D3 – getting started

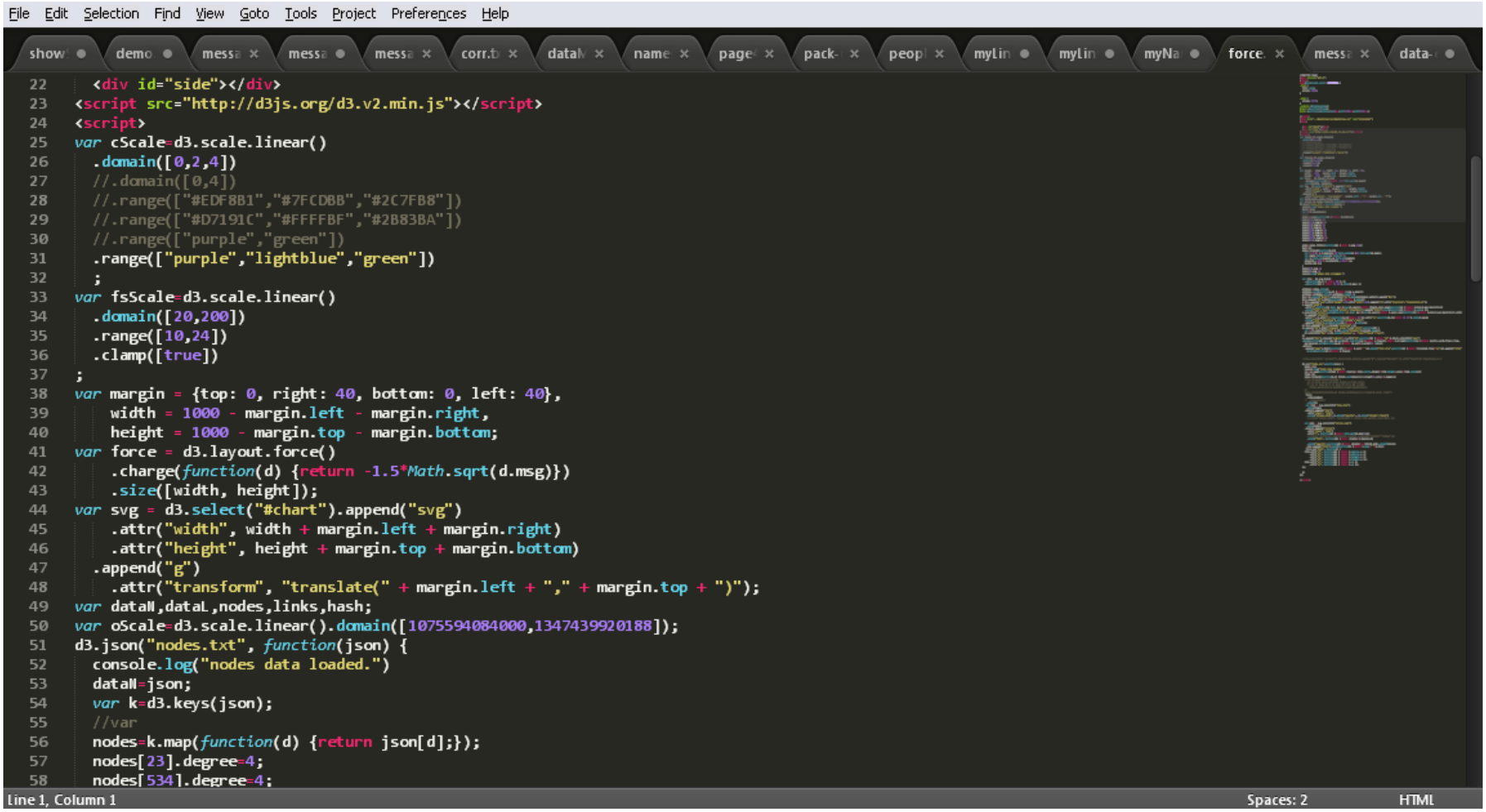
Visweek d3 workshop

What you need

- A text editor,
- The d3 library,
- Files for your code,
- *Recommended:* a web server,
- A browser.

A text editor

- There are a few options out there: textMate, eclipse / aptana, sublime text 2…
- What you really need is an editor with **syntax highlighting**. Constructs with d3 can become very intricate.
- Personally, I like sublime text 2.


File Edit Selection Find View Goto Tools Project Preferences Help
show demo messa messa messa corr.b dataM name page pack peopl mylin mylin myNa force messa data
22
23 <script src="http://d3js.org/d3.v2.min.js"></script>
24 <script>
25 var cScale=d3.scale.linear()
26 .domain([0,2,4])
27 //.domain([0,4])
28 //.range(["#EDF8B1","#7FCDBB","#2C7FB8"])
29 //.range(["#D7191C","#FFFFBF","#2B83BA"])
30 //.range(["purple","green"])
31 .range(["purple","lightblue","green"])
32 ;
33 var fsScale=d3.scale.linear()
34 .domain([20,200])
35 .range([10,24])
36 .clamp([true])
37 ;
38 var margin = {top: 0, right: 40, bottom: 0, left: 40},
39 width = 1000 - margin.left - margin.right,
40 height = 1000 - margin.top - margin.bottom;
41 var force = d3.layout.force()
42 .charge(function(d) {return -1.5*Math.sqrt(d.msg)})
43 .size([width, height]);
44 var svg = d3.select("#chart").append("svg")
45 .attr("width", width + margin.left + margin.right)
46 .attr("height", height + margin.top + margin.bottom)
47 .append("g")
48 .attr("transform", "translate(" + margin.left + "," + margin.top + ")");
49 var dataN,dataL,nodes,links,hash;
50 var oScale=d3.scale.linear().domain([1075594084000,1347439920188]);
51 d3.json("nodes.txt", function(json) {
52 console.log("nodes data loaded.")
53 dataN=json;
54 var k=d3.keys(json);
55 //var
56 nodes=k.map(function(d) {return json[d];});
57 nodes[23].degree=4;
58 nodes[534].degree=4;
Line 1, Column 1
Spaces: 2
HTML

Files you need

- The d3 library : get it at http://d3js.org
- Or link to it: http://d3js.org/d3. v2.min.js

A template for d3

```
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;charset=utf-8">
        <title>My project</title>
        <script type="text/javascript" src="../d3.v2.js"></script>
        <link href="style.css" rel="stylesheet">
    </head>
    <body>
        <div id="chart"></div>
        <script type="text/javascript" src="script.js"></script>
    </body>
</html>
```

A template for d3

<!DOCTYPE html>

Start by specifying the doctype, to be in HTML5 mode (less suprises).

A template for d3

<!DOCTYPE html>

<html>

</html>

An HTML tag is not required, but makes things more legible for people.

A template for d3

```
<!DOCTYPE html>
<html>
    <head>
    </head>
    <body>
    </body>
</html>
```

Likewise, head and body tags are not required, but make things easier to read.

A template for d3

```
<!DOCTYPE html>
<html>
    <head>
      <meta http-equiv="Content-Type" content="text/
      html;charset=utf-8">
    </head>
    <body>
    </body>
</html>
```

It's better to specify a content type, this will allow you to use non-ascii characters with confidence.

A template for d3

```
<!DOCTYPE html>
<html>
    <head>
      <meta http-equiv="Content-Type" content="text/html;charset=utf-8">
      <title>My project</title>
    </head>
    <body>
    </body>
</html>
```

You may name your project here.

A template for d3

```
<!DOCTYPE html>
<html>
    <head>
      <meta http-equiv="Content-Type" content="text/html;charset=utf-8">
      <title>My project</title>
      <script type="text/javascript" src="../d3.v2.js"></script>
    </head>
    <body>
    </body>
</html>
```

That's where you link to the d3 library. Here I am assuming it is in a folder one level up from the code. Alternatively, you can use http://d3js.org/d3.v2.min.js.

A template for d3

```
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;charset=utf-8">
        <title>My project</title>
        <script type="text/javascript" src="../d3.v2.js"></script>
        <link href="style.css" rel="stylesheet">
    </head>
    <body>
    </body>
</html>
```

Optionally, you can link to a stylesheet like so. Or specify style inside a <style> element here.

```
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;charset=utf-8">
        <title>My project</title>
        <script type="text/javascript" src="../d3.v2.js"></script>
        <link href="style.css" rel="stylesheet">
    </head>
    <body>
        <div id="chart"></div>
    </body>
</html>
```

Inside the body, we create a element which will hold the vis.

```
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;charset=utf-8">
        <title>My project</title>
        <script type="text/javascript" src="../d3.v2.js"></script>
        <link href="style.css" rel="stylesheet">
    </head>
    <body>
        <div id="chart"></div>
        <script type="text/javascript" src="script.js"></script>
    </body>
</html>
```

Finally, we link to a script file containing our actual javascript code.

Alternatively, we may write our code here inside a <script> element.

A template for d3

```
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;charset=utf-8">
        <title>My project</title>
        <script type="text/javascript" src="../d3.v2.js"></script>
        <link href="style.css" rel="stylesheet">
    </head>
    <body>
        <div id="chart"></div>
        <script type="text/javascript" src="script.js"></script>
    </body>
</html>
```

Now let's look at a sample js file.

```
var w=960,h=500;
var svg=d3.select("#chart")
    .append("svg")
    .attr("width",w).attr("height",h);
svg
    .append("text")
    .text("hello world!").attr("x",100).attr("y",100);
```

Now let's look at a sample js file.

var w=960,h=500;

Simple variables to size the vis.

Those numbers are chosen because they work well with Mike Bostock's http://bl.ocks.org, a simple viewer for code examples hosted on GitHub Gist.

Now let's look at a sample js file.

```
var w=960,h=500;
var svg=d3.select("#chart")
```

Now we are going to create an SVG container. It will be a child of the div named #chart, which we created earlier.

Now let's look at a sample js file.

```
var w=960,h=500;
var svg=d3.select("#chart")
    .append("svg")
```

This creates the svg element per se.

Now let's look at a sample js file.

```
var w=960,h=500;
var svg=d3.select("#chart")
    .append("svg")
     .attr("width",w).attr("height",h);
```

And this last line gives an explicit width and height to the svg element. This is desired in Firefox (in chrome/safari, the svg just resizes as needed) and generally more proper.

Now let's look at a sample js file.

```
var w=960,h=500;
var svg=d3.select("#chart")
    .append("svg")
    .attr("width",w).attr("height",h);
svg
    .append("text")
```

Now that we have an SVG container, we can just add any kind of SVG element to it. So let's start with text.

Now let's look at a sample js file.

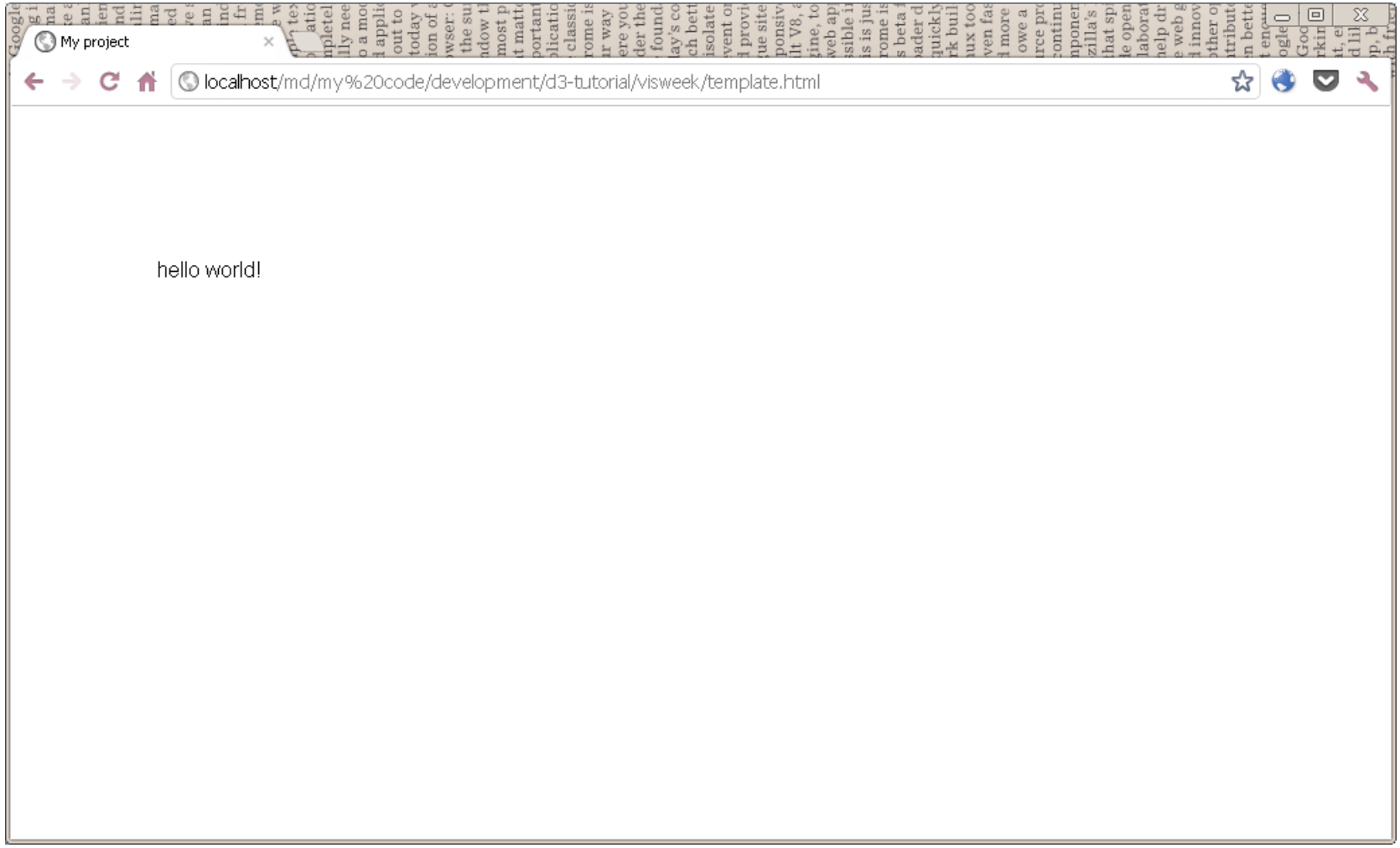
```
var w=960,h=500;
var svg=d3.select("#chart")
    .append("svg")
    .attr("width",w).attr("height",h);
svg
    .append("text")
    .text("hello world!").attr("x",100).attr("y",100);
```

This last line specifies characteristics of the element we've just added.

A sample js file.

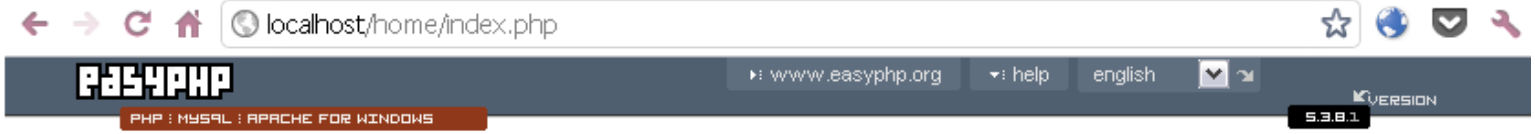
```
var w=960,h=500;
var svg=d3.select("#chart")
    .append("svg")
    .attr("width",w).attr("height",h);
svg
    .append("text")
    .text("hello world!").attr("x",100).attr("y",100);
```

Lo and behold:



A web server

- You can view most d3 visualizations locally, simply by opening an html file in a browser.
- But if your visualization is reading data from files or from a database (XMLHttpRequest), then you need to publish it on a web server to test it.
- There are many options: EasyPHP (windows), Mac OS X Server, MAMP (Mac OS X)



Hostname : localhost Port : 80

MySQL Username : root

EasyPHP folder : C:\Program Files\EasyPHP-5.3.8.1\

MySQL Password :

Databases folder : C:\Program Files\EasyPHP-5.3.8.1\mysql\data\

MySQL database host : localhost

PhpMyAdmin	Parameters	Options	Advanced options
Manage your databases	PHP environment	+ add alias	PHP configuration
	PHP extensions	+ add modules	Apache configuration

LOCAL WEB

You must place your files either in the directory 'www' (C:\Program Files\EasyPHP-5.3.8.1\www) or an alias that you have created (see 'Add alias'), so that PHP can interpret your PHP pages (*.php). All folders created in 'www' appear below.

Root

ALIAS

php	C:\Documents and Settings\cukier_j\My Documents\php\	delete
md	C:\Documents and Settings\cukier_j\My Documents\	delete
mycode	C:\Documents and Settings\cukier_j\My Documents\my code\	delete

MODULES

No module installed add modules

EasyPHP 5.3.8.1

- PHP 5.3.8 VC9
- Apache 2.2.21 VC9
- MySQL 5.5.16
- PhpMyAdmin 3.4.5
- Xdebug 2.1.2

EasyPHP is portable

If you want to use EasyPHP on an USB drive, you just need to copy the entire EasyPHP folder on the key. Be sure that all your scripts are in the folder 'www' and your databases in 'mysql/data'.

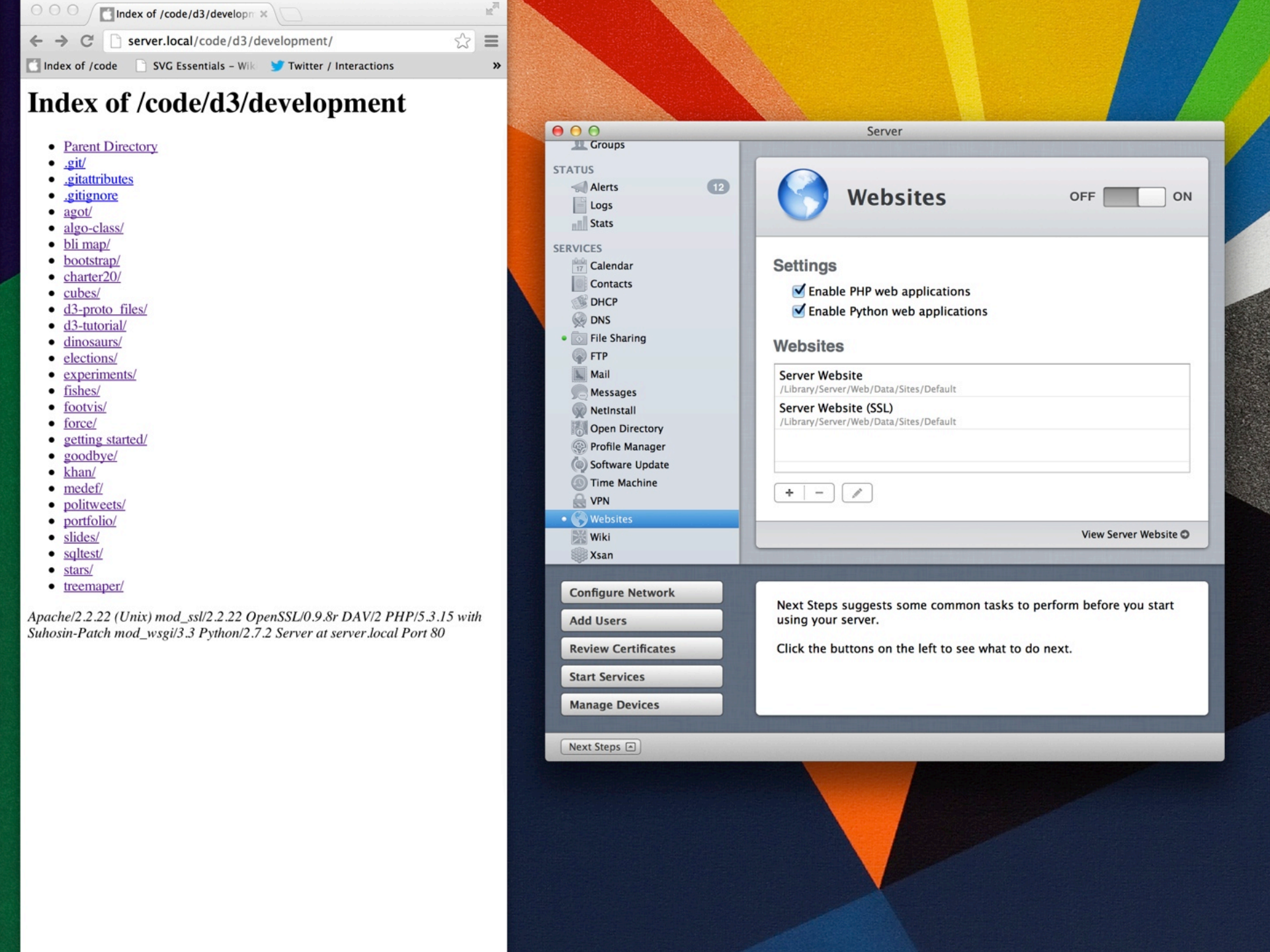
PHP 5.3 migration guide

Most improvements in PHP 5.3.x have no impact on existing code. However, there are a few incompatibilities and new features that should be considered.

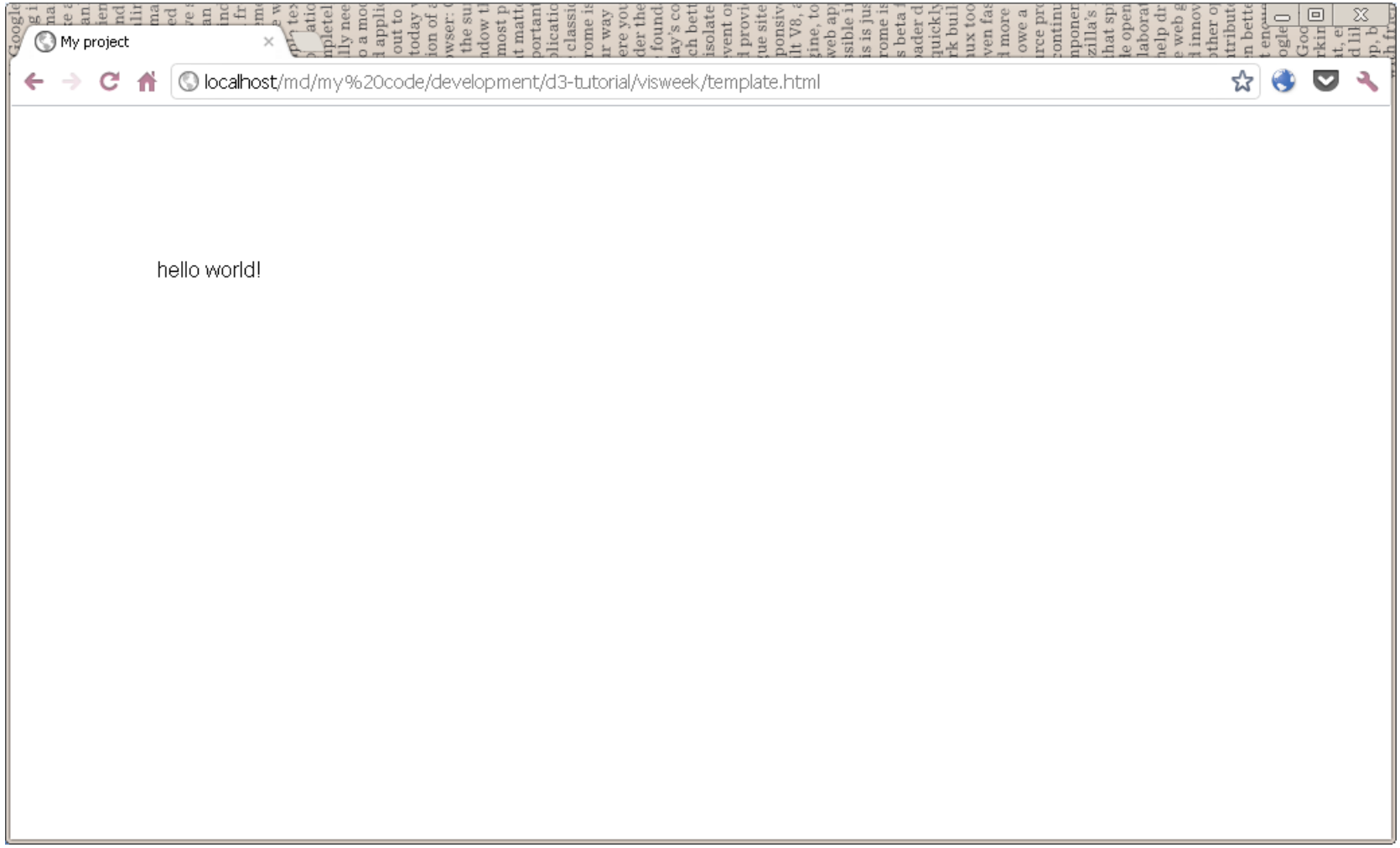
Donation

Support this project

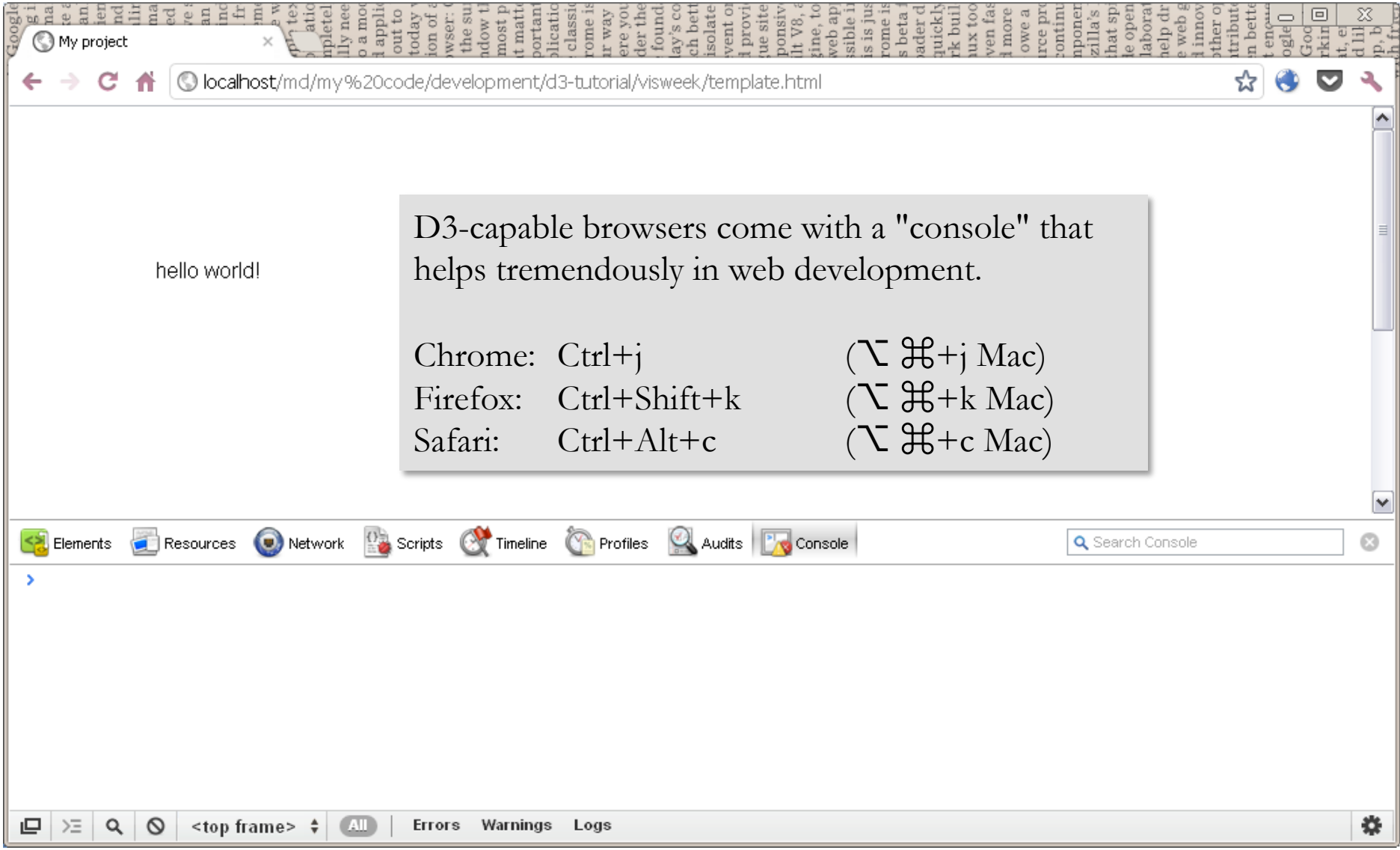
facebook twitter


Index of /code/d3/developm
server.local/code/d3/development/
Index of /code
SVG Essentials – Wik
Twitter / Interactions
Index of /code/d3/development
Parent Directory
.git/
.gitattributes
.gitignore
agot/
algo-class/
bli map/
bootstrap/
charter20/
cubes/
d3-proto_files/
d3-tutorial/
dinosaurs/
elections/
experiments/
fishes/
footvis/
force/
getting started/
goodbye/
khan/
medef/
politweets/
portfolio/
slides/
sqltest/
stars/
treemaper/
Apache/2.2.22 (Unix) mod_ssl/2.2.22 OpenSSL/0.9.8r DAV/2 PHP/5.3.15 with Suhosin-Patch mod_wsgi/3.3 Python/2.7.2 Server at server.local Port 80
Server
Groups
STATUS
Alerts
12
Logs
Stats
SERVICES
Calendar
Contacts
DHCP
DNS
File Sharing
FTP
Mail
Messages
NetInstall
Open Directory
Profile Manager
Software Update
Time Machine
VPN
Websites
Wiki
Xsan
Websites
OFF
ON
Settings
Enable PHP web applications
Enable Python web applications
Websites
Server Website
/Library/Server/Web/Data/Sites/Default
Server Website (SSL)
/Library/Server/Web/Data/Sites/Default
View Server Website
Configure Network
Add Users
Review Certificates
Start Services
Manage Devices
Next Steps suggests some common tasks to perform before you start using your server.
Click the buttons on the left to see what to do next.
Next Steps

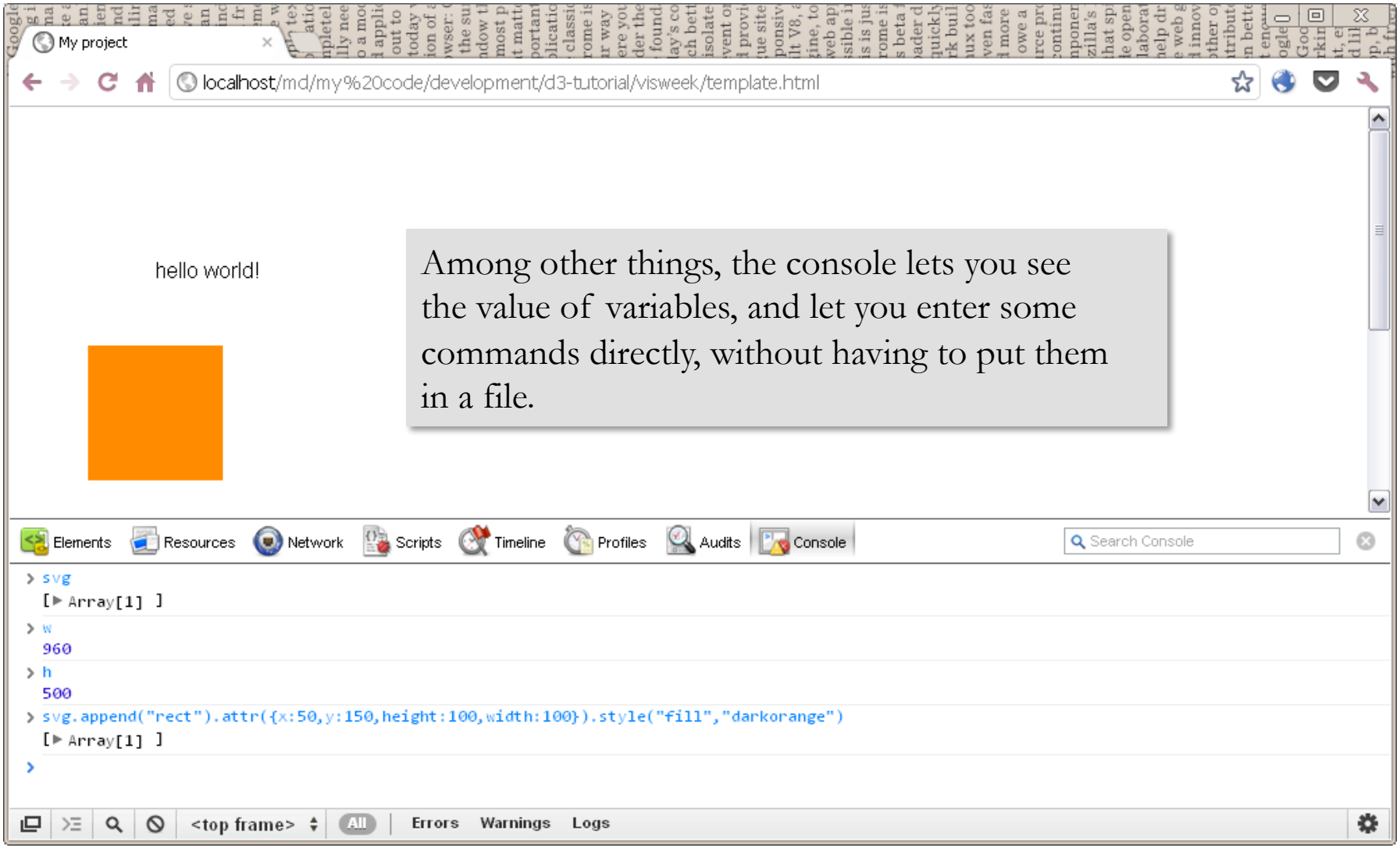
Finally, a browser



The console


My project
localhost/md/my%20code/development/d3-tutorial/visweek/template.html
hello world!
D3-capable browsers come with a "console" that helps tremendously in web development.
Chrome: Ctrl+j (⌥ ⌘+j Mac)
Firefox: Ctrl+Shift+k (⌥ ⌘+k Mac)
Safari: Ctrl+Alt+c (⌥ ⌘+c Mac)
Elements
Resources
Network
Scripts
Timeline
Profiles
Audits
Console
Search Console
<top frame>
All
Errors
Warnings
Logs

The console


My project
localhost/md/my%20code/development/d3-tutorial/visweek/template.html
hello world!
Among other things, the console lets you see the value of variables, and let you enter some commands directly, without having to put them in a file.
Elements
Resources
Network
Scripts
Timeline
Profiles
Audits
Console
Search Console
> svg
[▶ Array[1]]
> w
960
> h
500
> svg.append("rect").attr({x:50,y:150,height:100,width:100}).style("fill","darkorange")
[▶ Array[1]]
>
<top frame>
All
Errors
Warnings
Logs