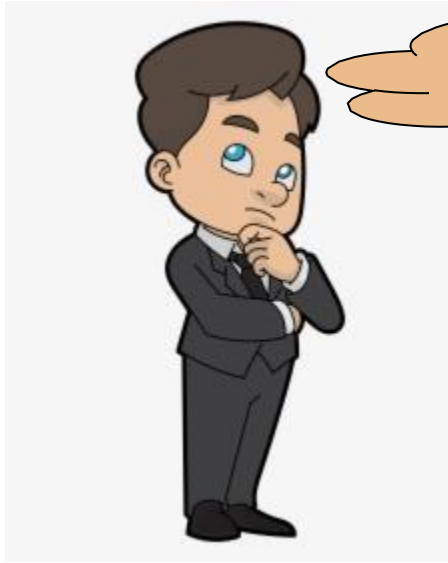


## Type casting in java:



Now You Wonder What is type casting?

Type casting is a process of converting one type of data to another

In Java, there are two types of casting:

**Implicit casting (automatically)** - converting a smaller type to a larger type size  
byte -> short -> char -> int -> long -> float -> double

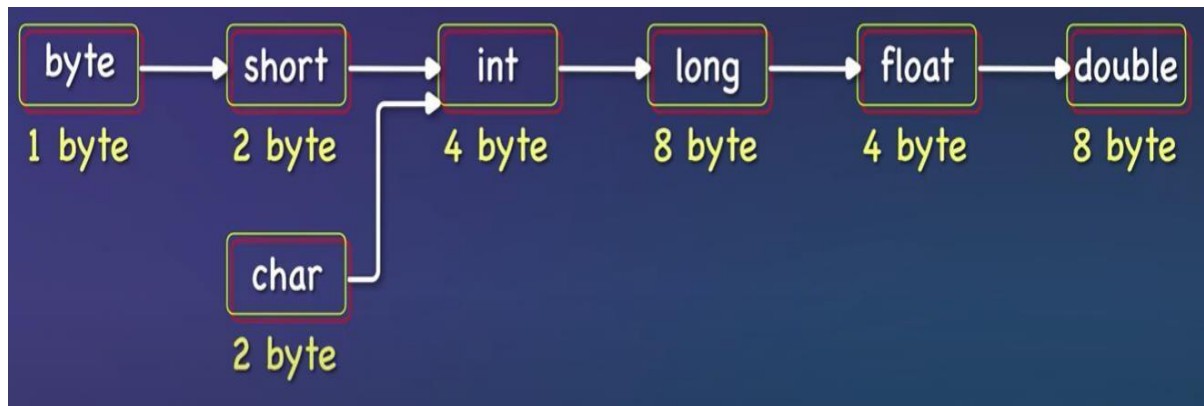
**Explicit casting (manually)** - converting a larger type to a smaller size type

## Implicit type Casting:

When a smaller data type is converted to a larger data type, the conversion is automatically performed by **the java compiler** and is referred to as implicit type casting.

**Advantage:** No loss of precision

Consider the **Implicit type casting** chart given below to understand this:



### Orders of Implicit Type-Casting for Primitives

Let us consider a code snippet to understand this:

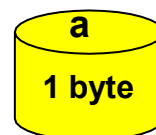
```
byte a = 45;
```

```
double b;
```

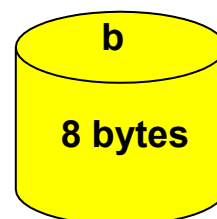
```
b = a;
```

Let us understand implicit type casting using the above code snippet

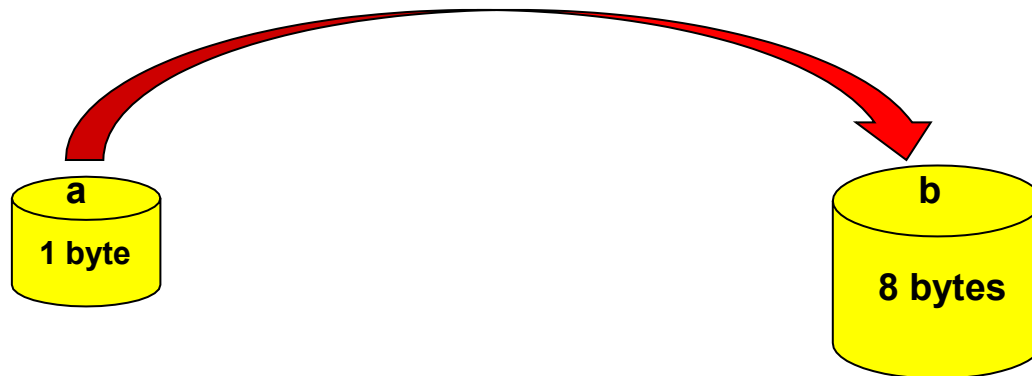
a is a variable of type byte whose size is 1 byte



b is a variable of type double whose size is 8 bytes



`b = a;` we are now trying to store the data present in `a` into `b`;  
`a` is of type `byte` and can store 1 byte. `b` is of type `double` and can store 8 bytes. We are trying to store data of smaller size into larger size.



This conversion is implicitly done without user interaction and hence it is referred to as implicit type casting

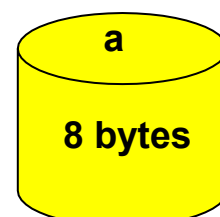
## Explicit type Casting:

When a larger data type is converted to a smaller data type, the **conversion is not automatically performed by the java compiler** and must be done by **programmer explicitly** and hence it is referred to as explicit type casting

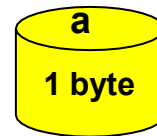
Let us consider a simple code snippet to understand this, the way we understood explicit type casting

```
double a = 45.5;  
byte b;  
b = a;
```

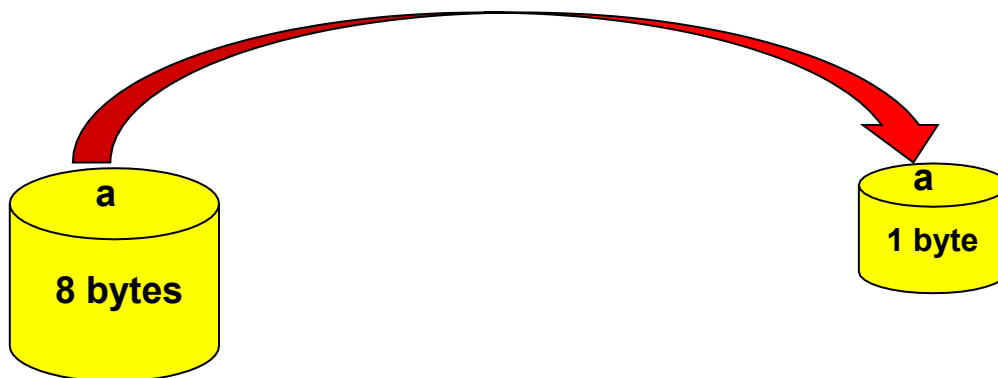
`a` is a variable of type `double` whose size is 8 bytes.



b is a variable of type byte whose size is 1 byte.



**b=a;** will give you **error** as you are trying to store a larger type of data into a smaller type.



The above conversion will result in error as loss of precision occurs. To get the error free output, we have to explicitly convert the data as shown below

```
double a = 45.5;
```

```
byte b;
```

```
b = (byte)a;
```

b is of type byte and it will only store 45 and 0.5 is lost during the conversion which is the disadvantage of explicit type casting.