Intro to p5.js

CF1

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Watch the videos

- If you haven't watched the CodingTrain videos yet, that's a bummer!

- I will cover the same material, but in a slightly different way

What Is Code?

- Computers still don't really understand intentions

- Even if they did, intentions can be ambiguous or unclear

- Code - computer programs - strive to give you the programmer a way to tell the computer exactly what to do, unambiguously

- … the trick is: how do *you* learn to speak its language?

Various Languages
Just for grins

- We're covering p5.js in this class

- … which is actually just Javascript (JS)

- Javascript is a C-like language, first released in 1972

- Java, C#, C++, Swift, Objective C are all in that family

- JS is a scripting language which has some huge upsides (and downsides)

- Other scripting languages: Python, Ruby, Lua
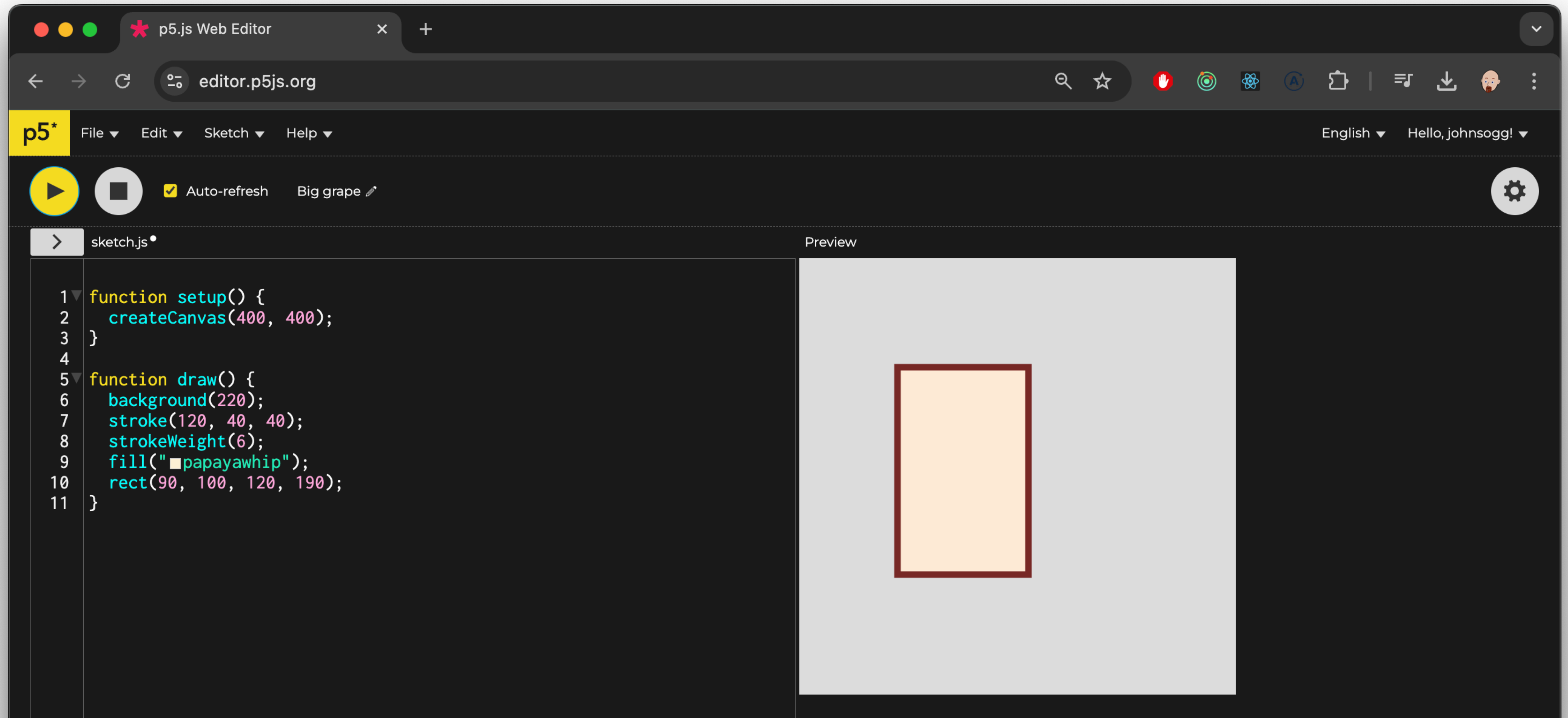
- Rust is a new awesomeness

Various Languages
Just for grins

- Computer languages have their own syntax/grammar like human languages

- They also have their own "libraries" - things that you can say in those languages, which are often idiomatic (just like human languages)

- We're *only* covering the parts of Javascript that are relevant to writing p5.js programs in this course

- Disclaimer: please don't confuse "code" with "p5" - p5 is just one of a zillion ways of writing code

- This class should give you the foundation for starting your quest

P5 Editor
https://editor.p5js.org/
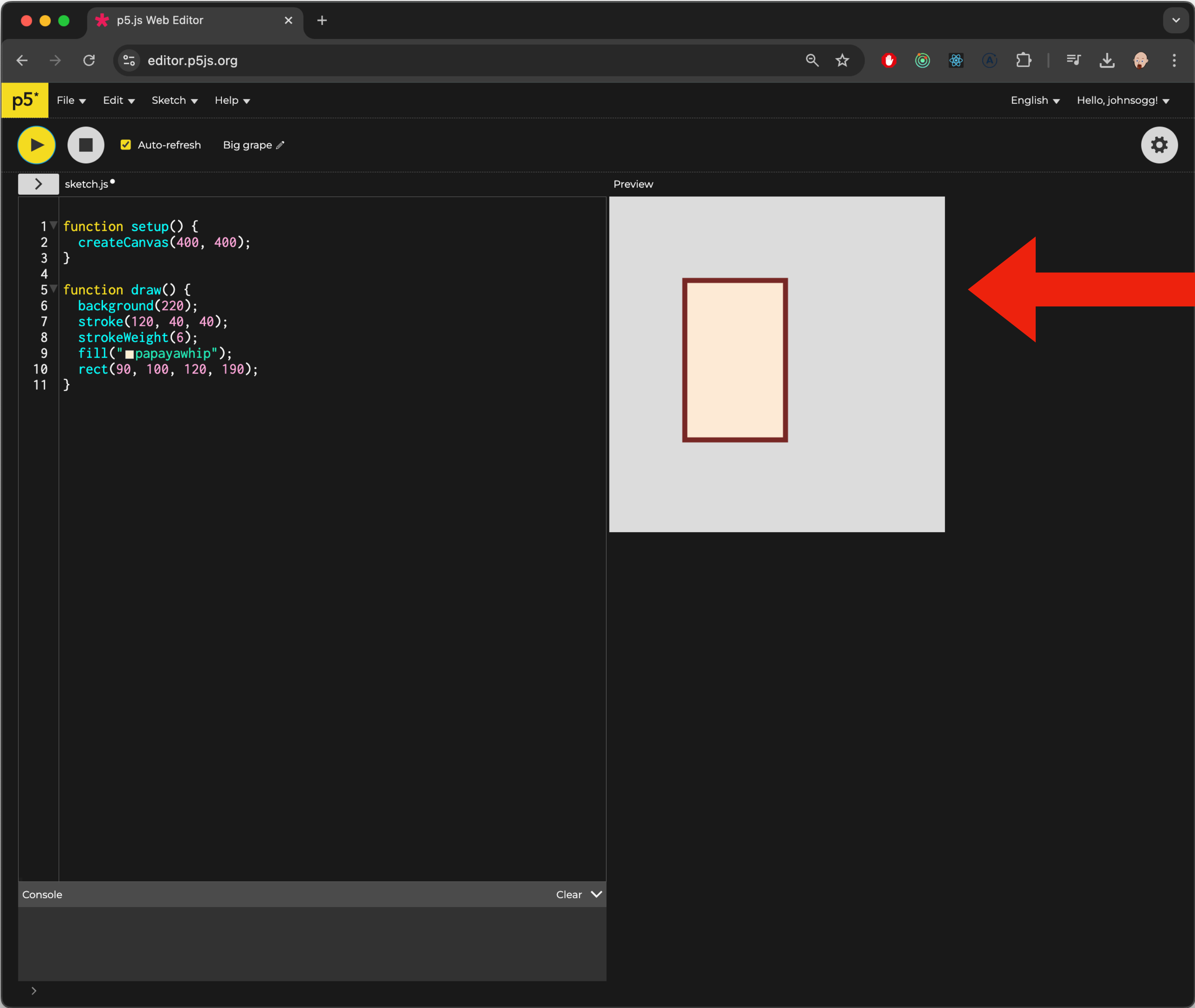
P5 Editor
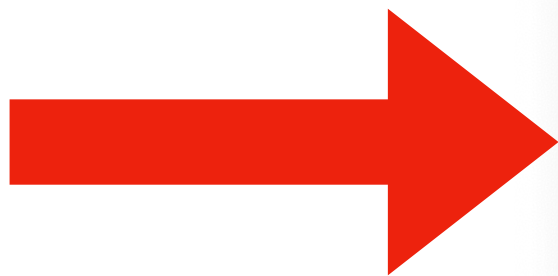## https://editor.p5js.org/

- To get in, make a Github account if you haven't already

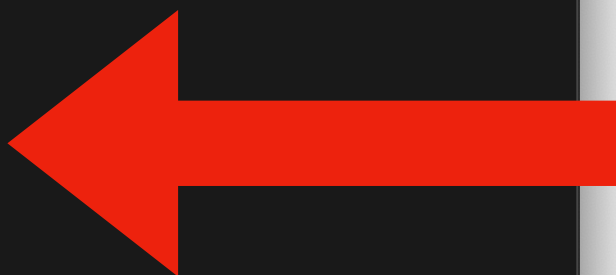- Then use your Github account to log in to the p5js editor

Administrative

Controls
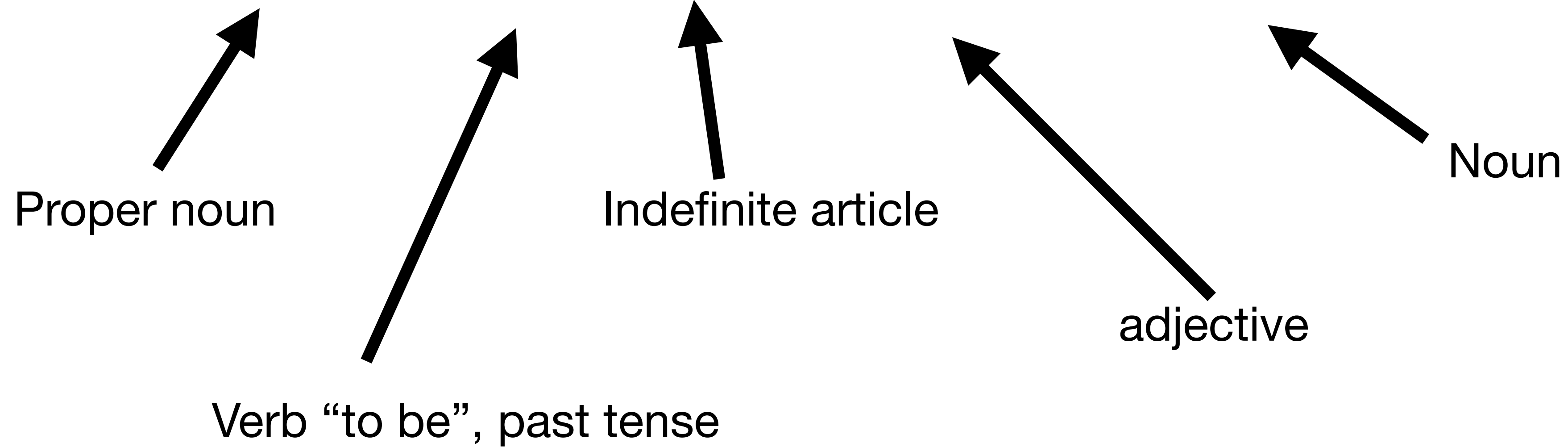
Code

Console

Graphic

Output

```
1  function setup() {
2    createCanvas(400, 400);
3  }
4
5  function draw() {
6    background(220);
7    stroke(120, 40, 40);
8    strokeWeight(6);
9    fill("papayawhip");
10   rect(90, 100, 120, 190);
11 }
```

```
function setup() {
  createCanvas(400, 400);
}

function draw() {
  background(220);
  stroke(120, 40, 40);
  strokeWeight(6);
  fill("papayawhip");
  rect(90, 100, 120, 190);
}
```

Anatomy Lesson

"George was a good guitar player."

Proper noun

Verb "to be", past tense

Indefinite article

adjective

Noun

George was a good guitar player

Was George a good guitar player

Was George a player guitar good

Was a George player guitar good

Was a good player guitar George

Guitar a good player was George

```
function setup() {
  createCanvas(400, 400);
}
```

function is saying "I'm about to create a new command - a function". This is basically a little script that can be used whenever you want.

```
function setup() {
  createCanvas(400, 400);
}
```

setup is just the name of the function.

```
function setup() {
  createCanvas(400, 400);
}
```

() - the parentheses are used like a little box, into which you can name some arguments. In this case, there are no arguments, so it looks kinda silly.

But if you don't do this, it is a "syntax error" - meaning the Javascript interpreter does not have any idea what you're talking about.

```
function setup() {
  createCanvas(400, 400);
}
```

{ and **}** - these braces are used to box off the
contents of the function - these are the steps
of the script that will run when you invoke it.

```
function setup() {
  createCanvas(400, 400);
}
```

createCanvas – this is a name of a symbol. In this case, it is "create canvas" and it is already defined for you by the p5.js library.

```
function setup() {
  createCanvas(400, 400);
}
```

(400, 400) – Inside parentheses, these are
arguments, or you can call them parameters.
This sets the size of the graphics output to be
400 pixels wide, 400 pixels tall.

Which is which? Can you tell by looking at it?
Nope! This is something that you just have to
know – or look up on the reference
documentation.

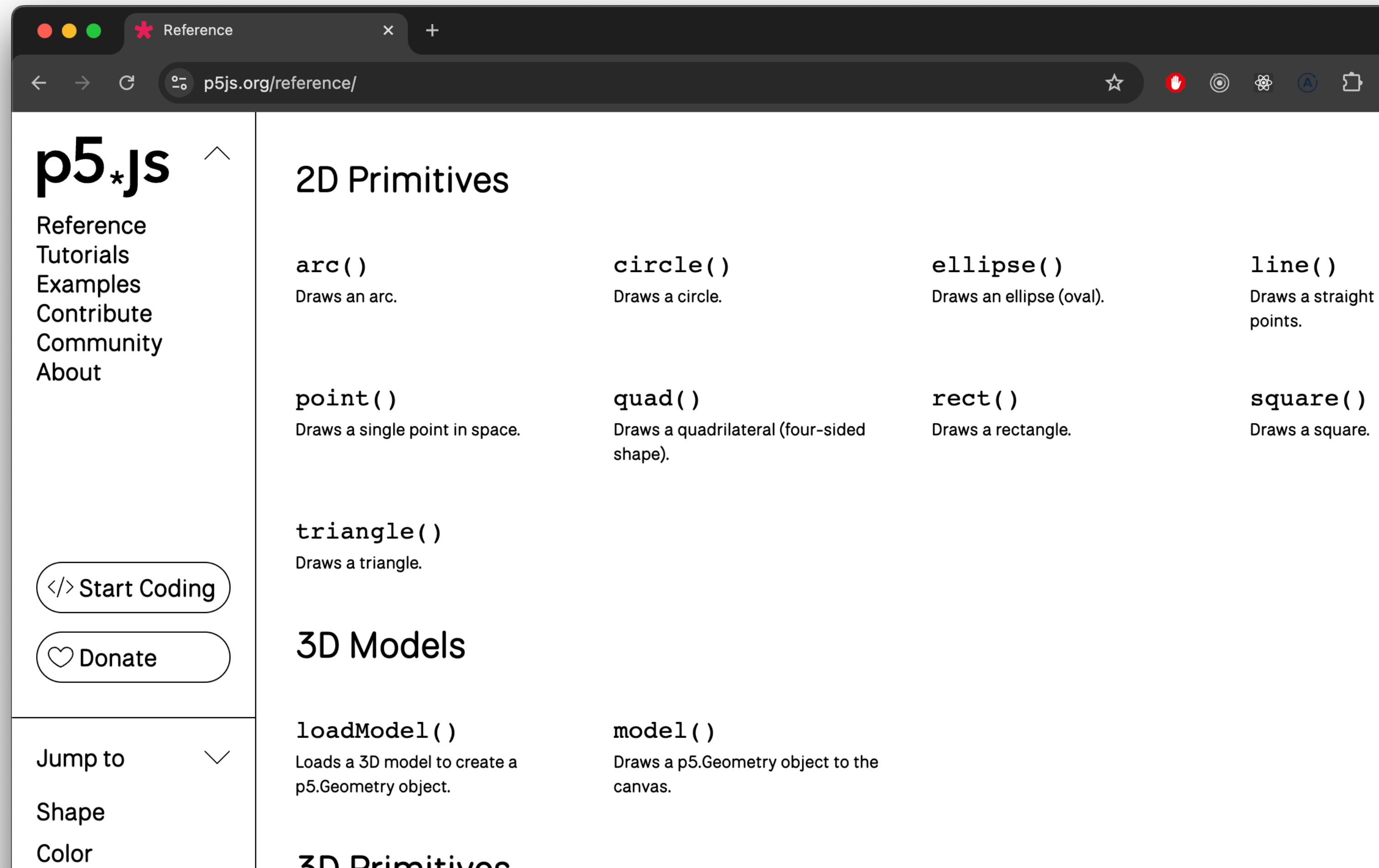# Read The Docs
https://p5js.org/reference/

For now focus on:

- 2D Shapes

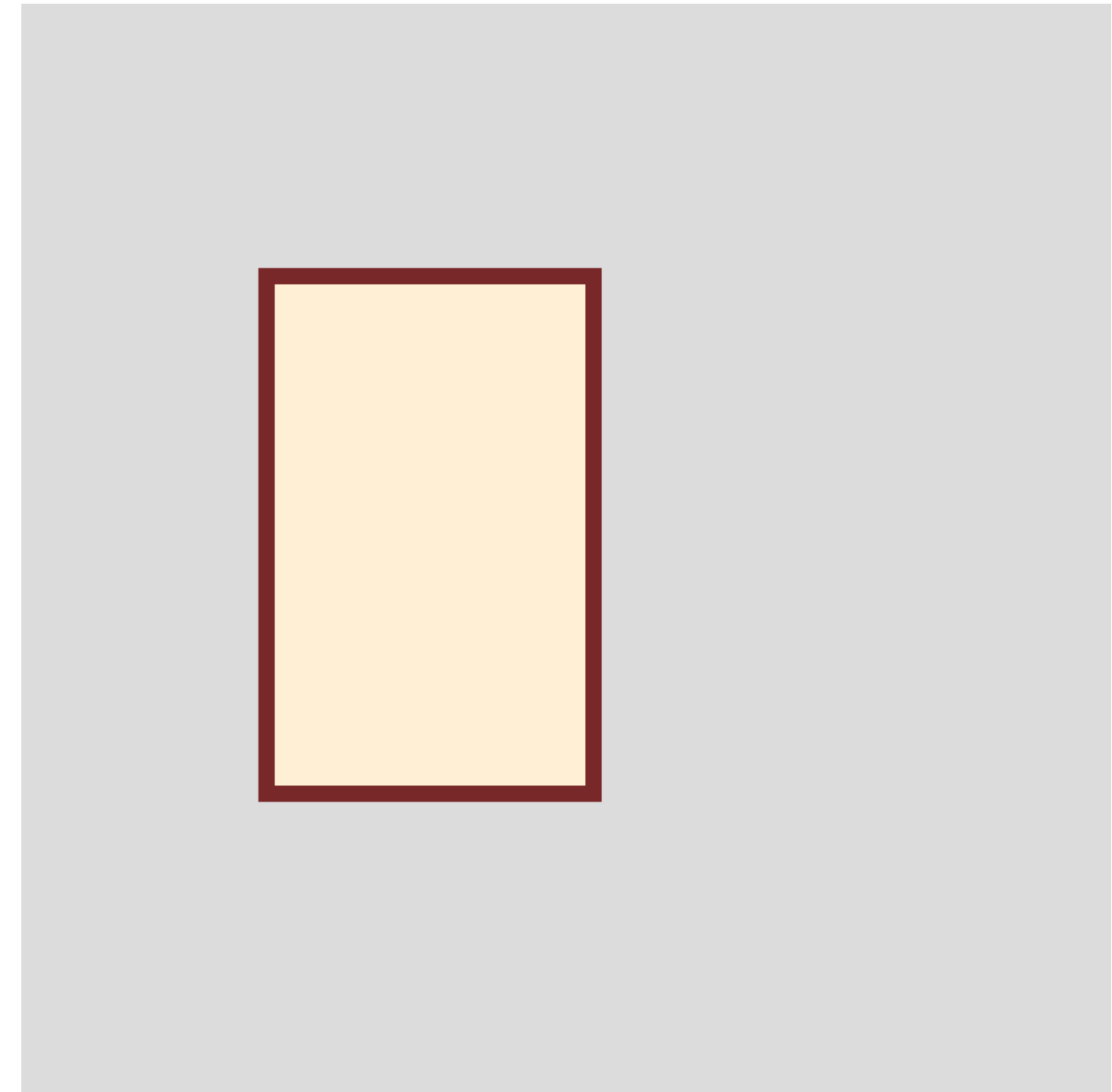- Settings like stroke and fill

And if you feel saucy:

- Typography

- Image

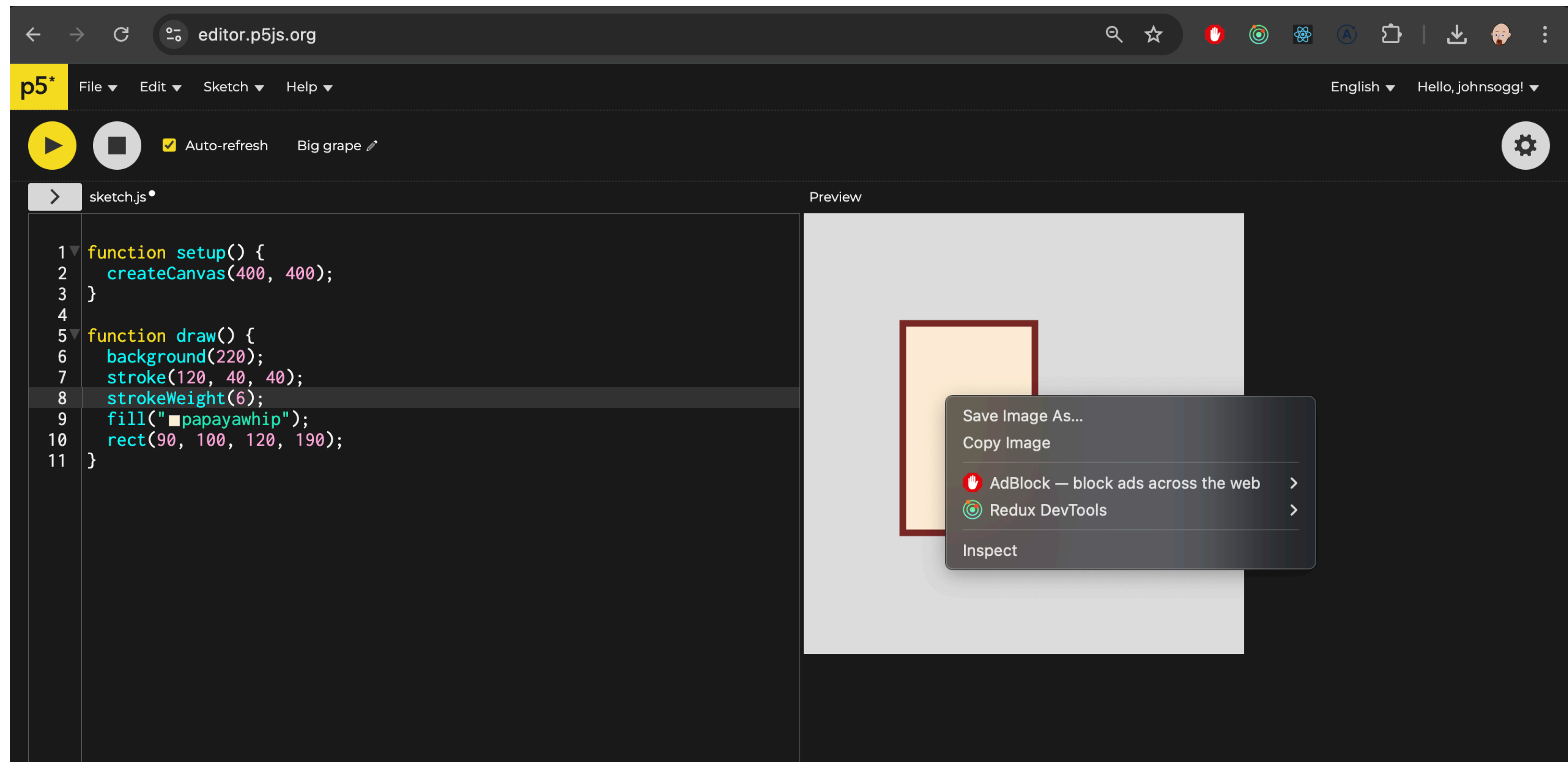# Use the docs and draw stuff!
Keep the docs open nearby for quick reference

```
function draw() {
  background(220);
  stroke(120, 40, 40);
  strokeWeight(6);
  fill(120, 120, 220);
  rect(90, 100, 120, 190);
}
```

Fun fact:

Right click on the preview and *Save Image As...*

Live Coding!

Bust out your laptop and play along!

My masterpiece p5 sketch