

Type Casting :-

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Type Casting refers to changing the type of data from one type to other. It is of 2 types:

① Widening Type Casting:

→ Automatically done by Java.

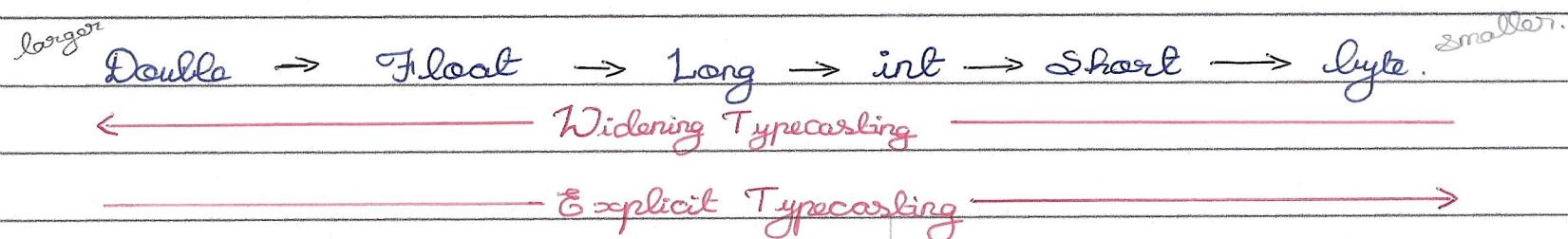
→ refers to moving from a smaller data type to a larger data type.

② Explicit Type Casting

→ User defined

→ refers to moving from a ~~smaller~~ larger data type to a smaller data type
→ Some can be lossy.

Order of Datatypes:-



Eg:-

int i = 20;

long l = i;

Eg:-

long i = 100000;

int y = (int) i;

Typecasting:

Program:

```
class sample {
    public static void main(String[] args){
        // Widening TypeCasting
        int i = 100000;
        long l = i;
        System.out.println(l);
        // Explicit Typecasting
        long i_2 = 100000;
        int y = (int) i_2;
        System.out.println(y);
        // Lossy data - Explicit
        int x = 2000;
        byte b = (byte) x;
        System.out.println(b);
    }
}
```

Output:

```
[Running] cd "d:\Java_Scaler\" && javac sample.java && java sample
100000
100000
-48
```

```
[Done] exited with code=0 in 0.688 seconds
```

Constants :-

constants is used to lock the value which is assigned to a variable . so that it's value can't be changed in between.

Program :-

use your filename.

```
class Main {
    public static void main(Strings [] args) {
        final double Pi = 3.14;
        System.out.println(Pi);
    }
}
```

→ keyword to declare Constant.

Constants:

Program:

```
class sample {  
    public static void main(String[] args){  
        // constants  
        final double Pi= 3.14;  
        System.out.println(Pi);  
        // Variables  
        int weight = 50;  
        weight = 65;  
        System.out.println(weight);  
    }  
}
```

Output:

```
[Running] cd "d:\Java_Scaler\" && javac sample.java && java sample  
3.14  
65
```

```
[Done] exited with code=0 in 0.688 seconds
```

Reading Input :-

Java offers a variety of solutions for reading inputs. The simplest and easiest way of reading inputs is through scanner class.

Program :-

```
import java.util.Scanner;           → imports code for input.  
public class scannerInput {  
    public static void main (String [] args) {  
        Scanner sc = new Scanner (System.in);   → reading input  
        System.out.println ("Enter the integer");  → create an object  
        int a = sc.nextInt();                    → read an integer input.  
        System.out.println ("Enter a string");  
        String s = sc.nextLine();  
        System.out.println ("String is " + s);  
    }  
}
```

Reading inputs;

Program:

```
package com.company;

import java.util.Scanner;

public class Main{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        // int a = sc.nextInt();
        // String s = sc.next();
        boolean bool = sc.nextBoolean();
        System.out.println(bool);
    }
}
```

Output:

```
"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Educational Edition 2022.2.2\lib\idea_rt.jar=56650:C:\Program Files\JetBrains\IntelliJ IDEA Educational Edition 2022.2.2\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath "C:\Users\NAGA HARI PRIYAN\IdeaProjects\main\out\production\main" com.company.Main

true
true
```

Example: Simple Interest Calculator :-

Given the values of principle, rate and interest, compute the Simple interest. Sample input { P=100, R=5, T=2 }, Sample Output { 10 }, Simple interest formula = (Principle × Rate × Time) / 100.

Solution :-

```
import java.util.Scanner;  
class Main {  
    public static void main(String[] args) {  
        Scanner sc = new Scanner(System.in);  
        System.out.println("Enter the principle");  
        int principle = sc.nextInt();  
        System.out.println("Enter the Rate");  
        int Rate = sc.nextInt();  
        System.out.println("Enter the Time");  
        int Time = sc.nextInt();  
        int simpleInterest = ((principle * Rate * Time) / 100);  
        System.out.println("S.I.: " + simpleInterest);  
    }  
}
```

Simple Interest Calculator:

Program:

```
package com.company;

import java.util.Scanner;

public class Main{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the Principle");
        int principle = sc.nextInt();
        System.out.println("Enter the Rate of Interest");
        int rateOfInterest = sc.nextInt();
        System.out.println("Enter the Time of Interest");
        int timeOfInterest = sc.nextInt();
        int simpleInterest = ((timeOfInterest*principle*rateOfInterest)/100);
        System.out.println("Therefore the Simple Interest = "+simpleInterest);
    }
}
```

Output:

```
Enter the Principle
100
Enter the Rate of Interest
5
Enter the Time of Interest
2
10
```
