Assignment Operators

A byte size lesson in Java programming.

Do you remember what an operator is?

- An operator is a symbol that performs an action on variables and values.

- E.g. 3 **+** 5: Arithmetic operators like plus work on two values and give us a new value.

- E.g. 5 **<** 3: Relational operators like less than work on two values and give us true or false.

Operators we did so far…

- Arithmetic Operators
- Logical Operators
- Relational Operators

```java
int a = 12, b = 5;

// arithmetic
a = a + b;


// relational
boolean result = a > b;
boolean isAGreater = result == true;


// logical
boolean cold = true;
boolean snow = false;
boolean snowman = cold && snow;
```

Assignment Operator

- Used to assign values to variables.

=   Equals

+=   Addition Assignment

-=   Subtraction Assignment

- Java has an assignment operator for every arithmetic operator!

How does arithmetic assignment work?

```
int a = 12, b = 5;
// suppose we want to do
a = a + b;
// we can achieve the same thing by doing
a += b;
```

They both mean the same thing!

- a += b is exactly like a = a + b
- a -= b is exactly like a = a – b
- a *= b is exactly like ?
- a /= b is exactly like ?
- Did we leave an arithmetic operator out?

Let's test your understanding!

- Which assignment operator do we need so that a can become 15?

```
int a = 12;

a ___ 3;
```

Let's test your understanding!

- What is the value of a if the following code runs?

```
int a = 12;
int b = 2;

a *= 2;
```

Let's test your understanding!

```
int a = 10, b = 6;

a += b;      // a becomes ____
a ____ b;    // a becomes 4
a %= 2;      // a becomes ____
a /= ____    // a becomes 5
```

Can you remember all these operators?

Let's find out…

Which one is arithmetic?

```
int a = 12, b;
b = a + 3;
```

```
int a = 12, b = 2;
boolean r = a > b;
```

Example of a logical operator…

```
boolean isLightOn;
boolean a = false, b = true;


isLightOn = a        b;
```

What kind of operator is ==?

```
int a = 12, b = 12;
boolean isEqual = a == b;
```

1. Logical?   2. Arithmetic?   3. Relational?

Time to practice in BlueJ

Later we have a challenge in store… are you up for the challenge?