TYPE CASTING

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Type Casting:

Conversion of data from one data type to another data type is called "Type Casting".

Type casting is of two types.

1.Implicit Typecasting
2.Explicit Typecasting

Implicit Typecasting:

Conversion of data from lower data type to higher data type is called "Implicit conversion". Its is also called as type promotion or widening.

*In implicit conversion no data loss occurs.

Explicit Typecasting:

Conversion of data from higher data type to lower data type is called "Explicit conversion".

*In explicit conversion we may have the possibility of losing the data.

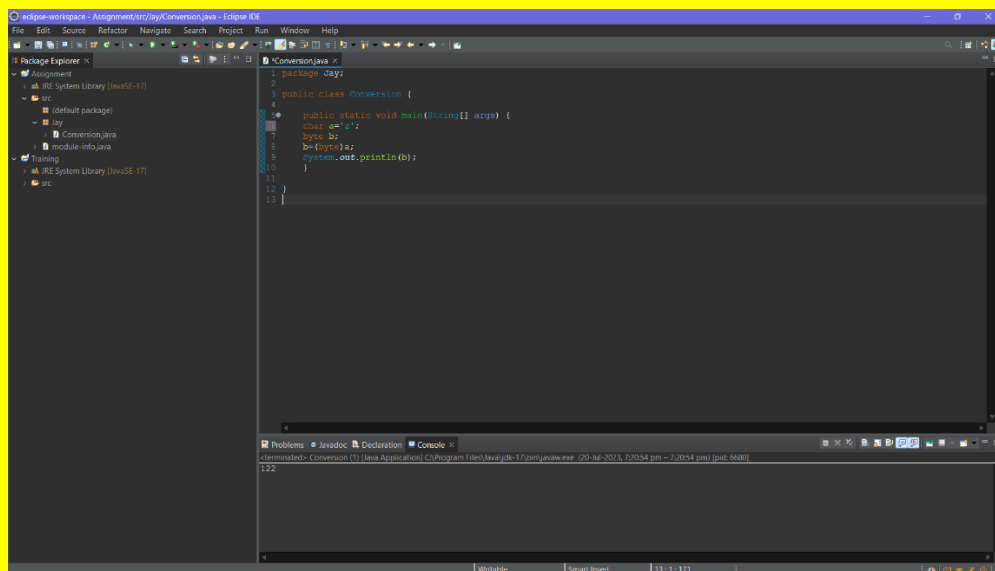In java we have 8 primitive data types, viz.

- ➢ Char
- ➢ Byte
- ➢ Short
- ➢ Int
- ➢ Long
- ➢ Float
- ➢ Double
- ➢ Boolean

Using these 8 types of primitive data types, 64 types of type castings are possible. Let's have a peep into each of these conversion in detail.
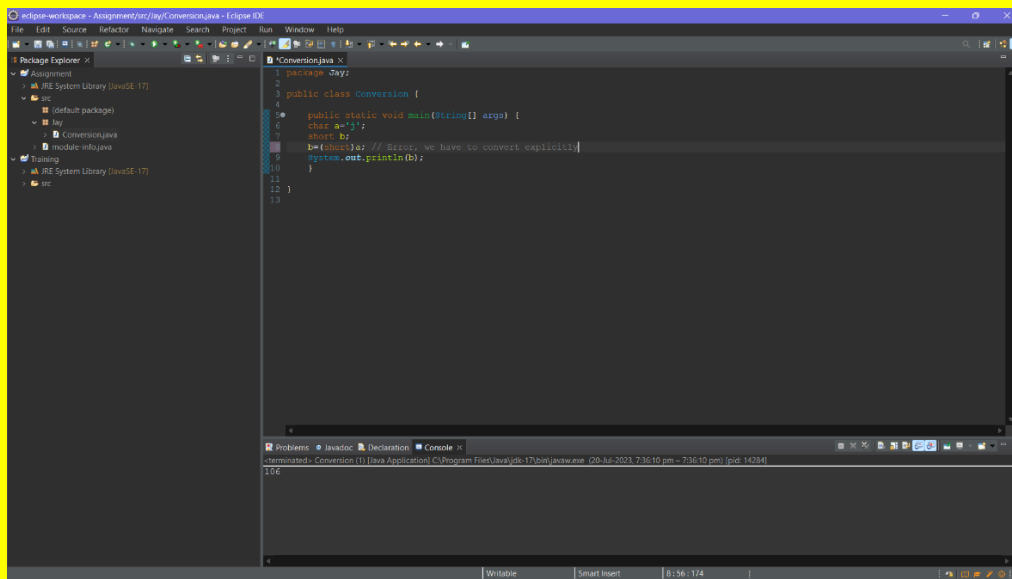
1. Char to Char:

Char to char type casting is not required as they both are of same data types.

2. Char to Byte:

Char to byte is an explicit type casting

3. Char to Short:
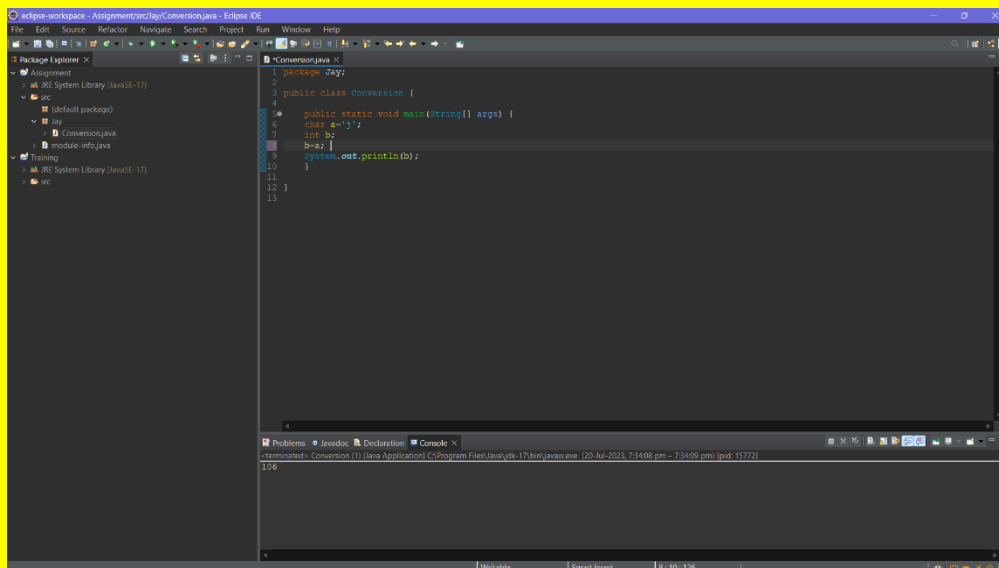
Char to Short is an explicit conversion

4.Char to Int:
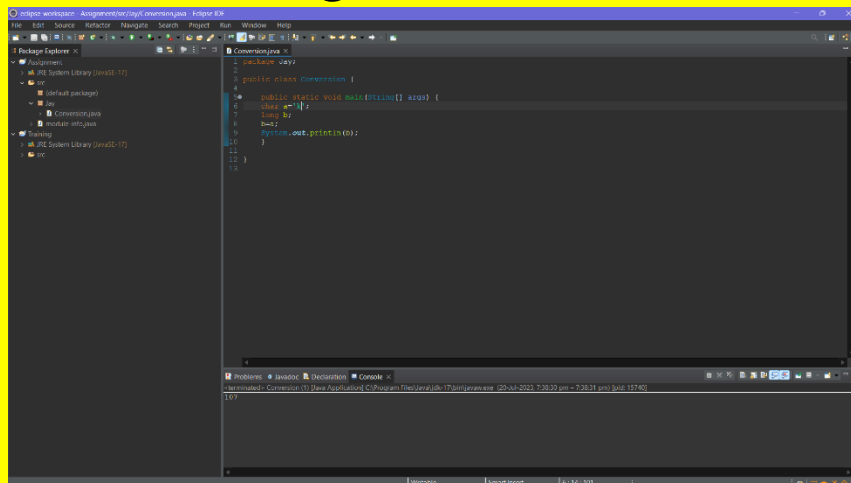
Char to int is an implicit type of type casting

5.Char to Long:
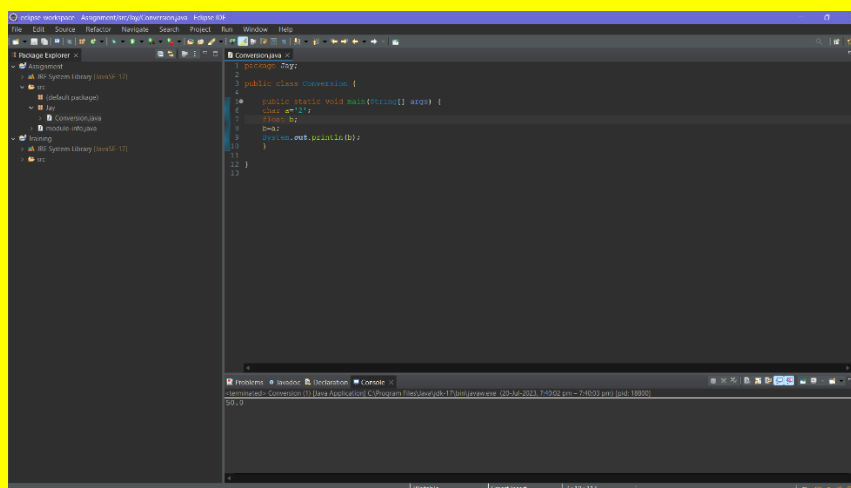
Char to long is an implicit type of type conversion

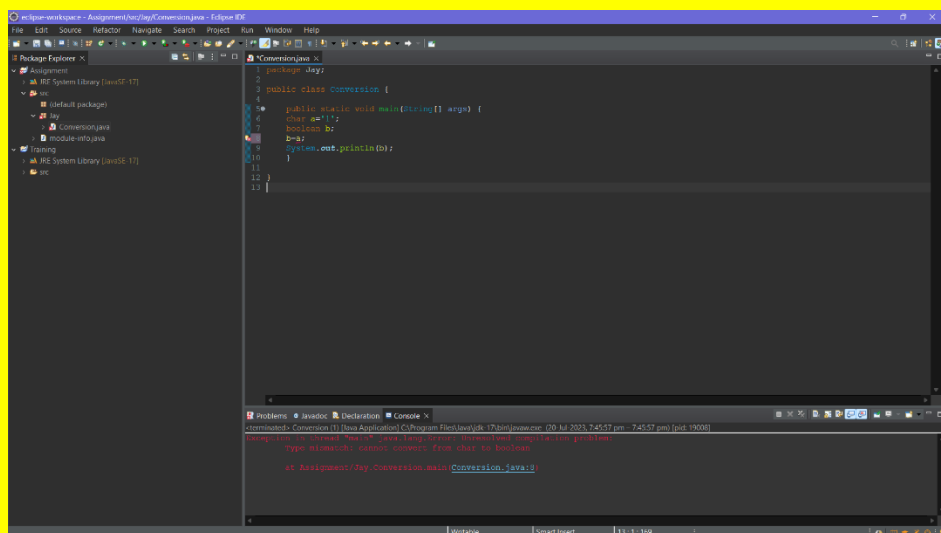## 6.Char to Float:

Char to float is an implicit type casting
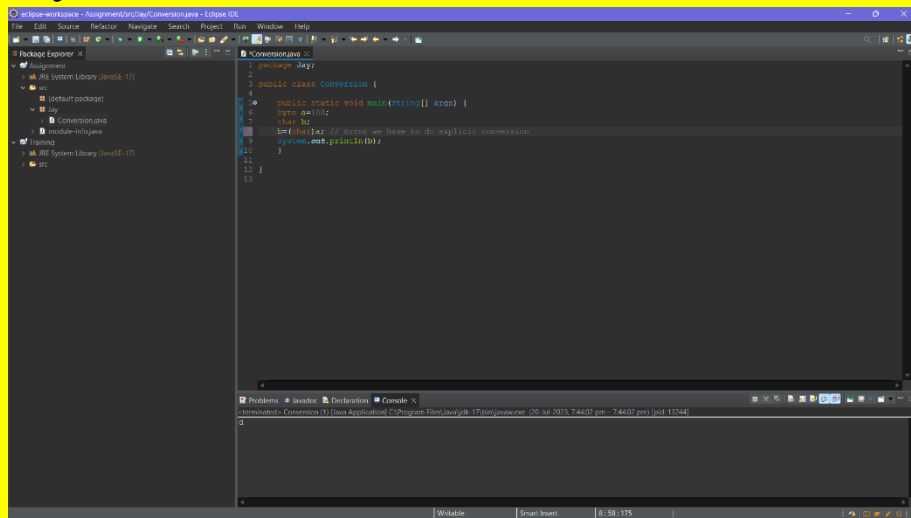
7.Char to Double:
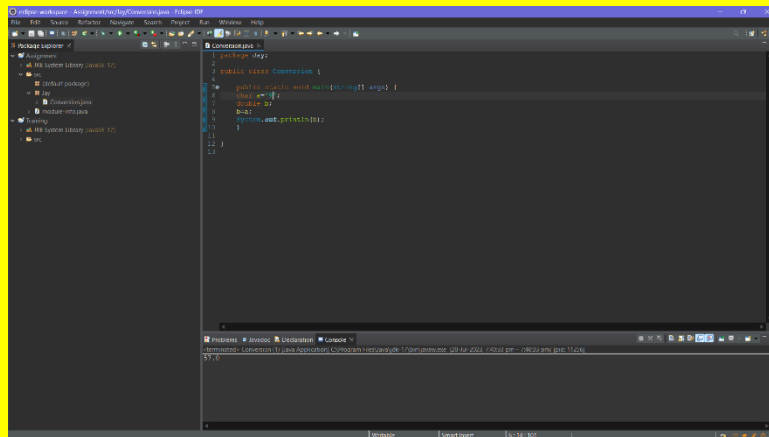
Char to double is an implicit type of type casting

8. Char to Boolean:

Char to Boolean conversion is not possible
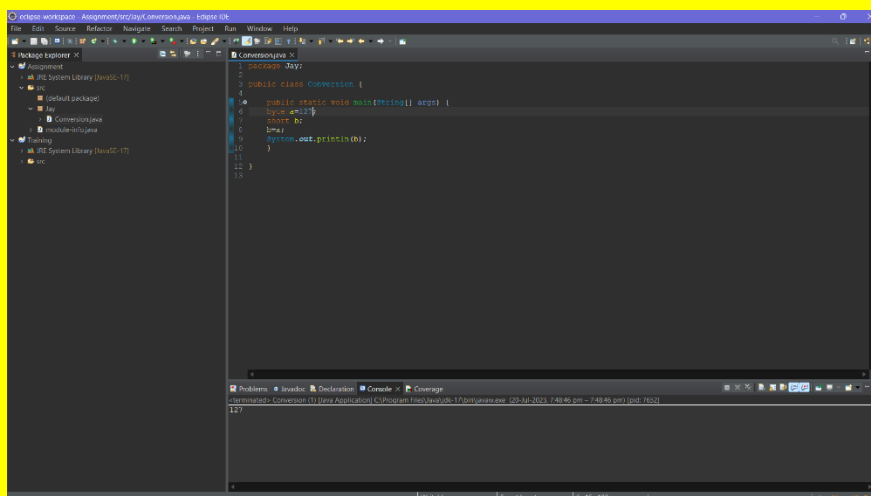
9.Byte to Char:

Byte to char is an explicit type casting

10.Byte to Byte:

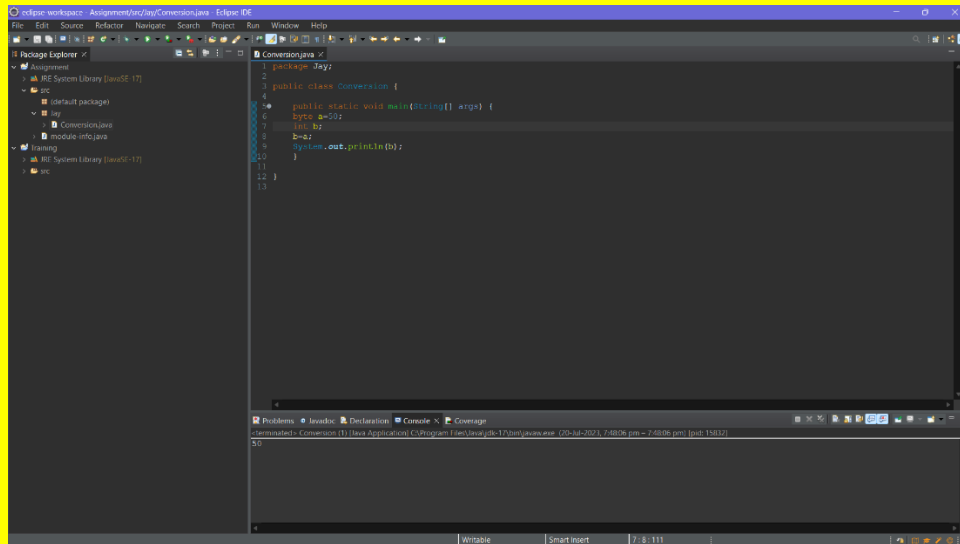Byte to byte conversion is not required as both are of same data type.
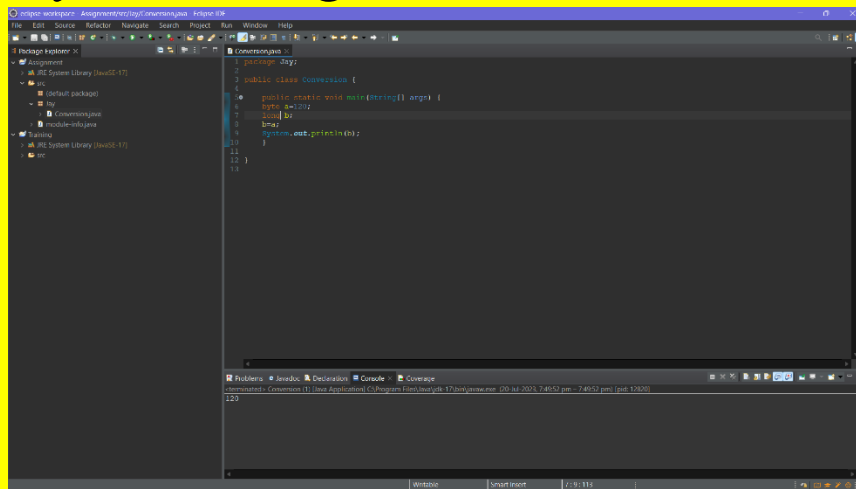
11.Byte to short:

Byte to short is an implicit type of type casting

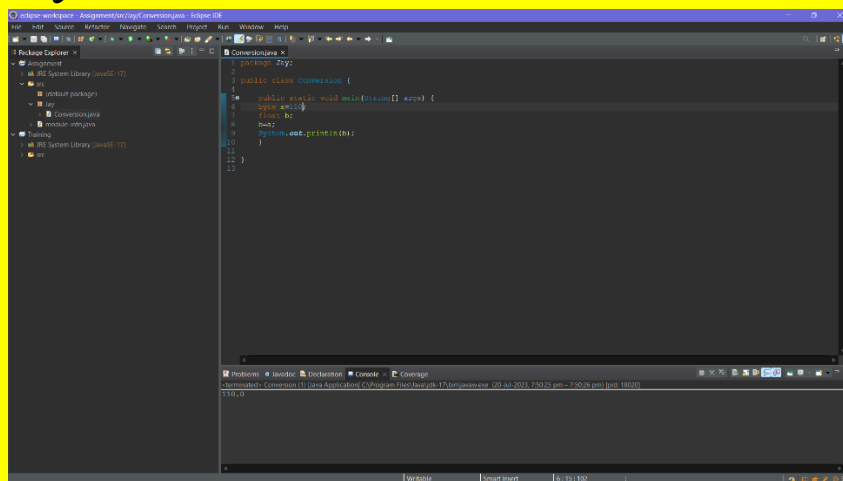## 12.Byte to Int:

Byte to int is an implicit type of type casting
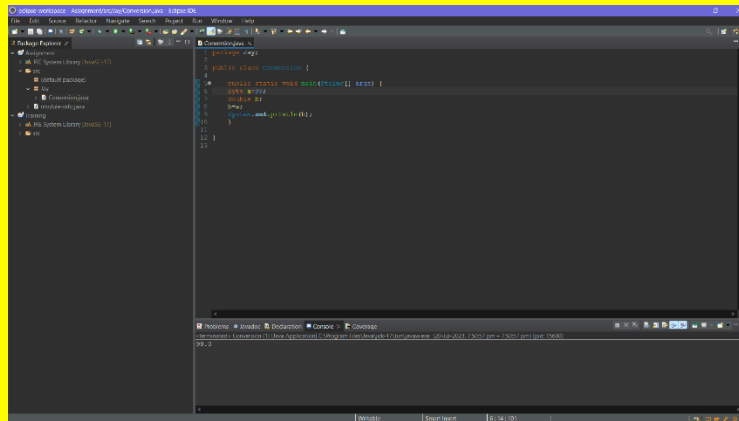
13.Byte to Long:

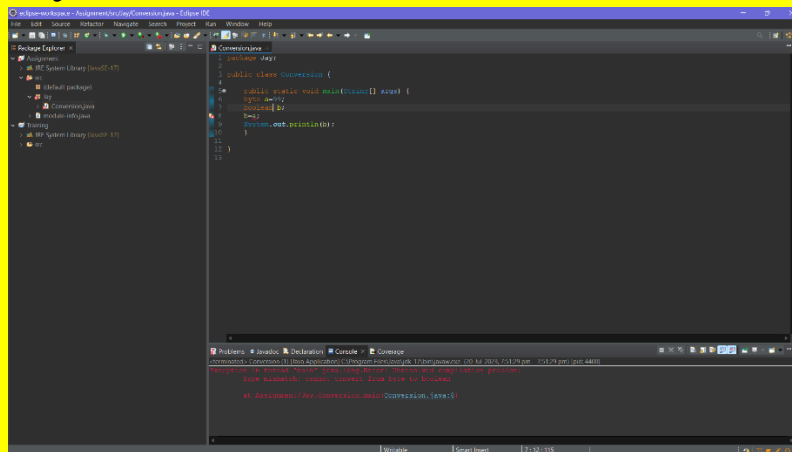Byte to long is an implicit type casting

14.Byte to Float:

Byte to float is an implicit type casting

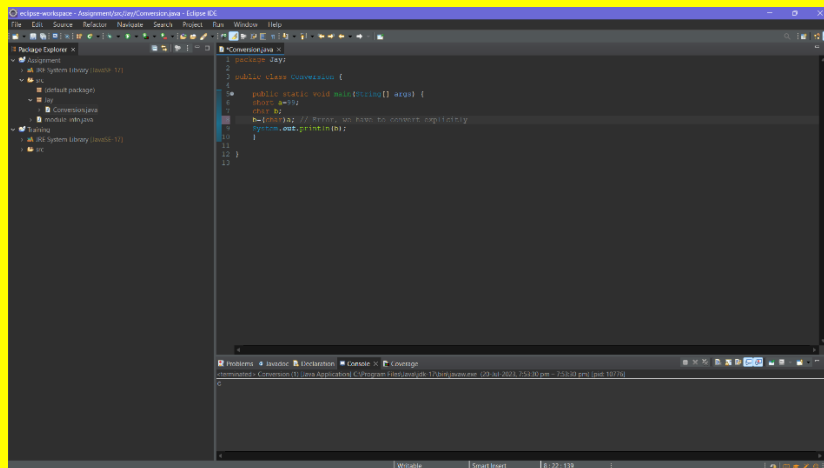## 15.Byte to Double

Byte to double is an implicit type conversion
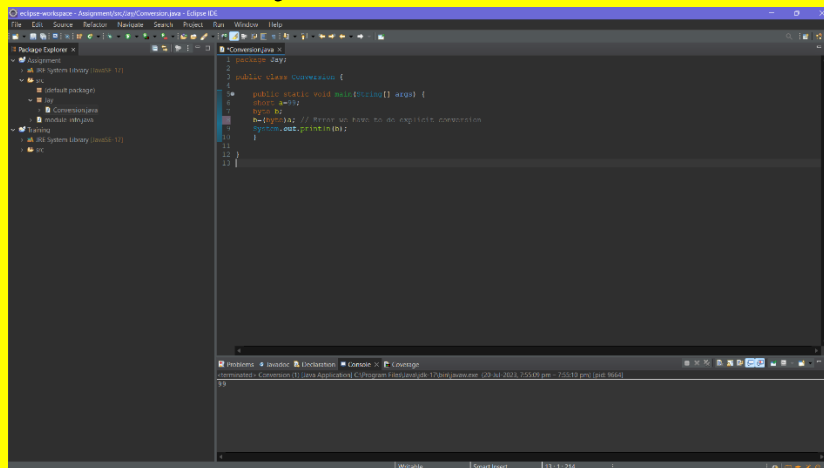
16.Byte to Boolean:

Byte to Boolean conversion is not possible

17.Short to Char:

Short to char is an explicit type of coversion
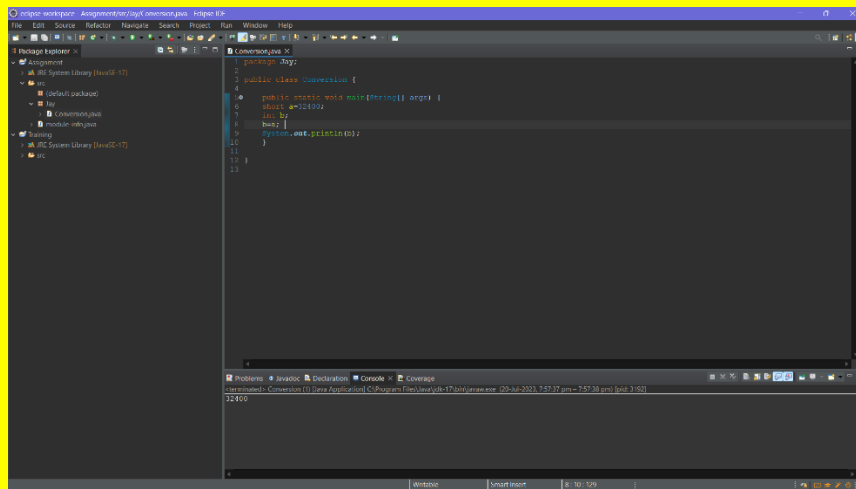
18.Short to Byte:

Short to byte is an explicit type of conversion

19.Short to Short:

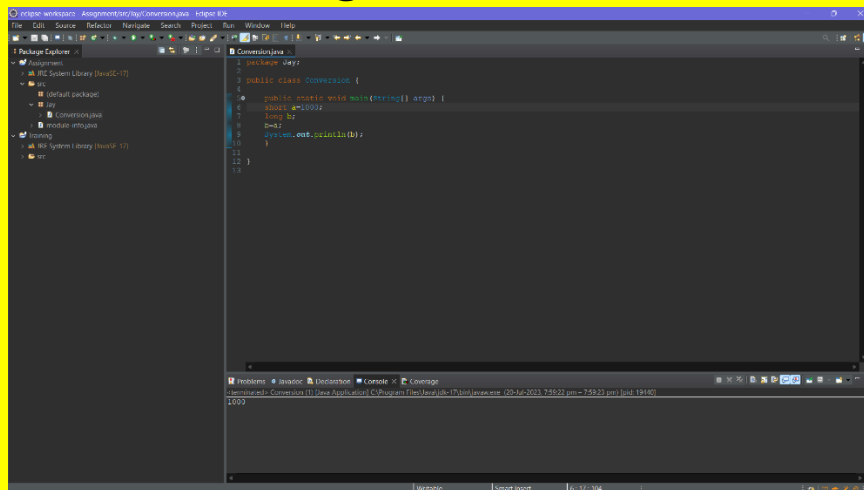Short to short type of conversion is not required as they both are of same data type.

20.Short to Int:

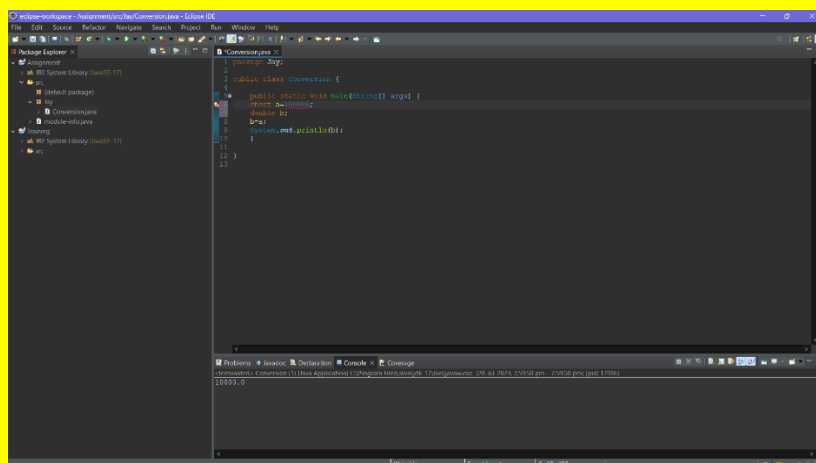Short to int is and implicit type of conversion

21.Short to Long:

Short to long is an implicit type of conversion
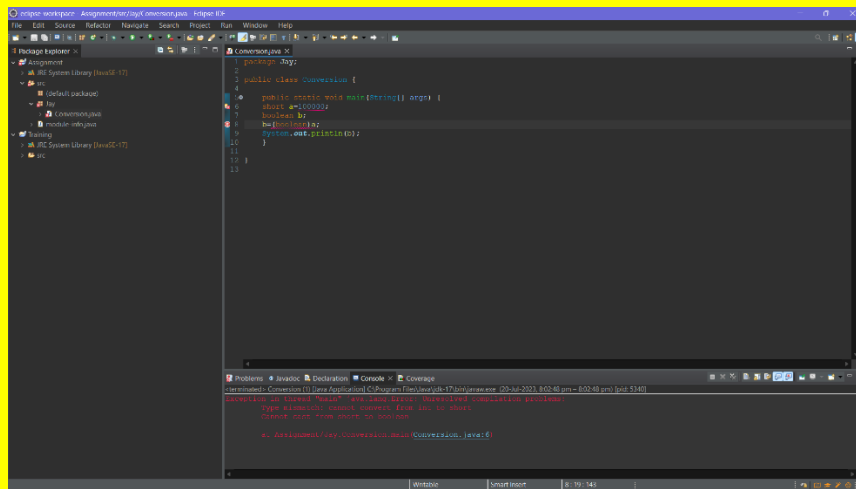
22.Short to Float:
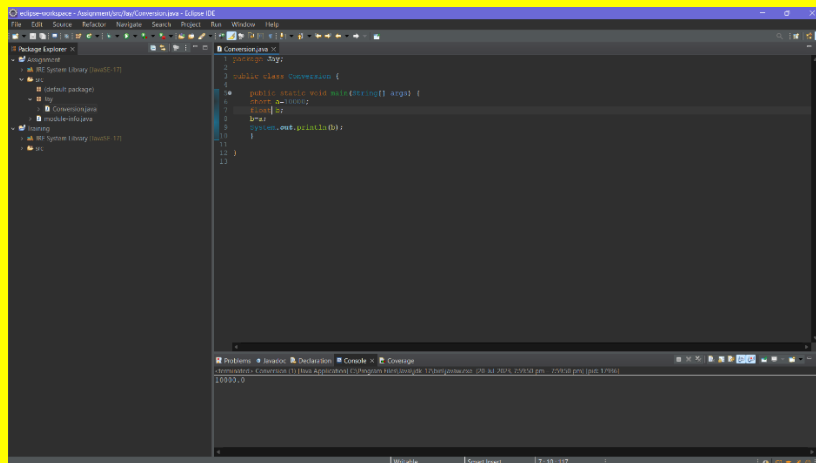
Short to float is an implicit conversion
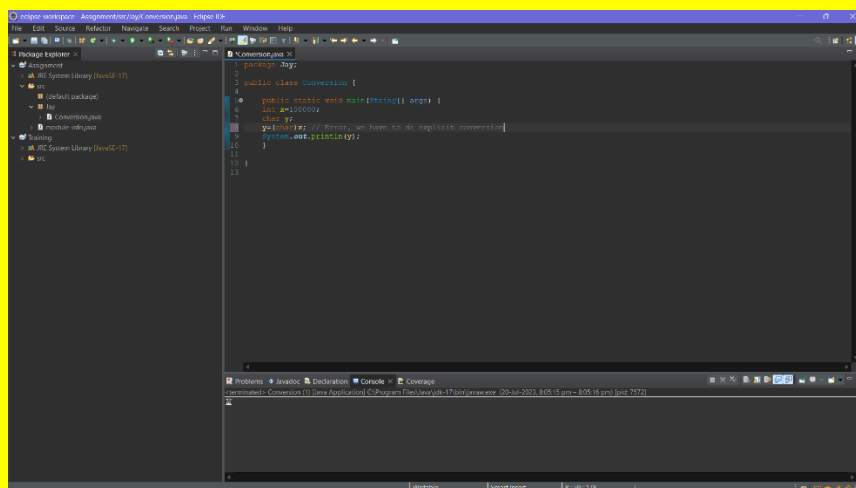
23.Short to Double:

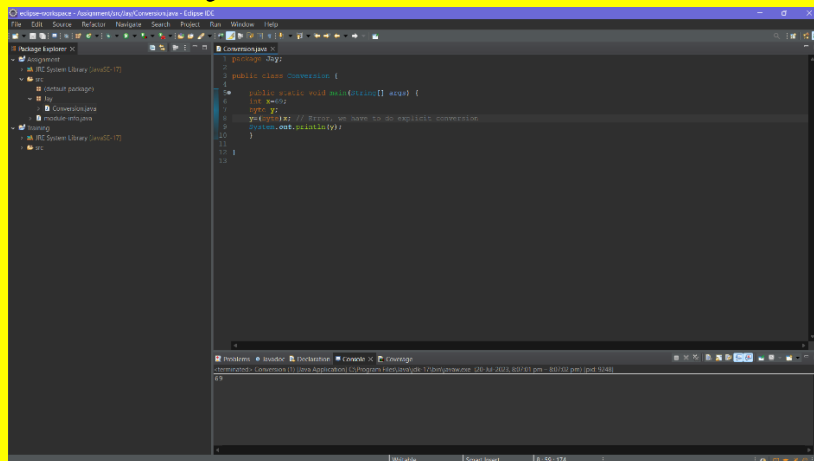Short to double is an implicit type of type casting

24.Short to Boolean:

Short to Boolean conversion is not possible

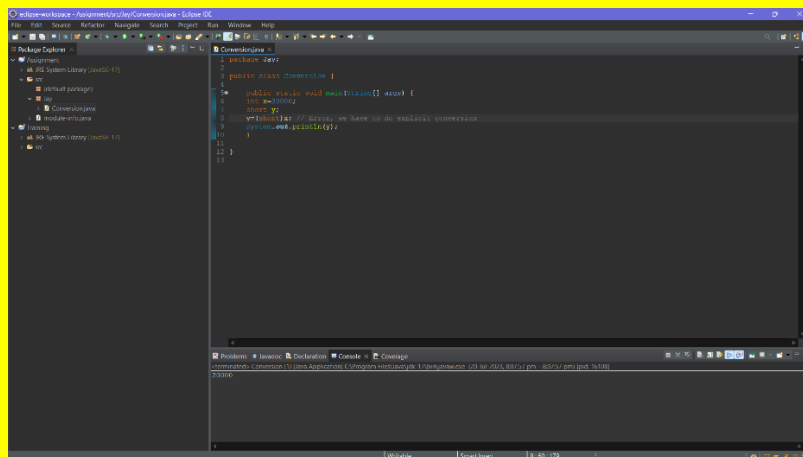## 25.Int to Char:

Int to char is an explicit type of type casting

26.Int to Byte:

Int to byte conversion is explicit type of casting
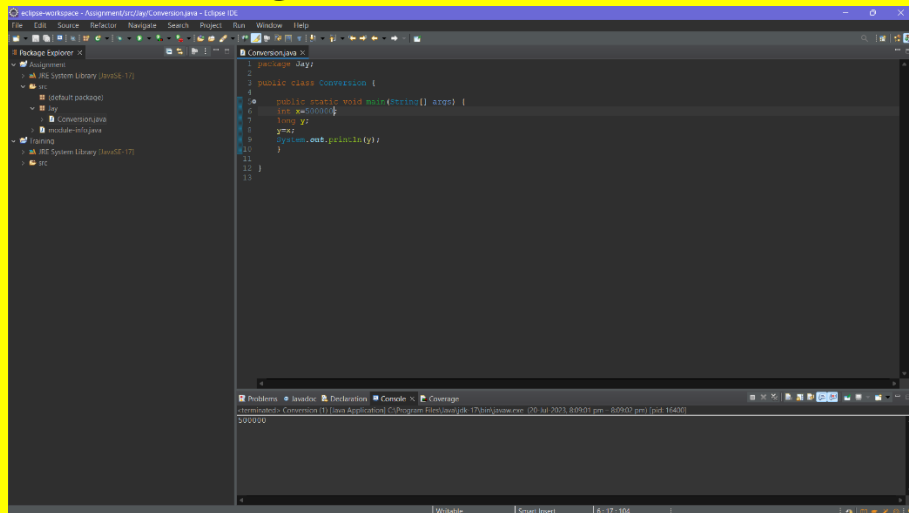
27.Int to Short:

Int to short is an explicit type of type casting

28. Int to Int:

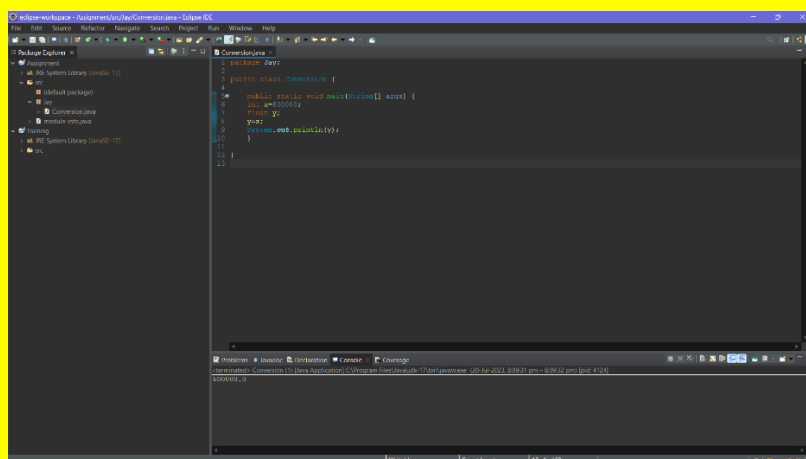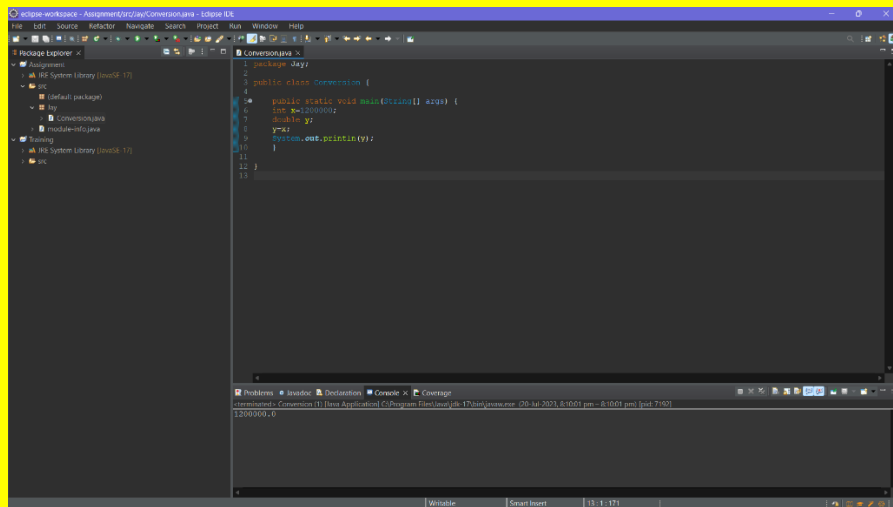Int to int type of conversion is not possible as they both are of same type.

29. Int to Long:

Int to long is an implicit type of type casting

30. Into to Float:

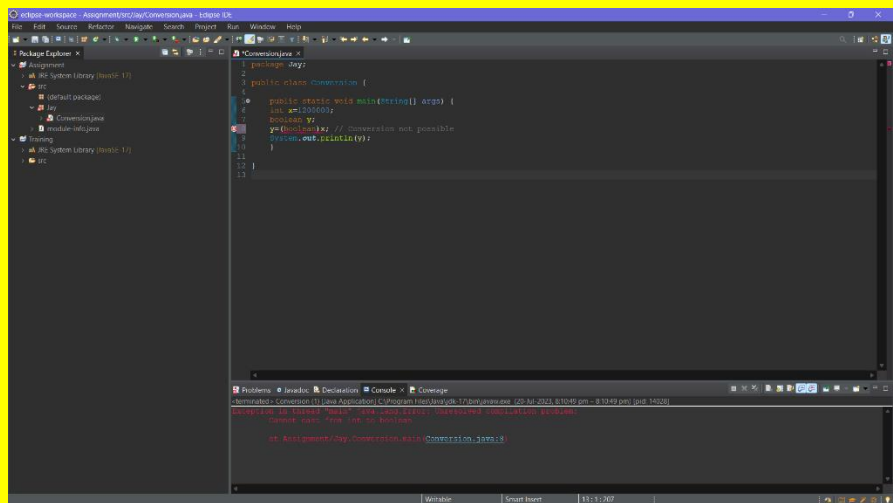Int to float is an implicit type of type casting

31.Int to Double:

Int to double conversion is a type of implicit type casting
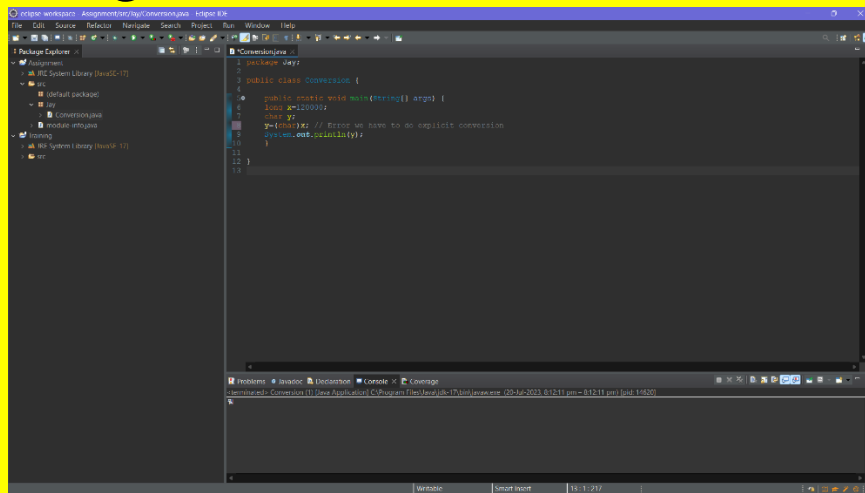
32.Int to Boolean:

Int to Boolean type of conversion is not possible
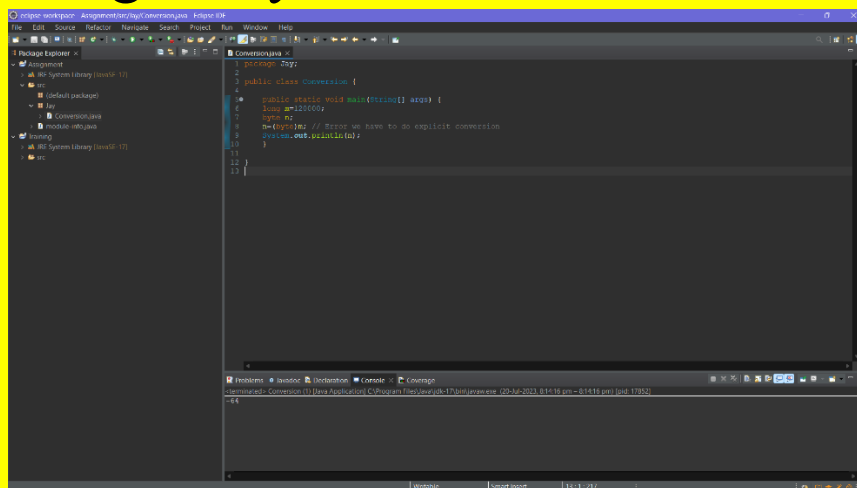
33.Long to Char:
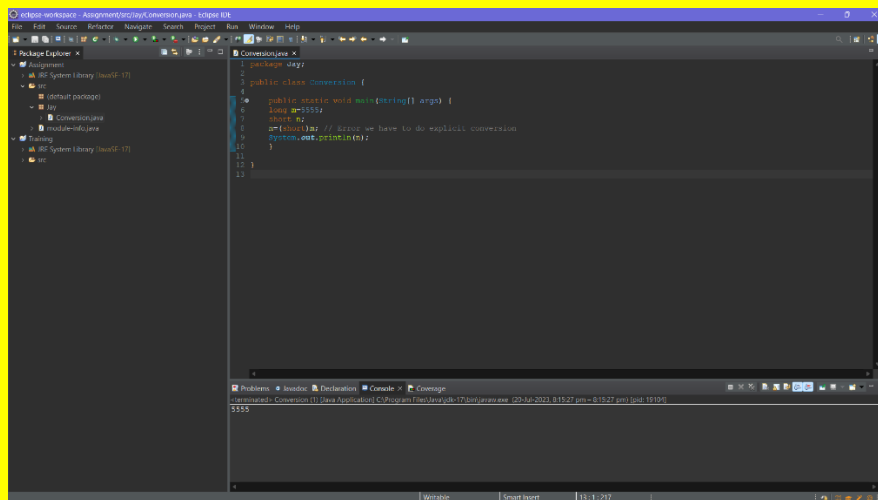
Long to char is an explicit type casting

34.Long to Byte

Long to byte is an explicit type casting

35.Long to Short:
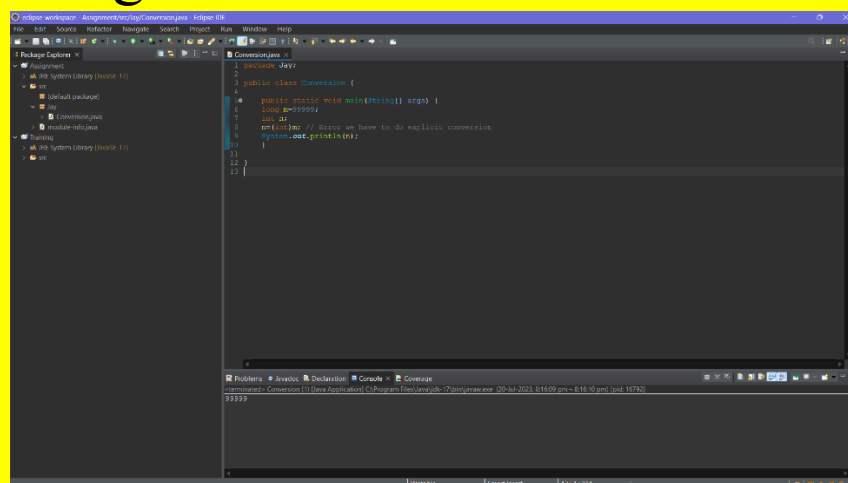
Long to short is an explicit type casting

36.Long to Int:

Long to int is an explicit type casting

37.Long to Long:

Long to long conversion is not required because they both are of same type.

38.Long to Float:
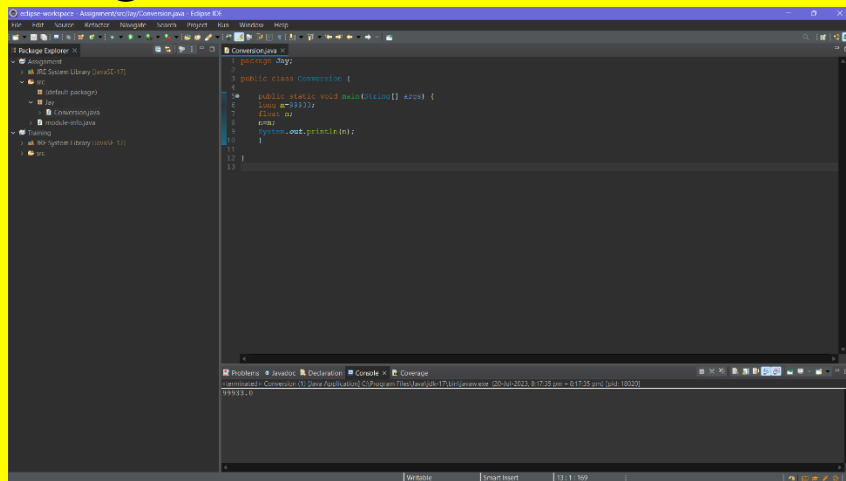
Long to float is an implicit type casting

39.Long to Double:
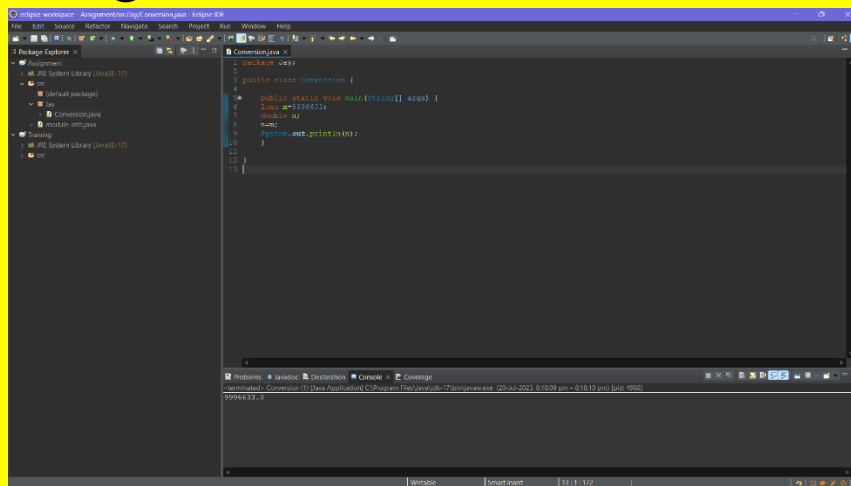
Long to double conversion is an implicit type casting

40.Long to Boolean:
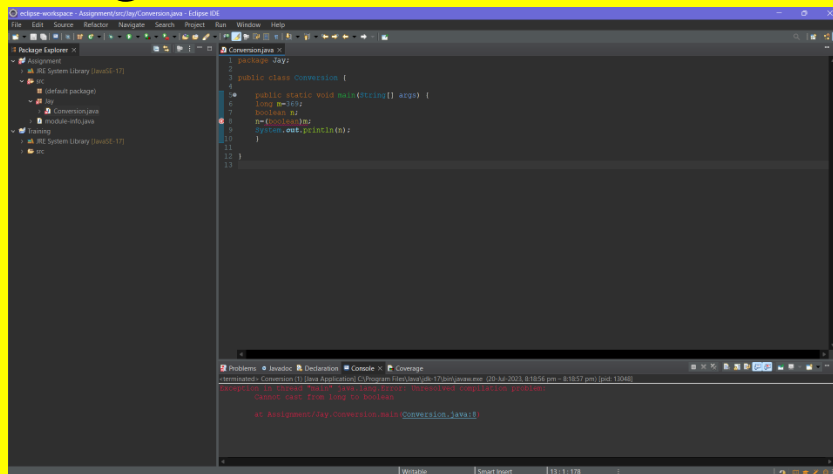
Long to boolean conversion is not possible

41.Float to Char:
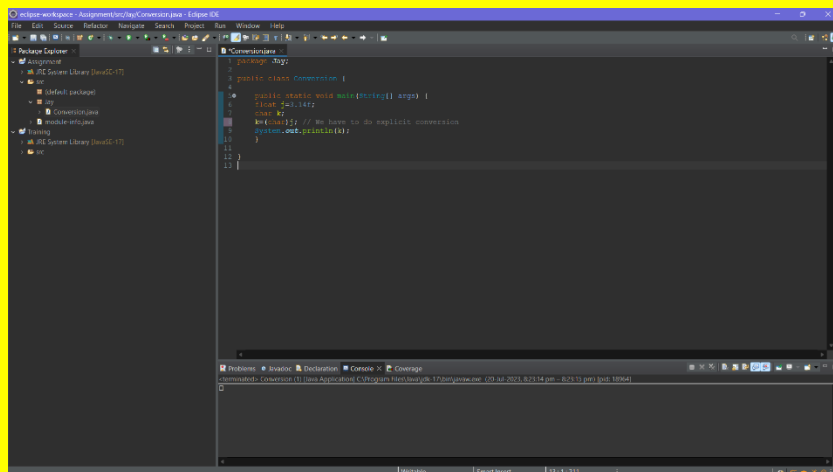
Float to char is an explicit type of type casting

42.Float to Byte:
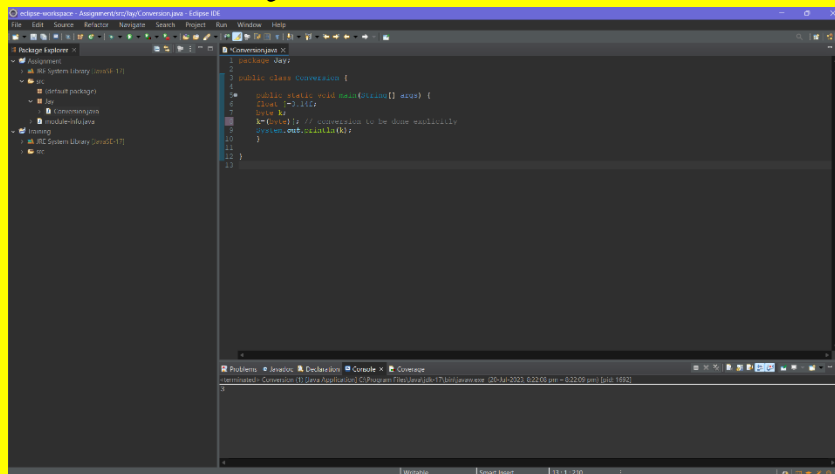
Float to byte is an explicit type of type casting

43.Float to Short:
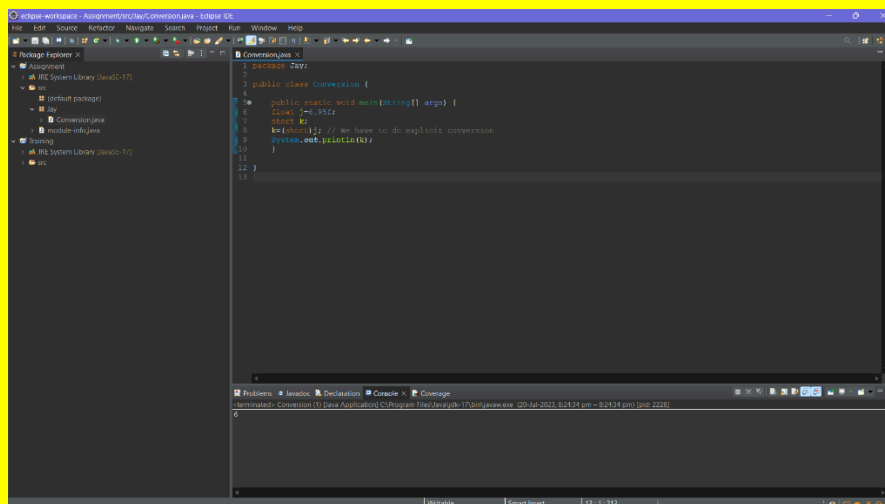
Float to short is an explicit type casting

44.Float to Int:
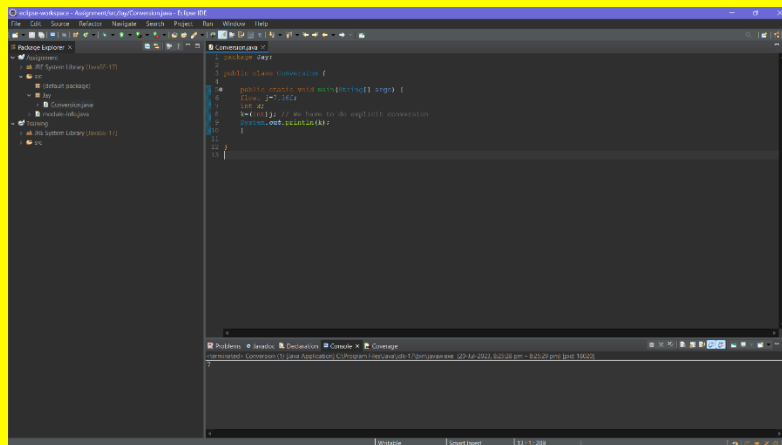
Float to int is an explicit type of type casting

45.Float to Long:
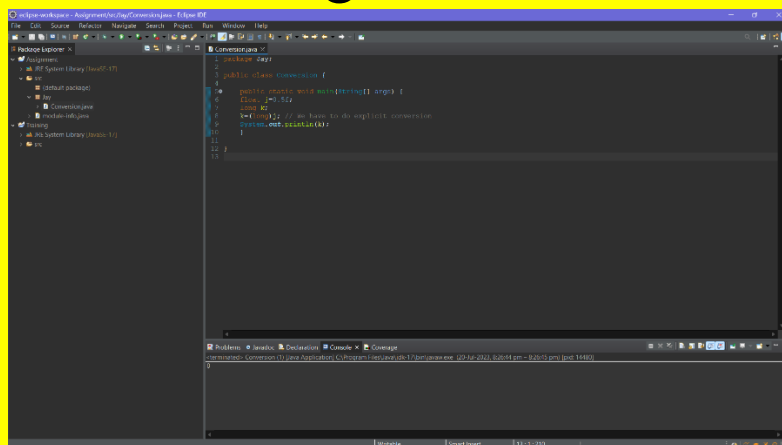
Float to long is an explicit type of type casting

46.Float to Float:

Float to float type of conversion is not required as they both are of same data type.

47.Float to Double:
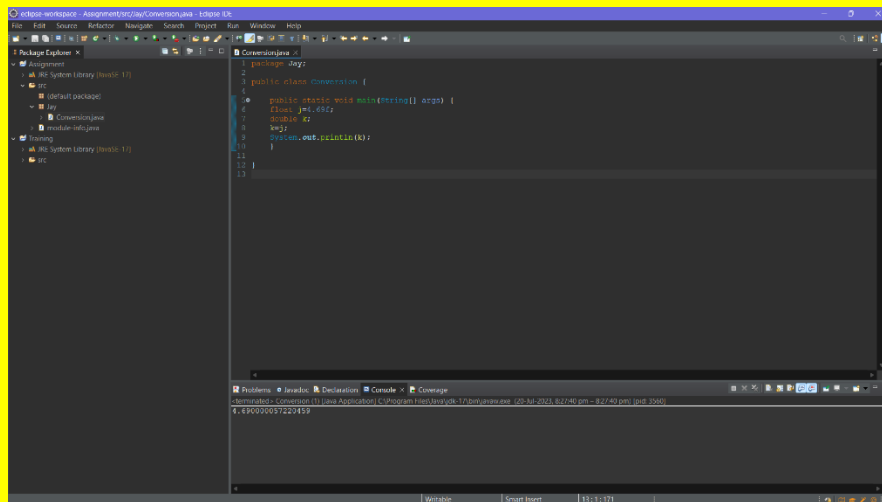
Float to double is an implicit type of type casting

48.Float to Boolean:
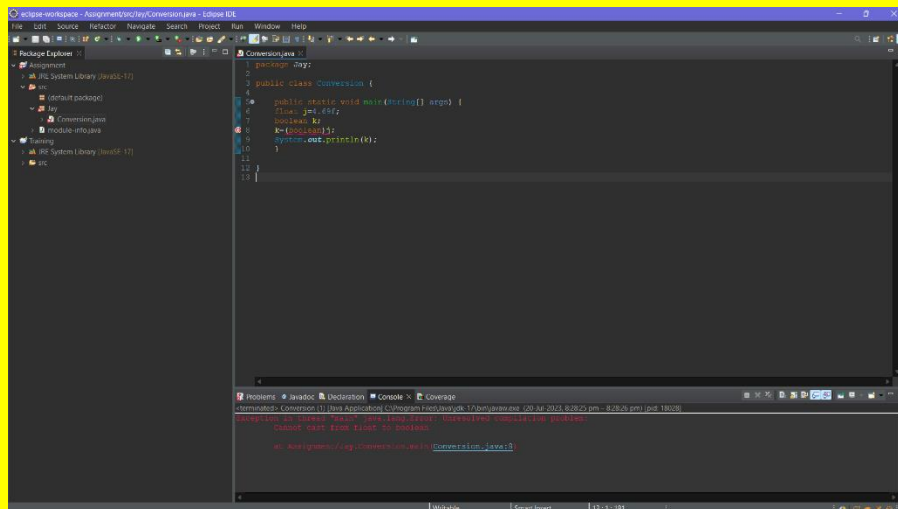
Float to Boolean type of conversion is not possible

49.Double to Char:
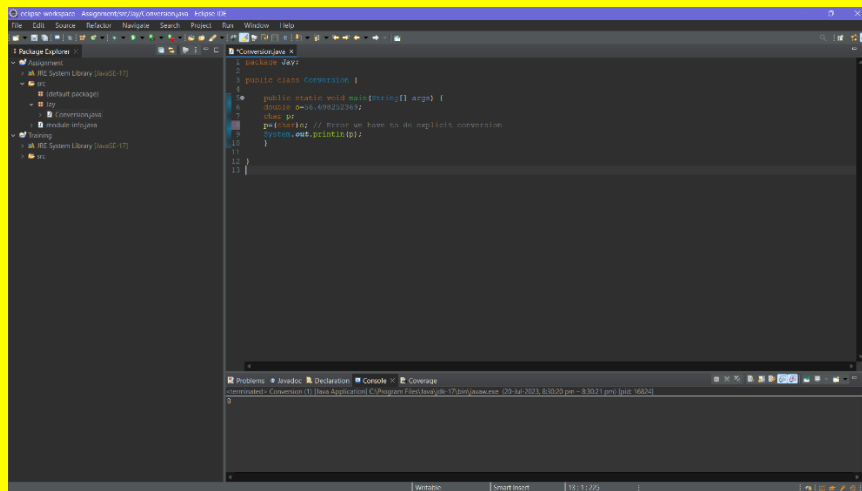
Double to char type of conversion is an explicit type of type casting

50.Double to Byte:
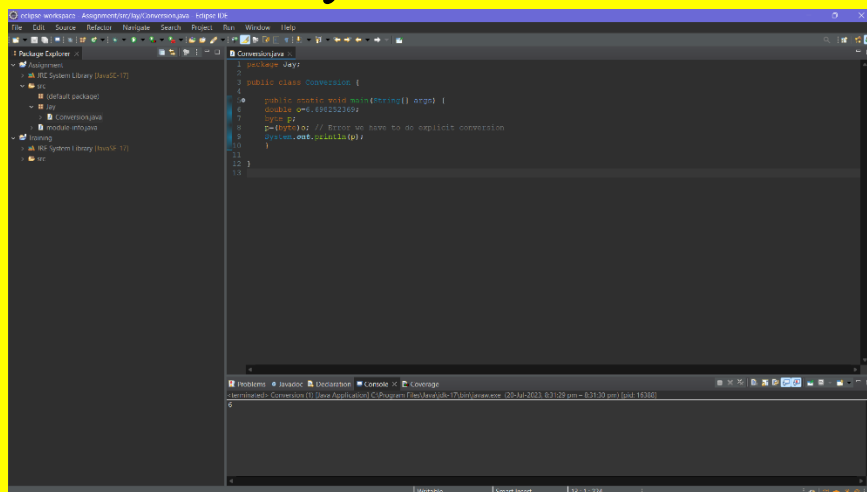
Double to byte type of conversion is an explicit type casting

51.Double to Short:
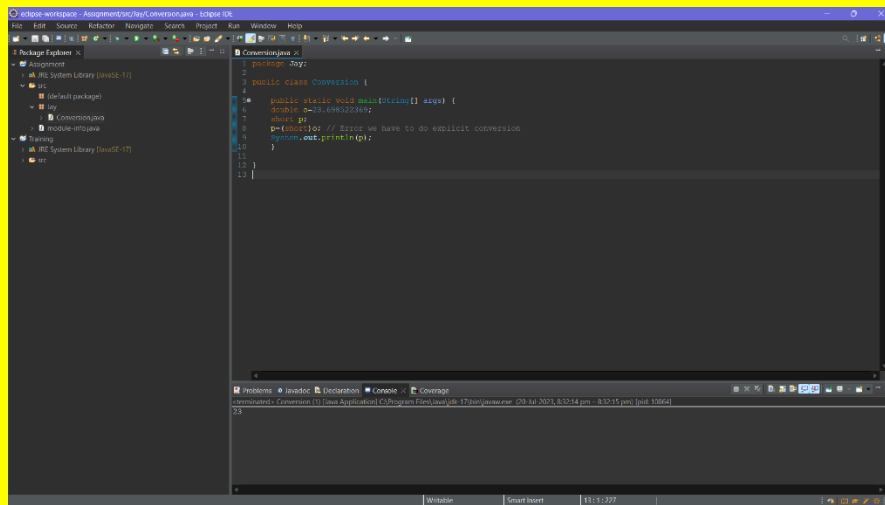
Double to short is an explicit type casting

52.Double to Int:
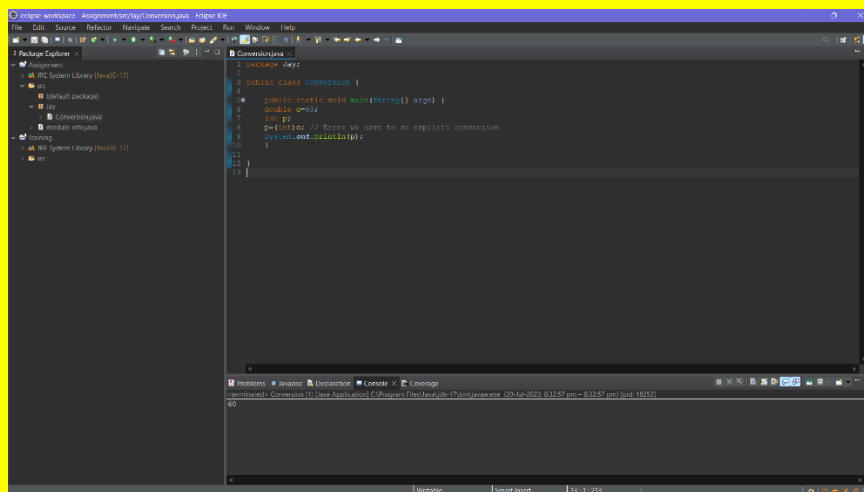
Double to int is an explicit type of type casting

53.Double to Long:
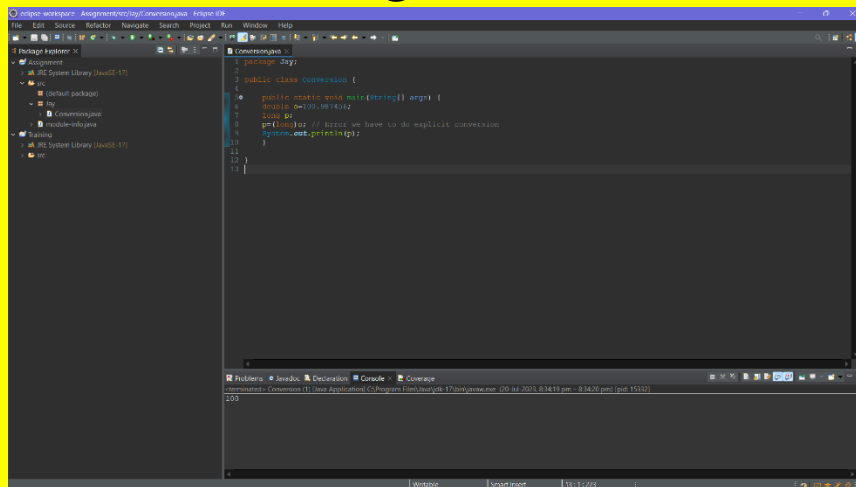
Double to long is an explicit type of type casting

54.Double to Float:
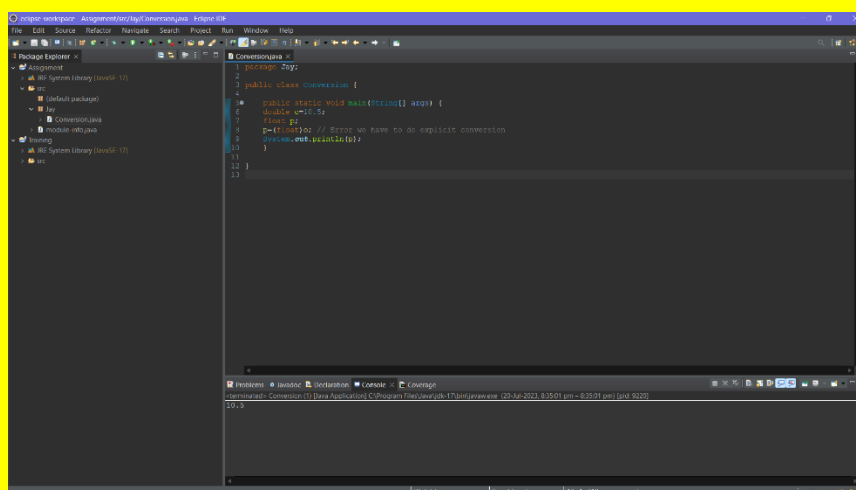
Double to float is an explicit type of type casting

55.Double to Double:

Double to double type of conversion is not required as they both are of same data type

56.Double to Boolean:
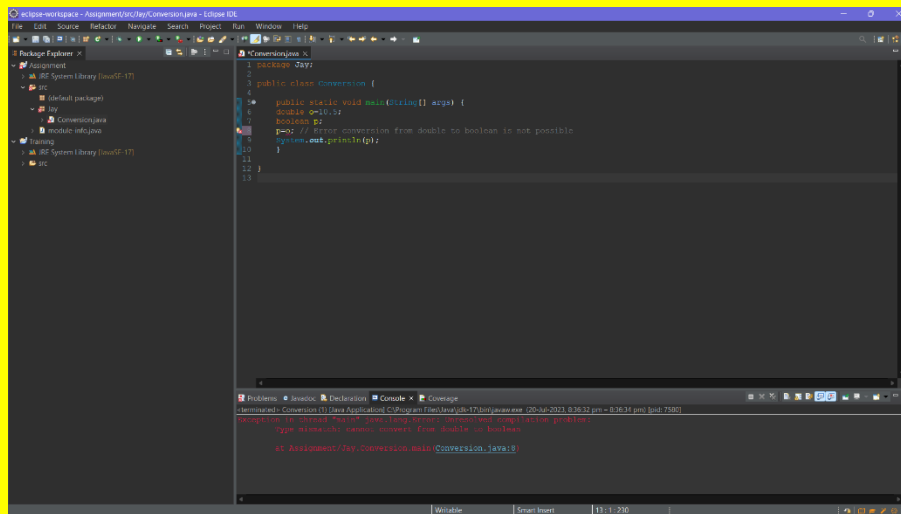
Double to boolean type of conversion is not possible

57.Boolean to Char:
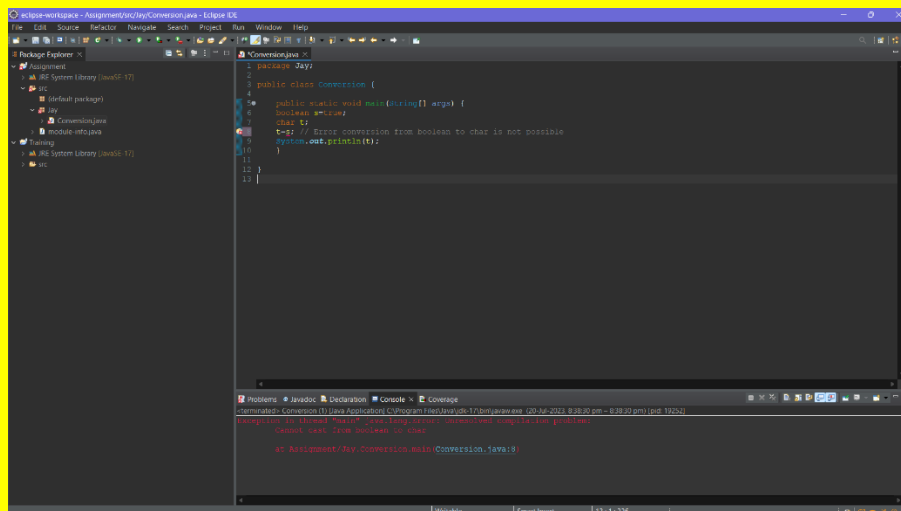
Boolean to char type conversion is not possible

58.Boolean to Byte:
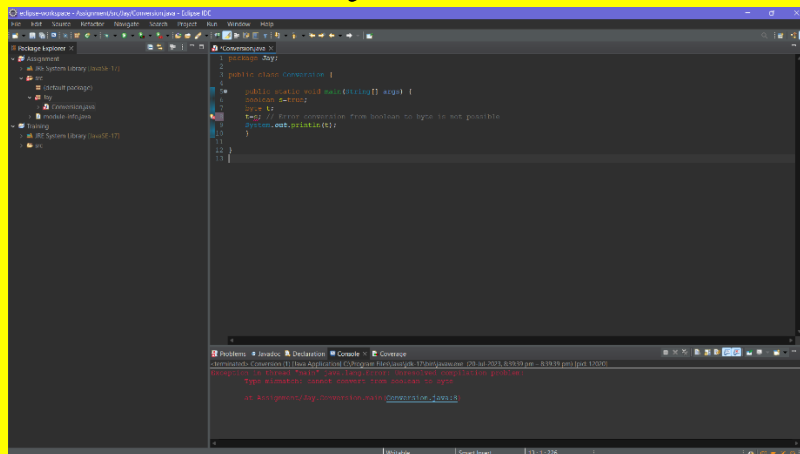
Boolean to byte type conversion is not possible

59.Boolean to Short:
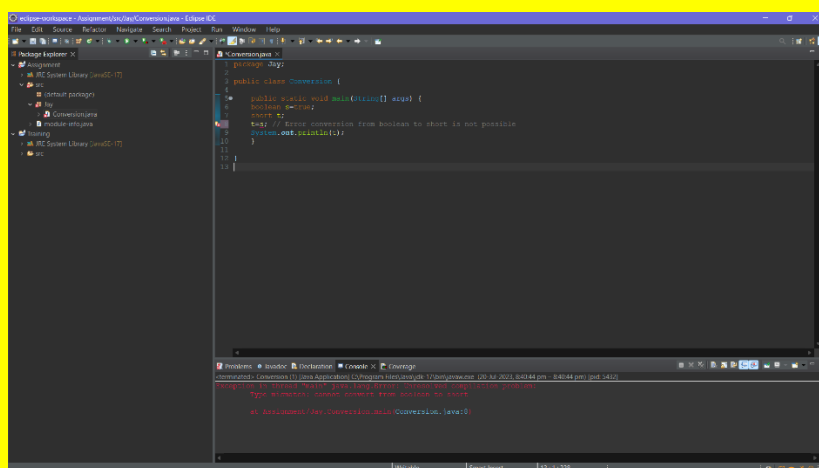
Boolean to short type conversion is not possible

60.Boolean to Int:

Boolean to int type conversion is not possible

61.Boolean to Long:

Boolean to long type conversion is not possible

62.Boolean to Float:

Boolean to float type conversion is not possible

63.Boolean to Double:

Boolean to double type conversion is not possible

64. Boolean to Boolean:

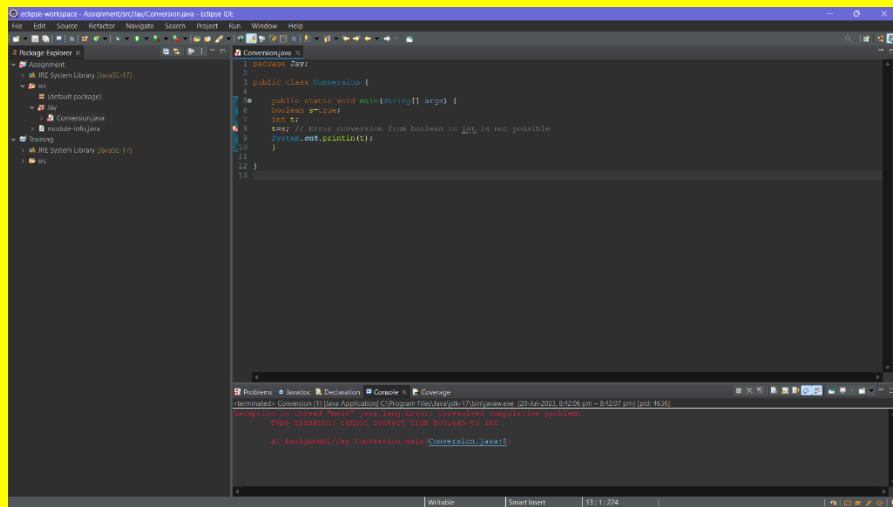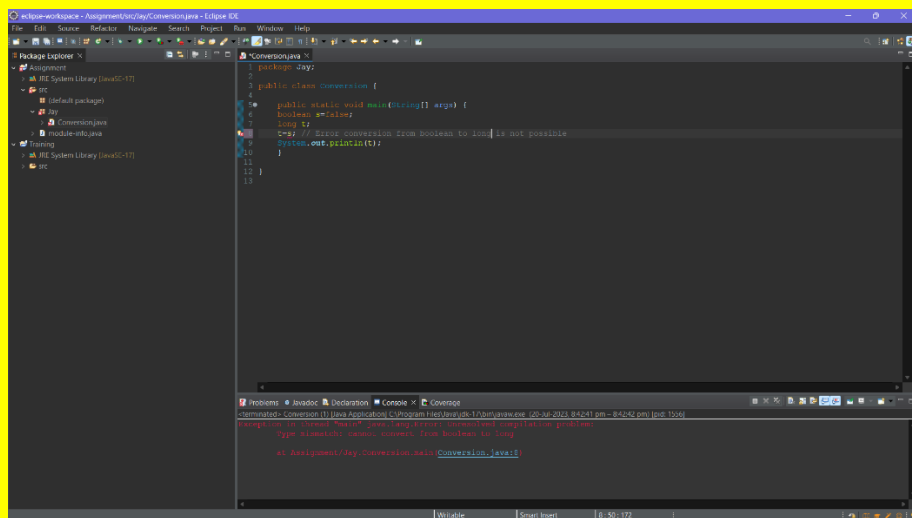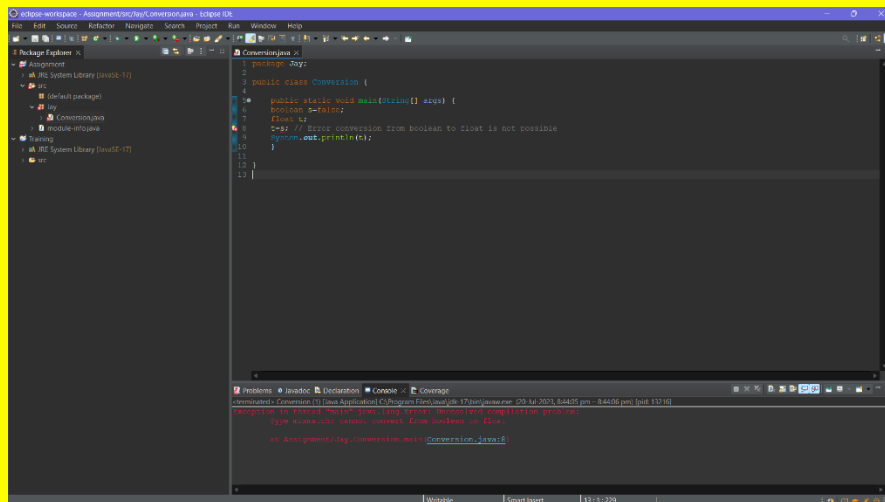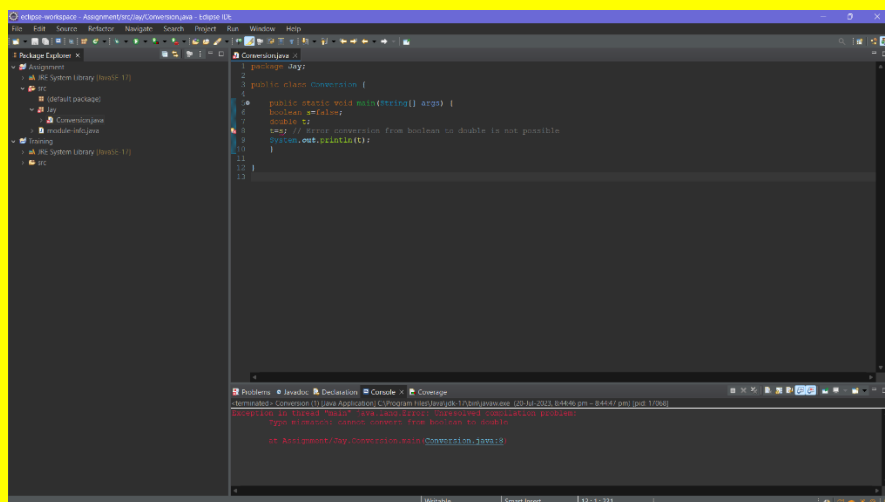Boolean to Boolean type of conversion is not required they both are of same type.

Table of Conversion

	Char	Byte	Short	Int	Long	Float	Double	Boolean
Char	NCR	✔ EC	✔ EC	✔ IC	✔ IC	✔ IC	✔ IC	✖ CNP
Byte	✔ EC	NCR	✔ IC	✔ IC	✔ IC	✔ IC	✔ IC	✖ CNP
Short	✔ EC	✔ EC	NCR	✔ IC	✔ IC	✔ IC	✔ IC	✖ CNP
Int	✔ EC	✔ EC	✔ EC	NCR	✔ IC	✔ IC	✔ IC	✖ CNP
Long	✔ EC	✔ EC	✔ EC	✔ EC	NCR	✔ IC	✔ IC	✖ CNP
Float	✔ EC	✔ EC	✔ EC	✔ EC	✔ EC	NCR	✔ IC	✖ CNP
Double	✔ EC	✔ EC	✔ EC	✔ EC	✔ EC	✔ EC	NCR	✖ CNP
Boolean	✖ CNP	✖ CNP	✖ CNP	✖ CNP	✖ CNP	✖ CNP	✖ CNP	NCR

Type Casting Graph

Narrowing Type Casting

| double | → | float | → | long | → | int | → | short | → | byte |

Widening Type Casting

Type Casting in Java