VARIABLES

THE UNIVERSITY OF MOUNT UNION

WHAT DOES A VARIABLE DO?

- Stores a value in memory so it can be used later in the program
- Value can be easily changed while the program is running

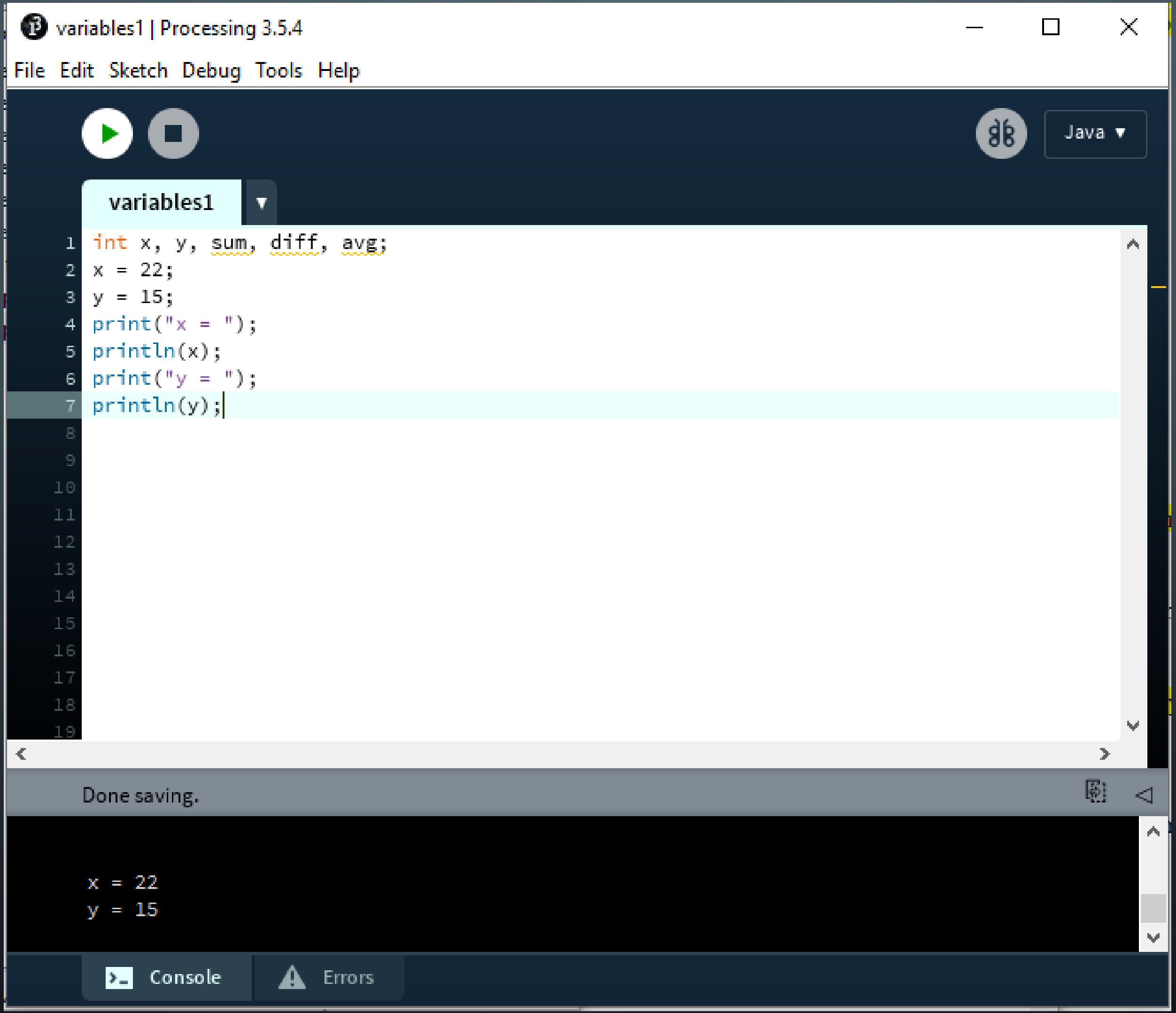
WHY DO WE USE VARIABLES?

- Avoid repeating ourselves
- Much easier to update code
- Much more efficient

WHAT DO WE NEED TO DO?

- Determine the name, data type, and value
- Convention is to use lower case for variable names
- Data types include (but are certainly not limited to)
  - int (integer)
  - float (short for floating-point, which can include decimals)
  - Array (holds a list of data)

EXAMPLE FROM LAB 1


variables1 | Processing 3.5.4
File Edit Sketch Debug Tools Help
Java ▾
variables1

```
int x, y, sum, diff, avg;
x = 22;
y = 15;
print("x = ");
println(x);
print("y = ");
println(y);
```

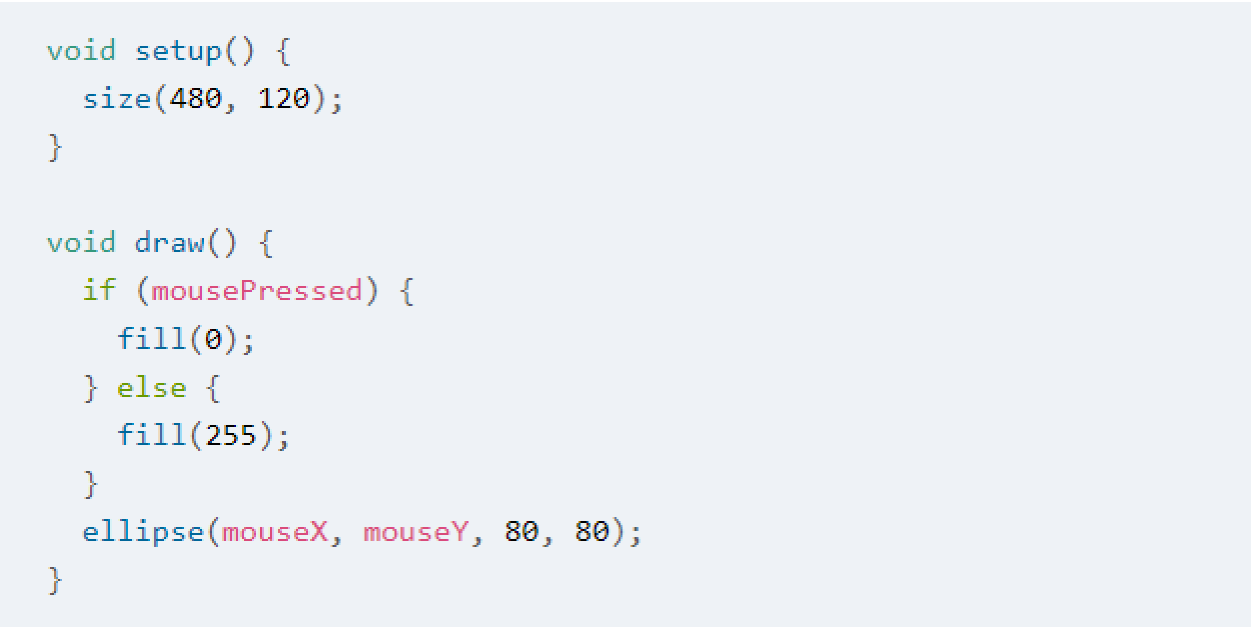
Done saving.

```
x = 22
y = 15
```

BUILT-IN VARIABLES

- width – automatically stores width of window
- height – automatically stores height of window
- mouseX – automatically stores current x-position of the mouse
- mouseY – automatically stores current y-position of the mouse

LOOKING AT EXAMPLE 2-2 AGAIN



```
void setup() {
  size(480, 120);
}

void draw() {
  if (mousePressed) {
    fill(0);
  } else {
    fill(255);
  }
  ellipse(mouseX, mouseY, 80, 80);
}
```

We still don’t have the tools to understand *all* of this code…but how about “size”? And “ellipse”? We can understand those now!