

### 3. Type Casting:

The process of converting data from one data type to another data type is called as Type Casting.

There are two types of Type castings in Java.

1. Primitive Data Types Type Casting
2. User Defined Data Types Type Casting

```
-----+-----1-----+-----2-----+-----3-----+-----4-----+
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         byte b = 10;
6         int i = b;
7         System.out.println(b+" "+i);
8     }
9 }
10
```

```
-----+-----1-----+-----2-----+-----3-----+-----4-----+
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         int i = 10;
6         byte b = i;
7         System.out.println(i+" "+b);
8     }
9 }
10 |
```

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         byte b = 65;
6         char c = b;
7         System.out.println(b+" "+c);
8     }
9 }
0
```

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         char c = 'A';
6         short s = c;
7         System.out.println(c+" "+s);
8     }
9 }
10
```

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         float f = 22.22f;
6         long l = f;
7         System.out.println(f+" "+l);
8     }
9 }
0
```

```
-----1-----2-----3-----4-----5-----  
1 class Test  
2 {  
3     public static void main(String[] args)  
4     {  
5         long l = 10;  
6         float f = l;  
7         System.out.println(l+" "+f);  
8     }  
9 }  
10
```

```
class Test  
{  
    public static void main(String[] args)  
    {  
        byte b = 130;  
        System.out.println(b);  
    }  
}
```

```
-----1-----2-----3-----4-----5-----  
1 class Test  
2 {  
3     public static void main(String[] args)  
4     {  
5         byte b1 = 60;  
6         byte b2 = 70;  
7         byte b = b1 + b2;  
8         System.out.println(b);  
9     }  
10 }
```

X, Y and Z are three primitive data types.

X + Y = Z

1. If X and Y belongs to {byte, short, int} then Z must be int.

2. If either X or Y or both X and Y belongs to {long, float, double} then Z shpuld be hiher(X,Y)

**byte + byte = int**  
**byte + short = int**  
**short + int = int**  
**byte + long = long**  
**float + long = float**  
**long + double = double**

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         float f = 22.22f;
6         long l = 10;
7         long l1 = l + f;
8         System.out.println(l1);
9     }
10 }
11
```

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         long l = 10;
6         float f = 22.22f;
7         float f1 = l + f;
8         System.out.println(f1); I
9     }
0 }
1
```

## 2. Explicit Type Casting:

The process of converting data from higher data type to lower data type. is called as Explicit Type Casting.

```
P a = (Q) b;
```

Where P and Q are Primitive Data Types and Q must be either same as P or lower than P.

```
int i = 10;
byte b = (byte)i;
```

```
class Test
{
    public static void main(String[] args)
    {
        int i = 10;
        byte b = i; I
    }
}
```

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         byte b1 = 30;
6         byte b2 = 30;
7         byte b = b1 + b2;
8         System.out.println(b);
9     }
10 }
```

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         int i = 10;
6         byte b = (byte)i;
7         System.out.println(i+" "+b);
8     }
9 }
0
```

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         int i = 10;
6         short s = i;
7         System.out.println(i+" "+s);
8     }
9 }
10
```

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         int i = 10;
6         short s = (byte)i;
7         System.out.println(i+" "+s);
8     }
9 }
0
```

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         float f = 22.22f;
6         long l = (long)f;
7         System.out.println(f+" "+l);
8     }
9 }
0
```

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         float f = 22.22f;
6         int i = (short)f;
7         System.out.println(f+" "+i);
8     }
9 }
```

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         int i = 130;
6         byte b = (byte)i;
7         System.out.println(i+" "+b);
8     }
9 }
```

```
1 class Test
2 {
3     public static void main(String[] args)
4     {
5         byte b1 = 30;
6         byte b2 = 30;
7         byte b = (byte)(b1 + b2);
8         System.out.println(b);
9     }
0 }
1
```

```
1  {
2
3      float f = 22.22f;
4      long l = 10;
5      long l1 = (long)(f + l);
6      System.out.println(l1);
7
8
9  }
10 }
```

```
3  public static void main(String[] args)
4  {
5
6      double d = 22.22;
7      byte b = (byte)(short)(int)(long)(float)d;
8      System.out.println(b);
9
10 }
11
```