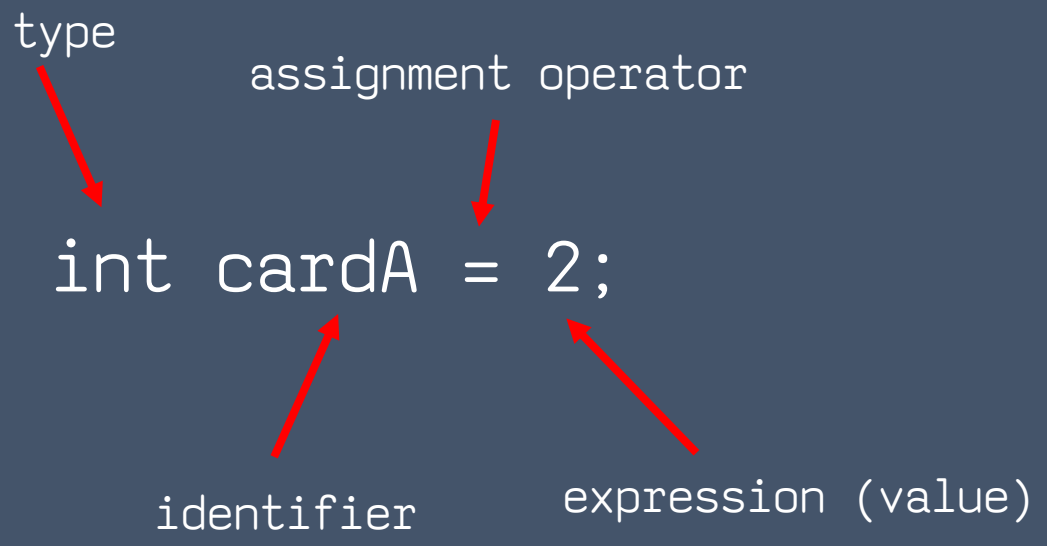
CMPSC 100

Computational Expression

Review: Assignments and variables



Parts of an assignment statement

Review: Assignments and variables

```
int cardB = 8;
int workingTotal = cardB * 2;

+=          workingTotal += 2;
-=          workingTotal -= 10 - cardA;
*=          workingTotal *= 5;
```

Assignments and variables

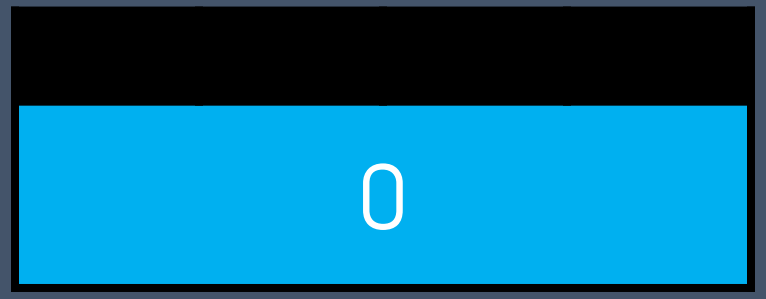
New assignment operators:

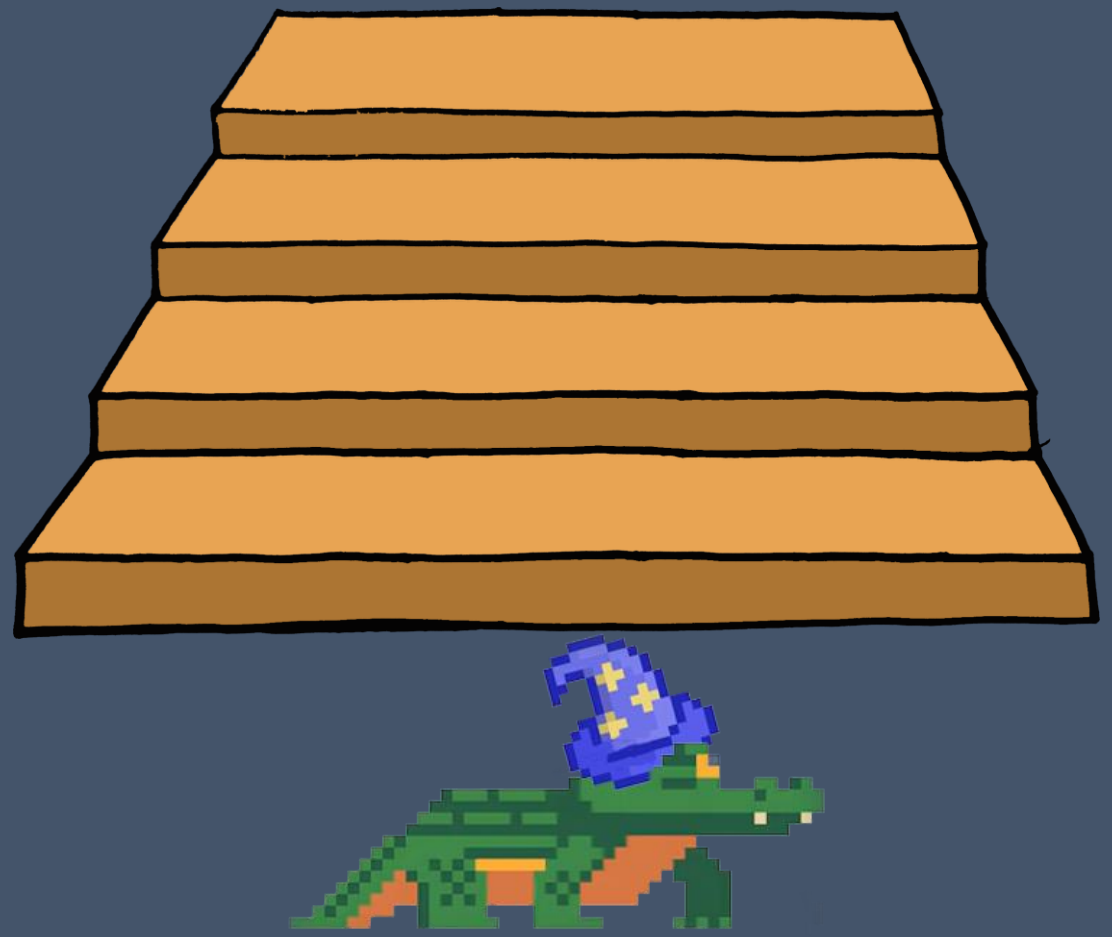
- ++
- --

Assignments and variables

```
int steps = 0;
```

steps





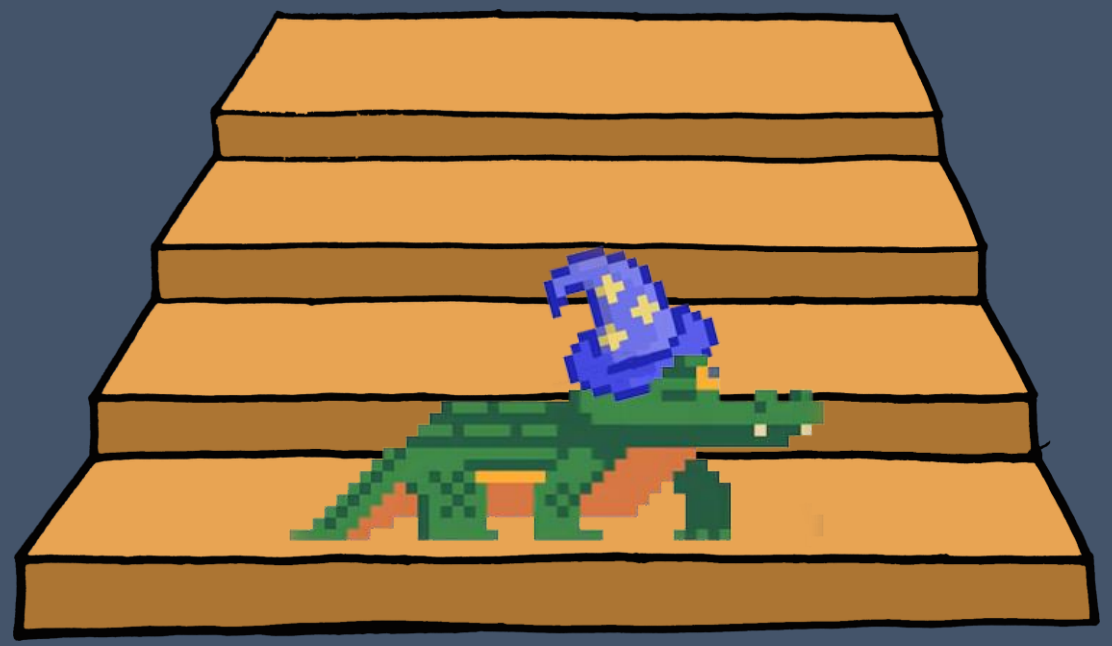
Assignments and variables

Represents the *expression:*

```
steps + 1;
```

```
steps++; // 1
```

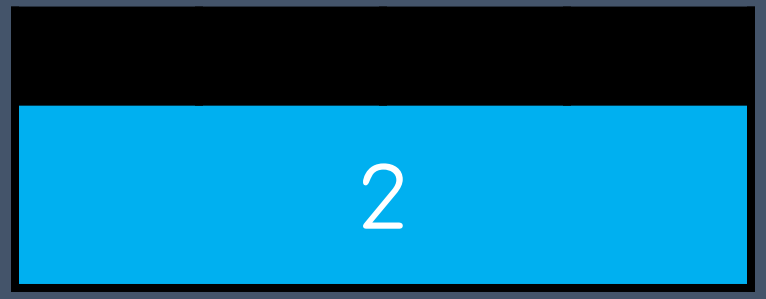
steps



Assignments and variables

```
steps++; // 2
```

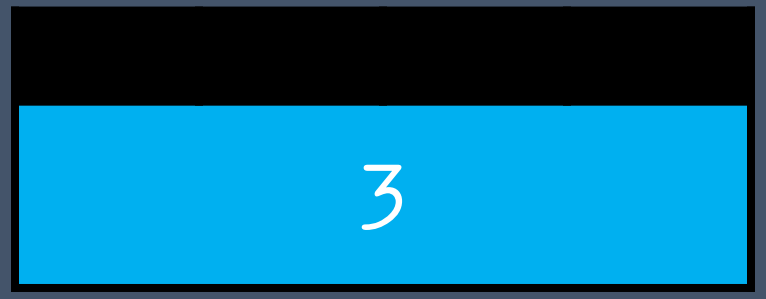
steps



Assignments and variables

```
steps++; // 3
```

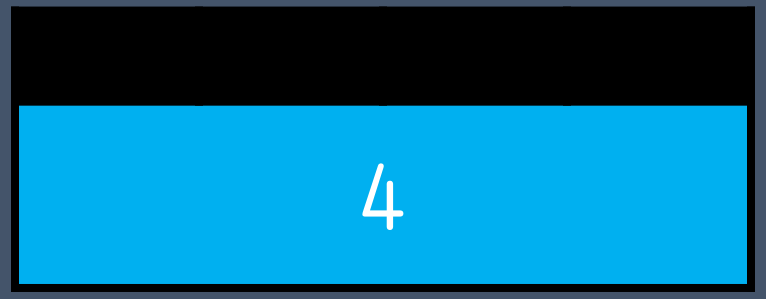
steps

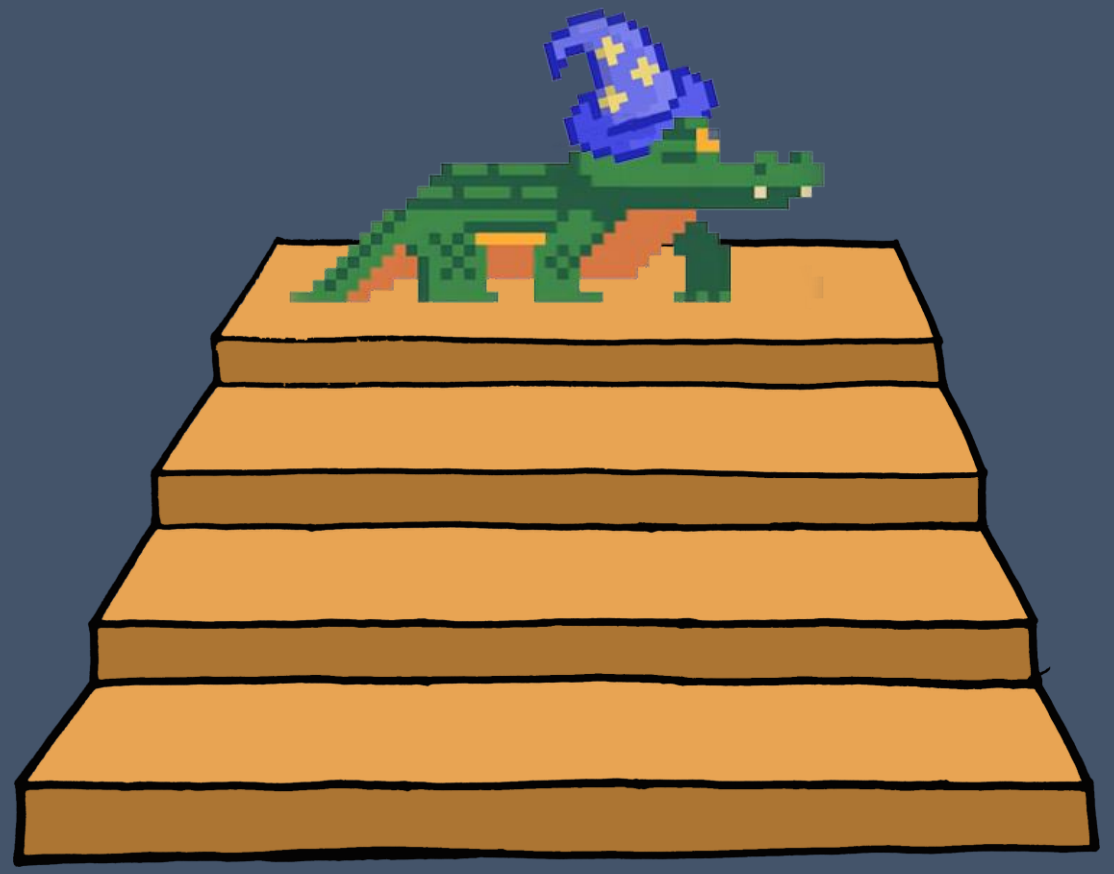


Assignments and variables

```
steps++; // 4
```

steps

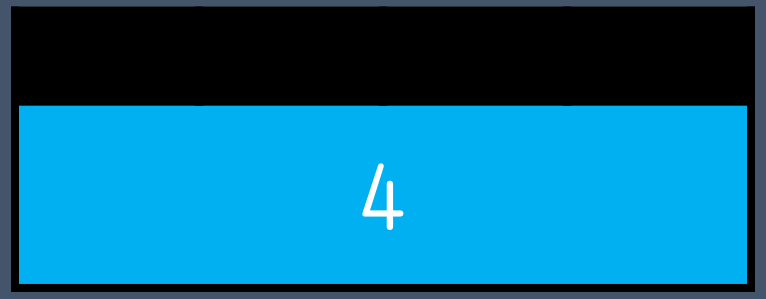


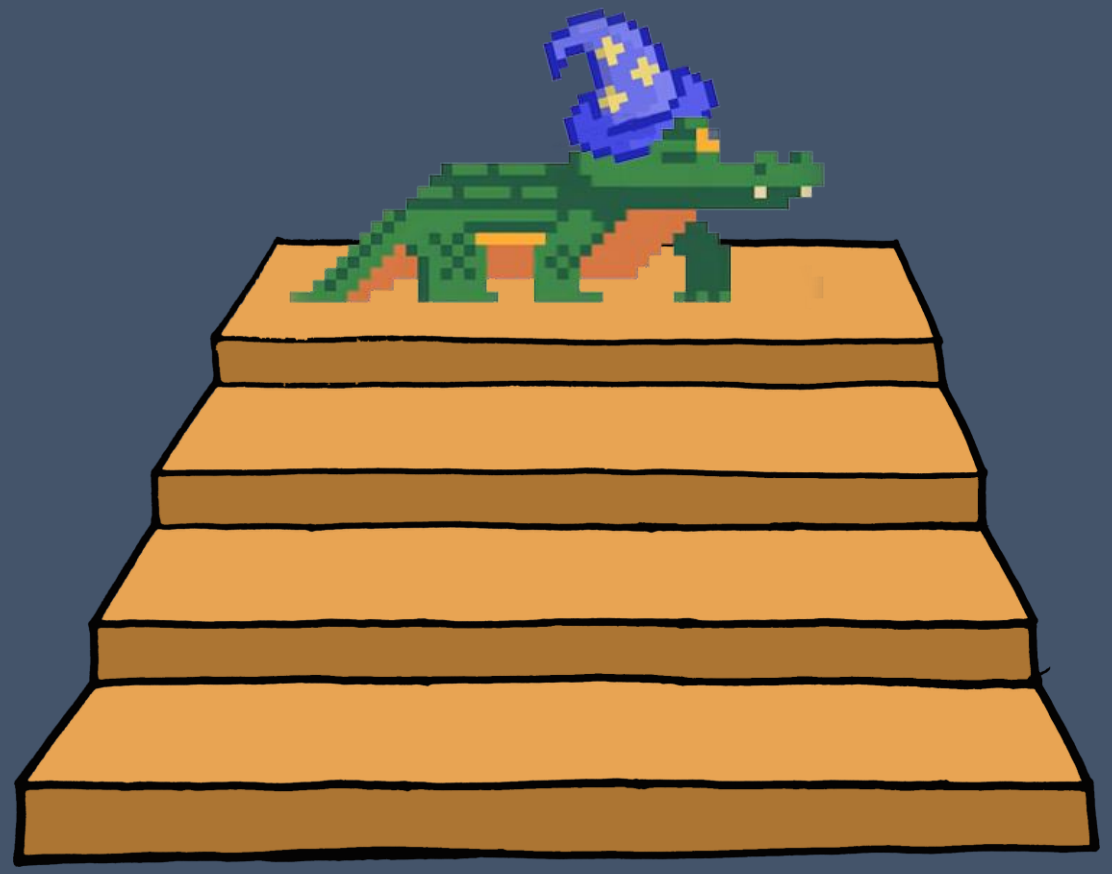


Assignments and variables

```
System.out.print(steps);
```

steps





Assignments and variables

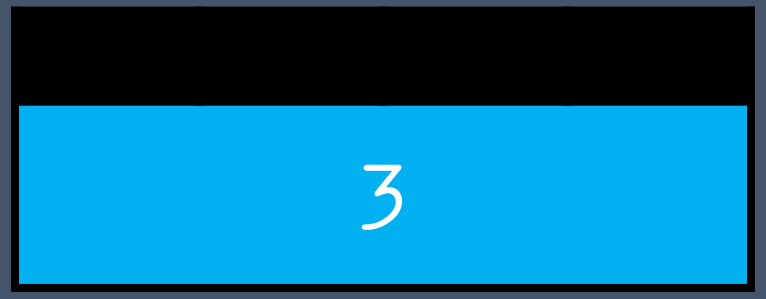
Represents the *expression:*

```
steps - 1;
```



```
steps--; // 3
```

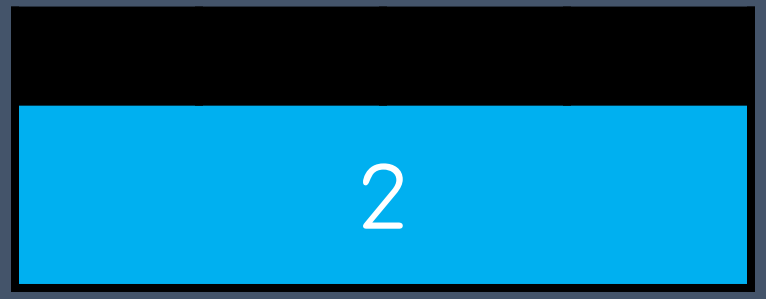
steps



Assignments and variables

```
steps--; // 2
```

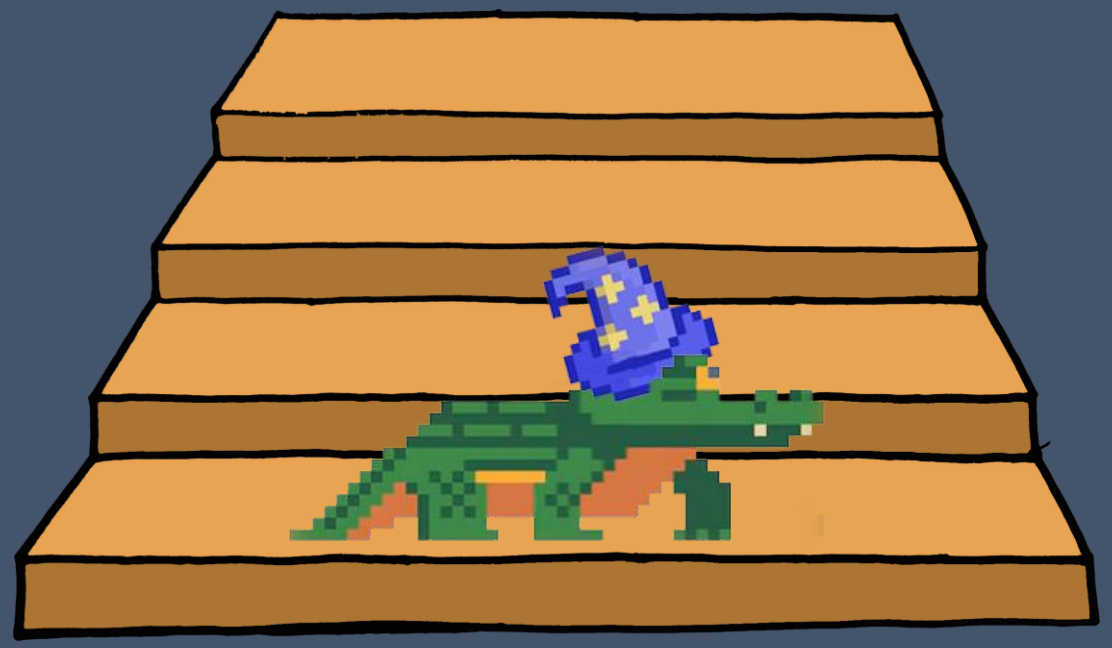
steps



Assignments and variables

```
steps--; // 1
```

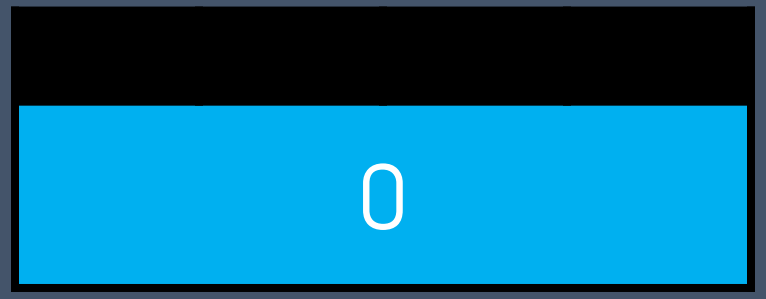
steps

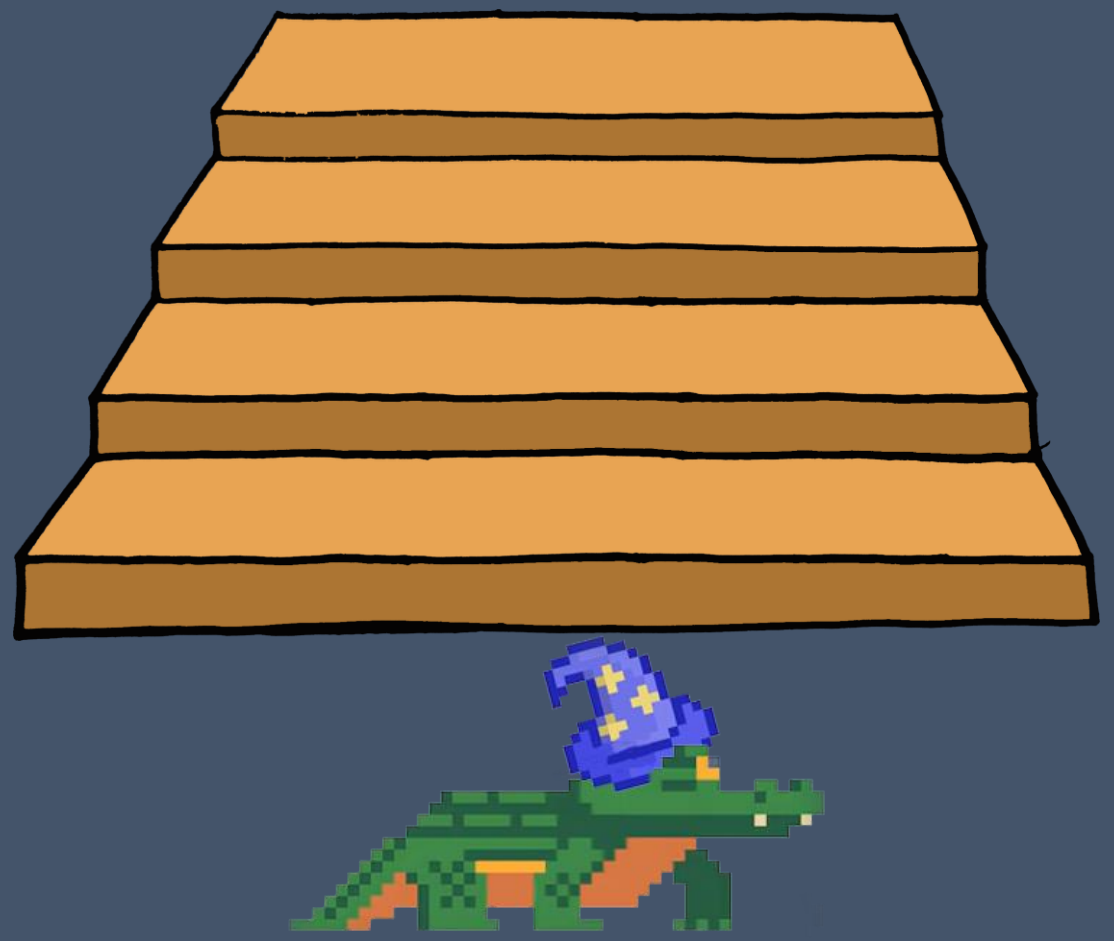


Assignments and variables

```
steps--; //0
```

steps





Expressions

Activity: dividing the baker’s dozen

cd to your activities repository
perform a git pull download master
cd to the activity-04 folder

Expressions

Today, we're going to solve a problem that drove Facebook users *mad*:

```
int answer = 6 / 2 * 1+2 - 1;
 answer = 8; // How and why?
```

Data Type	Size	Min value	Max Value
byte	1 byte	-128	127
short	2 bytes	-32,768	32,767
int	4 bytes	-2,147,483,648	2,147,483,647
long	8 bytes	- a lot	+ a lot
float	4 bytes	7 decimals	7 decimals
double	8 bytes	15 decimals	15 decimals
char	2 bytes	0	65,536
boolean	(not important)	0 (true)	1 (false)

Special primitive used for Strings

Special primitive used to evaluate “truthiness”

“primitive” data types

Assignments and variables

```
int pi =
```


```
double pi =
```


Assignments and variables

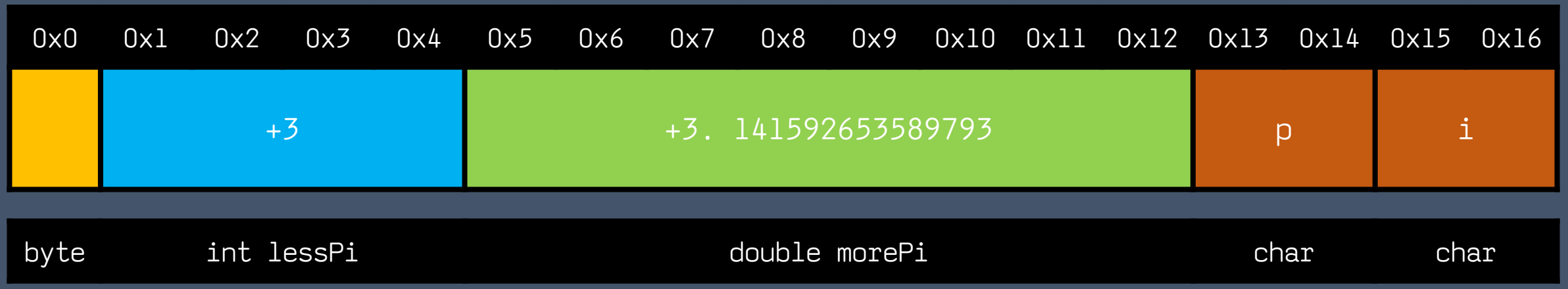
```
int pi = 3;
```

```
double pi = 3.141592653589793;
```

Because the data type takes up more space, we can represent more “significant digits”

Assignments and variables

```
String label = “pi”;
int lessPi = 3;
double morePi = 3.141592653589793;
```



Assignments and variables

```
int a = 4;
double b = 2.0;
String greeting = “Hello!”;
boolean wasPiJokeFunny = false;
// it was, tho
wasPiJokeFunny = true;
```

Assignments and variables and expressions

Boolean: represents truth value (“truthiness”)

```
boolean twoPlusTwo = 2 + 2 == 5; // false
boolean sameName = “Bill” == “Ted”; //false

boolean isGreater = 4 > 2; // true
boolean isNotSameName = “Bill” != “Ted”
```

Assignments and variables and expressions

- Assignment operators:
  - =
  - +=
  - *=
  - -=
- Logical operators:
  - >
  - <
  - >=
  - <=
  - ==
  - !=

Back to our activities-04 folder!

(Fun fact: alligators generally like temperatures between 28-33 ° C; they become dormant below 55 ° F)

(Additional fun fact: today’s high is 10.5 ° C (at 4:00 PM. Will alligators be dormant today?)