

Copying Arrays

- Copying One Array to Other
- = operator
- Loop to copy

Type conversion

- You assign a value of one data type to another:
 - Two types might not be compatible or might be
- If Data types are compatible:
 - Java will perform the conversion automatically known as Automatic Type Conversion
- If not then they need to be cast or converted explicitly.
 - For example, assigning a long value to an int variable.

Datatype	Bits Acquired In Memory
boolean	1
byte	8 (1 byte)
char	16 (2 bytes)
short	16 (2 bytes)
int	32 (4 bytes)
long	64 (8 bytes)
float	32 (4 bytes)
double	64 (8 bytes)

Widening or Automatic Type Conversion

- Automatically done by Java
- When:
 - Two Data Types are compatible
 - Like numeric types
 - Numeric to boolean is incompatible
 - Assign the value of smaller dtype to bigger dtype

Byte → Short → Int → Long → Float → Double

Widening or Automatic Conversion

```
// Main class
class GFG {

    // Main driver method
    public static void main(String[] args)
    {
        int i = 100;

        // Automatic type conversion
        // Integer to long type
        long l = i;

        // Automatic type conversion
        // long to float type
        float f = l;

        // Print and display commands
        System.out.println("Int value " + i);
        System.out.println("Long value " + l);
        System.out.println("Float value " + f);
    }
}
```

Narrowing or Explicit conversion

- Larger data type to Smaller Data type:
 - Useful for incompatible types

Double → Float → Long → Int → Short → Byte

Narrowing or Explicit Conversion

Error (int 4 bytes, char 2 bytes)

```
// Java program to illustrate Incompatible data Type
// for Explicit Type Conversion

// Main class
public class GFG {

    // Main driver method
    public static void main(String[] argv)
    {

        // Declaring character variable
        char ch = 'c';
        // Declaring integer variable
        int num = 88;
        // Trying to insert integer to character
        ch = num;

    }
}
```



```
// Main class
public class GFG {

    // Main driver method
    public static void main(String[] args)
    {

        // Double datatype
        double d = 100.04;

        // Explicit type casting by forcefully getting
        // data from long datatype to integer type
        long l = (long)d;

        // Explicit type casting
        int i = (int)l;
    }
}
```