Lab 5

Computer Programming I

Al-Mustaqbal University

College of Sciences

Intelligent Medical Systems Department

Java Type Casting

Introduction:

Type casting is an essential concept in Java that involves converting a variable from one data type to another. There are two main types of casting in Java:

1- *Widening Casting (automatic)*
2- *Narrowing Casting (manual).*

Widening Casting:

Widening casting occurs automatically when converting a smaller data type to a larger data type. In Java, the order of data types for widening casting is as follows:

```
byte -> short -> char -> int -> long -> float -> double
```

```
int myInt = 9;
double myDouble = myInt; // Automatic casting: int to double


System.out.println(myInt);        // Outputs 9
System.out.println(myDouble);     // Outputs 9.0
```

Narrowing Casting:

Narrowing casting, on the other hand, requires manual intervention. It involves converting a larger data type to a smaller data type. The order of data types for narrowing casting in Java is as follows:

```
double -> float -> long -> int -> char -> short -> byte
```

```
double myDouble = 9.78d;

int myInt = (int) myDouble; // Manual casting: double to int


System.out.println(myDouble);    // Outputs 9.78

System.out.println(myInt);       // Outputs 9
```

Conclusion:

Understanding type casting is crucial for handling different data types in Java. While widening casting happens automatically, narrowing casting requires explicit casting using parentheses. Proper use of casting ensures smooth data manipulation and prevents potential data loss. As you delve deeper into Java programming, mastering type casting will enhance your ability to work with diverse data types effectively.