Casting

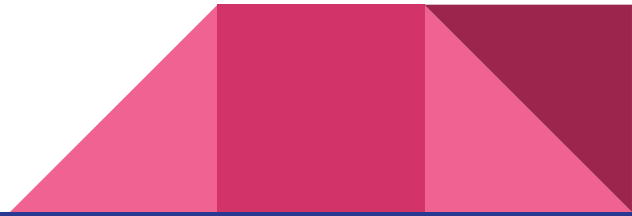
Do Now

What is the output of the following code?

```
int x = 5;

double y = 15.0;

System.out.println(y / x);
```

Output: 3.0

What can we do to have an int as result?

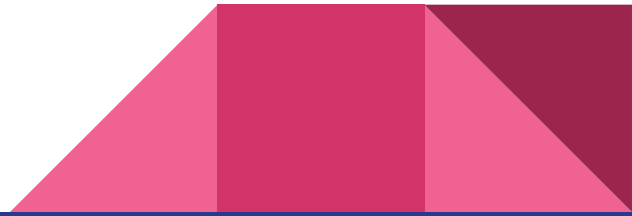


Casting

Casing is the conversion of one data type into another; for example, from an double to a integer or vice versa.

Casting in Java:

int myNum = **(int)**10.2 - - - -> 10



Casting a double to an int

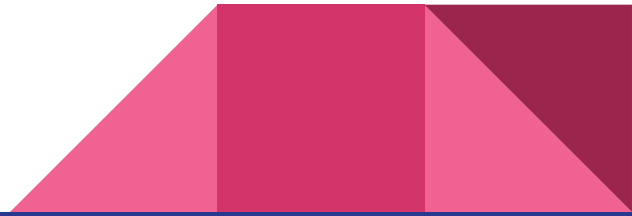
```
double x = 5.3;

int y = x;
```

Does it work?

NO. Java will throw an error

How can we make it work?

```
double x = 5.3;

int y = (int) x;
```

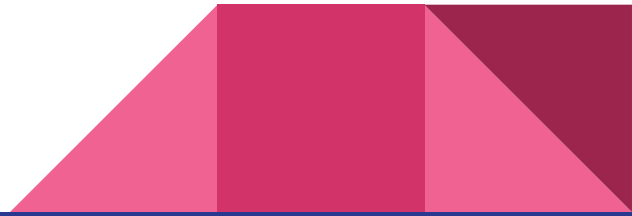


Casting an int to a double

```
int x = 5;

double y = x;
```

Does it work?

YES. There is a process called **implicit casting** that makes it work. Java automatically casts the value.



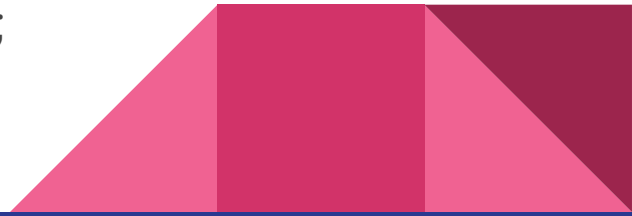
Division

```
int money = 100;

int numPeople = 40;

double dollarsPerPerson = money / numPeople;
```

How can money/numPeople become double without changing the type of variables money and numPeople?

```
double dollarsPerPerson = (double) money / numPeople;
```

Output: 2.5



Rounding with Casting

Casting can be used to round double values to the closest integer using:

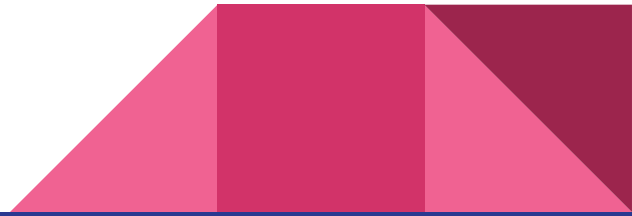
(int) (x + 0.5) —> 0.5 make sure that the value of x will be closest to the correct integer

double x = 2.0

int y = (int) (x + 0.5);

double x = 2.8

int y = (int) (x + 0.5);



Coding Time :)

https://novillo-cs.github.io/apcsa/classwork/03_cw_casting/