Casting (המרה)

- Sometimes it is desirable for a variable of one type to be considered as belonging to another in an operation.
- We say the variable is *cast* to the new type.
- Syntax: `(type)operation/variable`
Example – find what’s wrong

```java
int a = 10;
int b = 20;
System.out.println("average=" + (a+b)*(1/2));
```
Alternatives

```java
int a = 10;
int b = 20;
System.out.println("average = " + (a+b)*((double)1/2));
System.out.println("average = " + (a+b)*(1.0/2));
// will the following work?
System.out.println("average = " + (a+b)*(double)(1/2));
```
Implicit Cast

- Automatic conversion between data types
- Occurs when data types can not be compared as is

```c
int x, y;
double d;
x = 3; y = 5;
d = x + y; // d gets 8.0000
```
int a = 4.5; // implicit cast from double (4.5) to int (4), compilation error

double x = 4; // implicit cast from int to double, "int is a double" relation hold