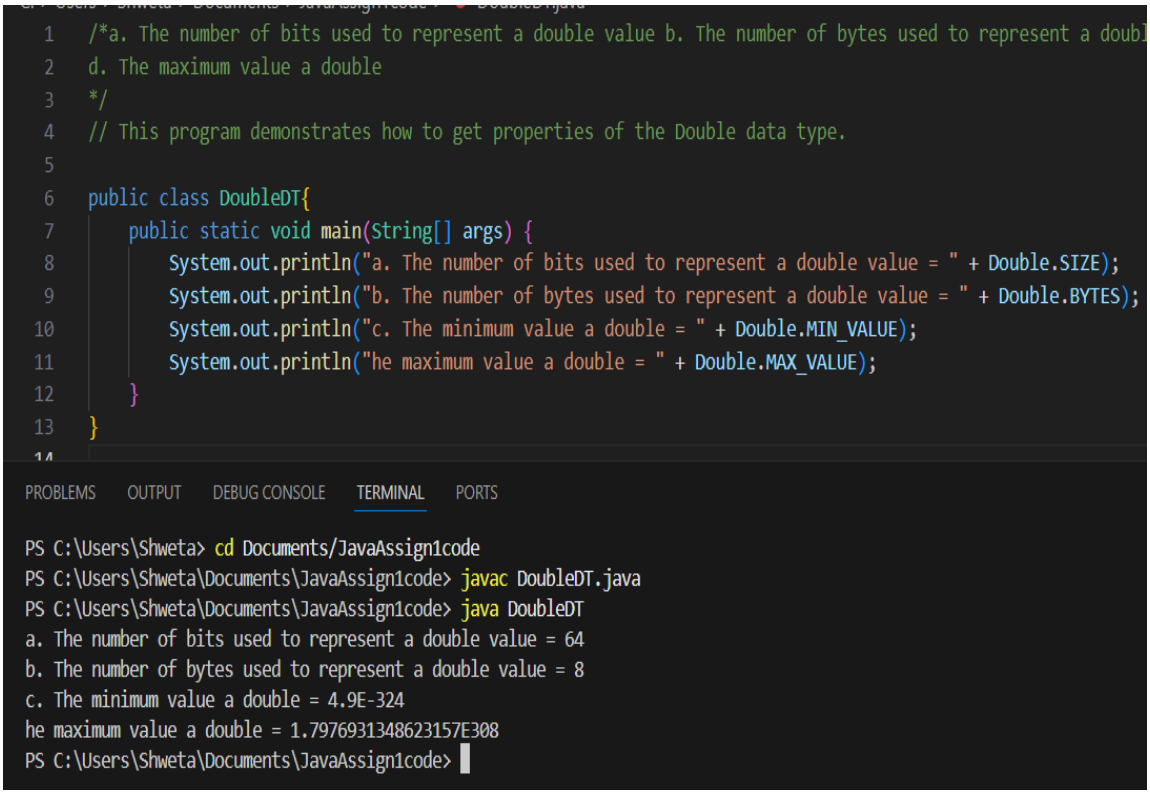
```java
//Write a program to find minimum and maximum number as well as t
public class FloatNum{
    public static void main(String[] args) {
        float num1 = 99.879f;
        float num2 = 22.74f;
        float minval = Float.min(num1, num2);
        System.out.println("Minimum number is = " + minval);
        float maxval = Float.max(num1, num2);
        System.out.println("Maximum number is = " + maxval);
        float sumval = Float.sum(num1, num2);
        System.out.println("Sum of is = " + sumval);
    }
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Shweta> cd Documents/JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac FloatNum.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java FloatNum
Minimum number is = 22.74
Maximum number is = 99.879
Sum of is = 122.618996
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

27. Write a program to perform below operations on Double type to get:
    a. The number of bits used to represent a double value
    b. The number of bytes used to represent a double value c. The minimum value a double
    d. The maximum value a double

Reference:https://docs.oracle.com/javase/8/docs/api/java/lang/Double.html

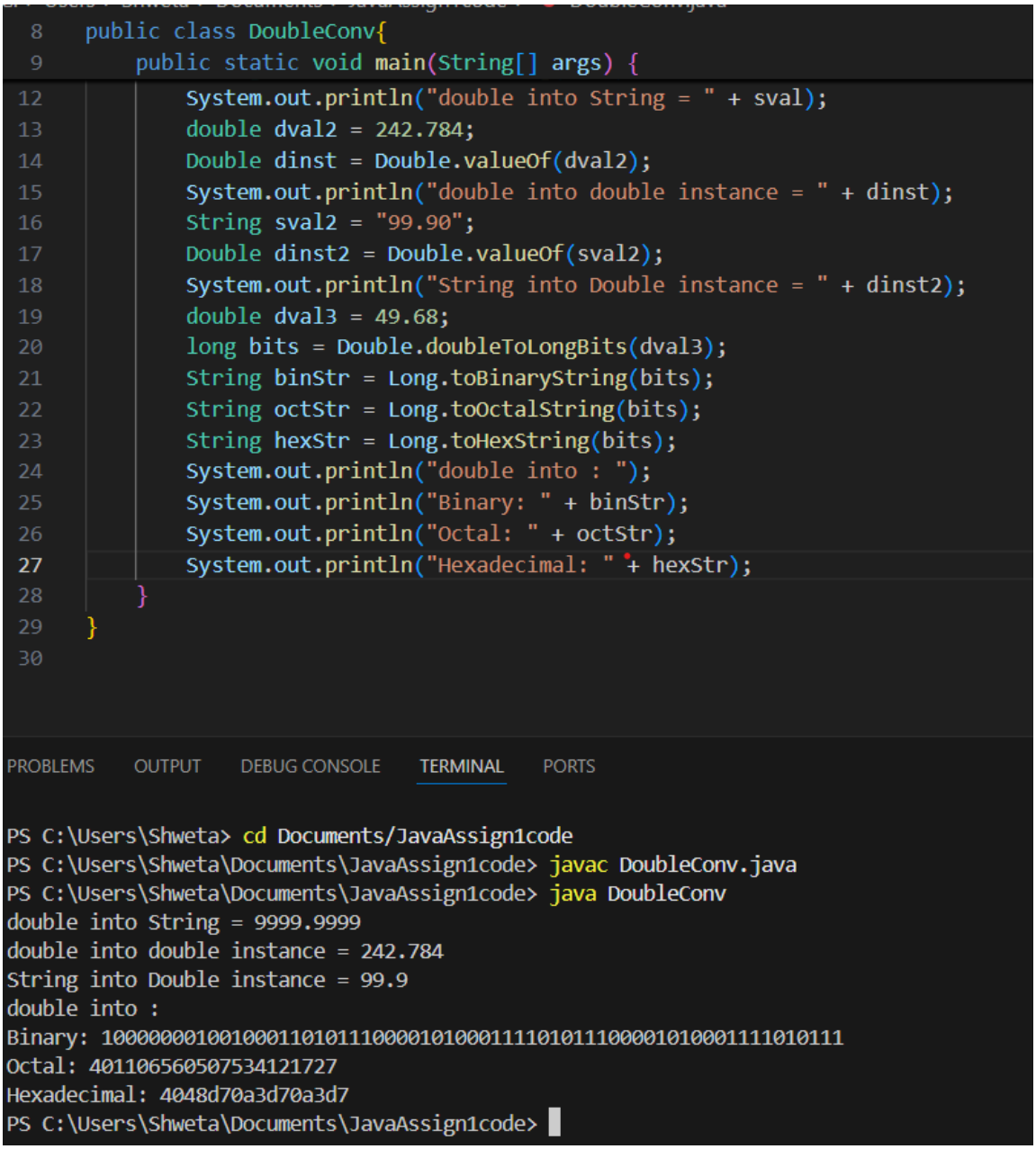


```java
/*a. The number of bits used to represent a double value b. The number of bytes used to represent a doubl
d. The maximum value a double
*/
// This program demonstrates how to get properties of the Double data type.

public class DoubleDT{
    public static void main(String[] args) {
        System.out.println("a. The number of bits used to represent a double value = " + Double.SIZE);
        System.out.println("b. The number of bytes used to represent a double value = " + Double.BYTES);
        System.out.println("c. The minimum value a double = " + Double.MIN_VALUE);
        System.out.println("he maximum value a double = " + Double.MAX_VALUE);
    }
}
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Shweta> cd Documents/JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac DoubleDT.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java DoubleDT
a. The number of bits used to represent a double value = 64
b. The number of bytes used to represent a double value = 8
c. The minimum value a double = 4.9E-324
he maximum value a double = 1.7976931348623157E308
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

28.Write a program to convert:

a. double value into String
b. double value into Double instance.
c. String instance into Double instance.
d. double value into binary, octal and hexadecimal string(Note: Here you can use doubleToLongBits() method along with methods of Long class).



```
 8   public class DoubleConv{
 9       public static void main(String[] args) {
12           System.out.println("double into String = " + sval);
13           double dval2 = 242.784;
14           Double dinst = Double.valueOf(dval2);
15           System.out.println("double into double instance = " + dinst);
16           String sval2 = "99.90";
17           Double dinst2 = Double.valueOf(sval2);
18           System.out.println("String into Double instance = " + dinst2);
19           double dval3 = 49.68;
20           long bits = Double.doubleToLongBits(dval3);
21           String binStr = Long.toBinaryString(bits);
22           String octStr = Long.toOctalString(bits);
23           String hexStr = Long.toHexString(bits);
24           System.out.println("double into : ");
25           System.out.println("Binary: " + binStr);
26           System.out.println("Octal: " + octStr);
27           System.out.println("Hexadecimal: " + hexStr);
28       }
29   }
30
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Shweta> cd Documents/JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac DoubleConv.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java DoubleConv
double into String = 9999.9999
double into double instance = 242.784
String into Double instance = 99.9
double into :
Binary: 1000000010010001101011100001010001111010111000010100011110101111
Octal: 401106560507534121727
Hexadecimal: 4048d70a3d70a3d7
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

29.Write a program to convert state of Double instance into byte, short, int, long, float and double.

C: > Users > Shweta > Documents > JavaAssign1code > DoubleInstCon.java

```java
//29.Write a program to convert state of Double instance into byte, s
public class DoubleInstCon{
    public static void main(String[] args) {
        Double dinst = Double.valueOf(999.79);
        byte bval = dinst.byteValue();
        short shval = dinst.shortValue();
        int ival = dinst.intValue();
        long lval = dinst.longValue();
        float fval = dinst.floatValue();
        double dval = dinst.doubleValue();
        System.out.println("Double instance value = " + dinst);
        System.out.println("to byte = " + bval);
        System.out.println("to short = " + shval);
        System.out.println("to int = " + ival);
        System.out.println("to long = " + lval);
        System.out.println("to float = " + fval);
        System.out.println("to double = " + dval);
    }
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Shweta> cd Documents/JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac DoubleInstCon.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java DoubleInstCon
Double instance value = 999.79
to byte = -25
to short = 999
to int = 999
to long = 999
to float = 999.79
to double = 999.79
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

30.Write a program to find minimum and maximum number as well as to add two double numbers using methods of Double.

```java
public class DoubleOp{
    public static void main(String[] args) {
        double num1 = 289.67;
        double num2 = 79.24;
        double minval = Double.min(num1, num2);
        System.out.println("Minimum number is = " + minval);
        double maxval = Double.max(num1, num2);
        System.out.println("Maximum number is = " + maxval);
        double sumval = Double.sum(num1, num2);
        System.out.println("Sum = : " + sumval);
    }
}
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Shweta> cd Documents/JavaAssign1code
PS C:\Users\Shweta\Documents\JavaAssign1code> javac DoubleOp.java
PS C:\Users\Shweta\Documents\JavaAssign1code> java DoubleOp
Minimum number is = 79.24
Maximum number is = 289.67
Sum = : 368.91
PS C:\Users\Shweta\Documents\JavaAssign1code>
```

31.Read the documentation of NumberFormatException and try to generate it in Java code.

Reference:https://docs.oracle.com/javase/8/docs/api/java/lang/NumberFormatException.html

```
C:\Users\Shweta\Documents\JAVAAAA>javac NumberFormatException.java
NumberFormatException.java:6: error: incompatible types: NumberFormatException cannot be converted to Throwable
      } catch (NumberFormatException e) {
               ^
1 error
```

32.Write a program to accept and print full name as an argument from command line.

```
C:\Users\Shweta\Documents\JAVAAAA>java PrintFullName
enter name = James Gosling
Full Name.= James Gosling

C:\Users\Shweta\Documents\JAVAAAA>
```

33. Pass integer, float and double value from command line. Parse it appropriately and perform arithmetic operations (+,-,*,/) on it. Here you can you switch case.
Reference:https://docs.oracle.com/javase/tutorial/java/nutsand bolts/switch.html

```
C:\Users\Shweta\Documents\JAVAAAA>java ArithmeticOp
Integer = 20
float = 30
double = 20
operator (+, -, *, /) = +
Result: 70.0

C:\Users\Shweta\Documents\JAVAAAA>java ArithmeticOp
Integer = 20
float = 20
double = 2
operator (+, -, *, /) = *
Result: 800.0

C:\Users\Shweta\Documents\JAVAAAA>java ArithmeticOp
Integer = 20
float = 4
double = 21
operator (+, -, *, /) = /
Result: 0.23809523809523808

C:\Users\Shweta\Documents\JAVAAAA>java ArithmeticOp
Integer = 200
float = 2
double = 2
operator (+, -, *, /) = -
Result: 196.0
```

Write a class EmployeeManagement.
Declare variables for id, name, salary, holidays, address.
Declare methods for calculating the salary of that employee based on number of days he has worked. Take 3 classes for types of employees.
1. Manager (Daily Salary 500 rs)
2. Peon (Daily Sal 100)
3. New Joinee (Daily Sal 200)
Now call all employee objects from main method class.
Create COnstructors of 3 types. Initialize ID of employees through constructor only
Display who is getting highest salary for that month and what amount?
use this to refer to current objcet.
Use static keyword also.

Code -
[https://drive.google.com/file/d/1css1Wd-Y4xLWRbCEc6rV3wDcArS66q3B/view?usp=drive_link]