**Types of primitive casting**

Primitive casting in Java can be categorized into two main types: widening casting (implicit casting) and narrowing casting (explicit casting). Each type is used to convert primitive data types to other primitive data types, either automatically or manually.

**1. Widening Casting (Implicit Casting)**

* This type of casting is done automatically by the Java compiler.
* It involves converting a smaller primitive type to a larger primitive type.
* No data is lost during widening casting.
* Examples of widening casting:
  + byte to short
  + short to int
  + int to long
  + long to float
  + float to double

**Example:**

public class WideningCastingExample {

public static void main(String[] args) {

int myInt = 100;

long myLong = myInt; // Automatic casting: int to long

float myFloat = myLong; // Automatic casting: long to float

System.out.println("Integer value: " + myInt);

System.out.println("Long value: " + myLong);

System.out.println("Float value: " + myFloat);

}

}

**2. Narrowing Casting (Explicit Casting)**

* This type of casting must be done manually by the programmer.
* It involves converting a larger primitive type to a smaller primitive type.
* Data may be lost during narrowing casting, so it must be done carefully.
* Examples of narrowing casting:
  + double to float
  + float to long
  + long to int
  + int to short
  + short to byte

**Example:**

public class NarrowingCastingExample {

public static void main(String[] args) {

double myDouble = 9.78;

float myFloat = (float) myDouble; // Manual casting: double to float

long myLong = (long) myFloat; // Manual casting: float to long

int myInt = (int) myLong; // Manual casting: long to int

System.out.println("Double value: " + myDouble);

System.out.println("Float value: " + myFloat);

System.out.println("Long value: " + myLong);

System.out.println("Integer value: " + myInt);

}

}