

# Variables, values, and types

a	b	c	d
32	12	20	true

int a = 32  
type variable value

int b = 12

int c = a - b  
32 12

bool d = a > b

# Comments

```
int a = 32
// ignored
int b = 20
/*
ignored
int c = a-b
*/
bool d = a > b
```

# The need for functions

Tired

```
int a = 2*2*2 - 2  
int b = 3*3*3 - 3  
int c = a-b
```

Wired

```
int a = 2-ish magic  
int b = 3-ish magic  
int c = a-b
```

Inspired

```
int magic (int x) {  
    return x*x*x - x  
}
```

```
int a = magic(2)  
int b = magic(3)  
int c = a-b
```

# Playing with functions

```
return type  name  argument
int magic (int x) { body starts
               type  name
               return x*x*x - x
body ends }
```

```
int a = magic(2) → 6
int b = magic(3) → 24
int c = a-b
```

# Fancier functions

```
int magic (int x){  
    return x*x*x - x  
}
```

```
int bigger (int x, int y){  
    if x > y  
    then return x  
    else return y  
}
```

```
bool positive (int x){  
    if x >= 0  
    then return true  
    else return false  
}
```

```
bool combined () {  
    int a = magic(2)  
    int b = magic(-1)  
    int c = bigger(a,b)  
    return positive(c)  
}
```

# Fancier types

Later, you will see some strange types.

Not `int` and `bool`, but `Person`, `Letter`, `Router`, and `Packet`.

Try to remember how to break it down!

```
return type      name      argument
void sendAPacketTo (Router r) {
    // creates and sends a packet to the router r
}
```