KodNest

TYPE CASTING IN JAVA

BY

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TYPE CASTING IN JAVA

Type casting:

Convert a value from one data type to another data type is known as type casting.

Two types of type casting:

1. Implicit type casting:

Converting a lower data type into a higher one is called implicit type casting. It is also known as widening. It is done automatically. It is safe because there is no chance to lose data.

2. Explicit type casting:

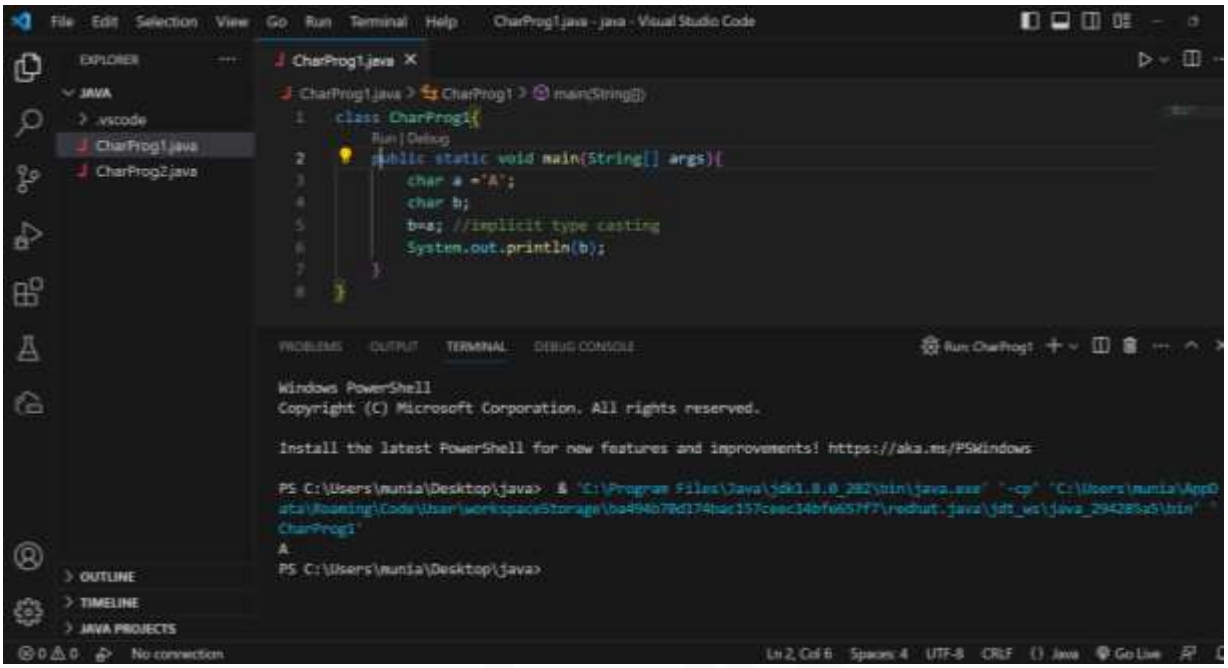
Converting a higher data type into a lower one is called explicit type casting. It is also known as narrowing. It is done manually by the programmer. If we do not perform casting then the compiler reports a compile-time error.

Program 1: (char to char)

```
class CharProg1{
   public static void main(String[] args){
      char a ='A';
      char b;
      b=a; //implicit type casting
      System.out.println(b);
   }
}
```

Casting Not Required

Output:

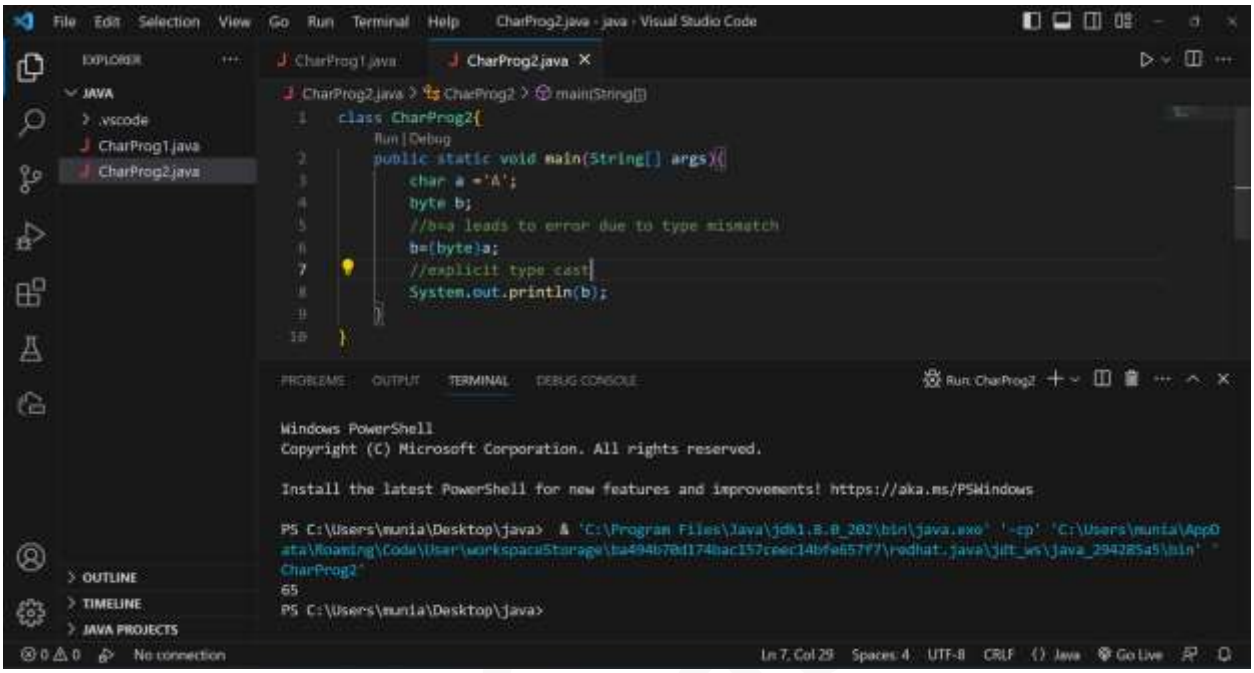


Program 2: (char to byte)

```
class CharProg2{
    public static void main(String[] args){
        char a ='A';
        byte b;
        //b=a leads to error due to type mismatch
        b=(byte)a;
        //explicit type cast
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

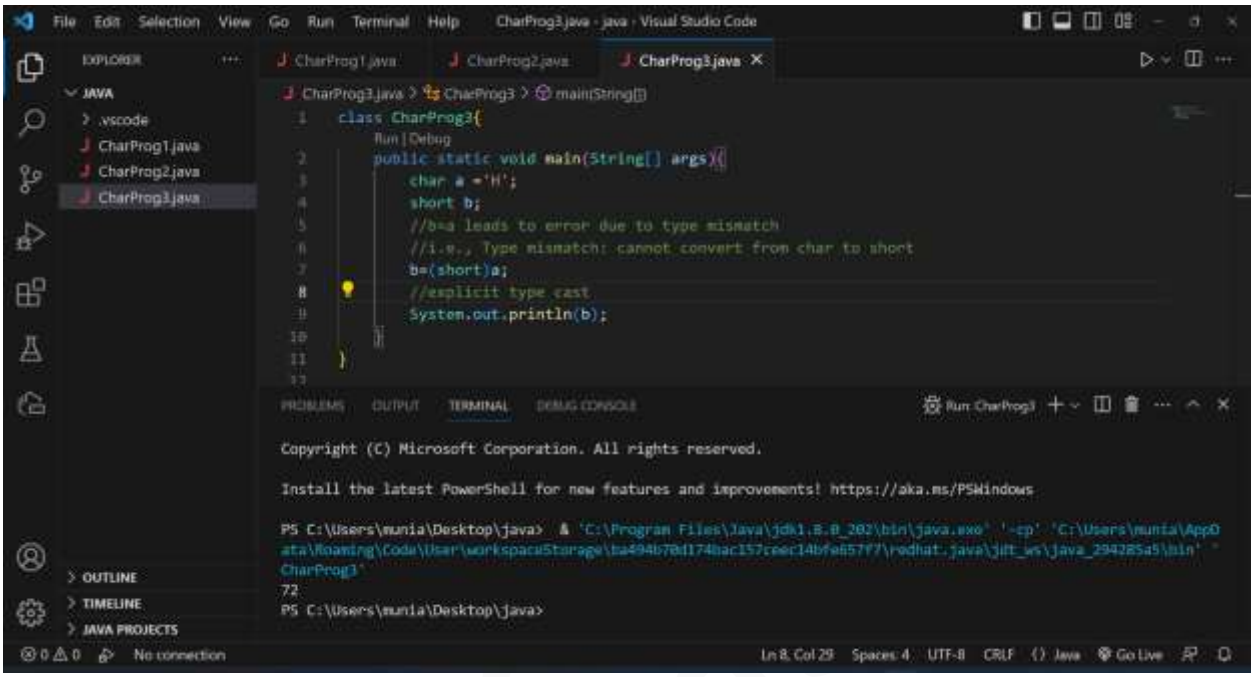


Program 3: (char to short)

```
class CharProg3{
    public static void main(String[] args){
        char a ='H';
        short b;
        //b=a leads to error due to type mismatch
        //i.e., Type mismatch: cannot convert from char to short
        b=(short)a;
        //explicit type cast
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

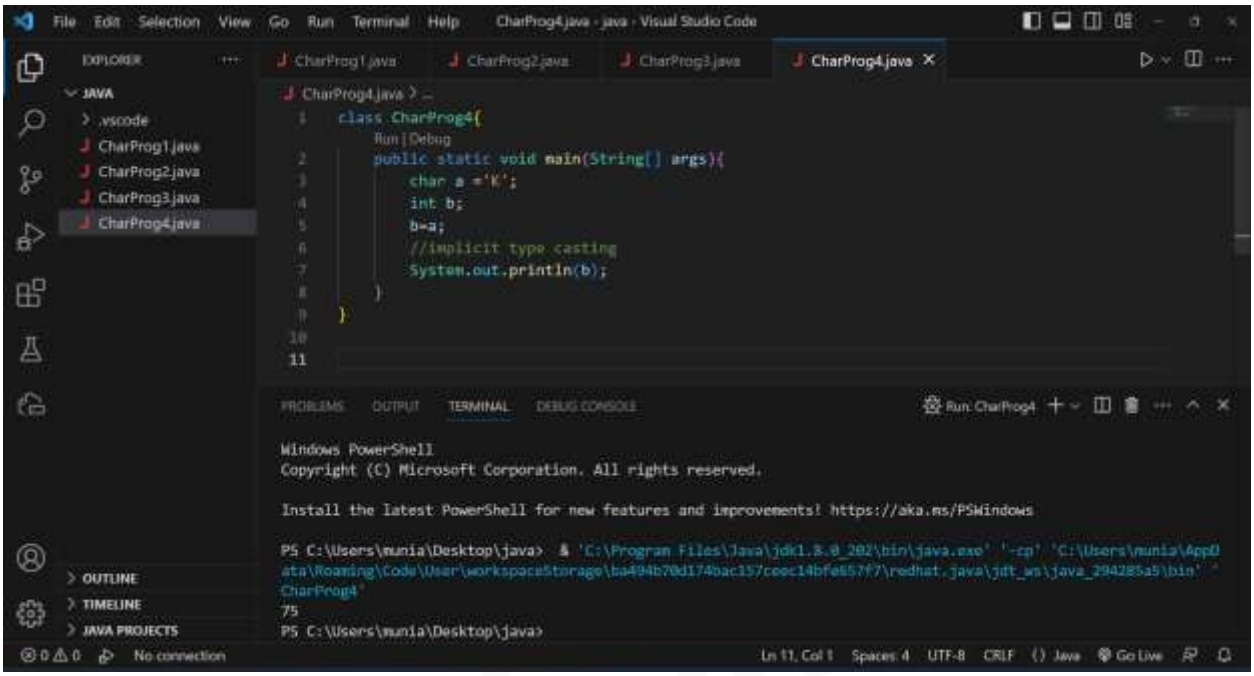


Program 4: (char to int)

```
class CharProg4{
    public static void main(String[] args){
        char a ='K';
        int b;
        b=a;
        //implicit type casting
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

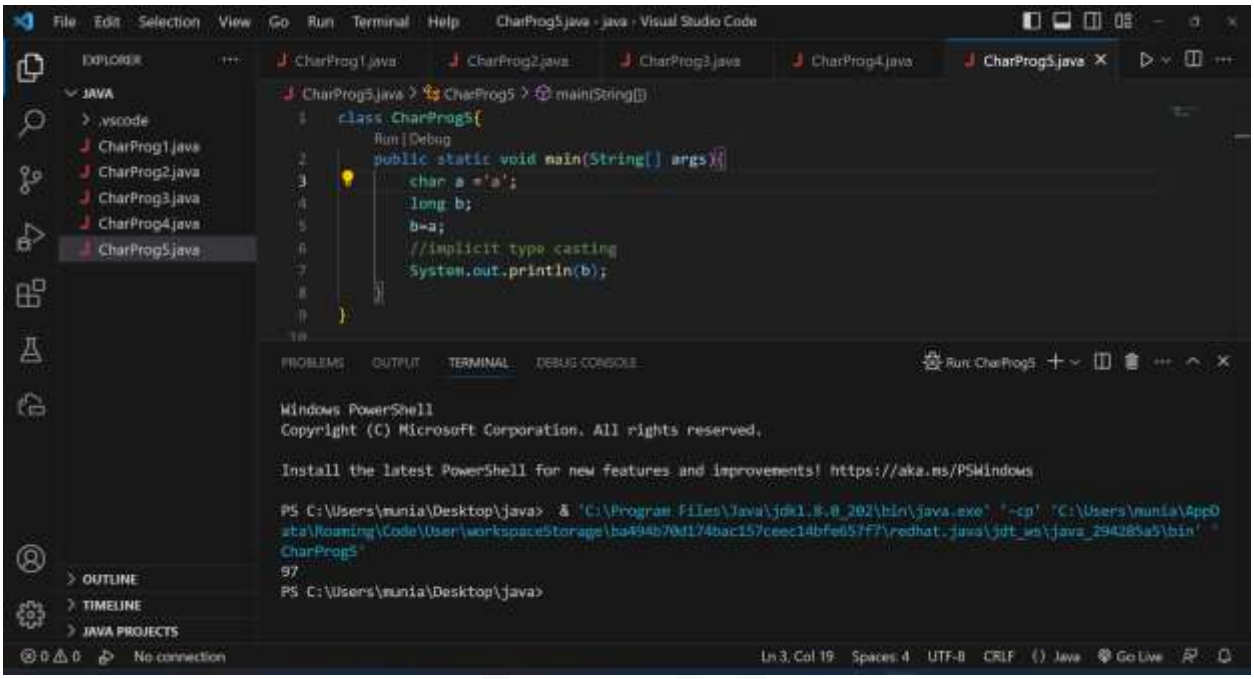


Program 5: (char to long)

```
class CharProg5{
    public static void main(String[] args){
        char a ='a';
        long b;
        b=a;
        //implicit type casting
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

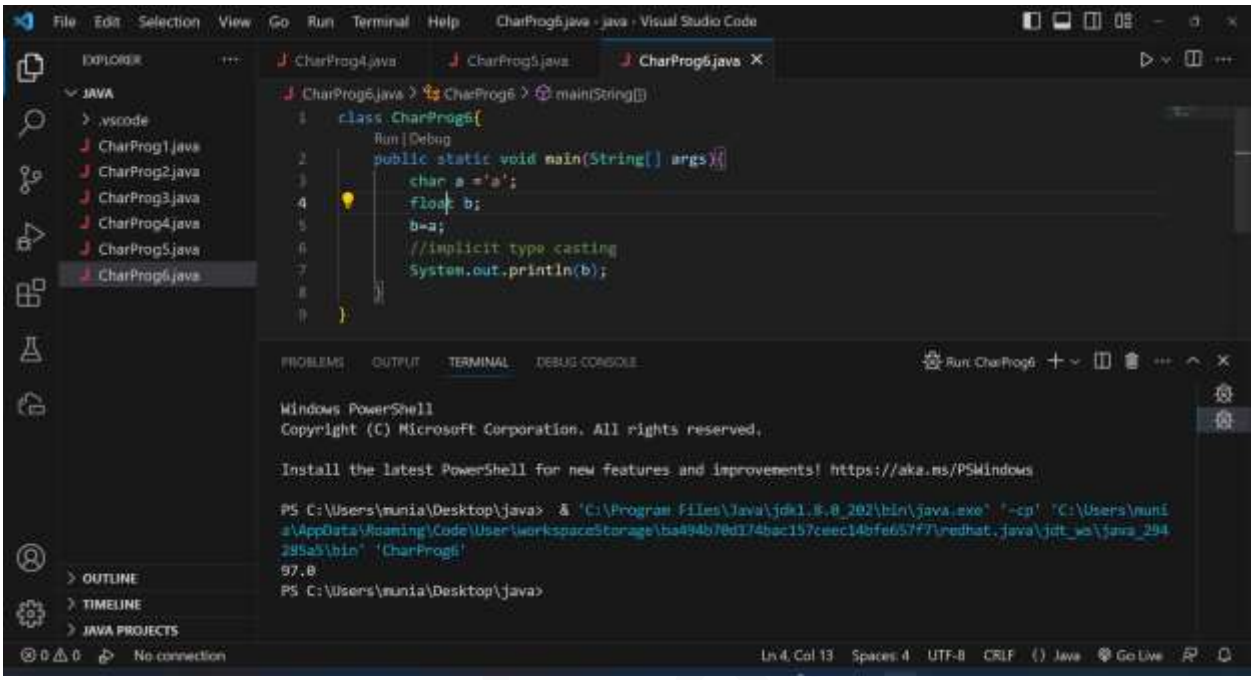


Program 6: (char to float)

```
class CharProg6{
    public static void main(String[] args){
        char a ='a';
        float b;
        b=a;
        //implicit type casting
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

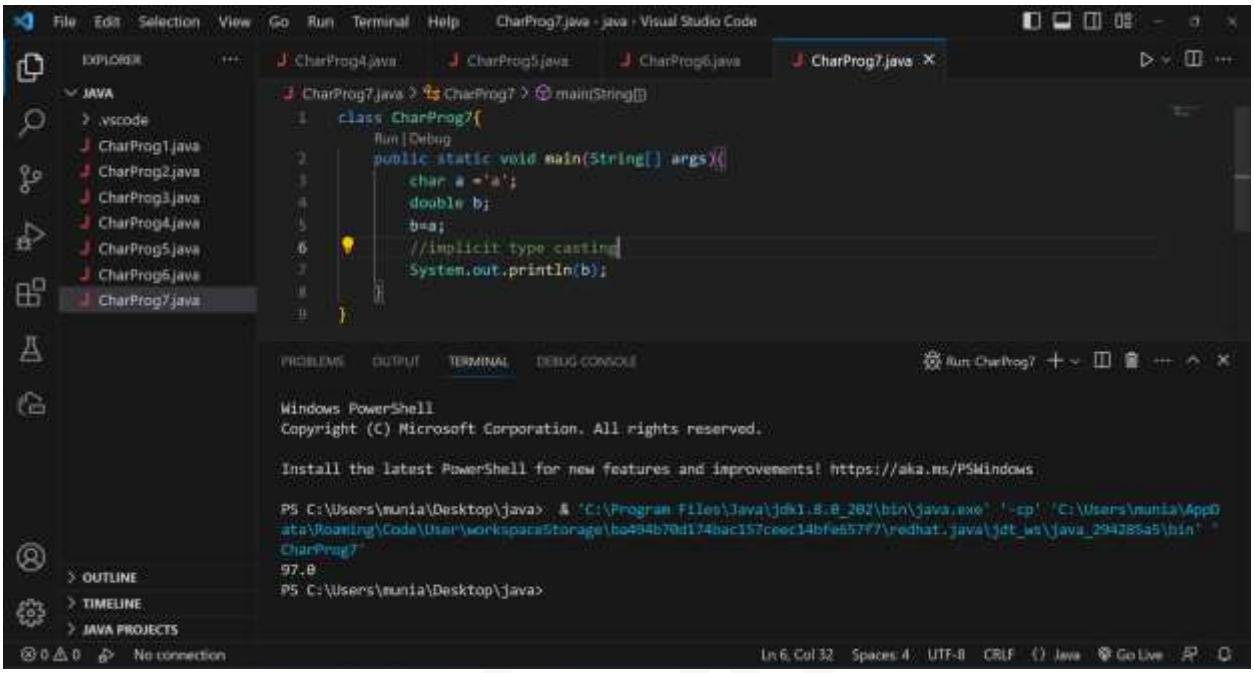


Program 7: (char to double)

```
class CharProg7{
    public static void main(String[] args){
        char a ='a';
        double b;
        b=a;
        //implicit type casting
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

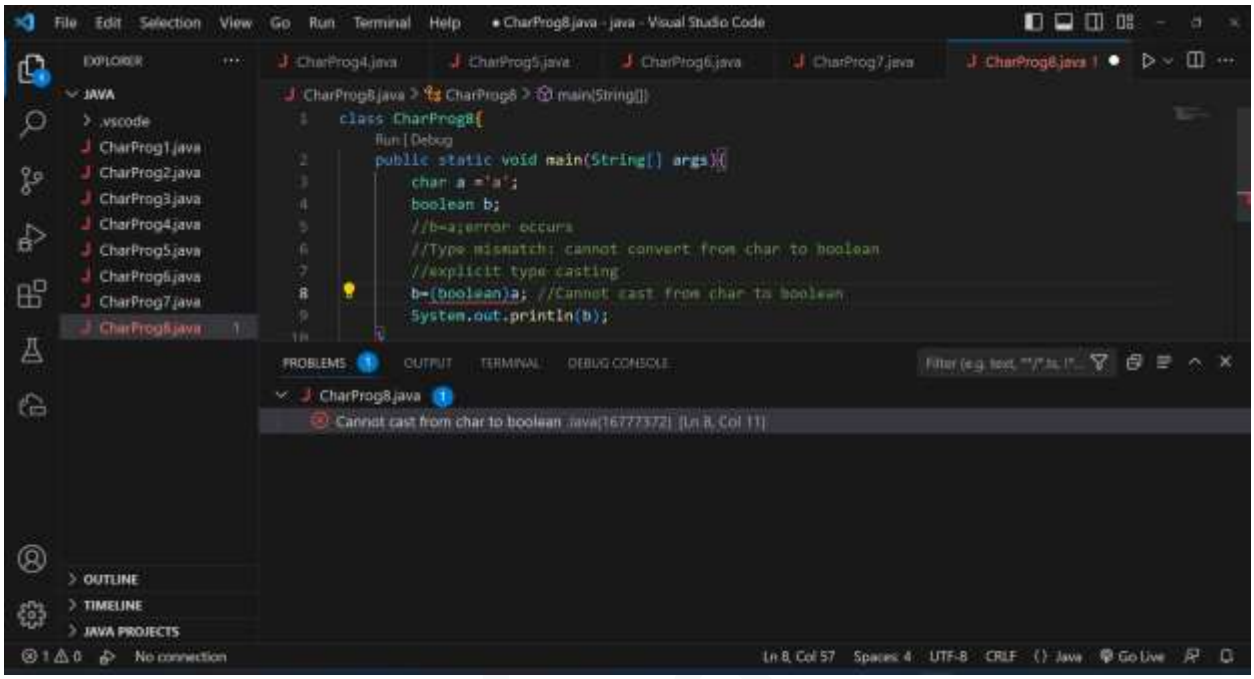


Program 8: (char to boolean)

```
class CharProg8{
    public static void main(String[] args){
        char a ='a';
        boolean b;
        //b=a;error occurs
        //Type mismatch: cannot convert from char to boolean
        //explicit type casting
        b=(boolean)a; //Cannot cast from char to boolean
        System.out.println(b);
    }
}
```

Casting cannot possible

Output:

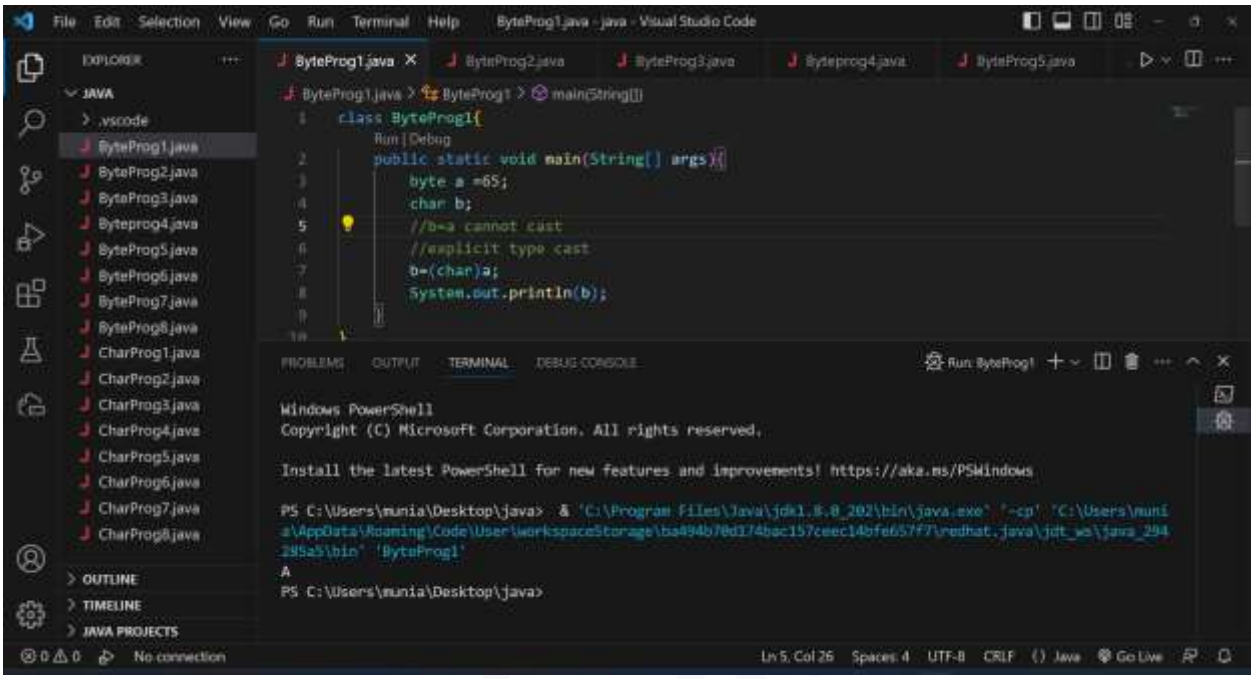


Program 9: (byte to char)

```
class ByteProg1{
    public static void main(String[] args){
        byte a =65;
        char b;
        //b=a cannot cast
        //explicit type cast
        b=(char)a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

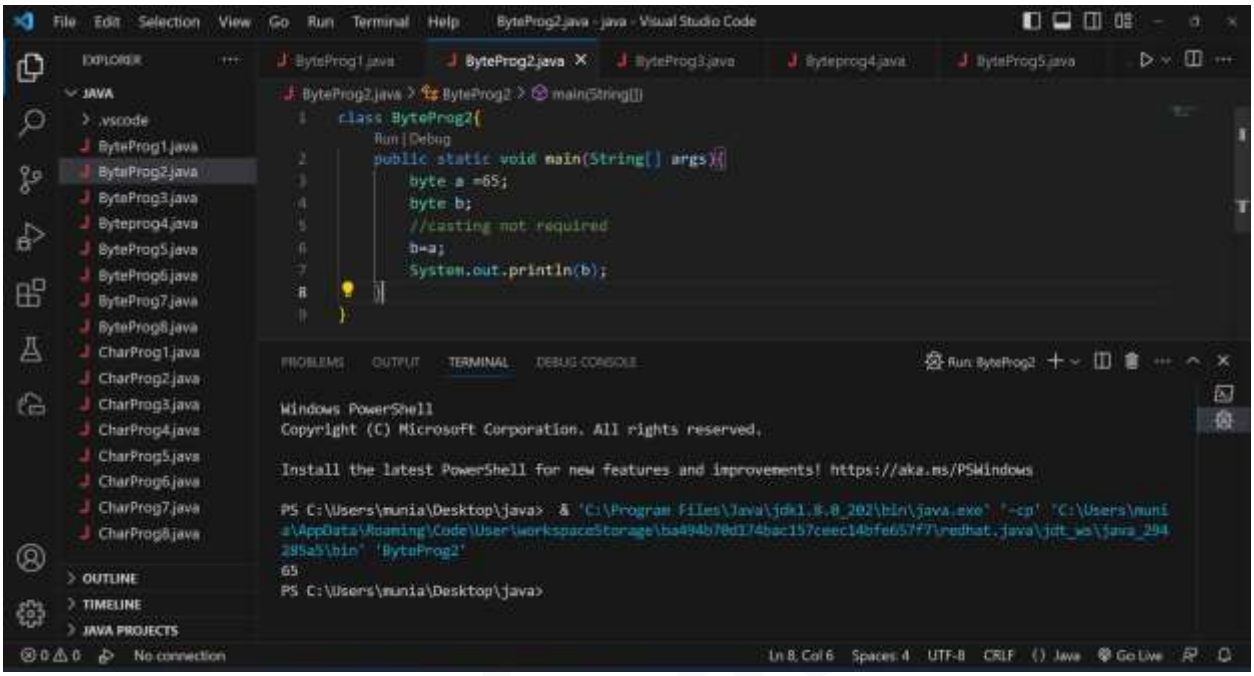


Program 10: (byte to byte)

```
class ByteProg2{
    public static void main(String[] args){
        byte a =65;
        byte b;
        //casting not required
        b=a;
        System.out.println(b);
    }
}
```

Casting not required

Output:

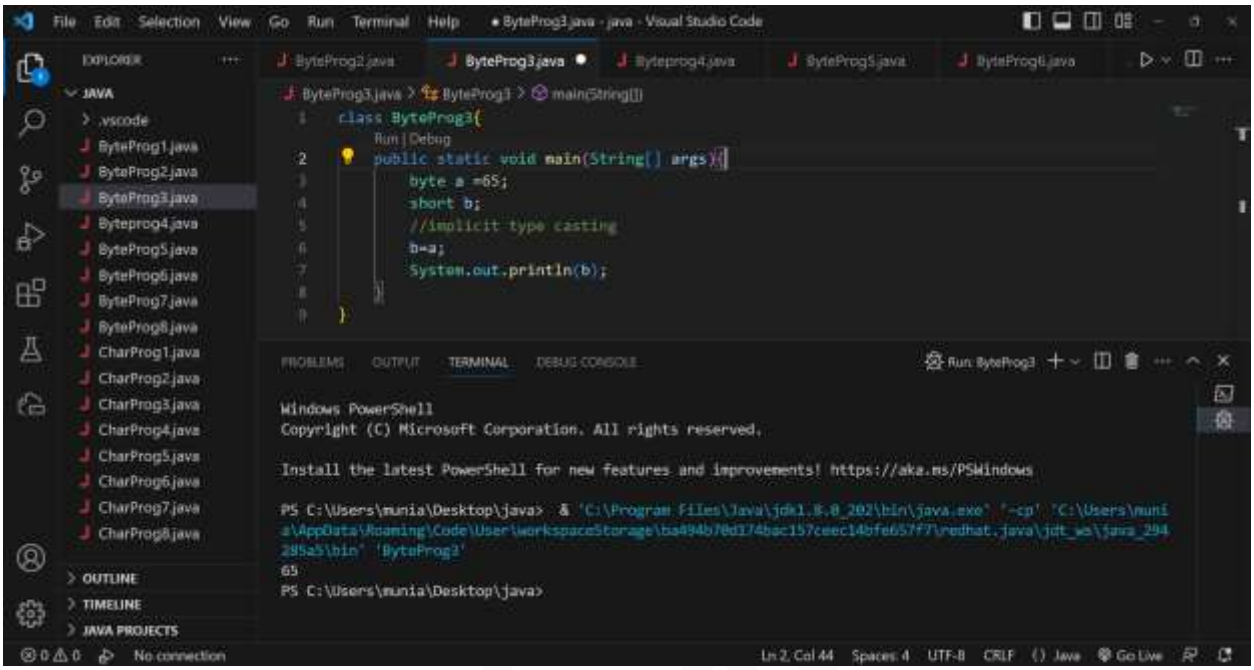


Program 11: (byte to short)

```
class ByteProg3{
    public static void main(String[] args){
        byte a =65;
        short b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

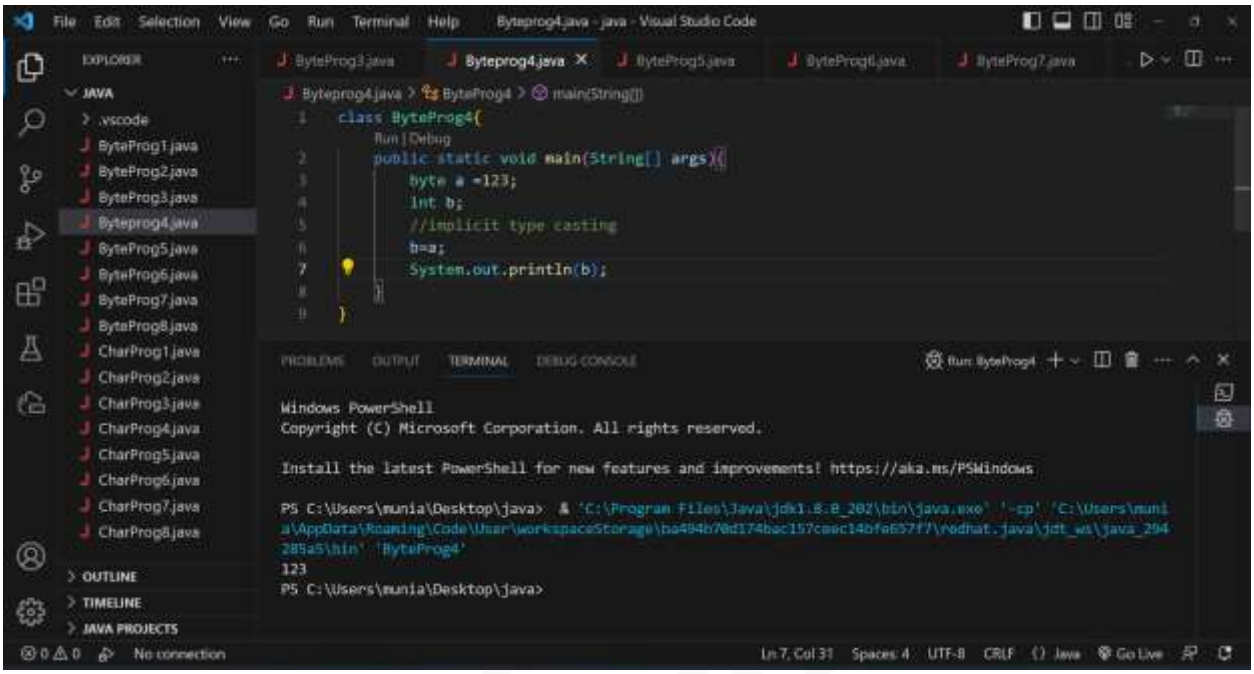


Program 12: (byte to int)

```
class ByteProg4{
    public static void main(String[] args){
        byte a =123;
        int b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

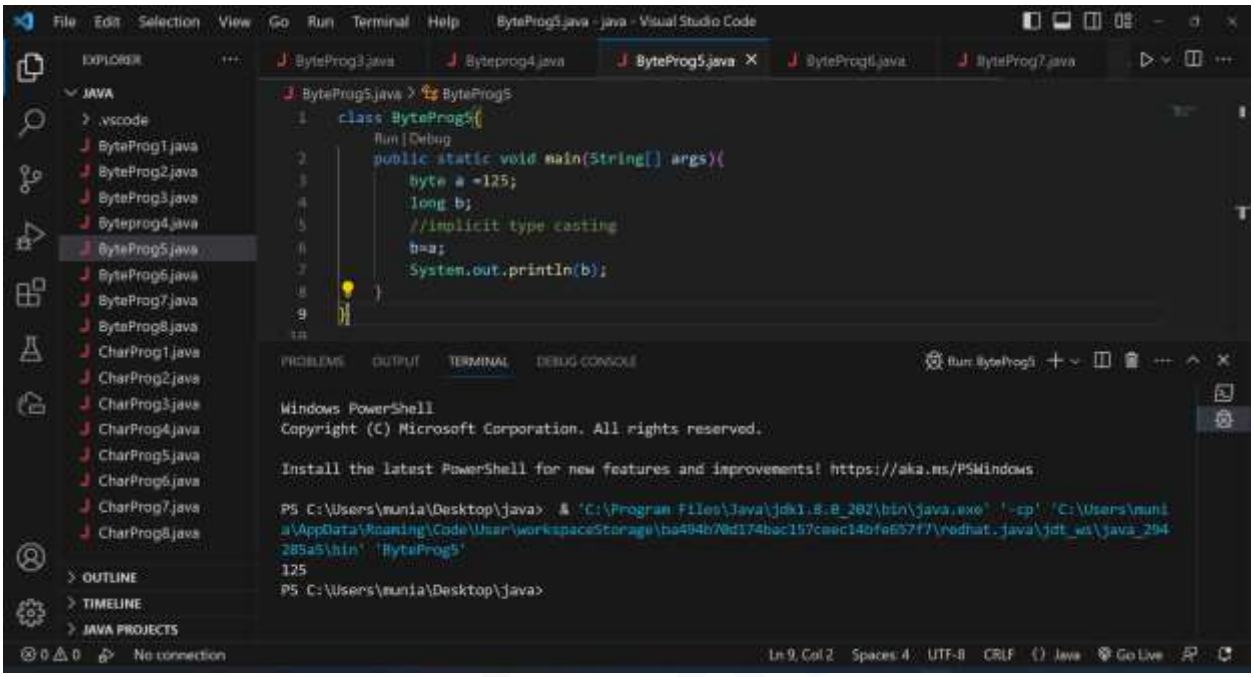


Program 13: (byte to long)

```
class ByteProg5{
    public static void main(String[] args){
        byte a =125;
        long b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

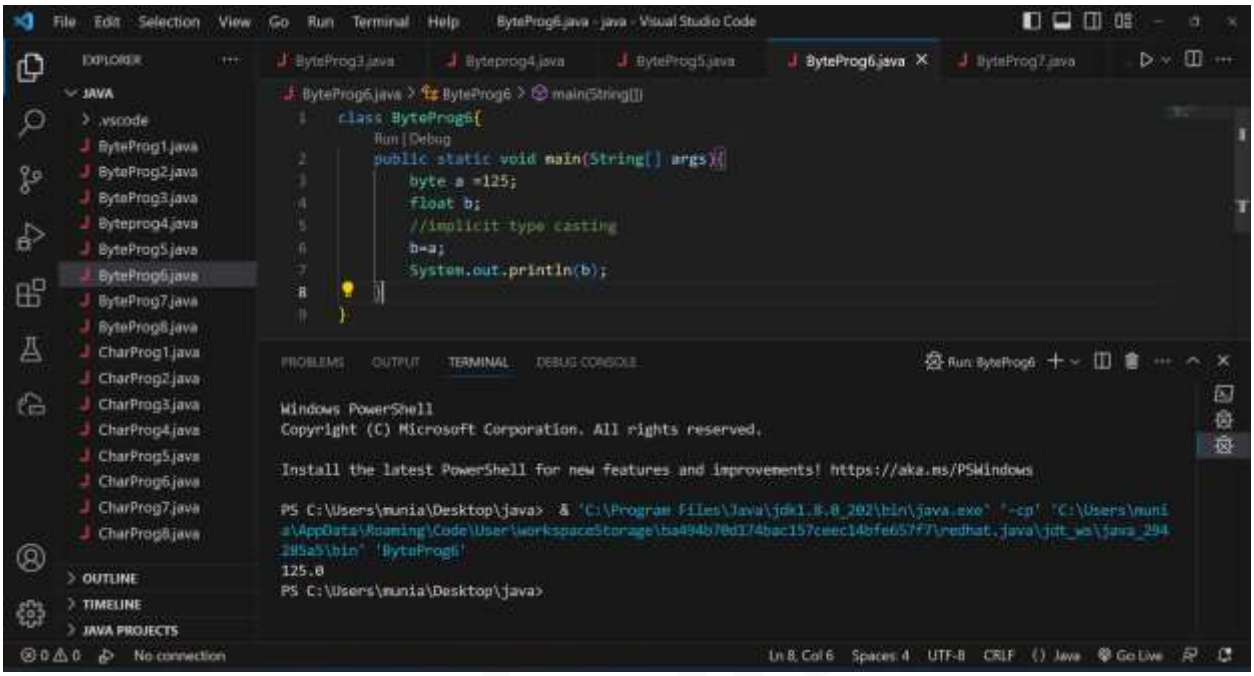


Program 14: (byte to float)

```
class ByteProg6{
    public static void main(String[] args){
        byte a =125;
        float b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

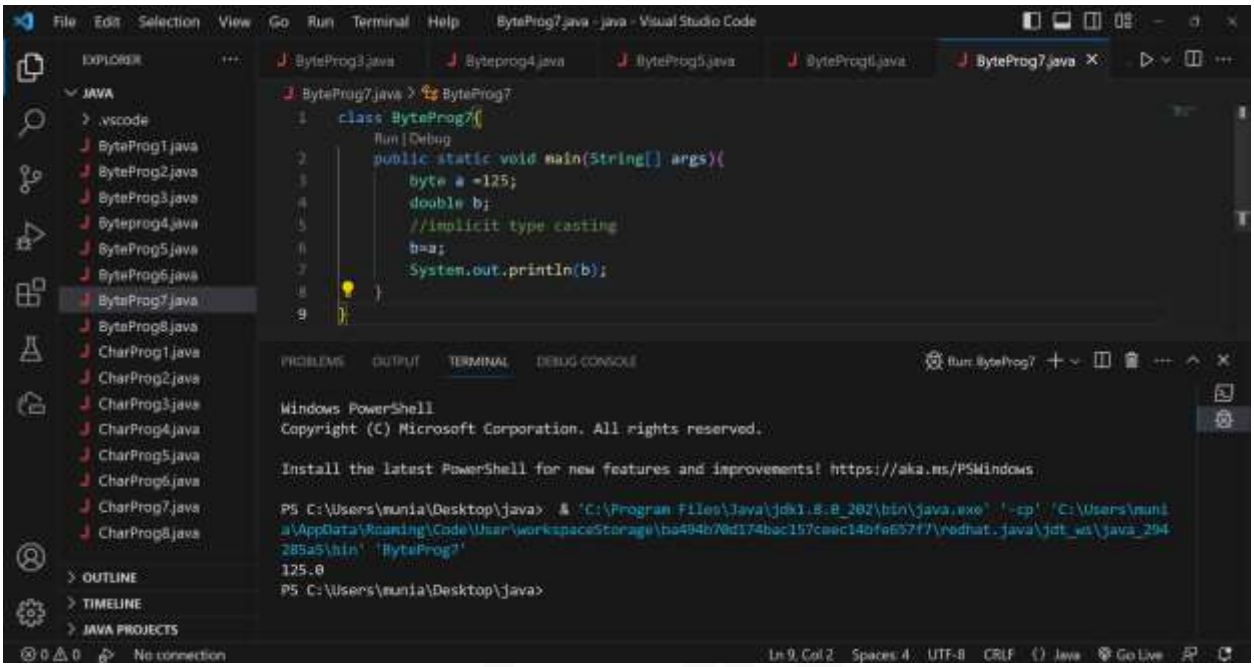


Program 15: (byte to double)

```
class ByteProg7{
    public static void main(String[] args){
        byte a =125;
        double b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

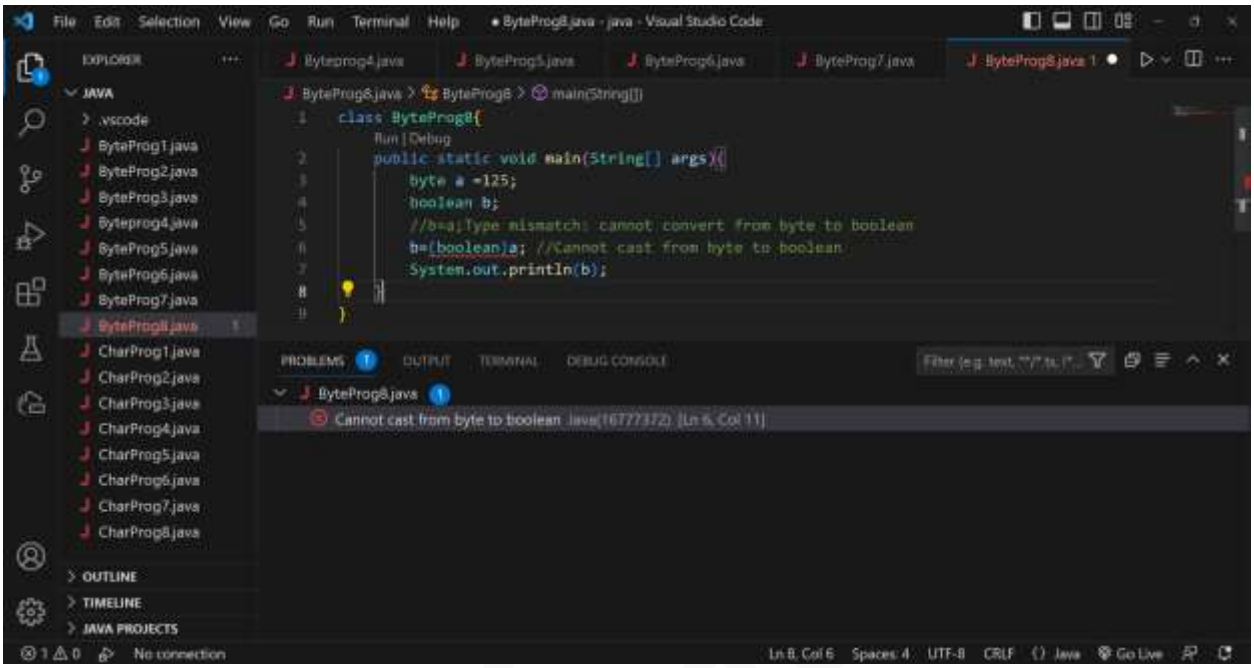


Program 16: (byte to boolean)

```
class ByteProg8{
    public static void main(String[] args){
        byte a =125;
        boolean b;
        //b=a;Type mismatch: cannot convert from byte to boolean
        b=(boolean)a; //Cannot cast from byte to boolean
        System.out.println(b);
    }
}
```

Casting cannot possible

Output:

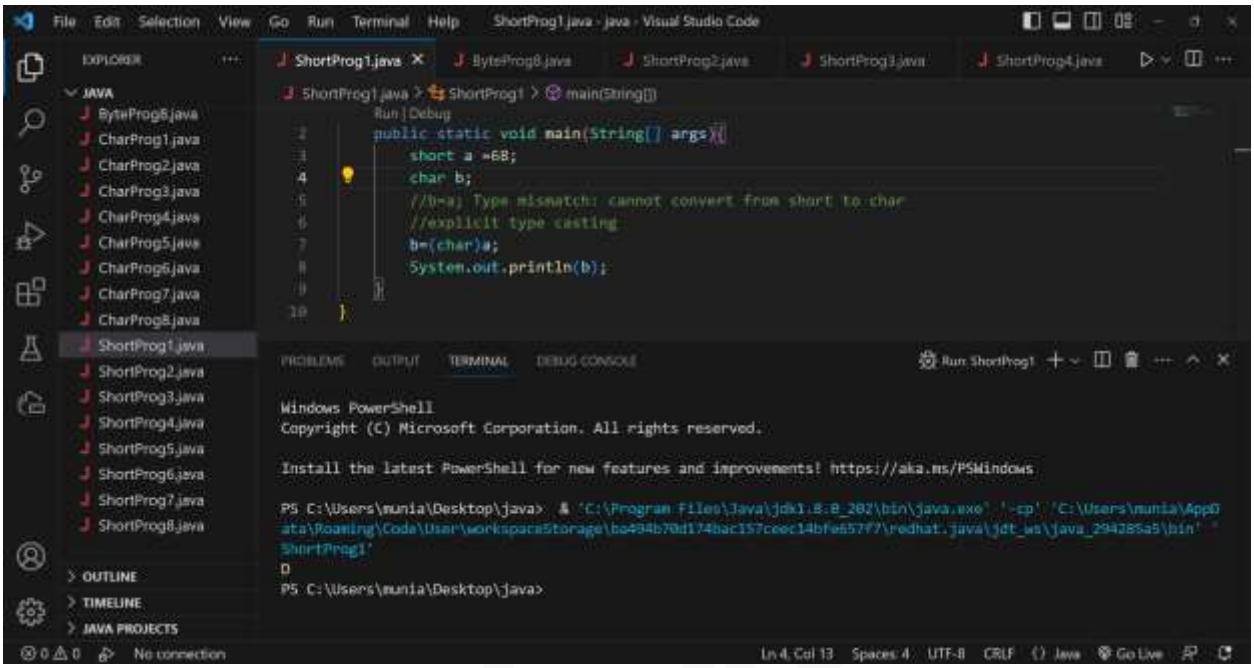


Program 17: (short to char)

```
class ShortProg1{
    public static void main(String[] args){
        short a =68;
        char b;
        //b=a; Type mismatch: cannot convert from short to char
        //explicit type casting
        b=(char)a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

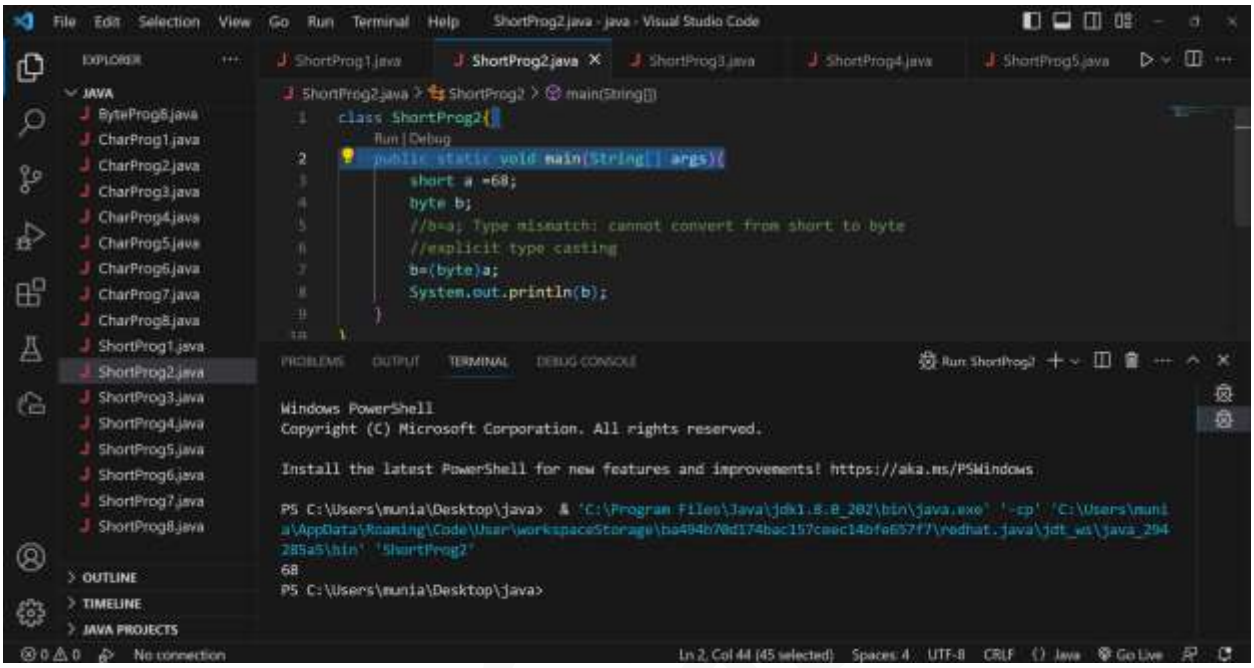


Program 18: (short to byte)

```
class ShortProg2{
    public static void main(String[] args){
        short a =68;
        byte b;
        //b=a; Type mismatch: cannot convert from short to byte
        //explicit type casting
        b=(byte)a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

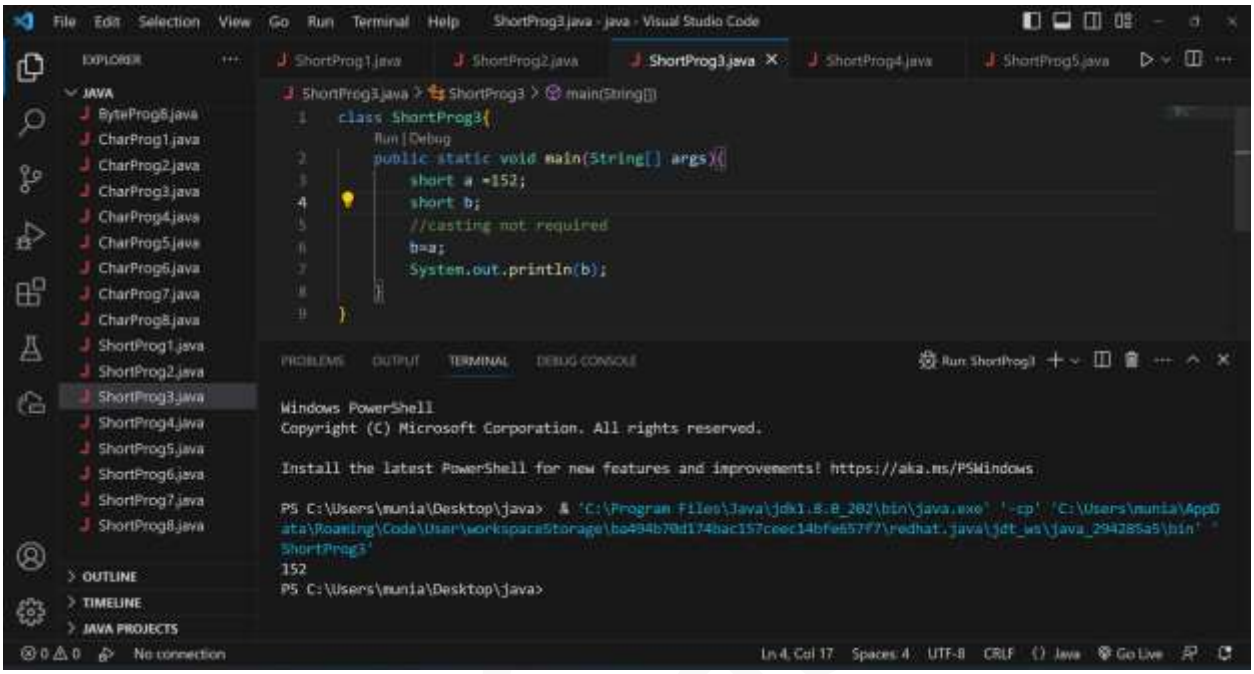


Program 19: (short to short)

```
class ShortProg3{
    public static void main(String[] args){
        short a =152;
        short b;
        //casting not required
        b=a;
        System.out.println(b);
    }
}
```

Casting not required

Output:

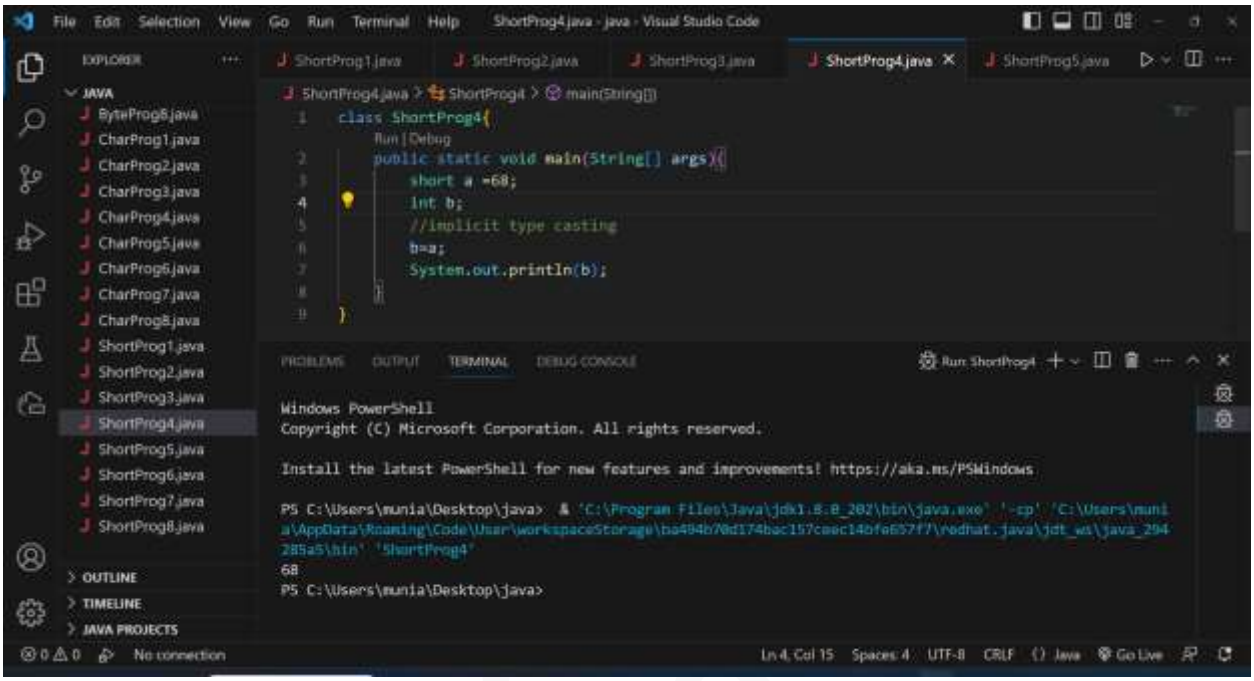


Program 20: (short to int)

```
class ShortProg4{
    public static void main(String[] args){
        short a =68;
        int b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

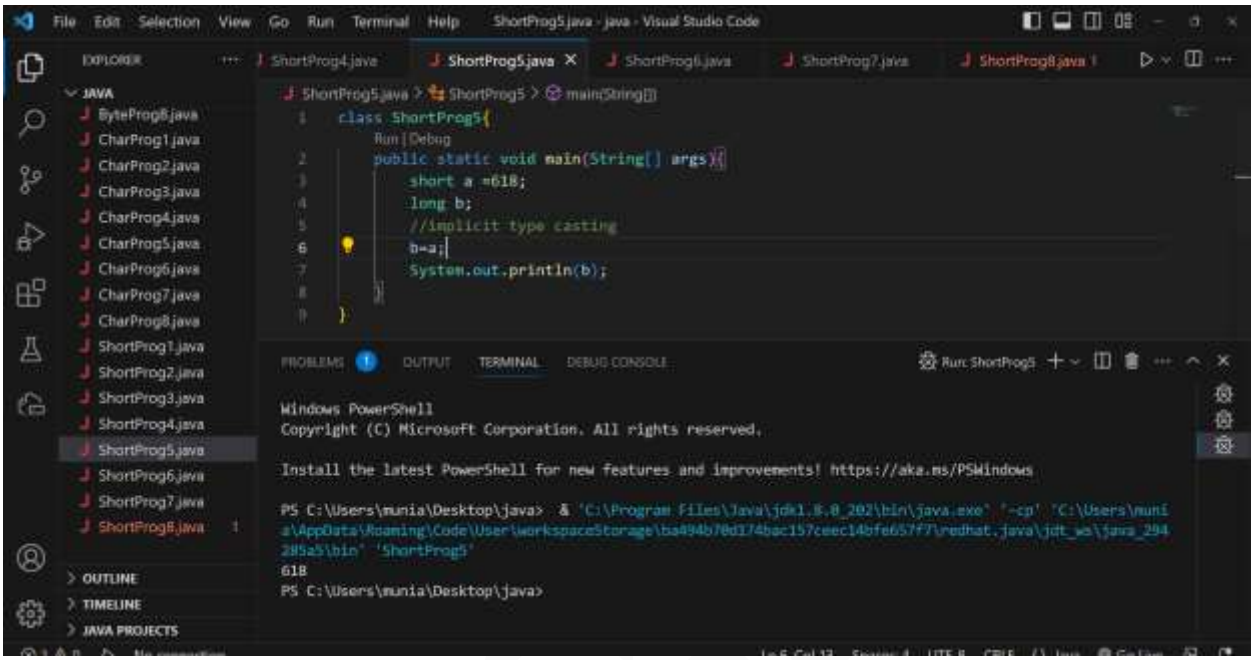


Program 21: (short to long)

```
class ShortProg5{
    public static void main(String[] args){
        short a =618;
        long b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

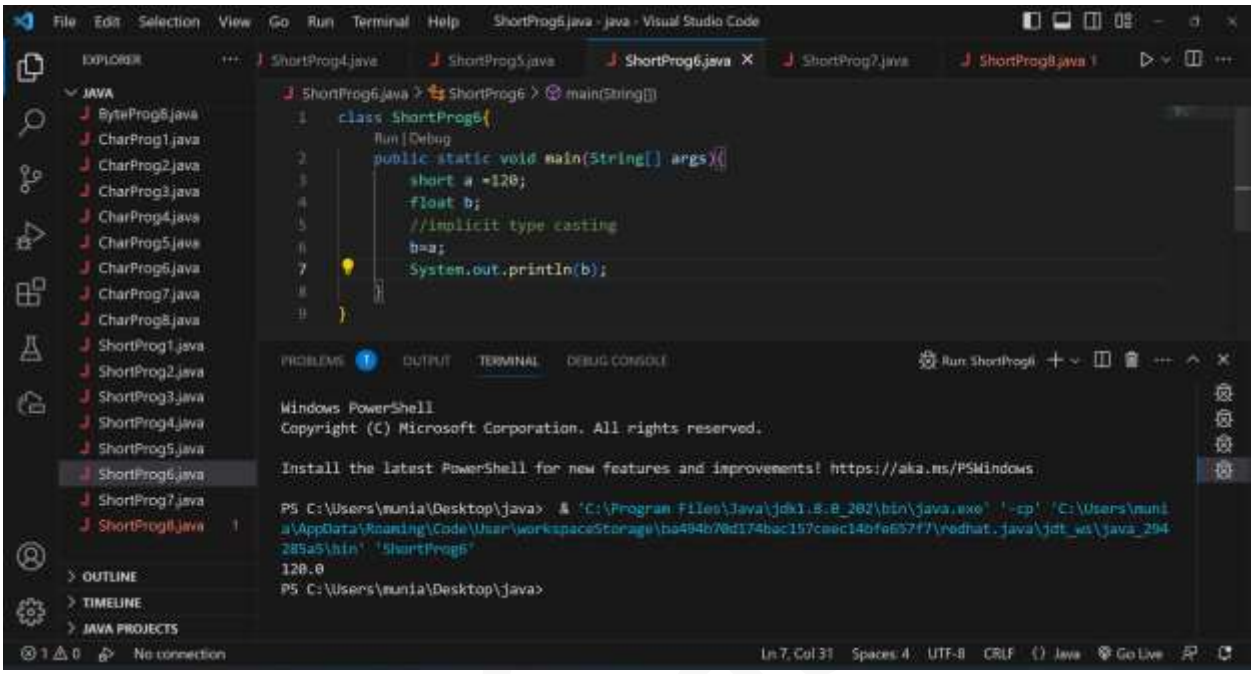


Program 22: (short to float)

```
class ShortProg6{
    public static void main(String[] args){
        short a =120;
        float b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

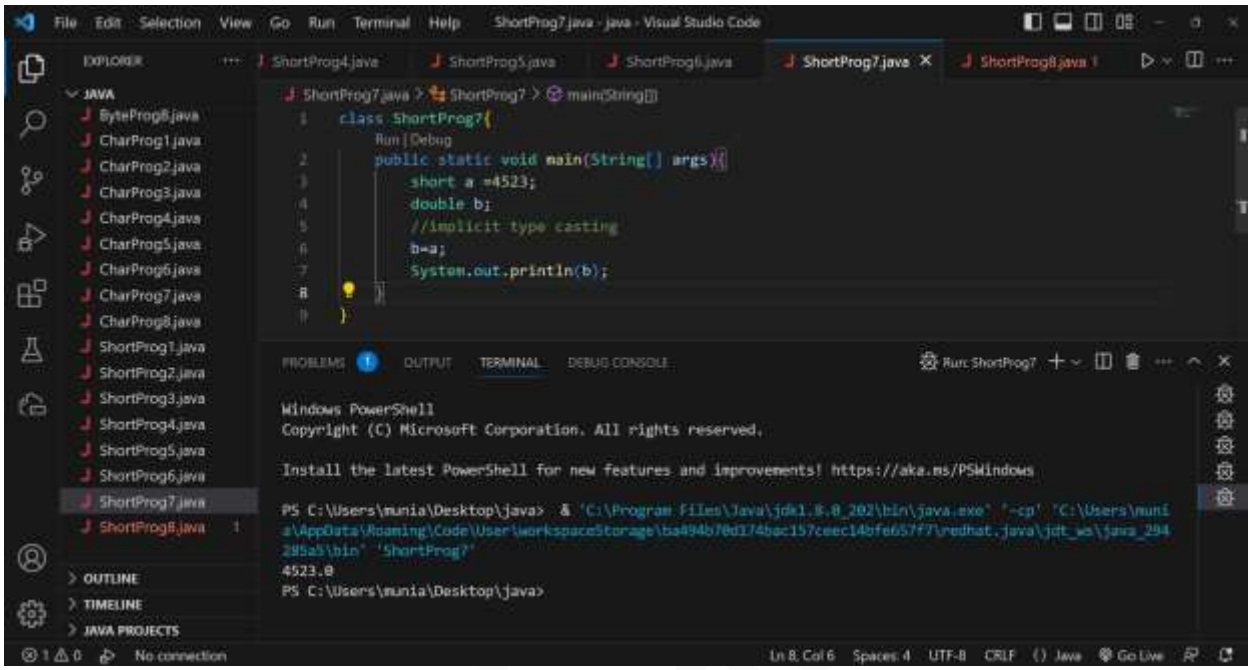


Program 23: (short to double)

```
class ShortProg7{
    public static void main(String[] args){
        short a =4523;
        double b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

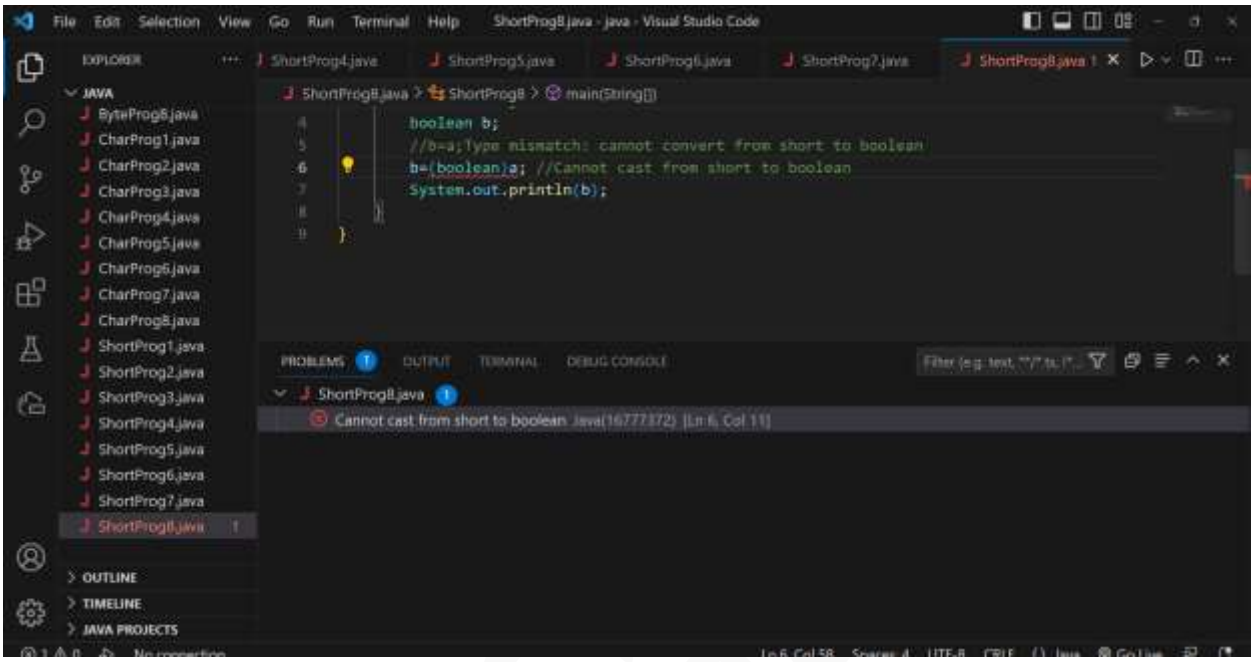


Program 24: (short to boolean)

```
class ShortProg8{
    public static void main(String[] args){
        short a =68;
        boolean b;
        //b=a;Type mismatch: cannot convert from short to boolean
        b=(boolean)a; //Cannot cast from short to boolean
        System.out.println(b);
    }
}
```

Casting cannot possible

Output:

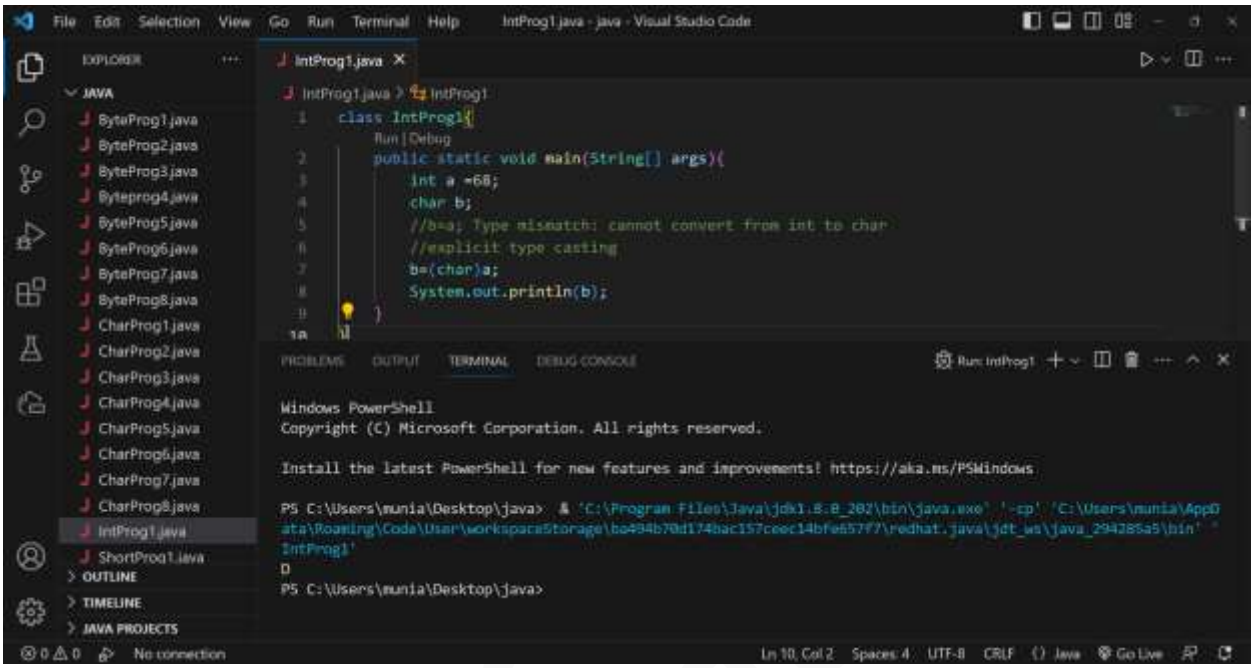


Program 25: (int to char)

```
class IntProg1{
   public static void main(String[] args){
      int a =68;
      char b;
      //b=a; Type mismatch: cannot convert from int to char
      //explicit type casting
      b=(char)a;
      System.out.println(b);
   }
}
```

Explicit type casting

Output:

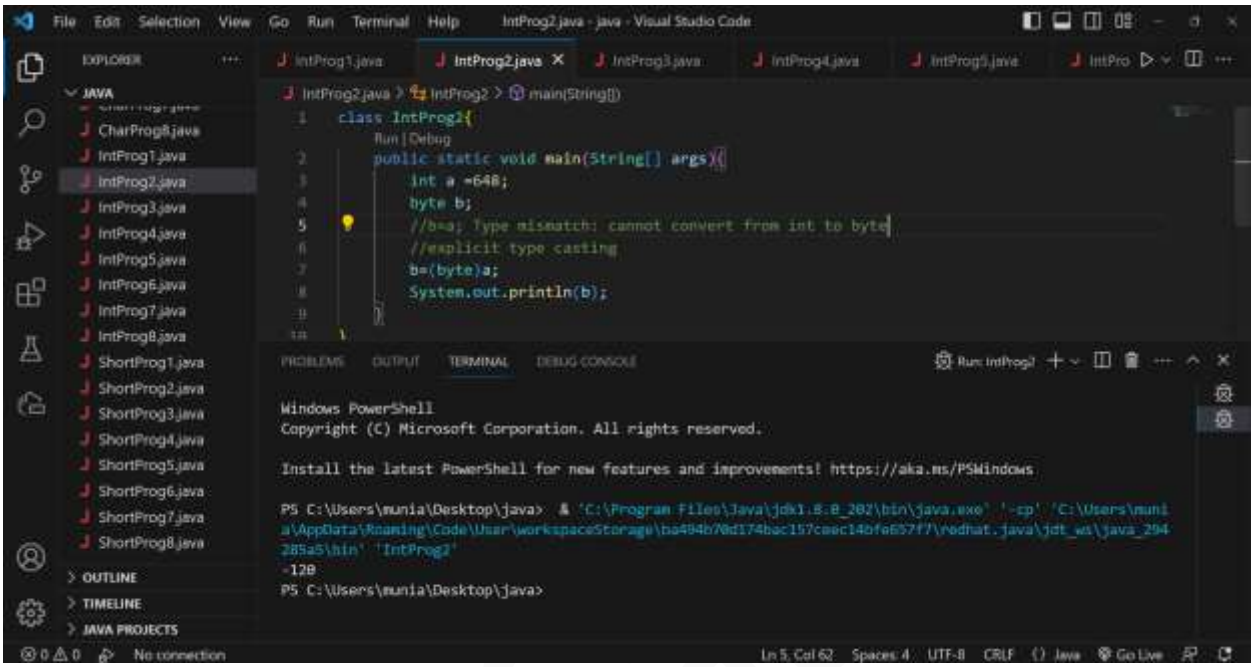


Program 26: (int to byte)

```
class IntProg2{
    public static void main(String[] args){
        int a =648;
        byte b;
        //b=a; Type mismatch: cannot convert from int to byte
        //explicit type casting
        b=(byte)a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

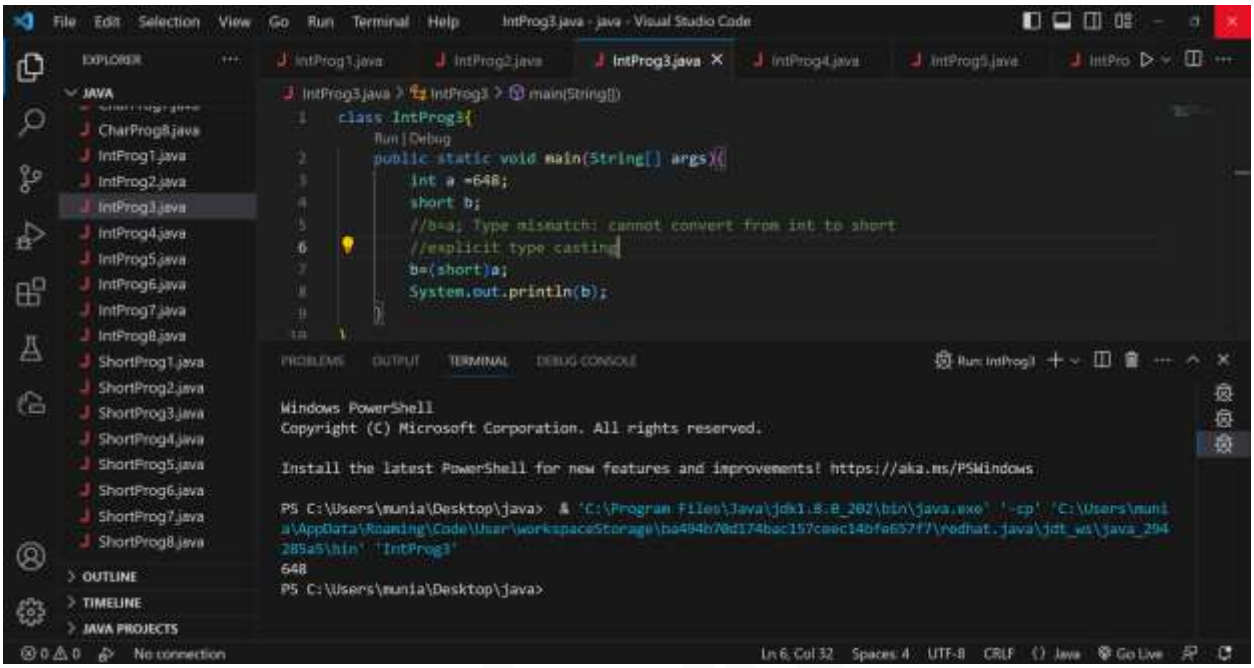


Program 27: (int to short)

```
class IntProg3{
    public static void main(String[] args){
        int a =648;
        short b;
        //b=a; Type mismatch: cannot convert from int to short
        //explicit type casting
        b=(short)a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

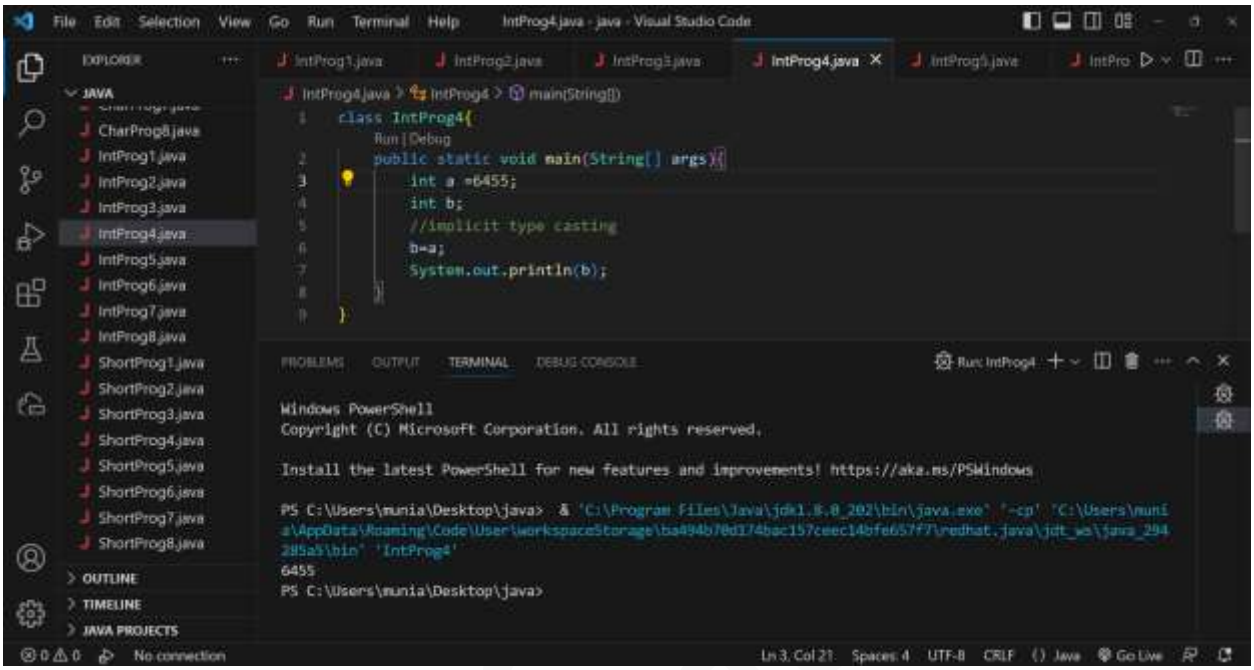


Program 28: (int to int)

```
class IntProg3{
    public static void main(String[] args){
        int a =6455;
        int b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Casting not required

Output:

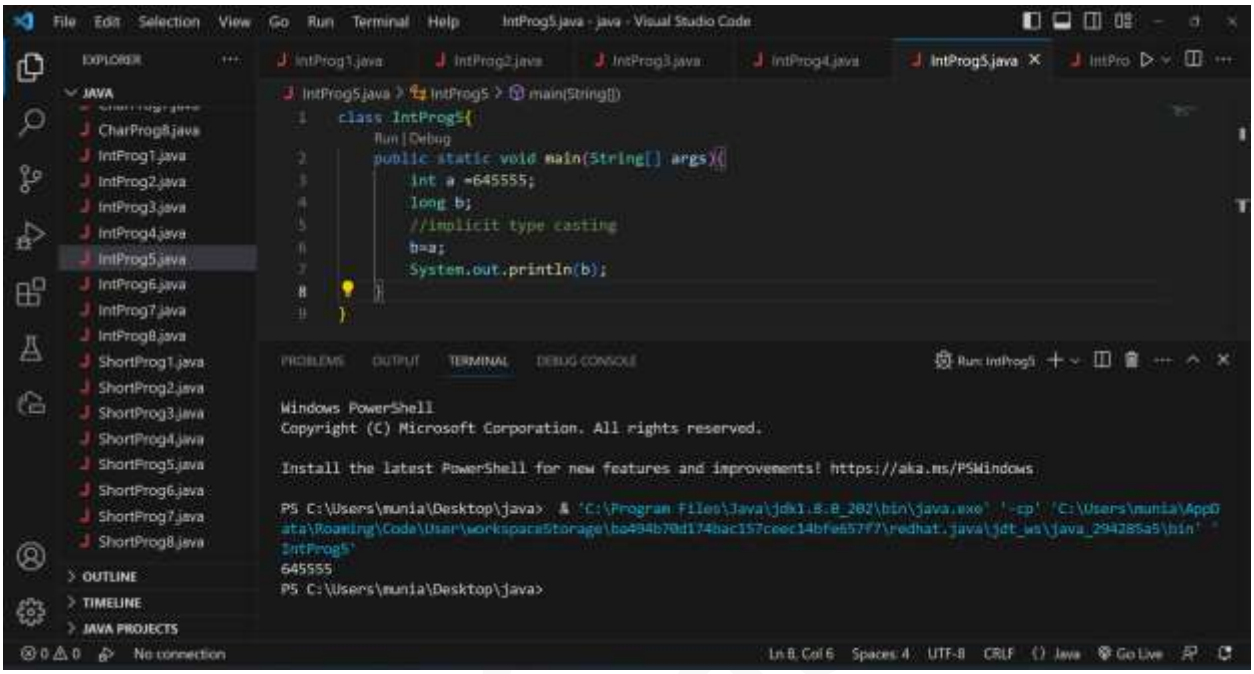


Program 29: (int to long)

```
class IntProg5{
    public static void main(String[] args){
        int a =645555;
        long b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

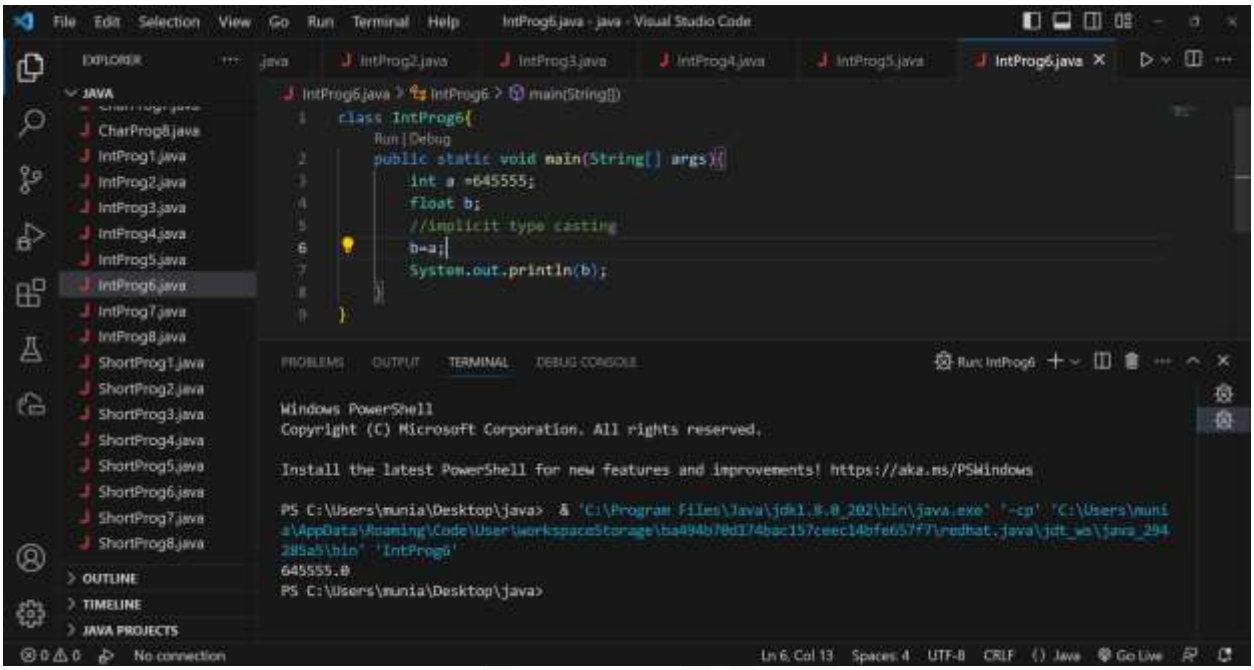


Program 30: (int to float)

```
class IntProg6{
    public static void main(String[] args){
        int a =645555;
        float b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

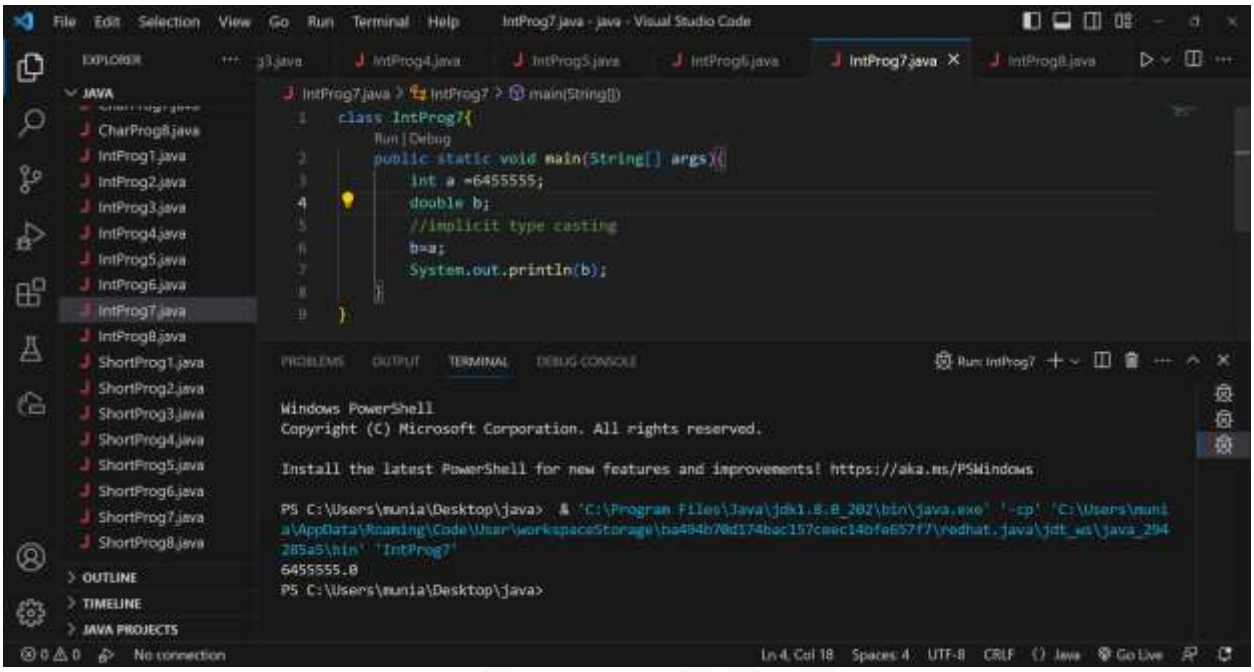


Program 31: (int to double)

```
class IntProg7{
    public static void main(String[] args){
        int a =6455555;
        double b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

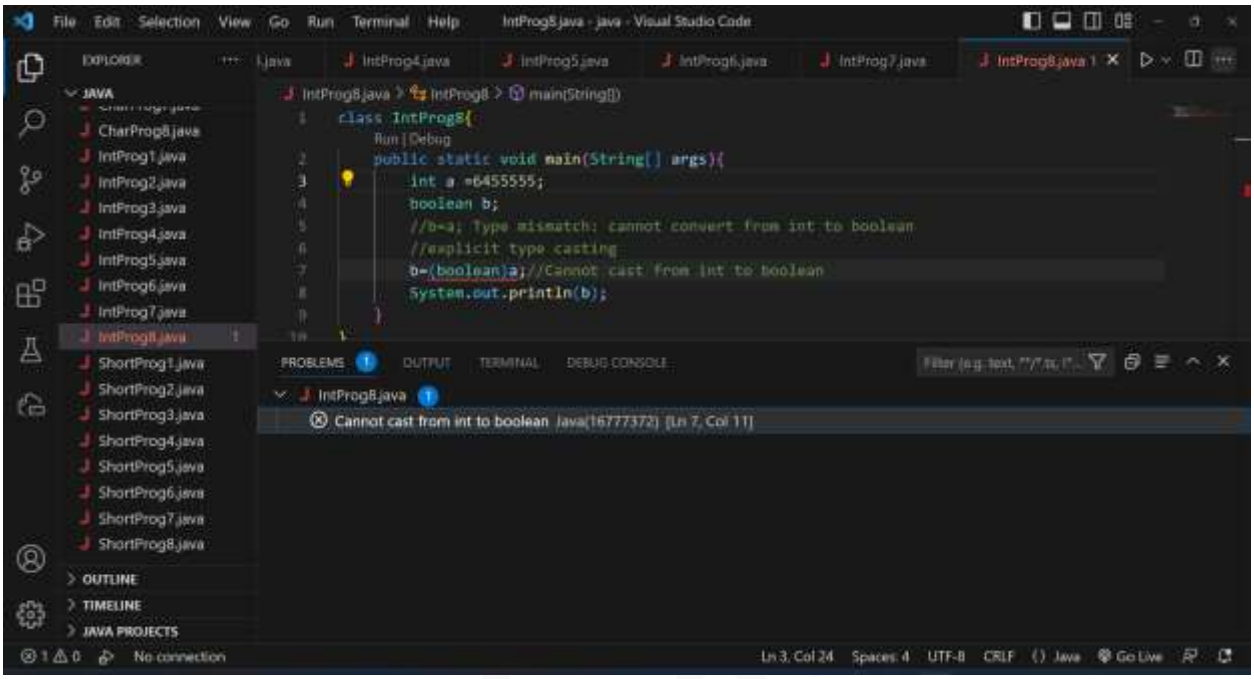


Program 32: (int to boolean)

```
class IntProg8{
    public static void main(String[] args){
        int a =6455555;
        boolean b;
        //b=a; Type mismatch: cannot convert from int to boolean
        //explicit type casting
        b=(boolean)a;//Cannot cast from int to boolean
        System.out.println(b);
    }
}
```

Casting cannot possible

Output:

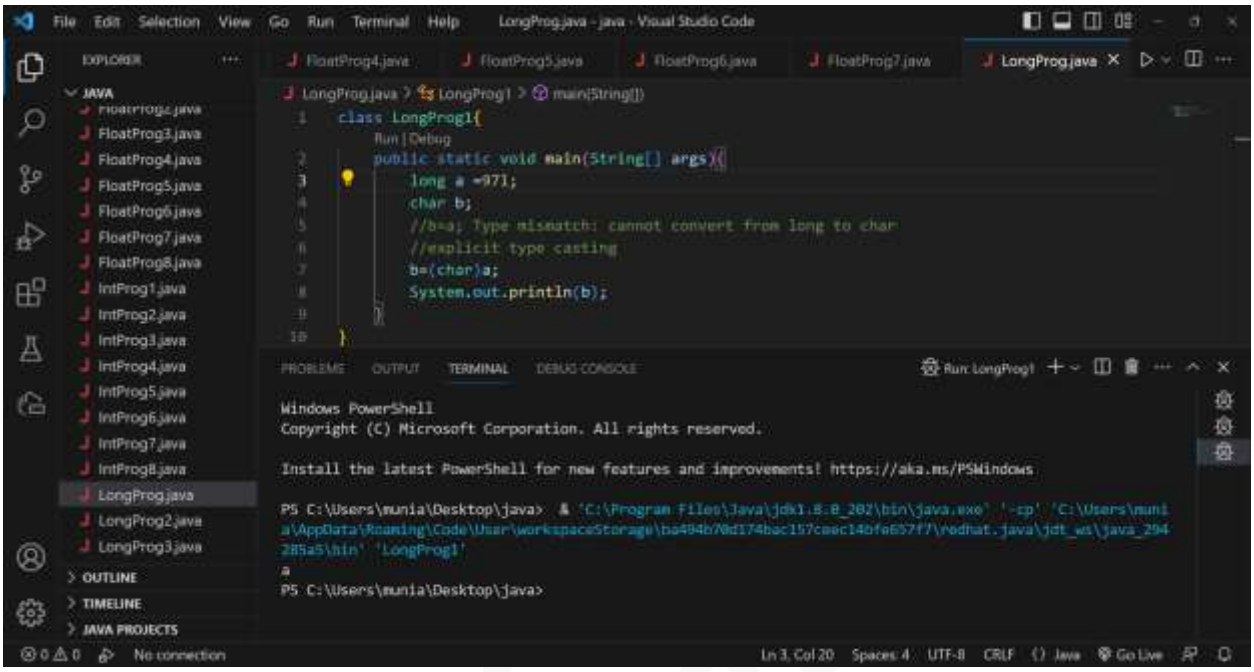


Program 33: (long to char)

```
class LongProg1{
    public static void main(String[] args){
        long a =97l;
        char b;
        //b=a; Type mismatch: cannot convert from long to char
        //explicit type casting
        b=(char)a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

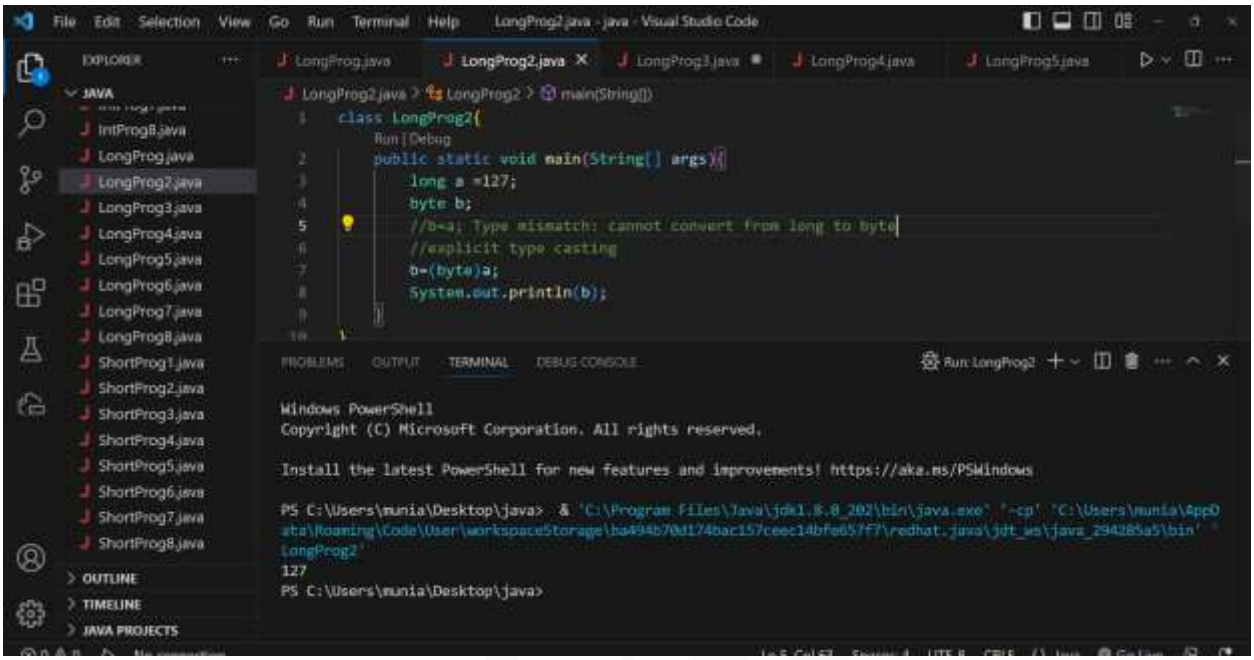


Program 34: (long to byte)

```
class LongProg2{
    public static void main(String[] args){
        long a =127l;
        byte b;
        //b=a; Type mismatch: cannot convert from long to char
        //explicit type casting
        b=(byte)a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

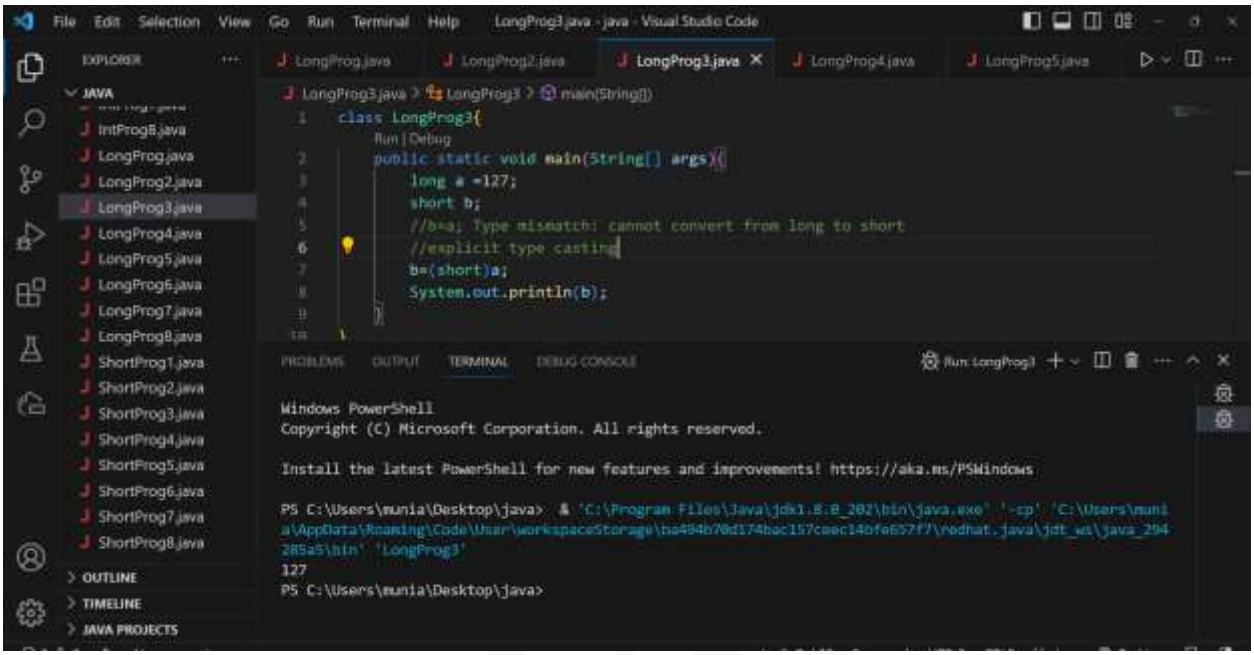


Program 35: (long to short)

```
class LongProg3{
    public static void main(String[] args){
        long a =127l;
        short b;
        //b=a; Type mismatch: cannot convert from long to short
        //explicit type casting
        b=(short)a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

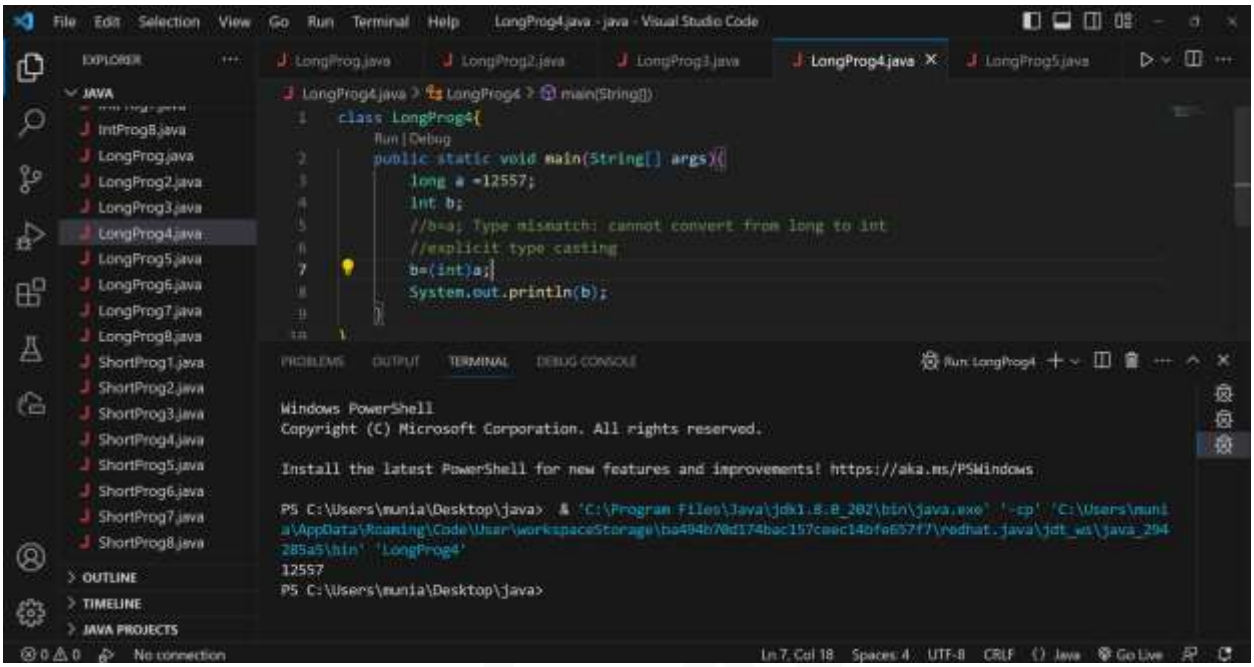


Program 36: (long to int)

```
class LongProg4{
    public static void main(String[] args){
        long a =12557l;
        int b;
        //b=a; Type mismatch: cannot convert from long to int
        //explicit type casting
        b=(int)a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

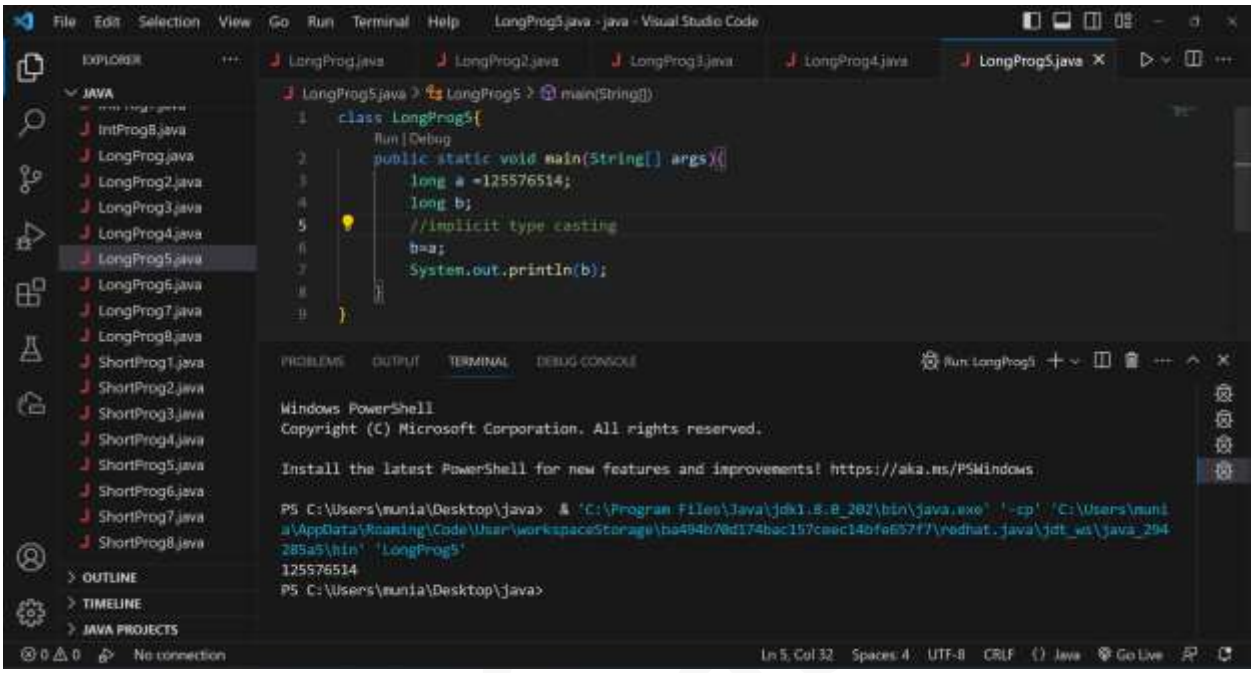


Program 37: (long to long)

```
class LongProg5{
    public static void main(String[] args){
        long a =125576514l;
        long b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Casting not required

Output:

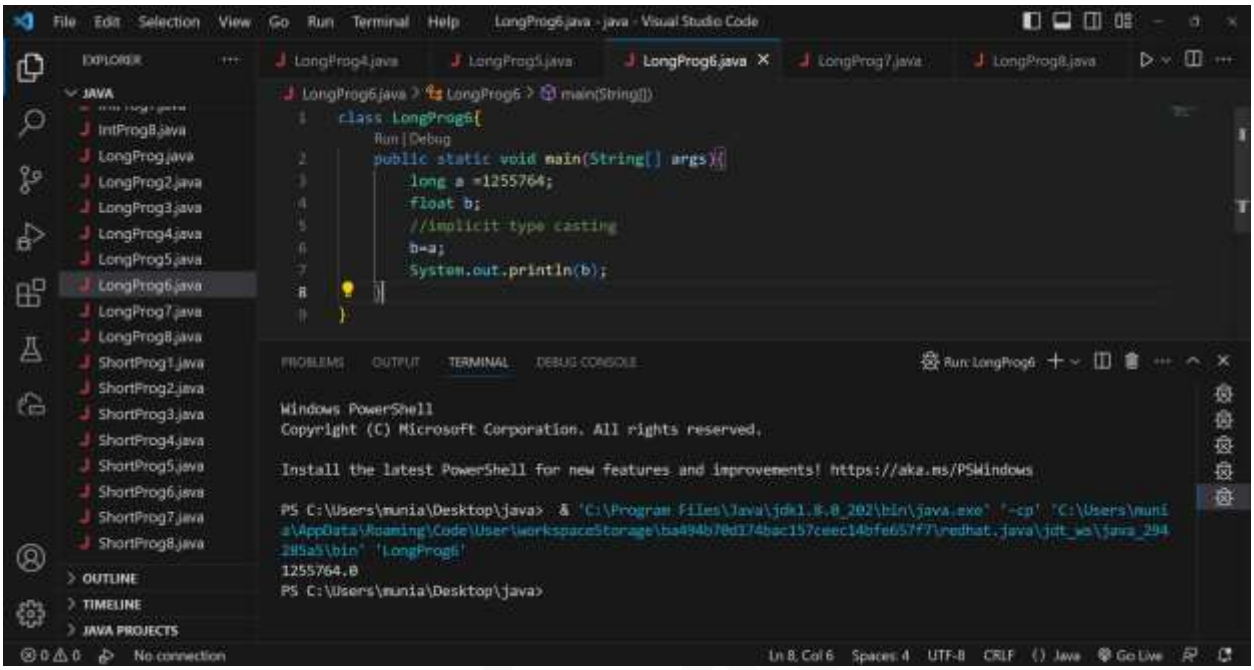


Program 38: (long to float)

```
class LongProg6{
    public static void main(String[] args){
        long a =1255764l;
        float b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

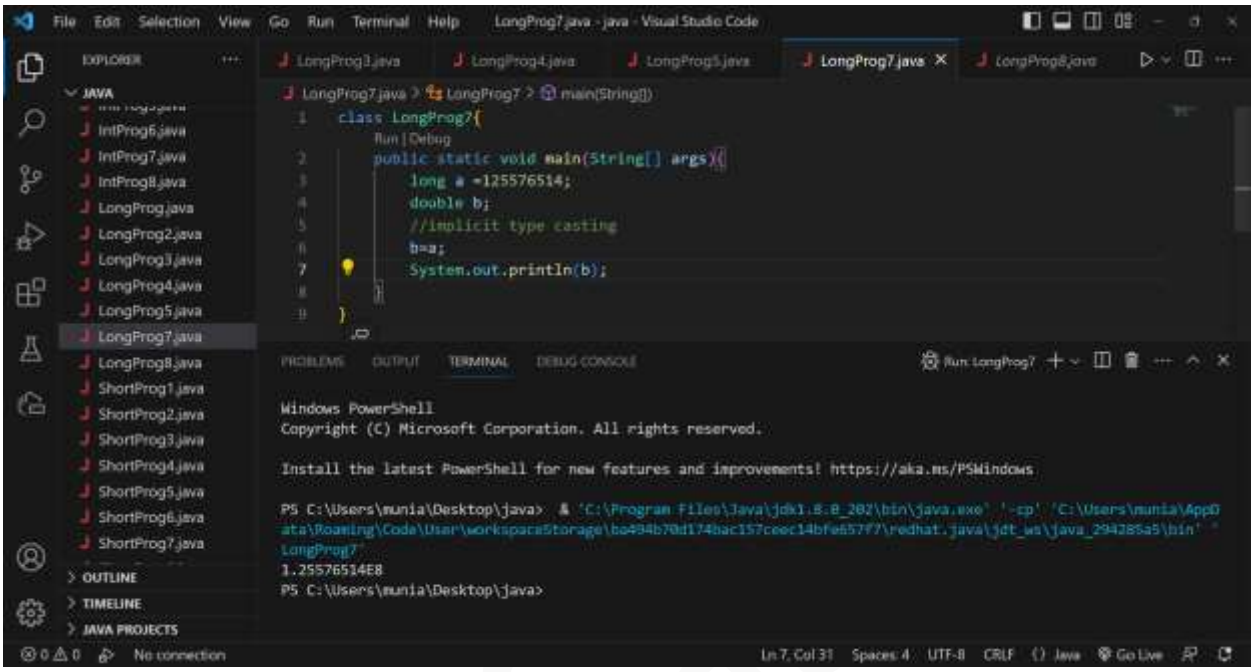


Program 39: (long to double)

```
class LongProg7{
    public static void main(String[] args){
        long a =1255765141;
        double b;
        //implicit type casting
        b=a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

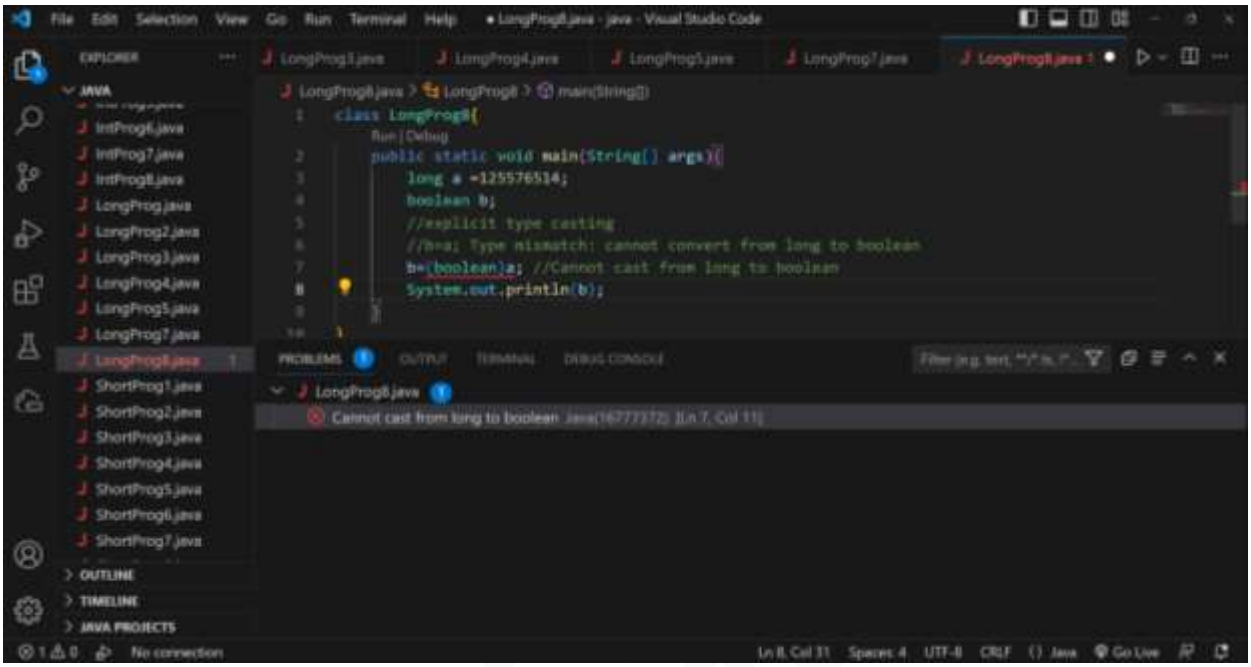


Program 40: (long to boolean)

```
class LongProg8{
    public static void main(String[] args){
        long a =125576514l;
        boolean b;
        //explicit type casting
        //b=a; Type mismatch: cannot convert from long to boolean
        b=(boolean)a; //Cannot cast from long to boolean
        System.out.println(b);
    }
}
```

Casting cannot possible

Output:

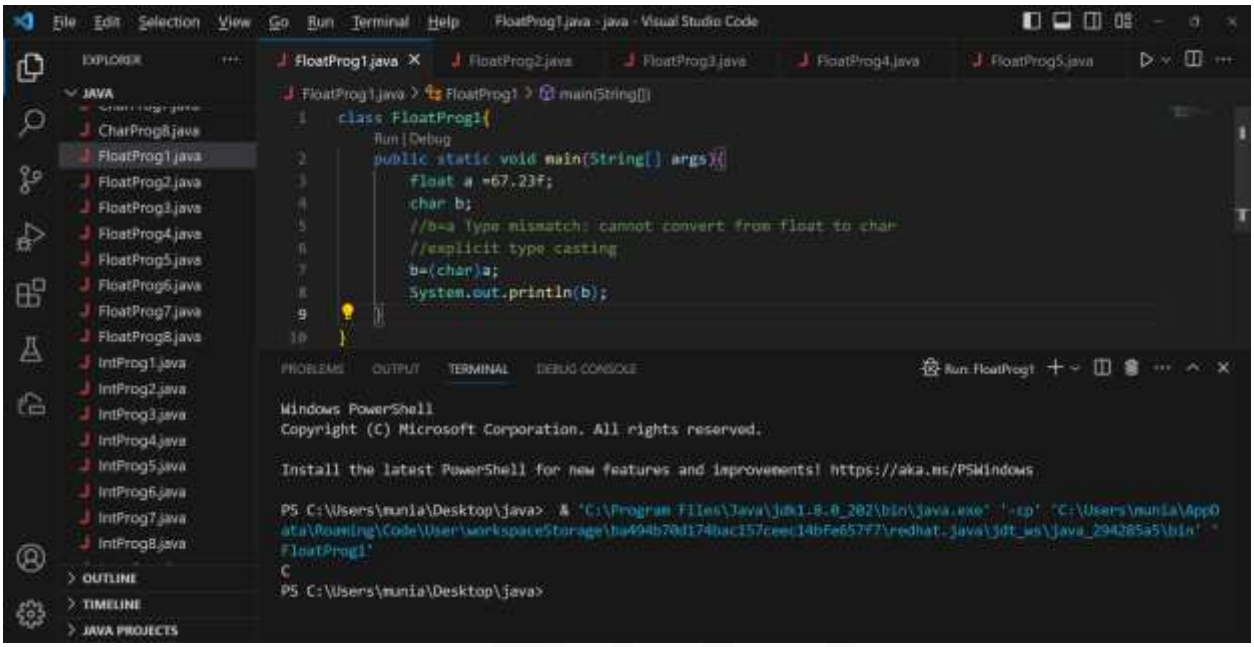


Program 41: (float to char)

```
class FloatProg1{
    public static void main(String[] args){
        float a =67.23f;
        char b;
        //b=a Type mismatch: cannot convert from float to char
        //explicit type casting
        b=(char)a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

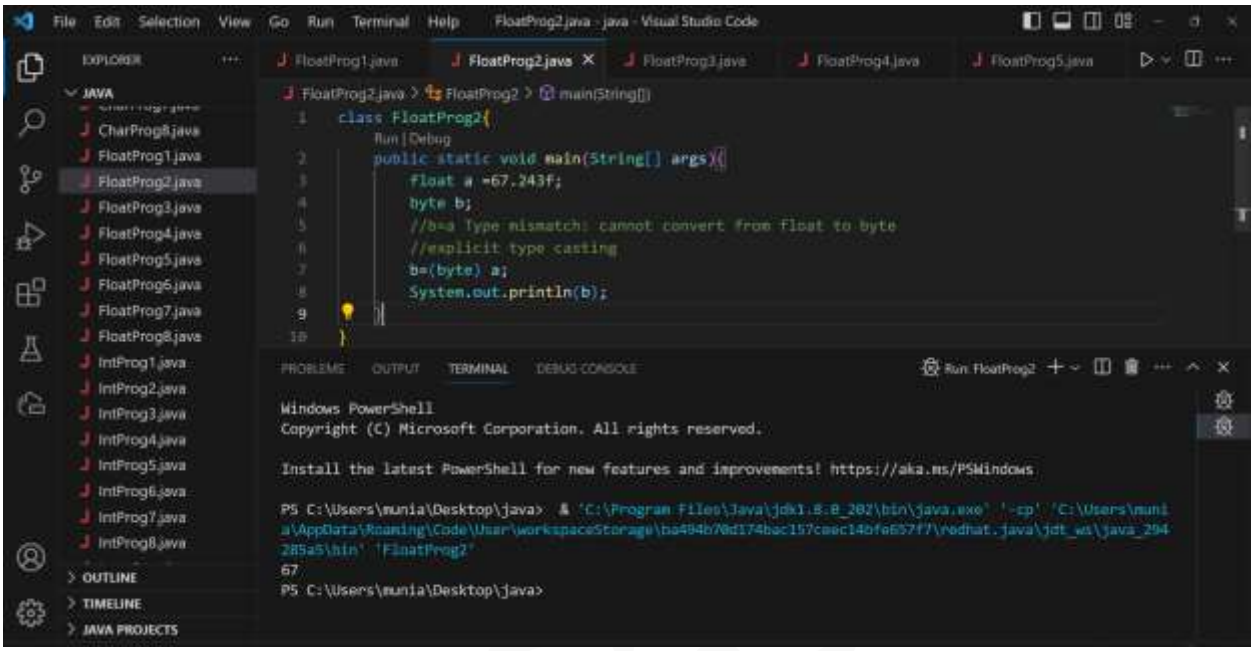


Program 42: (float to byte)

```
class FloatProg2{
    public static void main(String[] args){
        float a =67.243f;
        byte b;
        //b=a Type mismatch: cannot convert from float to byte
        //explicit type casting
        b=(byte) a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

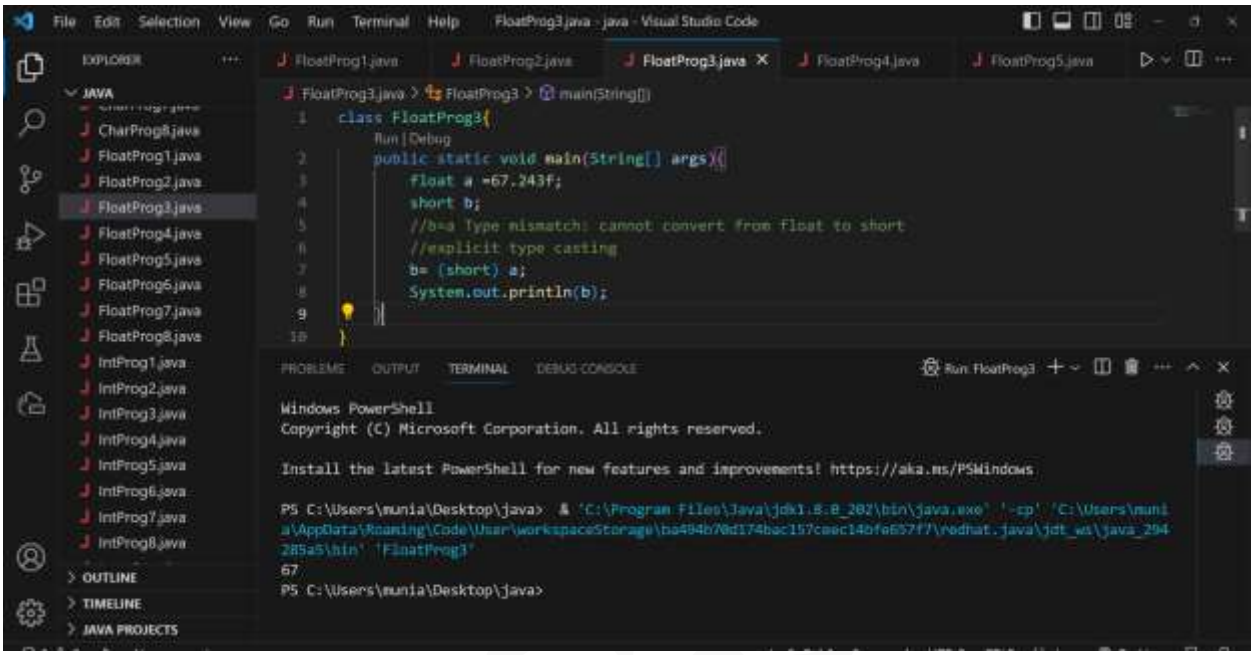


Program 43: (float to short)

```
class FloatProg3{
    public static void main(String[] args){
        float a =67.243f;
        short b;
        //b=a Type mismatch: cannot convert from float to short
        //explicit type casting
        b= (short) a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

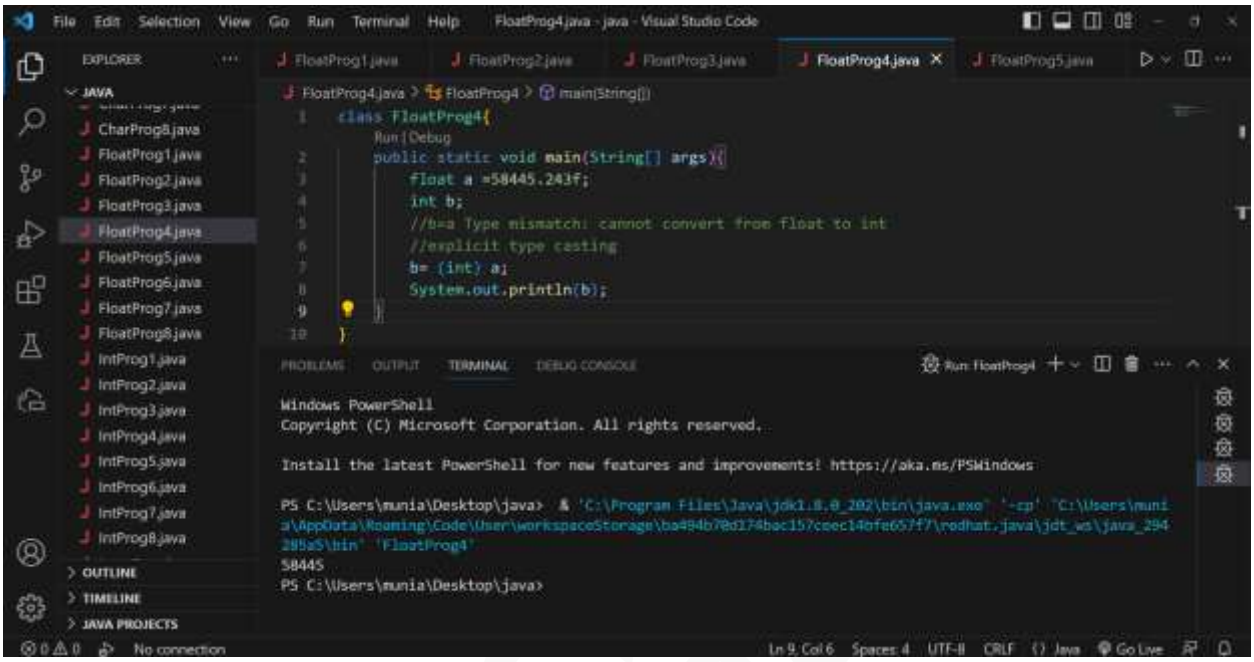


Program 44: (float to int)

```
class FloatProg4{
    public static void main(String[] args){
        float a =58445.243f;
        int b;
        //b=a Type mismatch: cannot convert from float to int
        //explicit type casting
        b= (int) a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

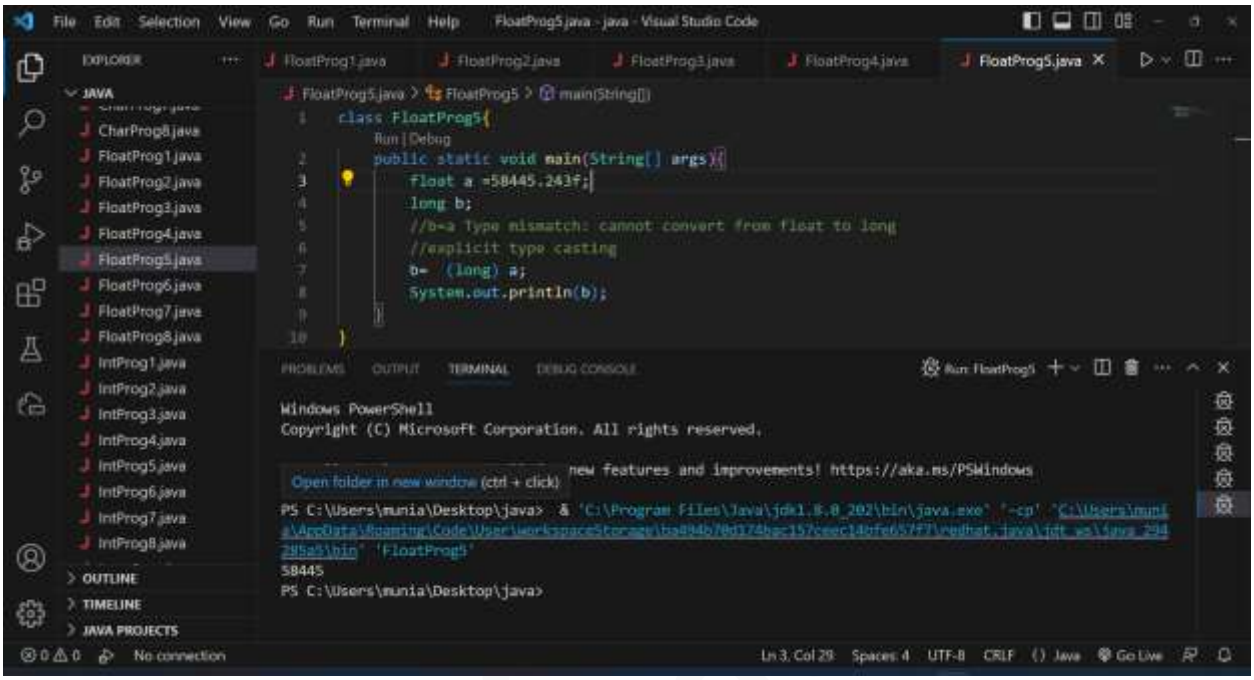


Program 45: (float to long)

```
class FloatProg5{
    public static void main(String[] args){
        float a =58445.243f;
        long b;
        //b=a Type mismatch: cannot convert from float to long
        //explicit type casting
        b=  (long) a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

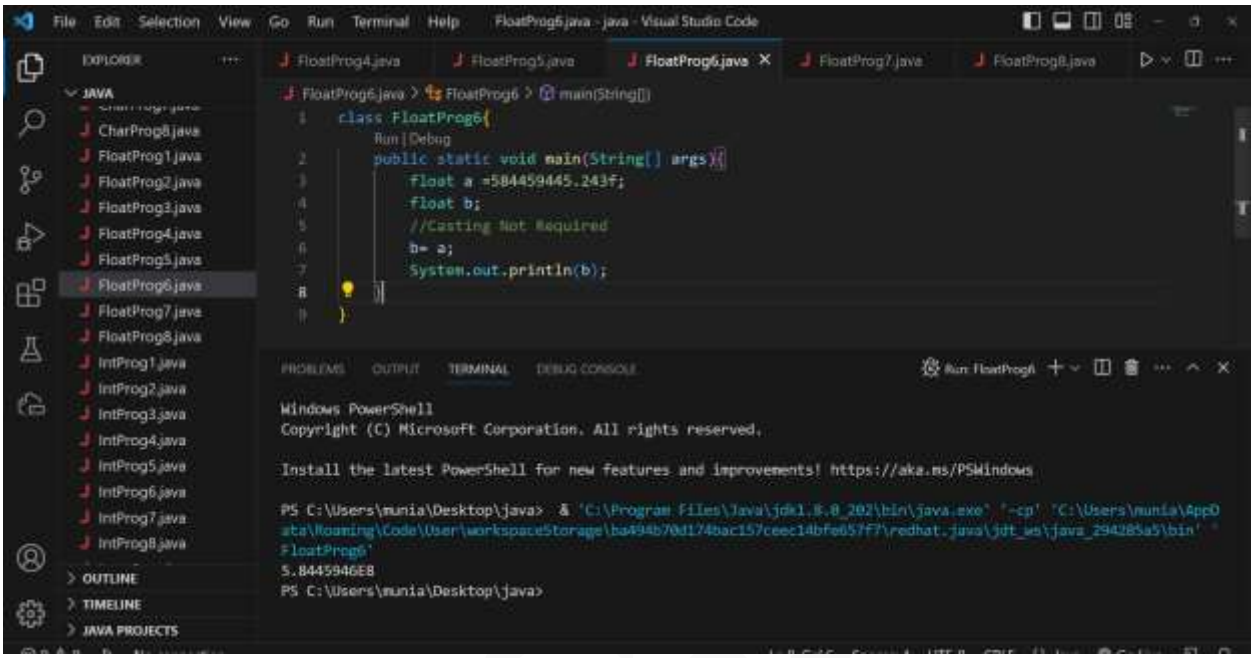


Program 46: (float to float)

```
class FloatProg6{
    public static void main(String[] args){
        float a =584459445.243f;
        float b;
        //Casting Not Required
        b= a;
        System.out.println(b);
    }
}
```

Casting not required

Output:

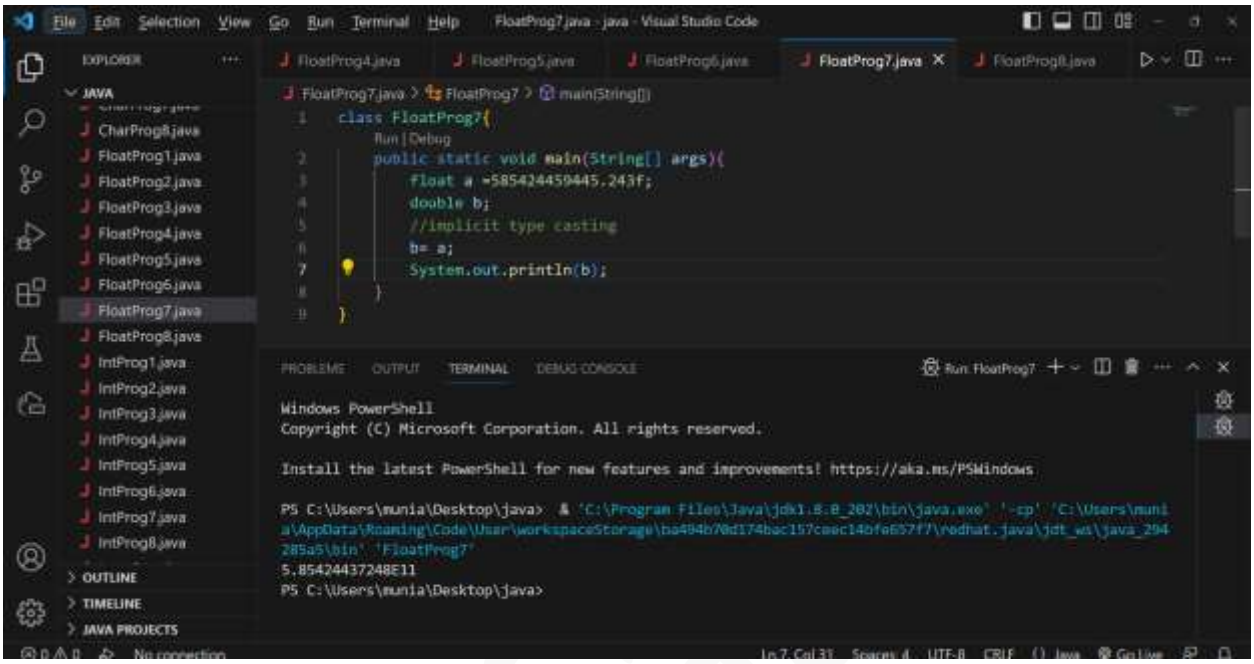


Program 47: (float to double)

```
class FloatProg7{
    public static void main(String[] args){
        float a =585424459445.243f;
        double b;
        //implicit type casting
        b= a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

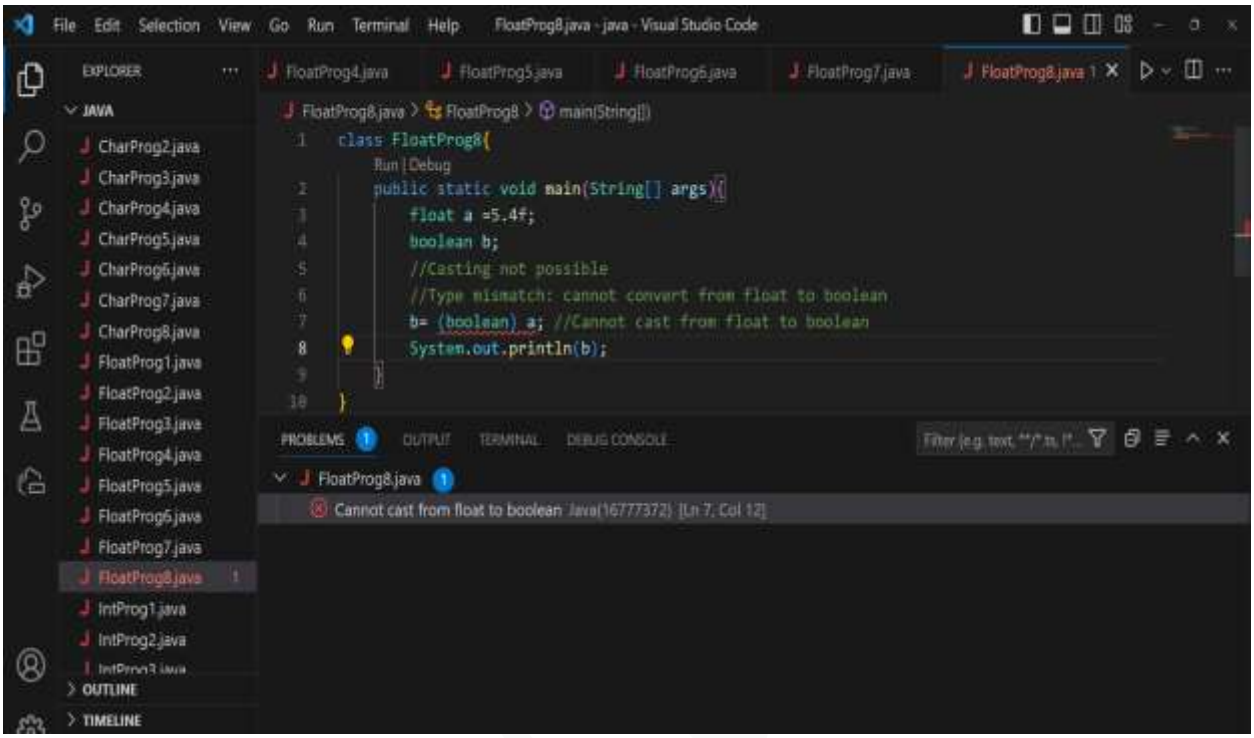


Program 48: (float to Boolean)

```
class FloatProg8{
    public static void main(String[] args){
        float a =5.4f;
        boolean b;
        //Casting not possible
        //Type mismatch: cannot convert from float to boolean
        b= (boolean) a; //Cannot cast from float to boolean
        System.out.println(b);
    }
}
```

Casting not possible

Output:

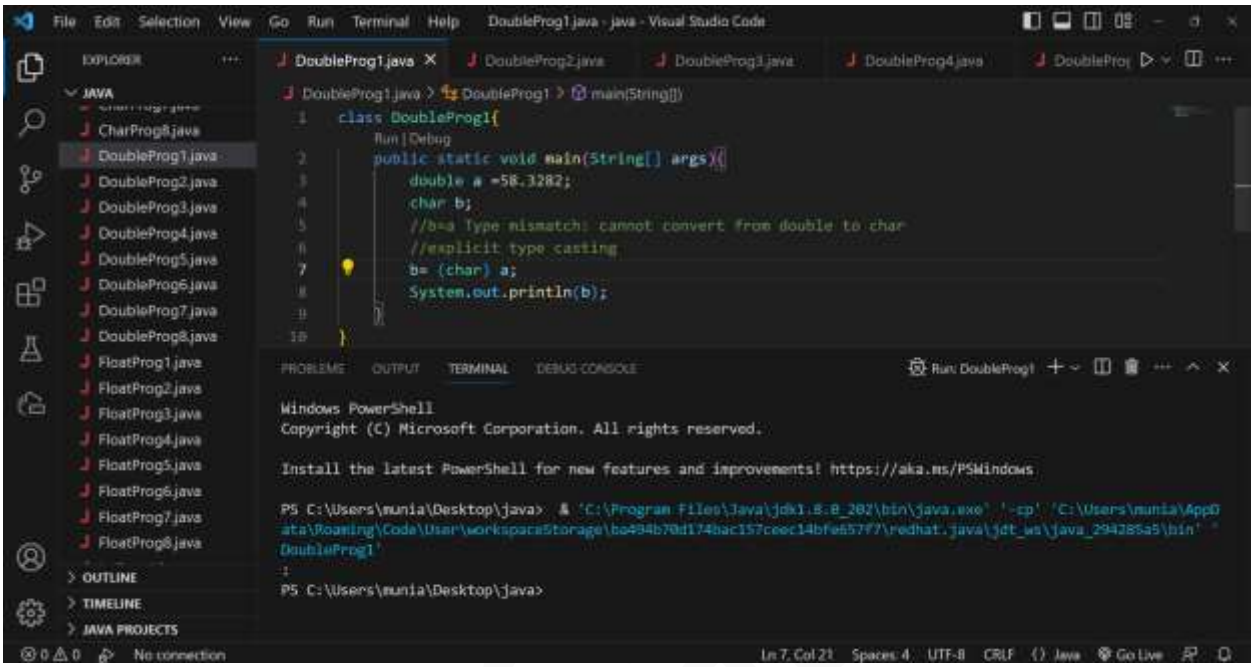


Program 49: (double to char)

```
class DoubleProg1{
    public static void main(String[] args){
        double a =58.3282;
        char b;
        //b=a Type mismatch: cannot convert from double to char
        //explicit type casting
        b= (char) a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

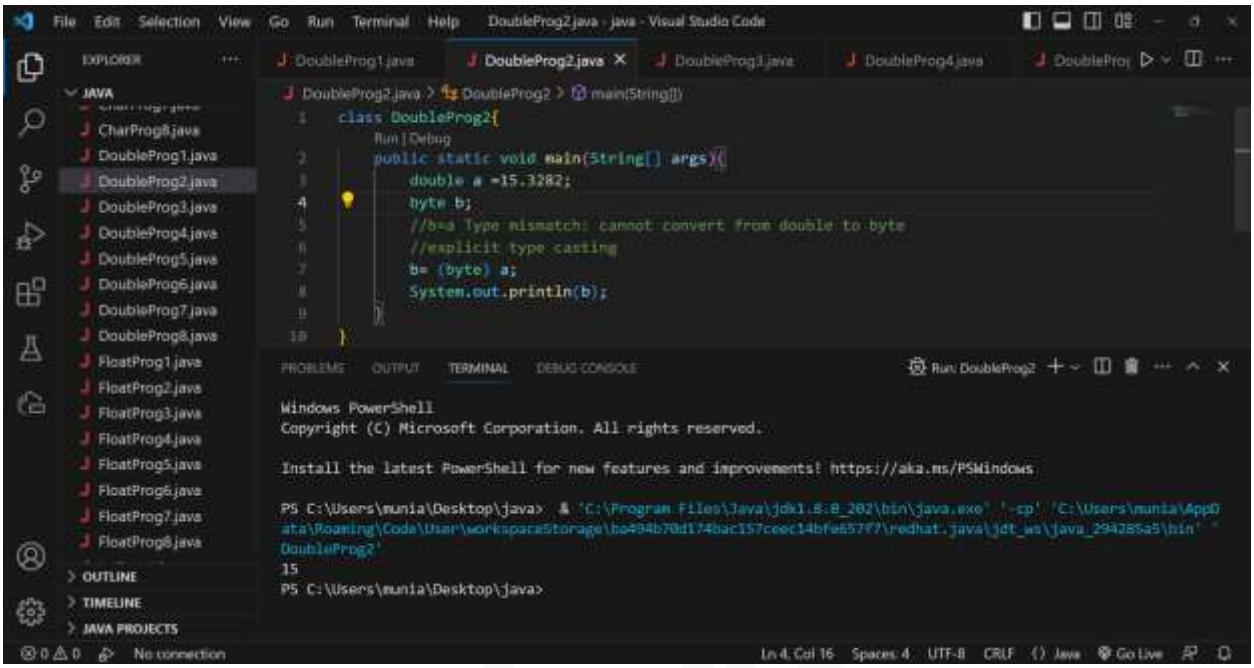


Program 50: (double to byte)

```
class DoubleProg2{
    public static void main(String[] args){
        double a =15.3282;
        byte b;
        //b=a Type mismatch: cannot convert from double to byte
        //explicit type casting
        b= (byte) a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

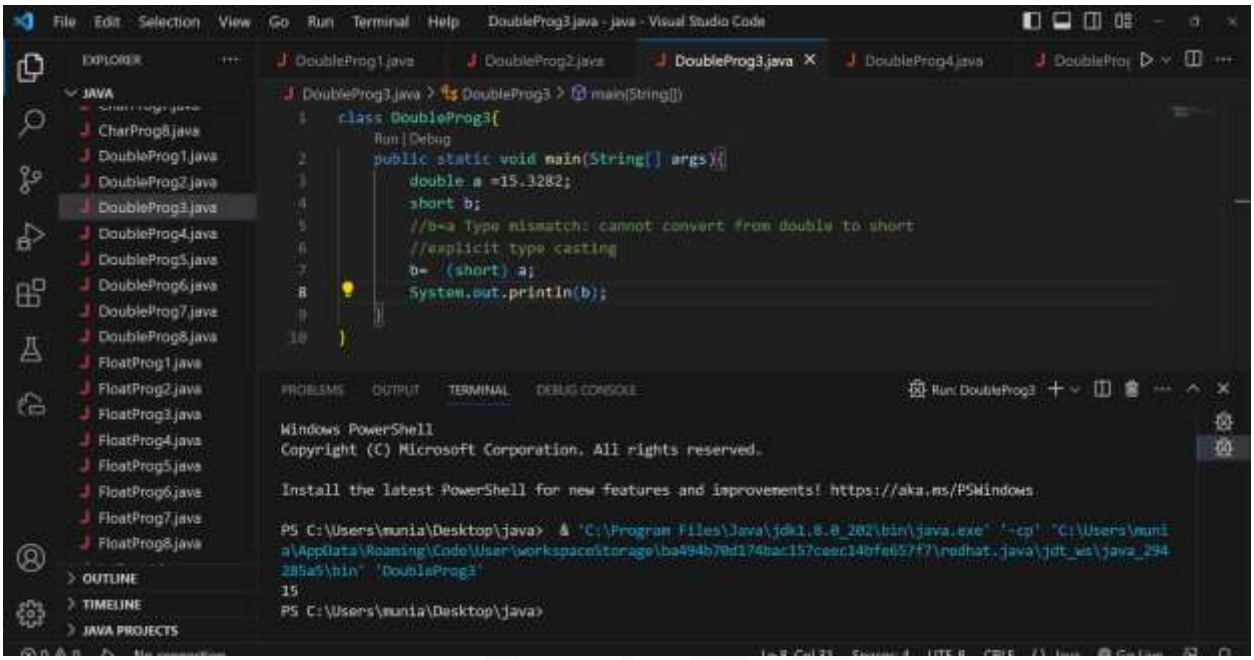


Program 51: (double to short)

```
class DoubleProg3{
    public static void main(String[] args){
        double a =15.3282;
        short b;
        //b=a Type mismatch: cannot convert from double to short
        //explicit type casting
        b=  (short) a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

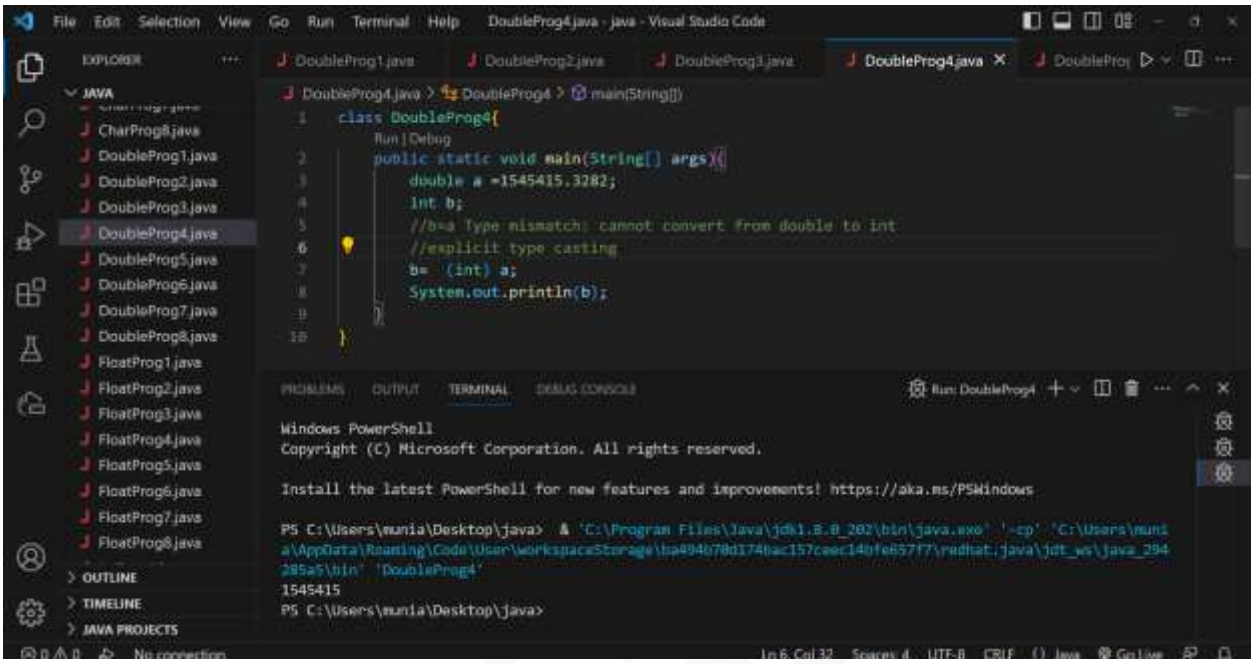


Program 52: (double to int)

```
class DoubleProg4{
    public static void main(String[] args){
        double a =1545415.3282;
        int b;
        //b=a Type mismatch: cannot convert from double to int
        //explicit type casting
        b=  (int) a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

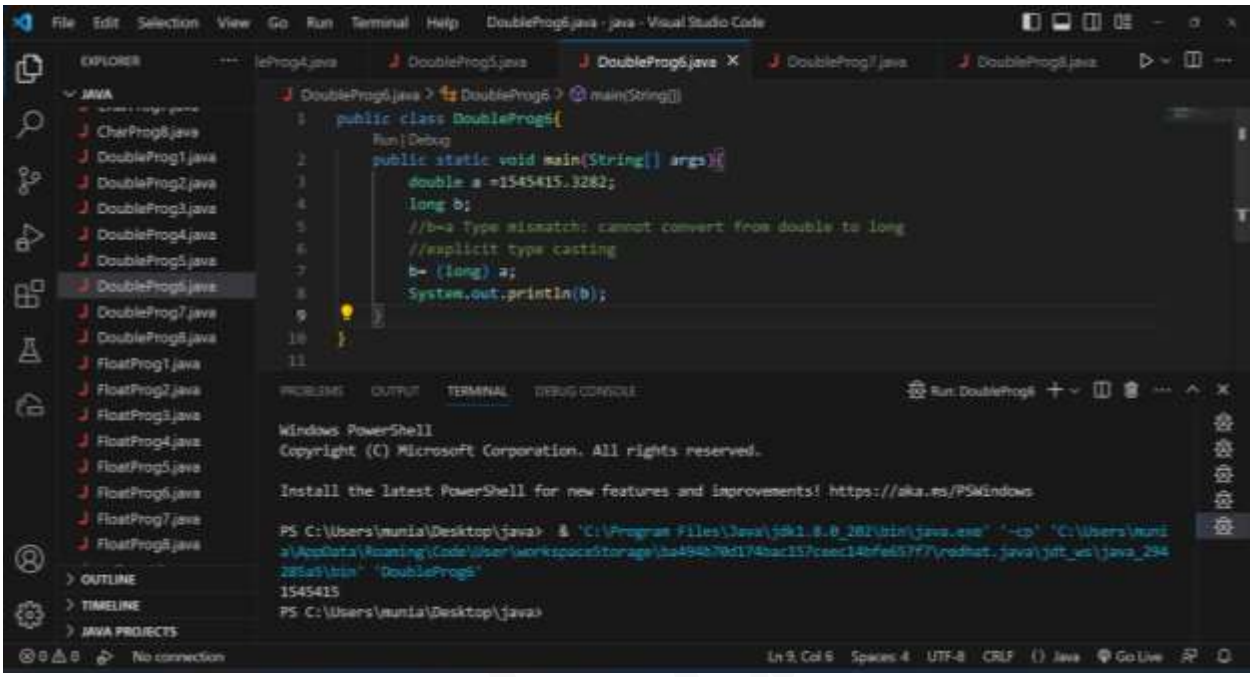


Program 53: (double to long)

```
public class DoubleProg6{
    public static void main(String[] args){
        double a =1545415.3282;
        long b;
        //b=a Type mismatch: cannot convert from double to long
        //explicit type casting
        b= (long) a;
        System.out.println(b);
    }
}
```

Explicit type casting

Output:

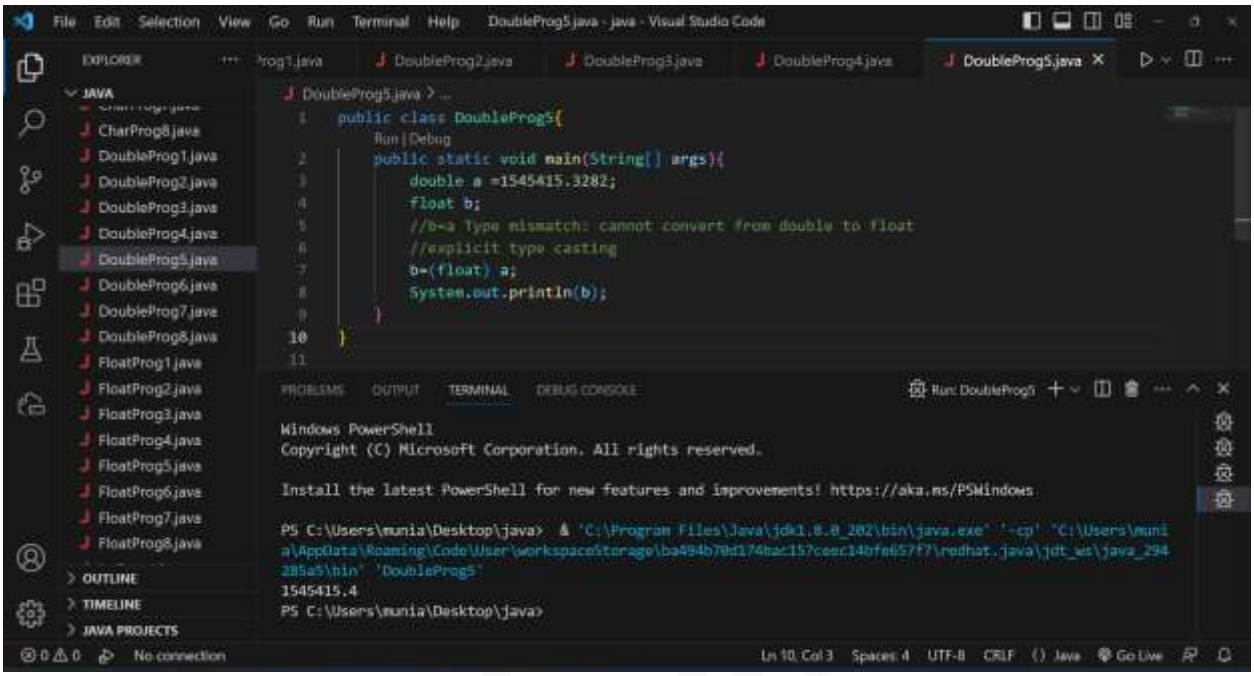


Program 54: (double to float)

```
public class DoubleProg5{
   public static void main(String[] args){
      double a =1545415.3282;
      float b;
      //b=a Type mismatch: cannot convert from double to float
      //explicit type casting
      b=(float) a;
      System.out.println(b);
   }
}
```

Explicit type casting

Output:

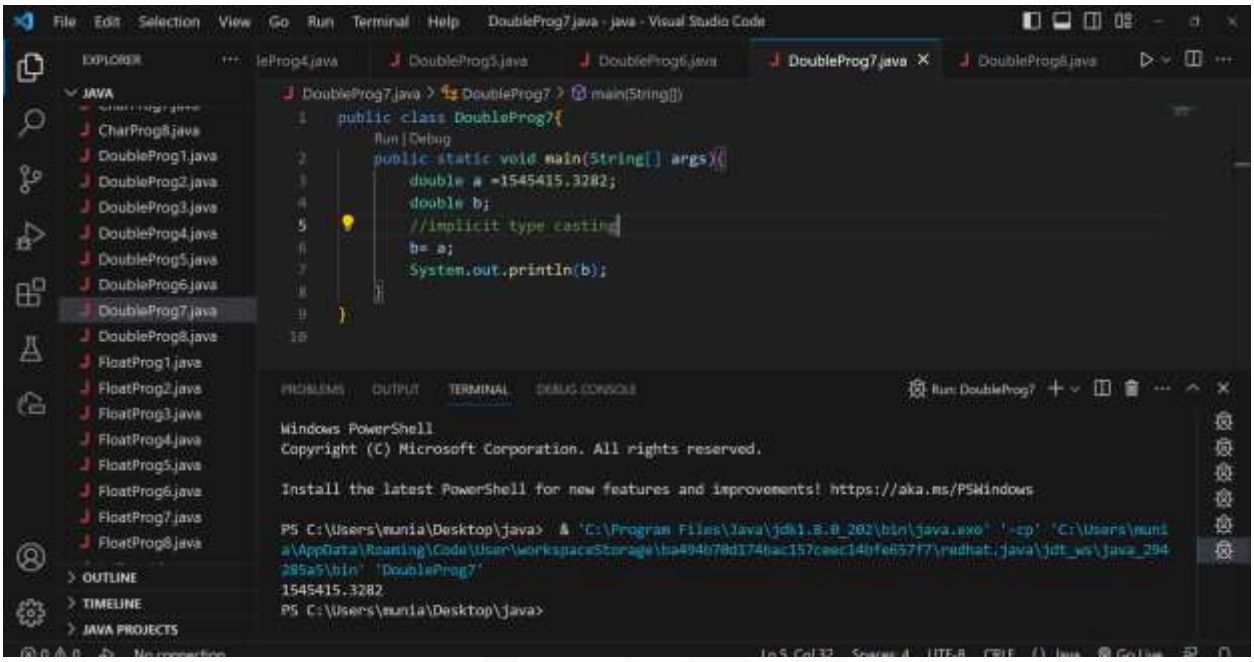


Program 55: (double to double)

```
public class DoubleProg7{
    public static void main(String[] args){
        double a =1545415.3282;
        double b;
        //implicit type casting
        b= a;
        System.out.println(b);
    }
}
```

Implicit type casting

Output:

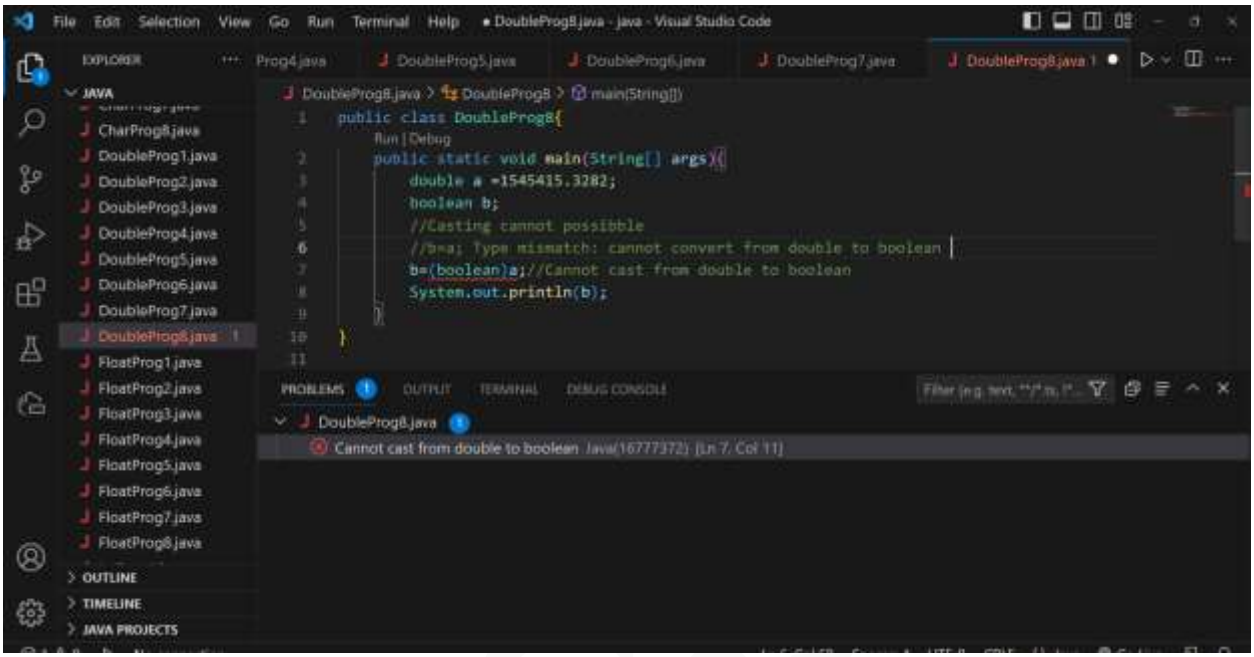


Program 56: (double to boolean)

```
public class DoubleProg8{
    public static void main(String[] args){
        double a =1545415.3282;
        boolean b;
        //Casting cannot possibble
        //b=a; Type mismatch: cannot convert from double to boolean
        b=(boolean)a;//Cannot cast from double to boolean
        System.out.println(b);
    }
}
```

Casting Cannot Possible

Output:

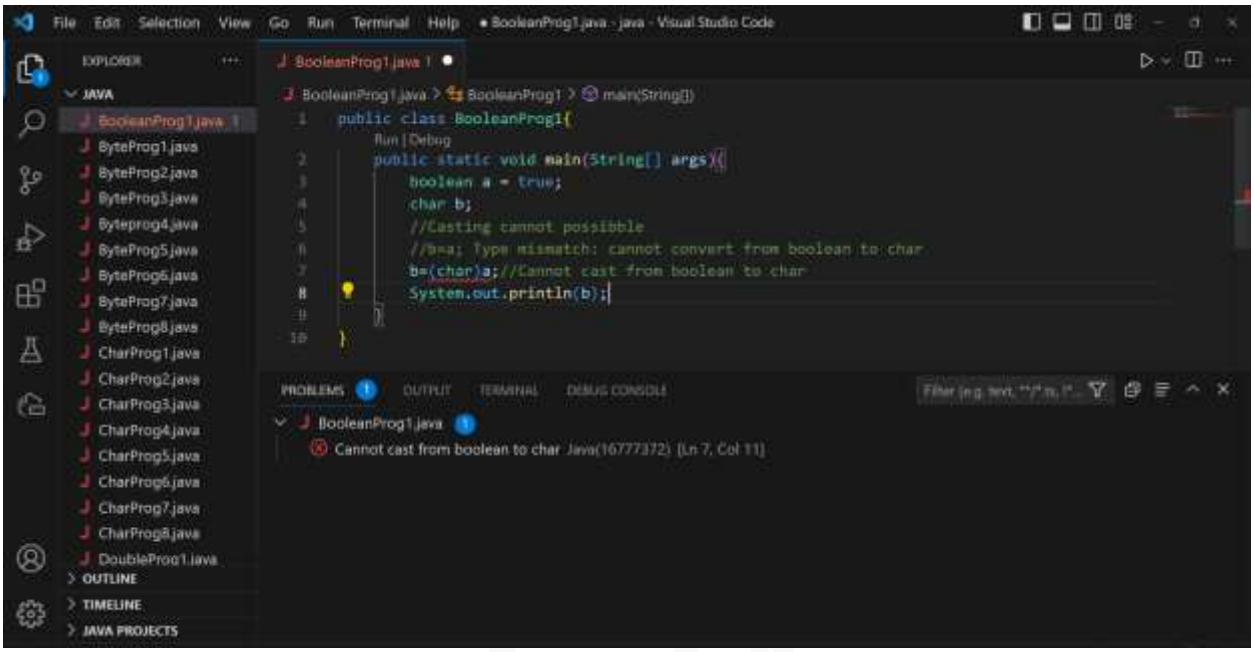


Program 57: (boolean to char)

```
public class BooleanProg1{
   public static void main(String[] args){
      boolean a = true;
      char b;
      //Casting cannot possibble
      //b=a; Type mismatch: cannot convert from boolean to char
      b=(char)a;//Cannot cast from boolean to char
      System.out.println(b);
   }
}
```

Casting Cannot Possible

Output:

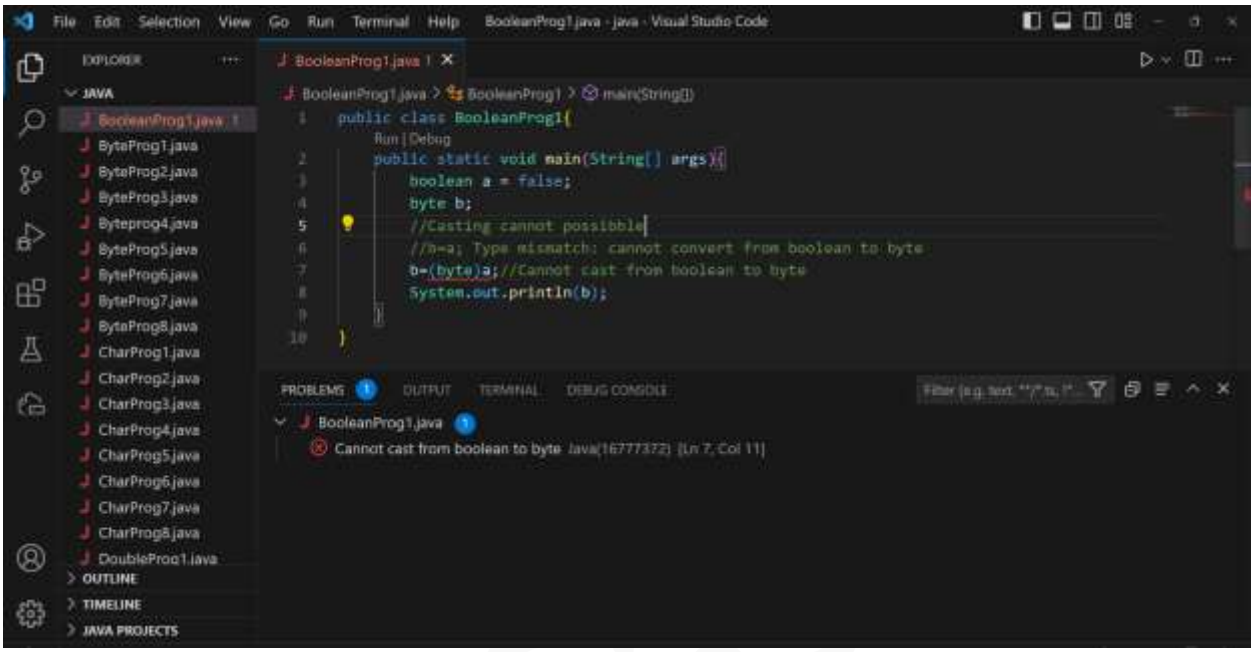


Program 58: (boolean to byte)

```
public class BooleanProg1{
    public static void main(String[] args){
        boolean a = false;
        byte b;
        //Casting cannot possibble
        //b=a; Type mismatch: cannot convert from boolean to byte
        b=(byte)a;//Cannot cast from boolean to byte
        System.out.println(b);
    }
}
```

Casting Cannot Possible

Output:

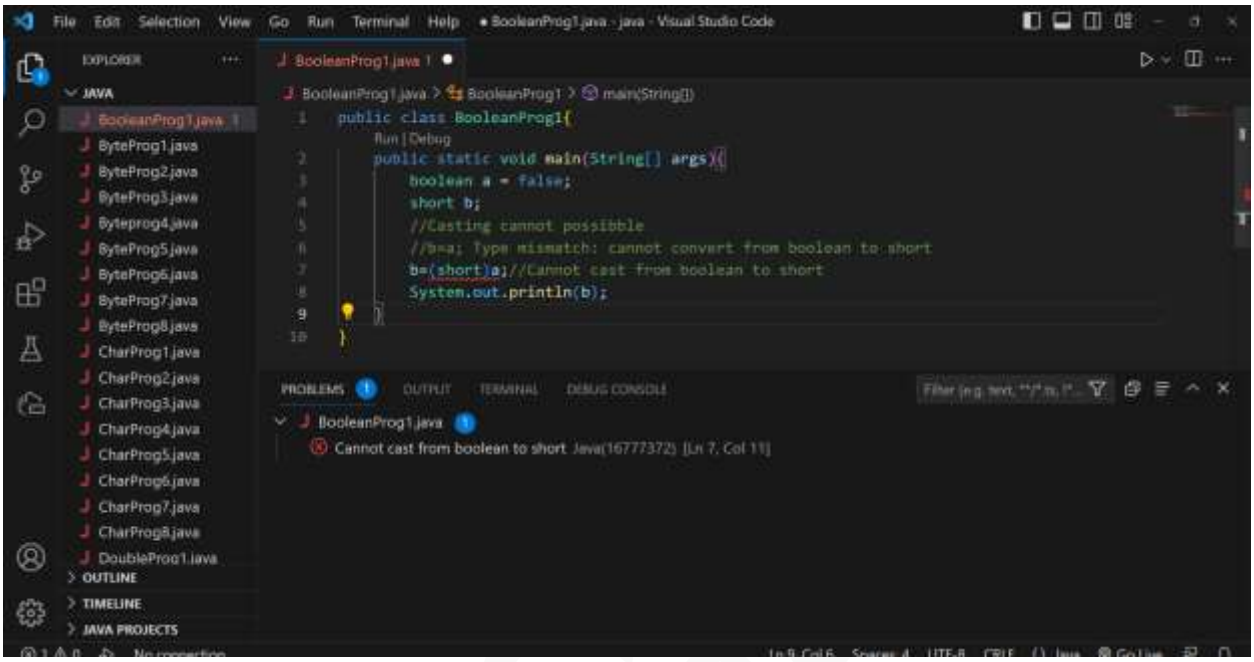


Program 59: (boolean to short)

```
public class BooleanProg1{
    public static void main(String[] args){
        boolean a = false;
        short b;
        //Casting cannot possibble
        //b=a; Type mismatch: cannot convert from boolean to short
        b=(short)a;//Cannot cast from boolean to short
        System.out.println(b);
    }
}
```

Casting Cannot Possible

Output:

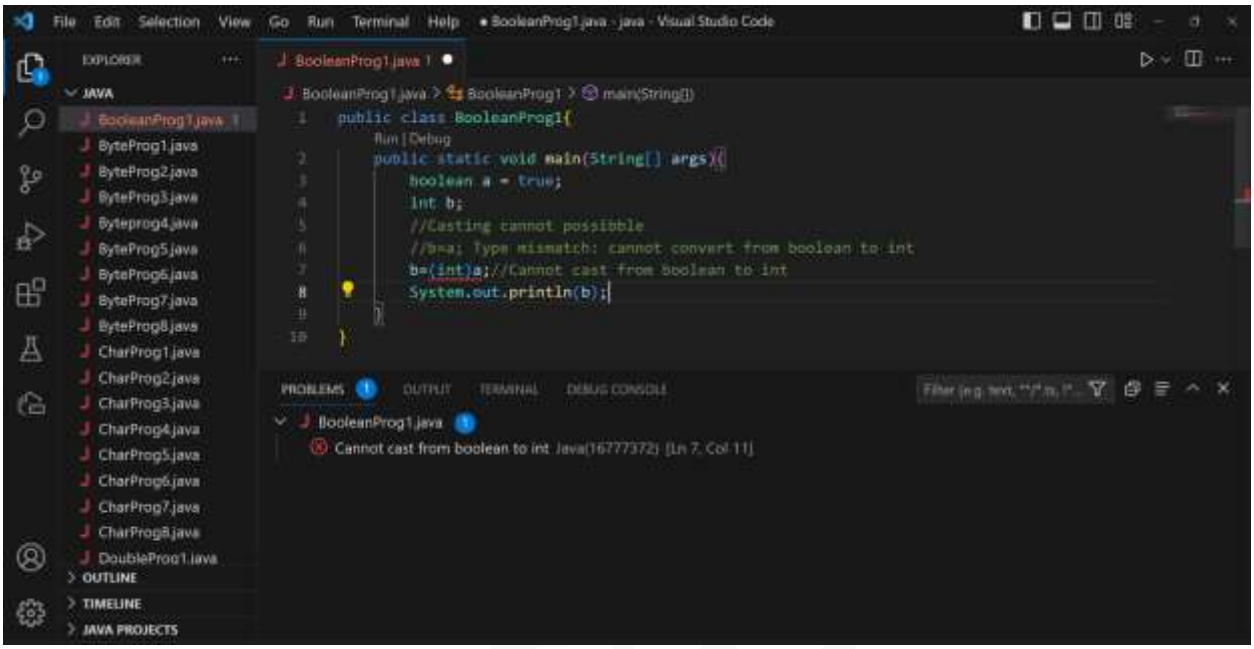


Program 60: (boolean to int)

```
public class BooleanProg1{
    public static void main(String[] args){
        boolean a = true;
        int b;
        //Casting cannot possibble
        //b=a; Type mismatch: cannot convert from boolean to int
        b=(int)a;//Cannot cast from boolean to int
        System.out.println(b);
    }
}
```

Casting Cannot Possible

Output:

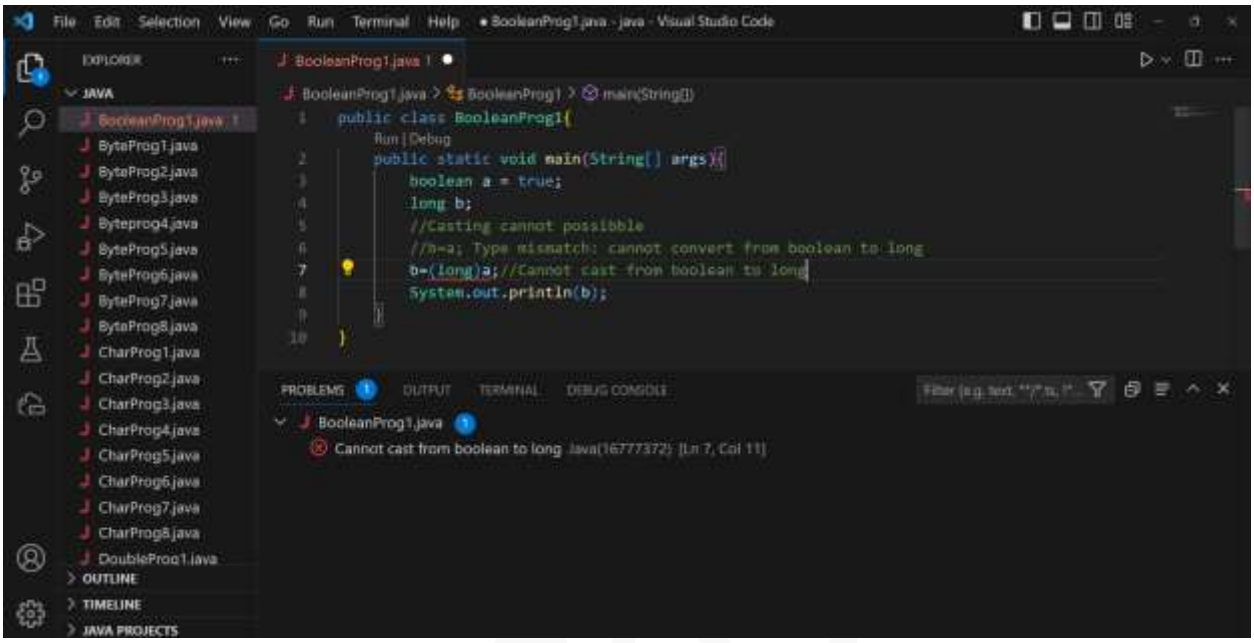


Program 61: (boolean to long)

```
public class BooleanProg1{
   public static void main(String[] args){
      boolean a = true;
      long b;
      //Casting cannot possibble
      //b=a; Type mismatch: cannot convert from boolean to long
      b=(long)a;//Cannot cast from boolean to long
      System.out.println(b);
   }
}
```

Casting Cannot Possible

Output:

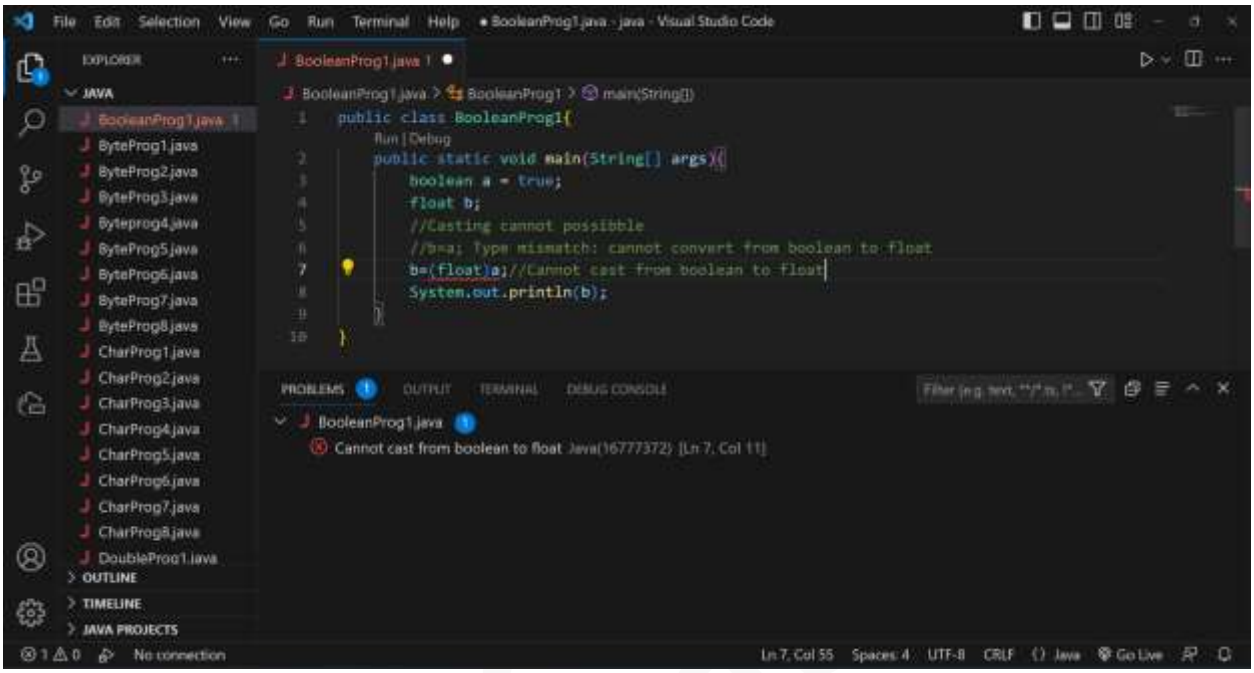


Program 62: (boolean to float)

```
public class BooleanProg1{
    public static void main(String[] args){
        boolean a = true;
        float b;
        //Casting cannot possibble
        //b=a; Type mismatch: cannot convert from boolean to float
        b=(float)a;//Cannot cast from boolean to float
        System.out.println(b);
    }
}
```

Casting Cannot Possible

Output:

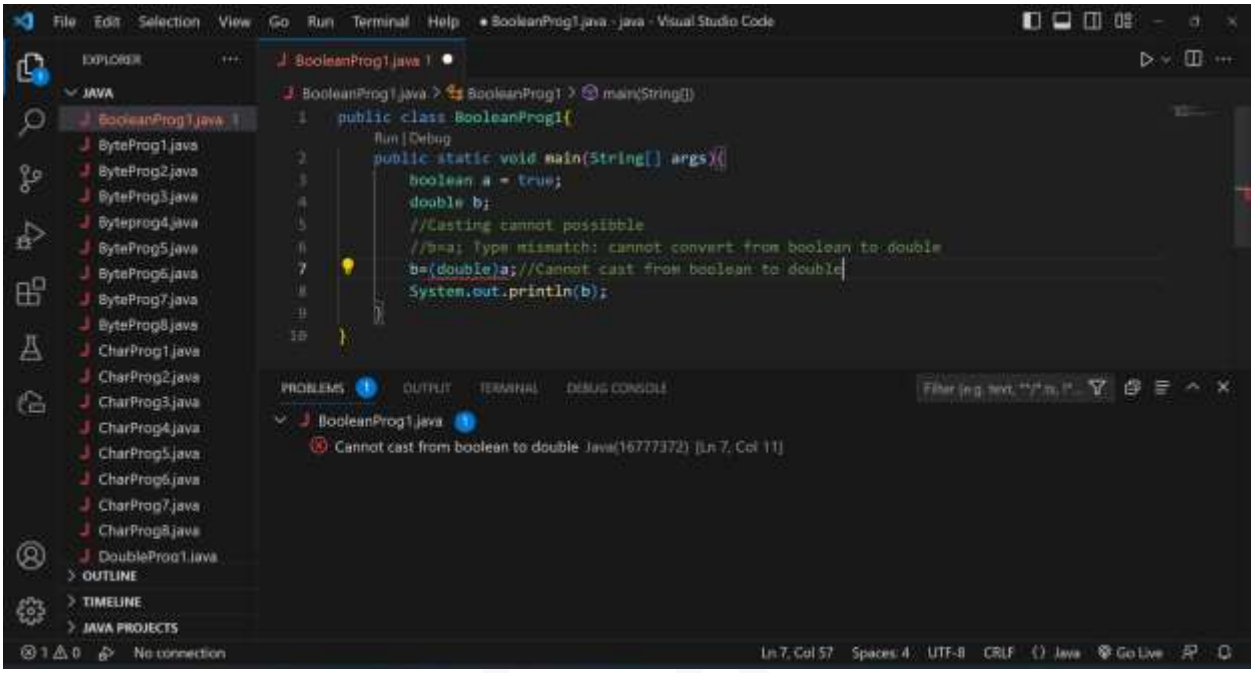


Program 63: (boolean to double)

```
public class BooleanProg1{
    public static void main(String[] args){
        boolean a = true;
        double b;
        //Casting cannot possibble
        //b=a; Type mismatch: cannot convert from boolean to double
        b=(double)a;//Cannot cast from boolean to double
        System.out.println(b);
    }
}
```

Casting Cannot Possible

Output:

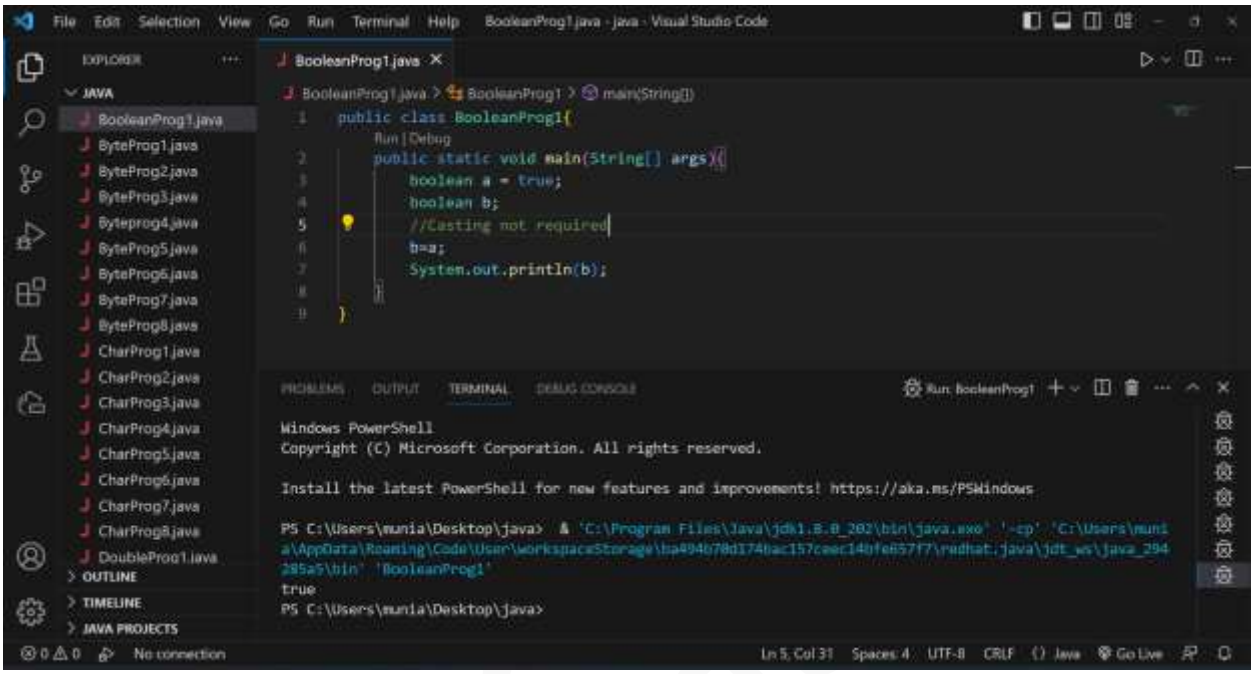


Program 64: (boolean to boolean)

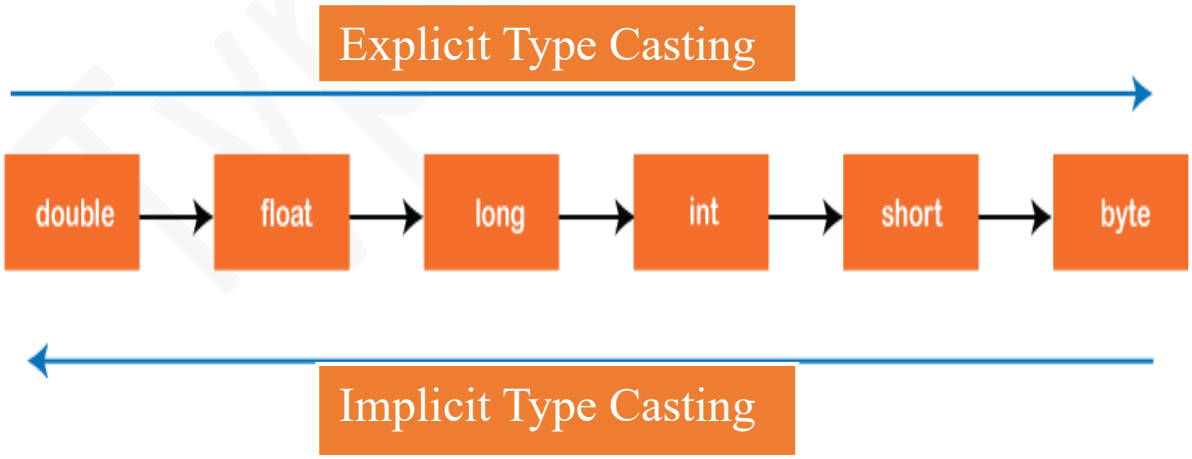
```
public class BooleanProg1{
    public static void main(String[] args){
        boolean a = true;
        boolean b;
        //Casting not required
        b=a;
        System.out.println(b);
    }
}
```

Casting not required

Output:



Type Casting Chart:



	char	byte	short	int	long	float	double	boolean
char	CNR	**E**	**E**	**I**	**I**	**I**	**I**	CNP
byte	**E**	CNR	**I**	**I**	**I**	**I**	**I**	CNP
short	**E**	**E**	CNR	**I**	**I**	**I**	**I**	CNP
int	**E**	**E**	**E**	CNR	**I**	**I**	**I**	CNP
long	**E**	**E**	**E**	**E**	CNR	**I**	**I**	CNP
float	**E**	**E**	**E**	**E**	**E**	CNR	**I**	CNP
double	**E**	**E**	**E**	**E**	**E**	**E**	CNR	CNP
boolean	CNP	CNP	CNP	CNP	CNP	CNP	CNP	CNR

Here,

CNR -- Casting Not Required

E-- Explicit Type Casting

I-- Implicit Type Casting

CNP-- Casting Not Possible