



Introduction to Web Applications

Tobias Pfeiffer
@PragTob
pragtob.wordpress.com

Today



**I'm
becoming
a programmer!**



Rails Girls Berlin
railsgirlsberlin.de

What is a **web application**?



Not rocket science

Ruby on Rails Tutorial

by Michael Hartl



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```
<pre># THE BEST-WAS SUCCESS? (MAYBE) A211
# MICHAEL HARTL'S WHITE TIEA TIEA... AS LONG AS YOU CATCH YOUR WAGON YOU
# CAN DO WHATEVER YOU WANT WITH THIS STUFF. IT IS BEING DONE RIGHT, AND YOU SHOULD
# TAKE THAT IN HEARTS. YOU CAN BEY ME A BEER TO THANKS.
</pre>
```

This is the secret of my success.

I owe Mr. Hartl so many beers.



I am Rails
(and **So Can You!**)

TIGERLILY

EASY

SOCIAL MARKETING SOLUTIONS

www.tigerlily.com

off fm

Music per in

af83

Live & Social web

www.af83.com

liquidco

Agile development



www.liqu

Programming is fun!

```
def __init__(self, name, age, height, weight):  
    self.name = name  
    self.age = age  
    self.height = height  
    self.weight = weight  
  
    def __str__(self):  
        return f'Name: {self.name}, Age: {self.age}, Height: {self.height}, Weight: {self.weight}'  
  
    def __repr__(self):  
        return f'Person({self.name}, {self.age}, {self.height}, {self.weight})'  
  
    def __eq__(self, other):  
        return self.name == other.name and self.age == other.age and self.height == other.height and self.weight == other.weight  
  
    def __lt__(self, other):  
        return self.age < other.age  
  
    def __gt__(self, other):  
        return self.age > other.age  
  
    def __le__(self, other):  
        return self.age <= other.age  
  
    def __ge__(self, other):  
        return self.age >= other.age
```

WiFi Hotspot
LERNEN
Lernen ist
Lernen
Telchom
01-11

Rails Girls Berlin at eurucamp



Name	Twitter handle	Hometown
Ute	nerdbabe	Berlin
Fanny	fannivuniconnu	Bitche
Dajana	DG_Tweety	Berlin
Lucas	medk_	Mirac
Kai	@TechnoKai	Berlin
Konstantin	@konstantinhaase	Halle an der Saale
Tom Stuart	mortice	London
Uta	@MyLifelsNotCrap	Berlin
PoTe	poteland	Montevideo
Béla	@drblinken	Berlin
Marco Sebald	@marcosebald	Berlin
Vanessa Butz	@VanessaButz	Munich, Germany
Rebecca	bioshrimp	Berlin
Tobi	@PragTob	Berlin, Germany

What **you** are going
to **build today**

So **what** is a web application?

Rails Girls Berlin at eurucamp



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Ute	nerdbabe	Berlin
Fanny	fannivuniconnu	Bitche
Dajana	DG_Tweety	Berlin
Lucas	medk_	London
Kai	@TechnoKai	Berlin
Konstantin	@konstantinhaase	Montreal
Tom Stuart	mortice	Berlin
Uta	@MyLifelsNotCrap	Berlin
PoTe	poteland	Berlin
Béla	@drblinken	Munich, Germany
Marco Sebald	@marcosebald	Berlin
Vanessa Butz	@VanessaButz	Berlin, Germany
Rebecca	bioshrimp	Lodz
Tobi	@PragTob	Lappenberg
Ula	@UrszulaPap	
Dimitri	dimitriively	

Presented in a **web browser**



Runs on a **server...**



...or the **cloud**

Tobias Pfeiffer
View my profile page

1,617 TWEETS **252** FOLLOWING **205** FOLLOWERS

Compose new Tweet...

Who to follow · Refresh · View all

- Stephan Eggermont** @StOn...
Follow
- ashe dryden** @ashedryden
Followed by Steve Klabnik and...
Follow
- lyssaadkins** @lyssaadkins
Follow

Browse categories · Find friends

Trends · Change

- Stuttgart
- #Berlin
- Vielleicht
- Nikolaus
- #s21
- Weihnachten
- #h96
- Schneefall
- Freundin
- Glühwein

Tweets

- Zen Moments** @Zen_Moments 36m
You have enemies? Good. That means you've stood up for something, sometime in your life. ~ Winston Churchill [v.ht/av](#)
Expand
- Preston Marshall** @bbhoss 9h
Wow, I switched to JRuby and a big Rails action that takes ~13 seconds on MRI 1.9 now takes only 5. Keep up the good work @headius and co!
Retweeted by Charles Nutter
Expand
- Tom Stuart** @mortice 50m
Today is brought to you by Liquid Swords and saying "screw it" a lot.
Expand
- d:evolute** @d_evolute 55m
there it is: it will be an independent movie about Steve Jobs.. [fb.me/VGHeQ3R1](#)
Expand
- Tom Stuart** @mortice 56m
I don't see "eradicate the merge button employing the fire of a thousand suns" [letsmake.github.com/bettertogether...](#)
Expand
- heise Developer** @heisedc 58m
Developer Snapshots: Programmierer-News in ein, zwei Sätzen [heise.de/-1763601/ftw](#)
Expand
- Light of Life** @Light_of_Life 6 Dec
"Don't judge each day by the harvest you reap but by the seeds that you plant." -Robert Louis Stevenson
Retweeted by Carol Nichols
Expand
- Ruby News** @ruby_news 1h
Brainfuckt - a Brainfuck Interpreter built in Ruby using Treetop [bit.ly/11QI4sz](#)
Expand
- co.up coworkingspace** @co_up 1h
RT @wooga: Tonight! @railsgirls_bln kicks off with the installation party @co_up (7pm): [bit.ly/RE357N](#)
Expand

is dynamic

A high level **overview**

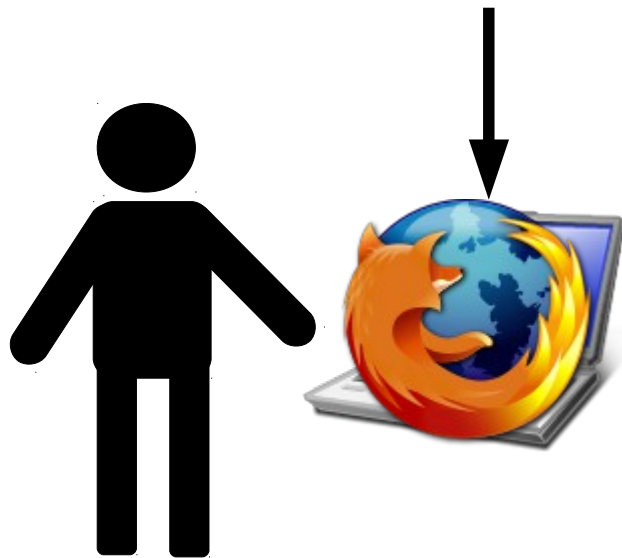
High level overview



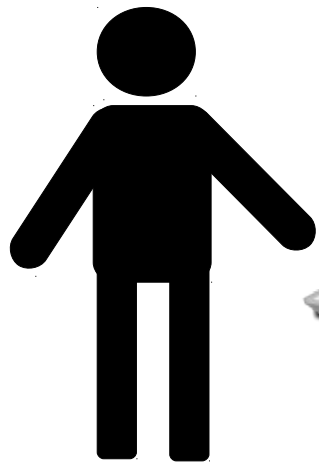
High level overview



 stark-lowlands-5619.herokuapp.com/attendees



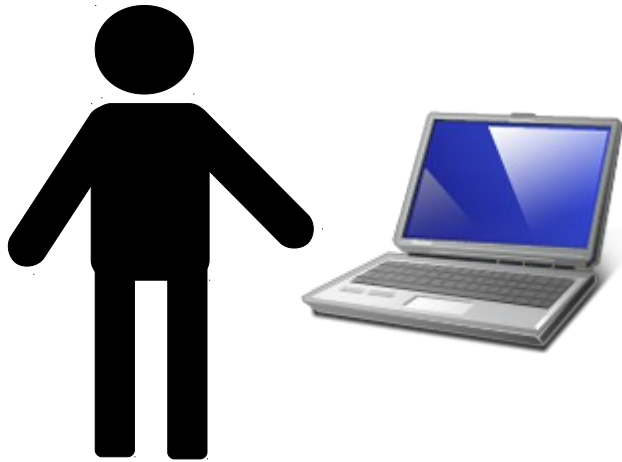
High level overview



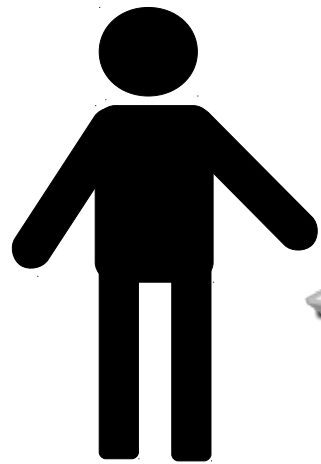
Request



High level overview



High level overview



Answer



High level overview



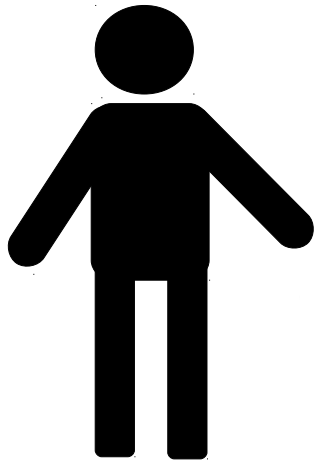
Answer

A thick black arrow pointing from the server towards the user and browser icon.

High level overview



The workshop app Attendees



Rails Girls Berlin at eurucamp



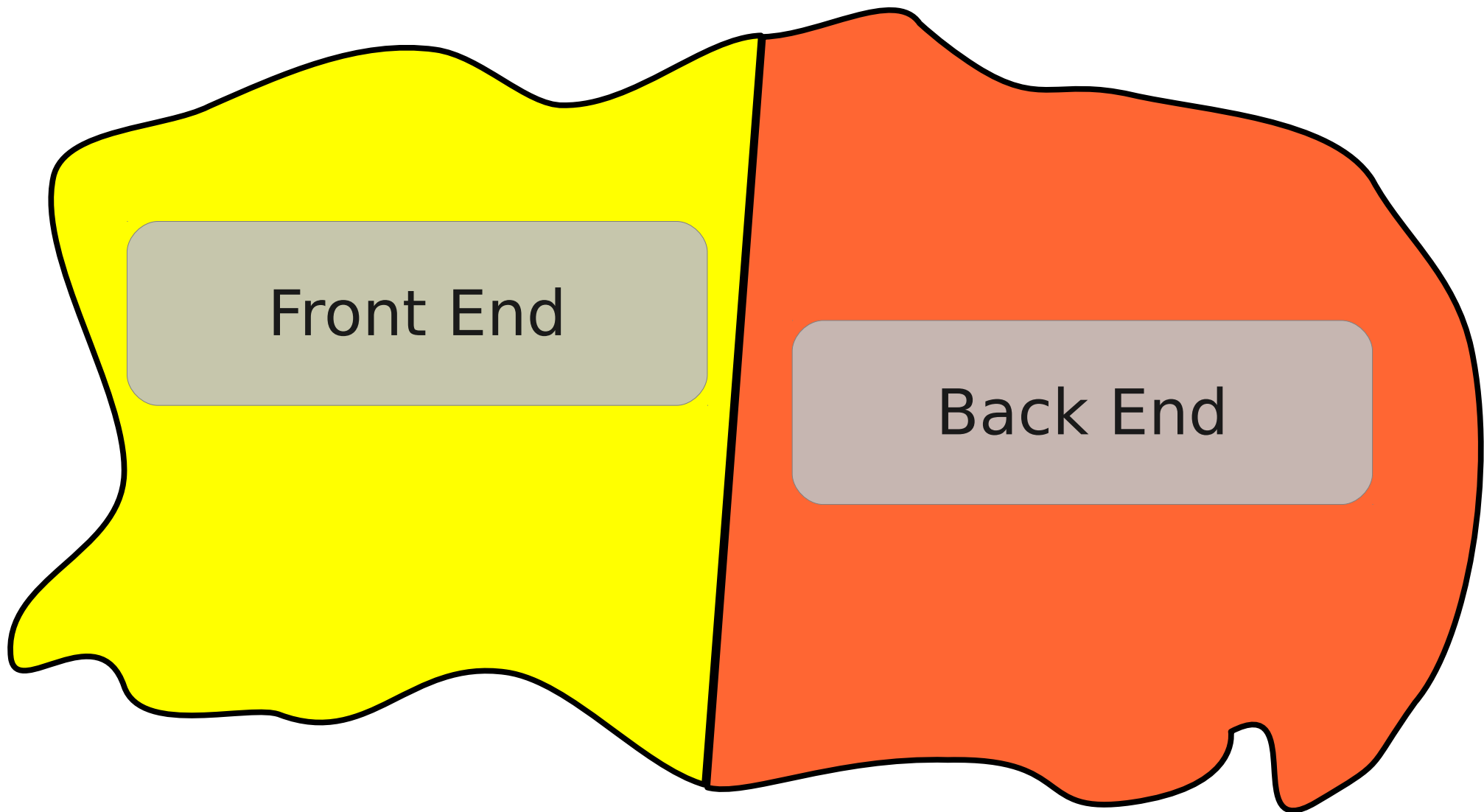
Name	Twitter handle	Hometown
Lite	nerdtube	Berlin
Fanny	fareivunicouu	Bitche
Dajana	DG_Tweety	Berlin
Lucas	mwoR_	Minecourt
Kai	@TechnoKai	Berlin
Konstantin	@konstantinhaase	Halle an der Saale
Tom Stuart	morlice	London
Uta	@MyLifeIsNotCrap	Berlin
PoTe	poteland	Montevideo
Bela	@orbinken	Berlin
Marco Sebold	@marcossebold	Berlin
Vanessa Butz	@VanessaButz	Munich, Germany
Rebecca	bioshmp	Berlin
Tobi	@PragTob	Berlin, Germany



What **parts** does a **web**
application consist of?



Web Application



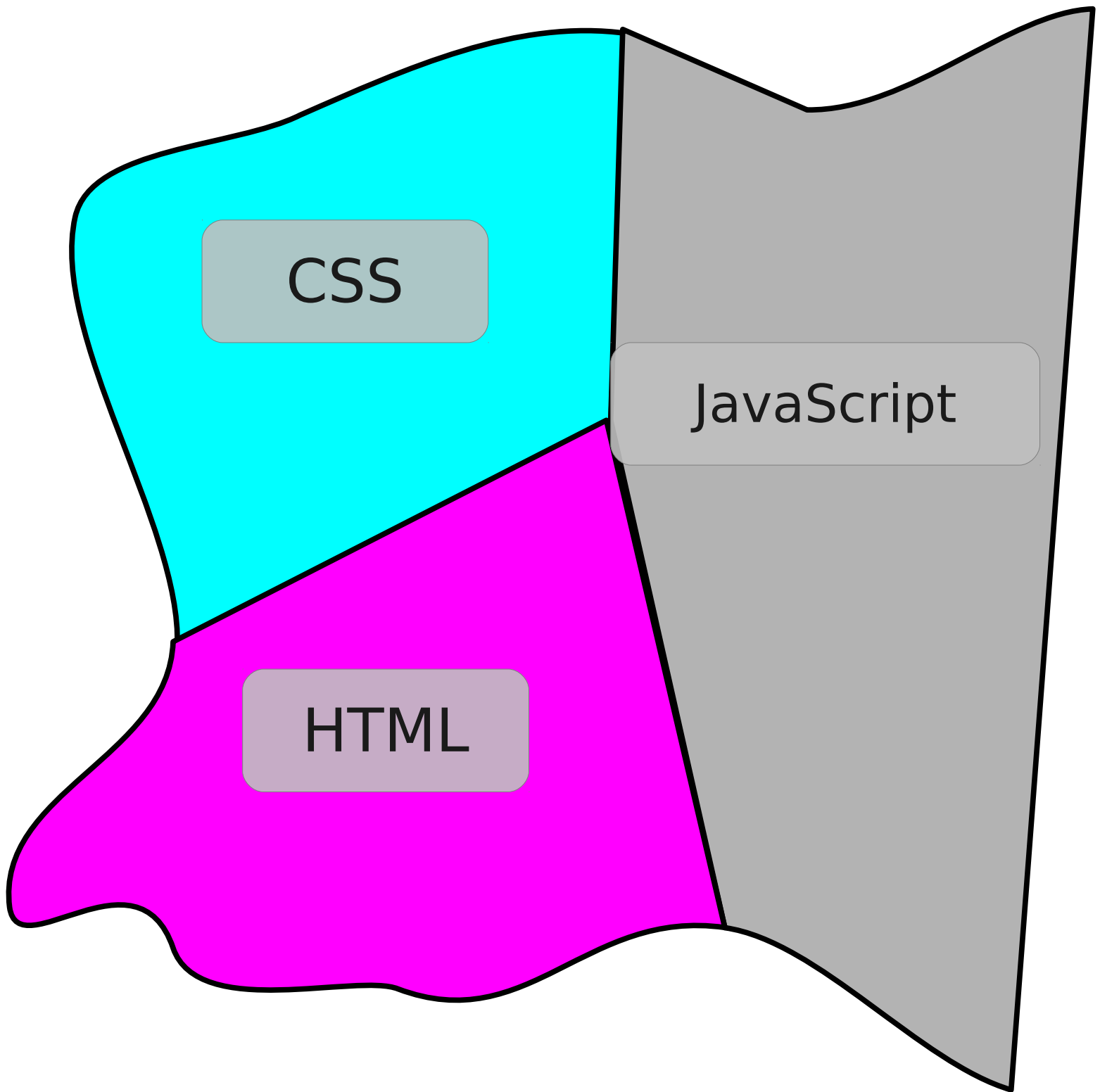
Front End

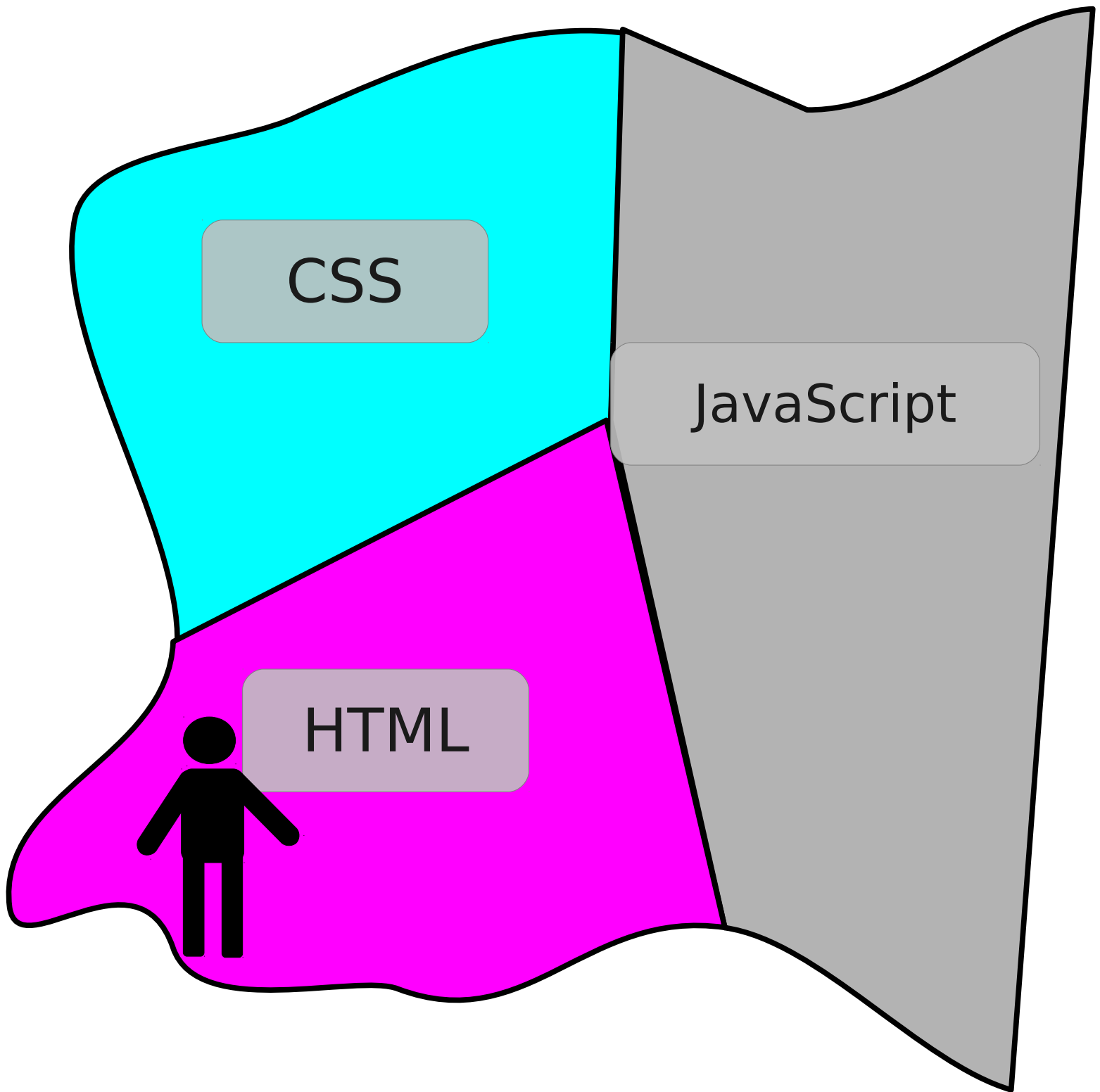
Back End

Front End



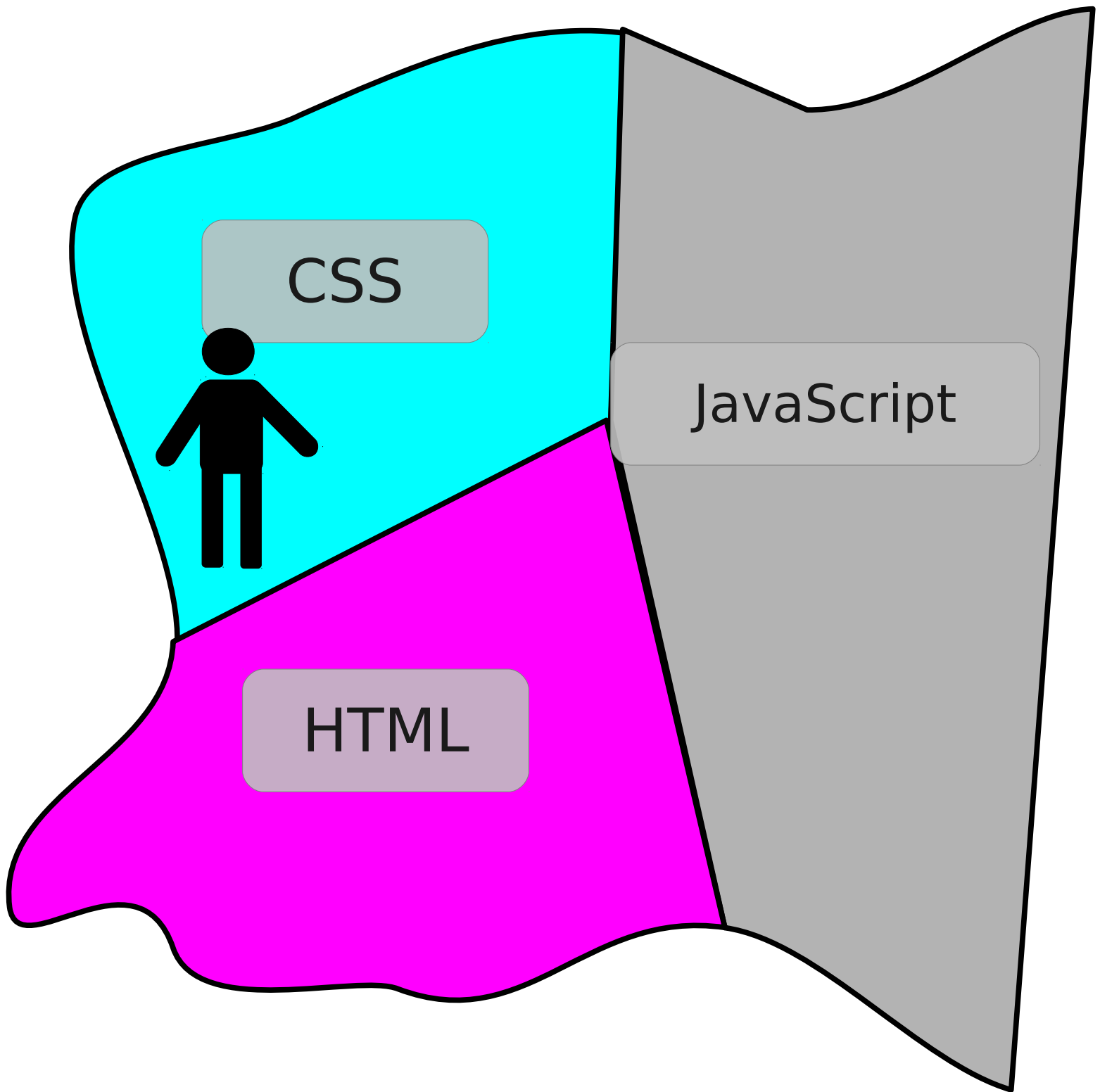
Back End





```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <title>Railsgirls</title>
5 <link rel="stylesheet" href="http://railsgirls.com/assets/bootstrap.css">
6 <link href="/assets/application-3ba9bf7fd774b388207b7bc6f2b8f323.css" media="all" rel="stylesheet" type="text/css" />
7 <script src="/assets/application-8c77725bf4dcc09ab5fb8f6bb10963ed.js" type="text/javascript"></script>
8 <meta content="authenticity_token" name="csrf-param" />
9 <meta content="XrAtTRvkueZ/p7B+DdJcGxuum2ENURiuASxe5WEZDpk=" name="csrf-token" />
10 </head>
11 <body>
12 <div class="navbar navbar-fixed-top">
13 <div class="navbar-inner">
14 <div class="container">
15 <a class="brand" href="/">The workshop app</a>
16 <ul class="nav">
17 <li class="active"><a href="/attendees">Attendees</a></li>
18 </ul>
19 </div>
20 </div>
21 </div>
22
23 <div class="container">
24 <h1>Rails Girls Berlin at eurucamp</h1>
25
26
27 <div class="map_container">
28 <div id="map" class="gmaps4rails_map"></div>
29 </div>
30
31 <script src="//maps.google.com/maps/api/js?v=3.8&sensor=false&key=&libraries=geometry&language=&hl=&region=" type="text/javascript"></script>
32
33 <script type="text/javascript" charset="utf-8">
34 Gmaps.map = new Gmaps4RailsGoogle();
35 Gmaps.load_map = function() {
36 Gmaps.map.map_options.center_longitude = 13.24;
37 Gmaps.map.map_options.center_latitude = 52.31;
38 Gmaps.map.map_options.zoom = 7;
39 Gmaps.map.initialize();
40 Gmaps.map.markers = [{"lat":52.519171,"lng":13.4060912}, {"lat":49.050415,"lng":7.427276}, {"lat":52.519171,"lng":13.4060912}, {"lat":48.302176,"lng":6.133863}, {"lat":52.519171,"lng":13.4060912}];
41 Gmaps.map.create_markers();
42 Gmaps.map.adjustMapToBounds();
43 Gmaps.map.callback();
44 };
45 Gmaps.oldOnload = window.onload;
46 window.onload = function() { Gmaps.triggerOldOnload(); Gmaps.loadMaps(); };
47 </script>
48
49
50 <table>
51 <tr>
52 <th class='first'></th>
53 <th>Name</th>
54 <th>Twitter handle</th>
55 <th>Hometown</th>
56 </tr>
57
58 <tr>
59 <td class="first"></td>
60 <td><a href="/attendees/1">Ute</a></td>
61 <td><a href="http://twitter.com/nerdbabe" target="_blank">nerdbabe</a></td>
62 <td>Berlin</td>
63 </tr>
64 <tr>
65 <td class="first"></td>
```

Structure and content



```

1  #logo {
2    font-size: 20px;
3    font-family: "Helvetica Neue",Helvetica,Arial,sans-serif;
4    float: left;
5    padding: 10px;
6  }
7  body { padding-top: 100px; }
8  footer { margin-top: 100px; }
9  table, td, th { vertical-align: middle !important; border: none !important; padding-right: 18px; width: 800px; }
10 th { border-bottom: 1px solid #DDD !important; padding-right: 18px;}
11 td.picture { width: 140px; }
12 td.picture img { width: 140px; }
13 td.first, th.first { width: 50px; }
14 .map_container {
15   padding: 6px;
16   border-width: 1px;
17   border-style: solid;
18   border-color: #ccc #ccc #999 #ccc;
19   -webkit-box-shadow: rgba(64, 64, 64, 0.5) 0 2px 5px;
20   -moz-box-shadow: rgba(64, 64, 64, 0.5) 0 2px 5px;
21   box-shadow: rgba(64, 64, 64, 0.1) 0 2px 5px;
22   width: 800px;
23 }
24
25 .gmaps4rails_map {
26   width: 800px;
27   height: 400px;
28 }
29
30 .bing_map {
31   position: absolute;
32   top: 20;
33   left: 10;
34   width: 400px;
35   height: 400px;
36   border:#555555 2px solid;
37 }
38 body {
39   background-color: #fff;
40   color: #333;
41   font-family: verdana, arial, helvetica, sans-serif;
42   font-size: 13px;
43   line-height: 18px; }
44
45 p, ol, ul, td {
46   font-family: verdana, arial, helvetica, sans-serif;
47   font-size: 13px;
48   line-height: 18px; }
49
50 pre {
51   background-color: #eee;
52   padding: 10px;
53   font-size: 11px; }
54
55 a {
56   color: #000; }
57 a:visited {
58   color: #666; }
59 a:hover {
60   color: #fff;
61   background-color: #000; }
62
63 div.field, div.actions {
64   margin-bottom: 10px; }
65
66 #notice {
67   color: green; }
68
69 .field_with_errors {
70   padding: 2px; }

```

Styling to transform...

- [Attendees](#)

Rails Girls Berlin at eurucamp

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Ute	nerdbabe	Berlin
Fanny	fannivuniconnu	Bitche
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Lucas	medk_	Mirecourt
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Konstantin	@konstantinhaase	Halle an der Saale
Tom Stuart	mortice	London
Uta	@MyLifeIsNotCrap	Berlin
PoTe	poteland	Montevideo
Béla	@drblinken	Berlin
Marco Sebald	@marcosebald	Berlin
Vanessa Butz	@VanessaButz	Munich, Germany
Rebecca	bioshrimp	Berlin
Tobi	@PragTob	Berlin, Germany
Ula	@UrszulaPap	Lodz
Dimitri	diminutively	Langenargen
Julia		Berlin
Sabrina	@sabrna	Berlin
Claudia	@claudlindner	Berlin
Ted Young	tedsuooo	Kailua Kona, HI
Inka		Freiburg
Sevi	@dreamingoflions	Berlin
Anja	_tyranja_	Magdeburg
Joana	_antimaterie_	Berlin
Chris Berkhout	@chrisberkhout	Melbourne, Australia
Lara	@citylinguist	Berlin
Sven Fuchs	svenfuchs	Berlin
CC Roy	@CCR	Washington DC USA
Sonia Gandhi	SexySoniaINC	New Delhi
Me		Penang
Matti	@mrusila	Oulu
Ross	@run4kelly	Aurora, Colorado
Wesley Conde		São Paulo, SP



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PoTe	poteland	Montevideo
Béla	@drblinken	Berlin
Marco Sebald	@marcosebald	Berlin
Vanessa Butz	@VanessaButz	Munich, Germany
Rebecca	bioshrimp	Berlin
Tobi	@PragTob	Berlin, Germany

...into this.

Zen Garden

The Beauty of CSS Design

A demonstration of what can be accomplished visually through [CSS-based design](#). Select any style sheet from the list to load it into this page.

Download the sample [html file](#) and [css file](#)

with the web.

So What is This About?

There is clearly a need for [CSS](#) to be taken seriously by graphic artists. The Zen Garden aims to excite, inspire, and encourage participation. To begin

The Road to Enlightenment

Littering a dark and dreary road lay the past relics of browser-specific tags, incompatible DOMs, and broken [CSS](#) support.

Today, we must clear the mind of past practices. Web enlightenment has been achieved thanks to the tireless efforts of folk like the [W3C](#), [WaSP](#) and the major browser creators.

The css Zen Garden invites you to relax and meditate on the important lessons of the masters. Begin to see with clarity. Learn to use the (yet to be) time-honored techniques in new and invigorating fashion. Become one



select a design:

Under the Sea! by Eric Stoltz

Make 'em Proud by Michael McAgnon and Scotty Reifsnyder

Orchid Beauty by Kevin Addison

Oceanscape by Justin Gray

CSS Co., Ltd. by Benjamin Klemm

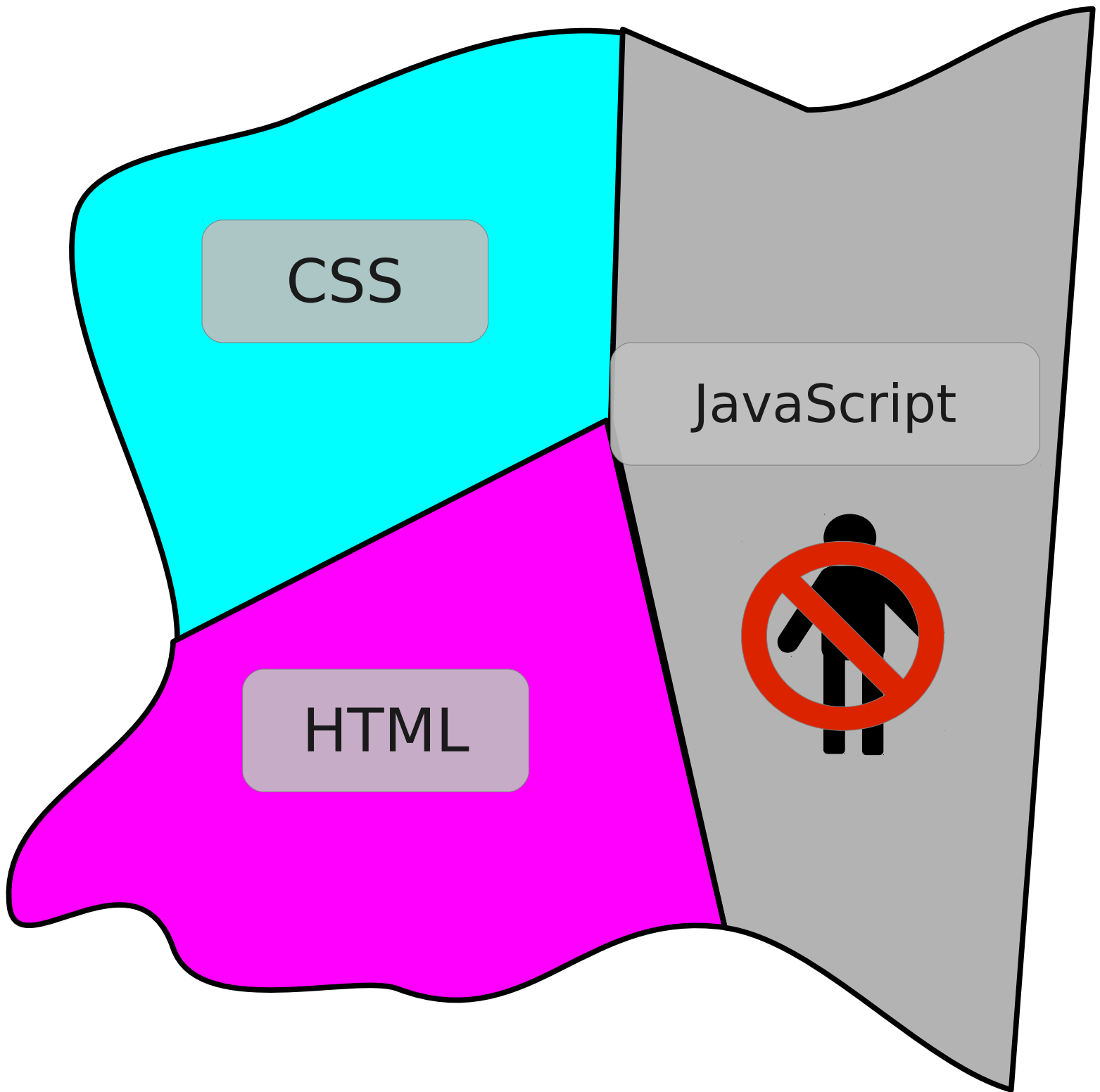
Sakura by Tatsuya Uchida

Kyoto Forest by John Politowski

A Walk in the Garden by Simon Van Hauwermeiren

archives:

[next designs »](#)

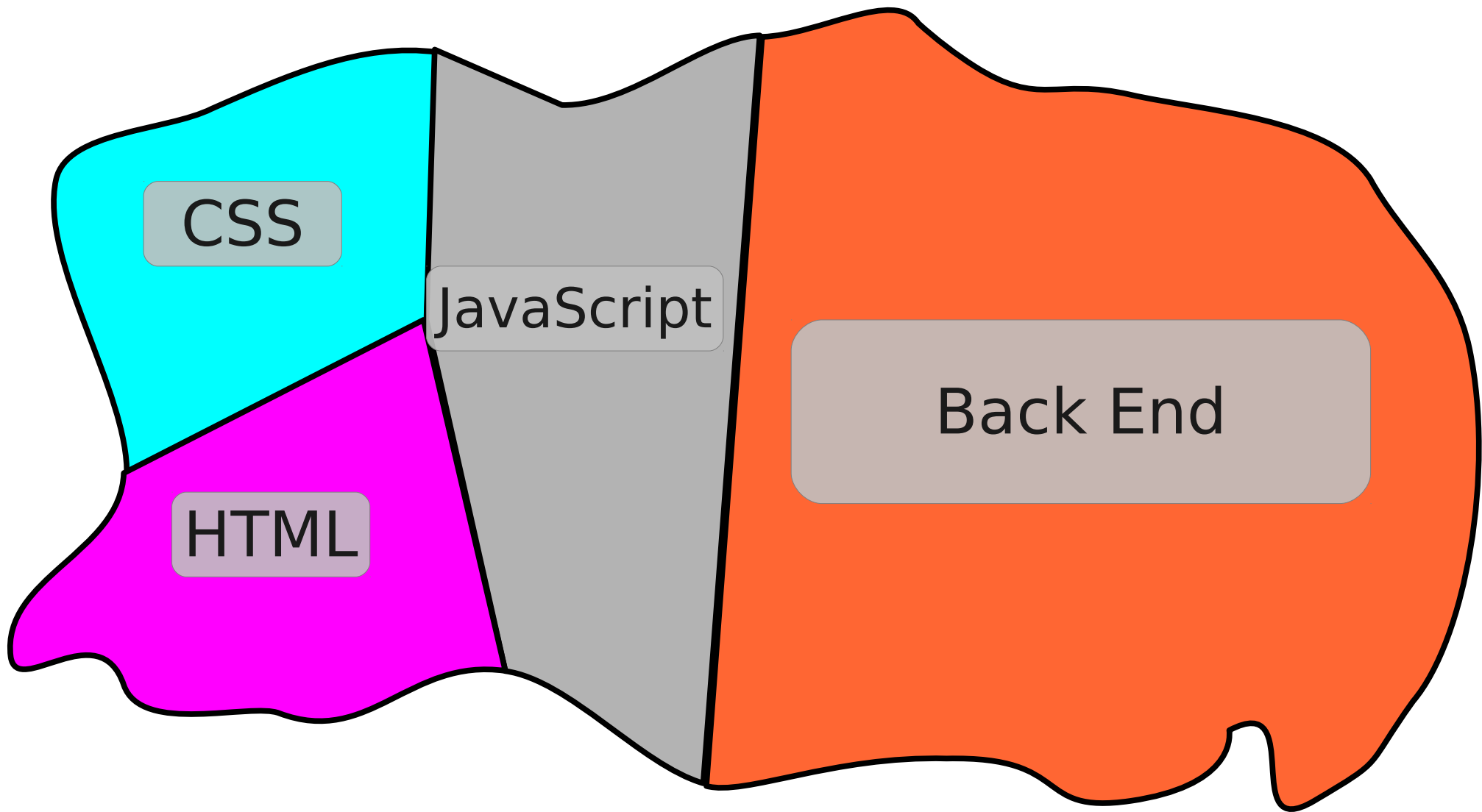


CSS

JavaScript

HTML



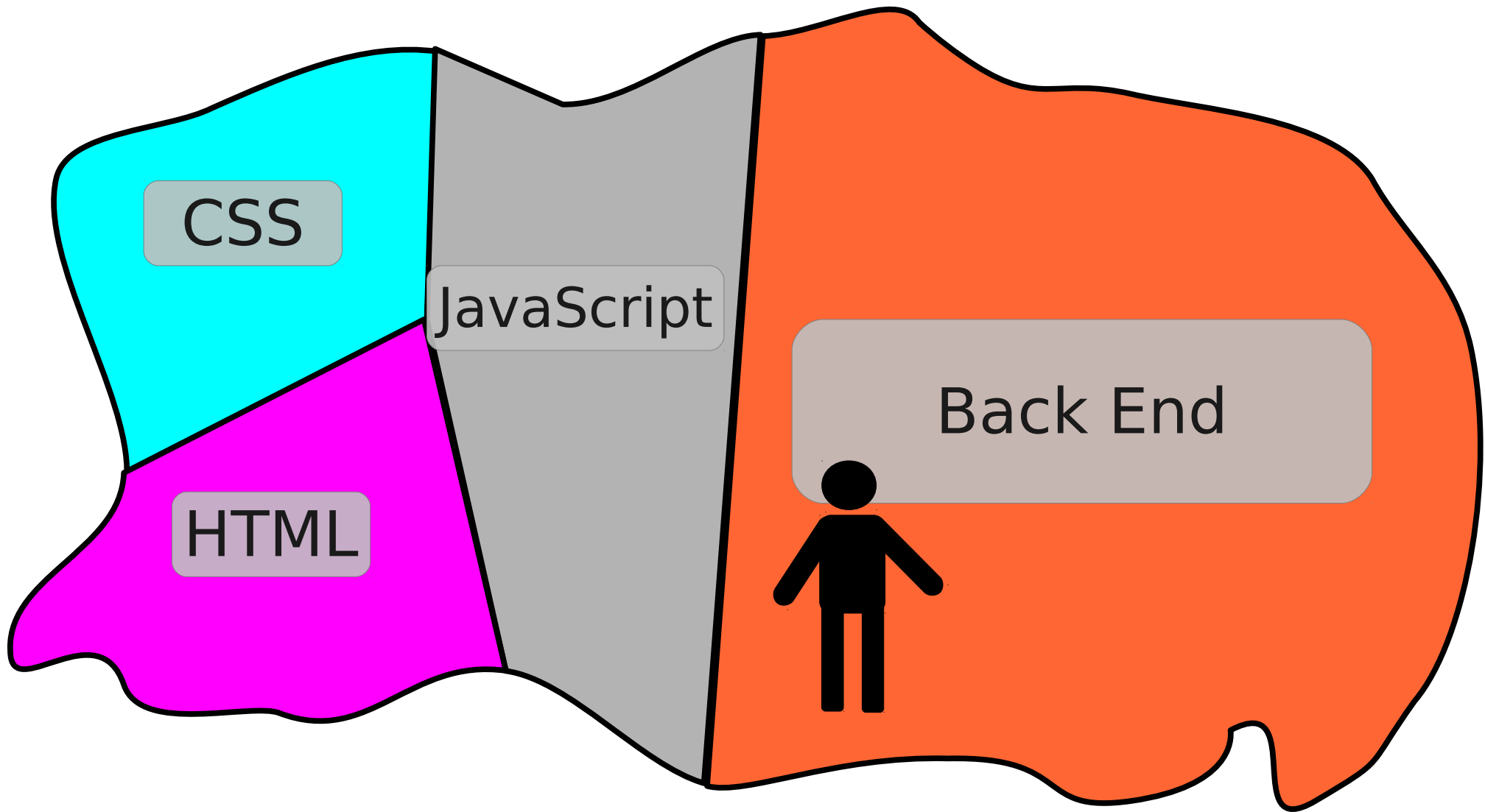


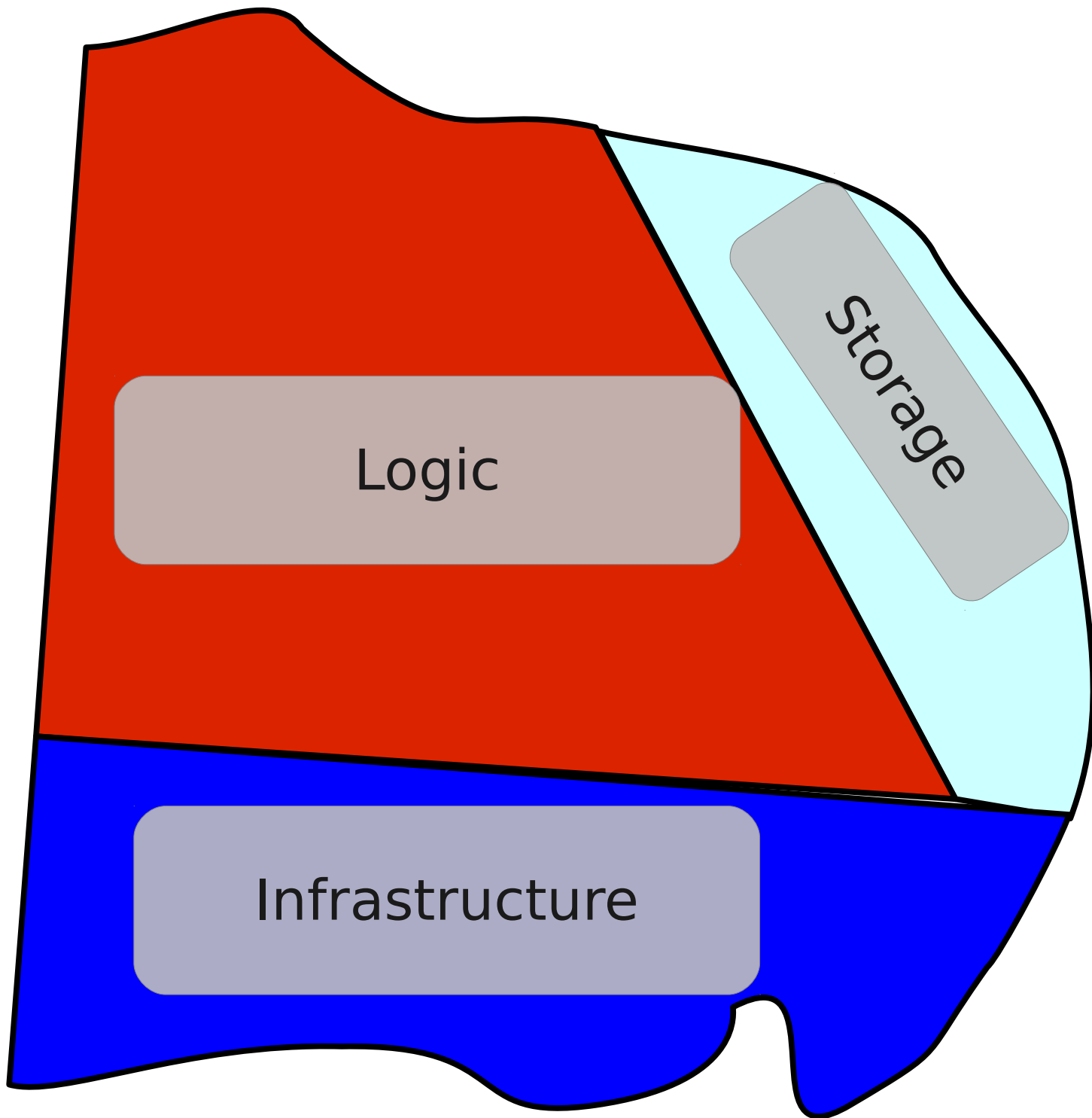
CSS

HTML

JavaScript

Back End

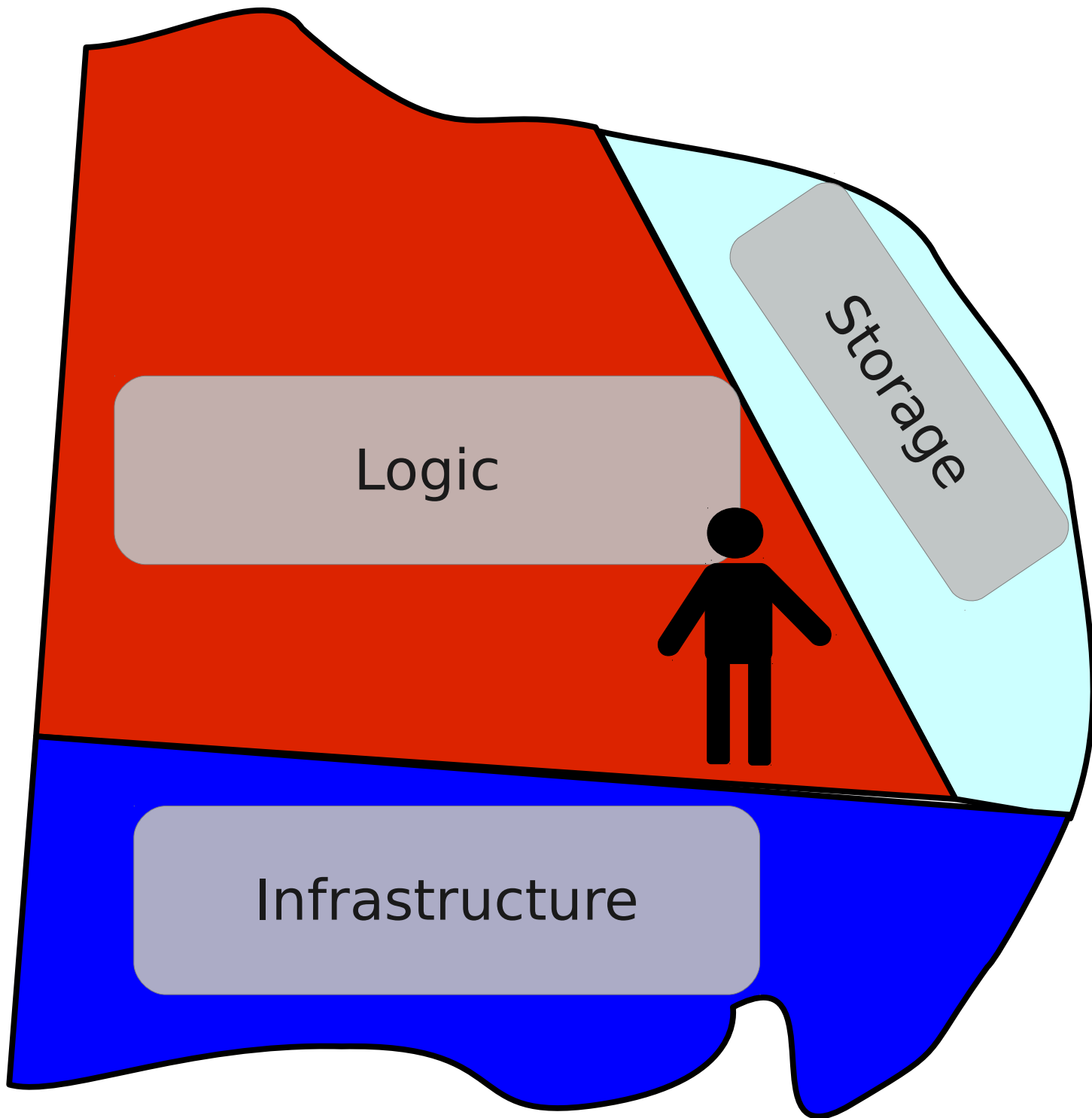




Logic

Storage

Infrastructure



Logic

Storage

Infrastructure

Logic



- Behaviour
- Implements the business logic
- Ties all the parts together
- Generates content

Ruby on Rails



But what is **Ruby on Rails**?

A web application
framework written in Ruby



Ruby

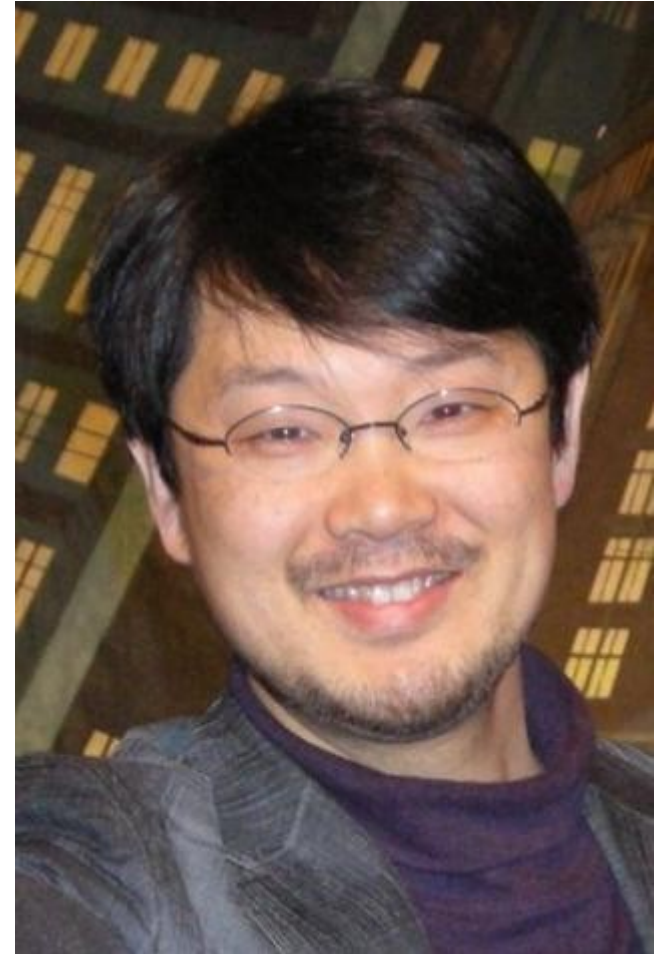
A Programmer's Best Friend



- A general purpose **programming language**
- Principle of least surprise
- Invented by Yukihiro Matsumoto

*"I hope to see Ruby **help every programmer** in the world to be productive, and to **enjoy programming**, and to **be happy**. That is the **primary purpose of Ruby language**."*

Yukihiro Matsumoto

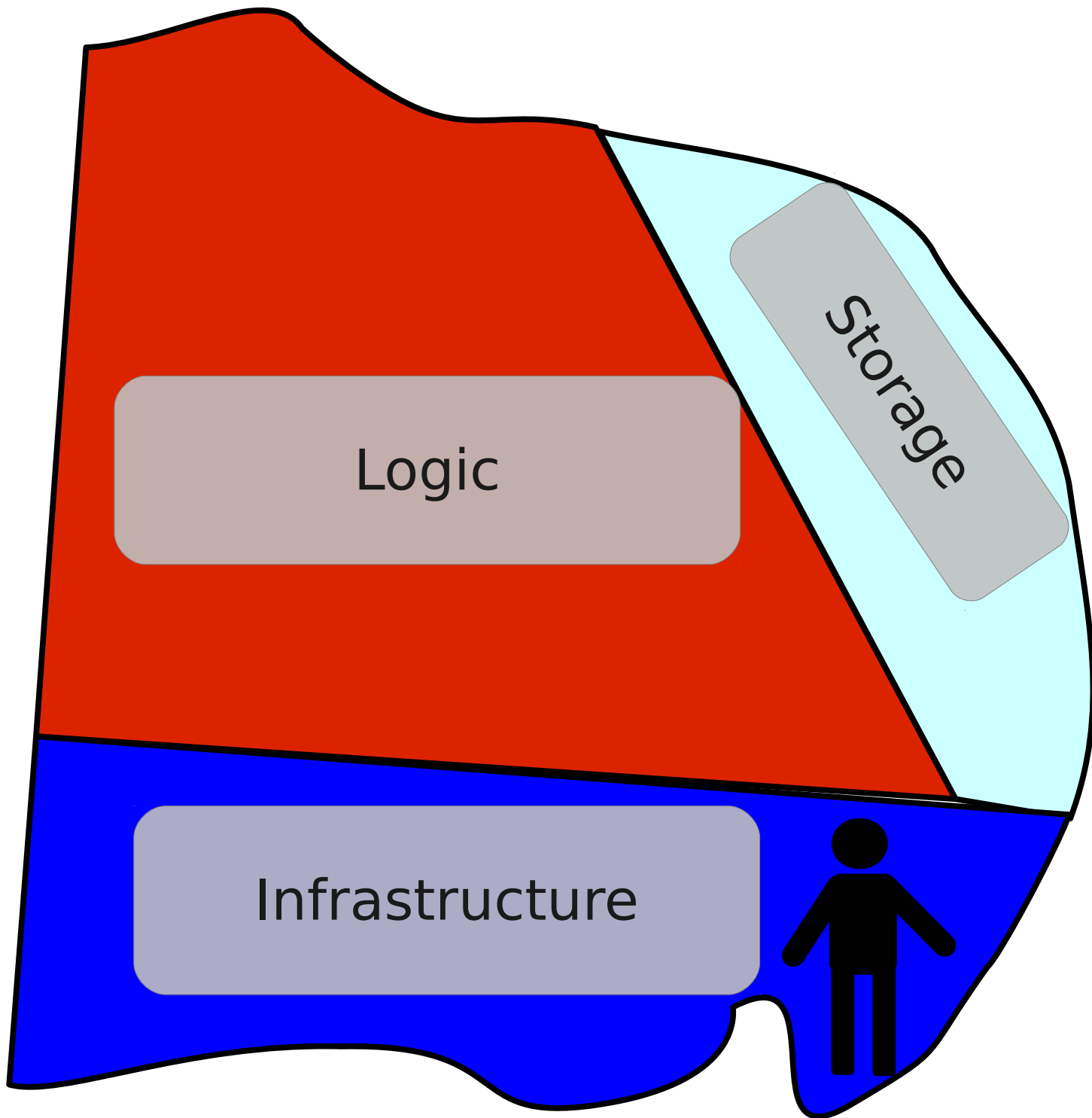




Ruby on Rails

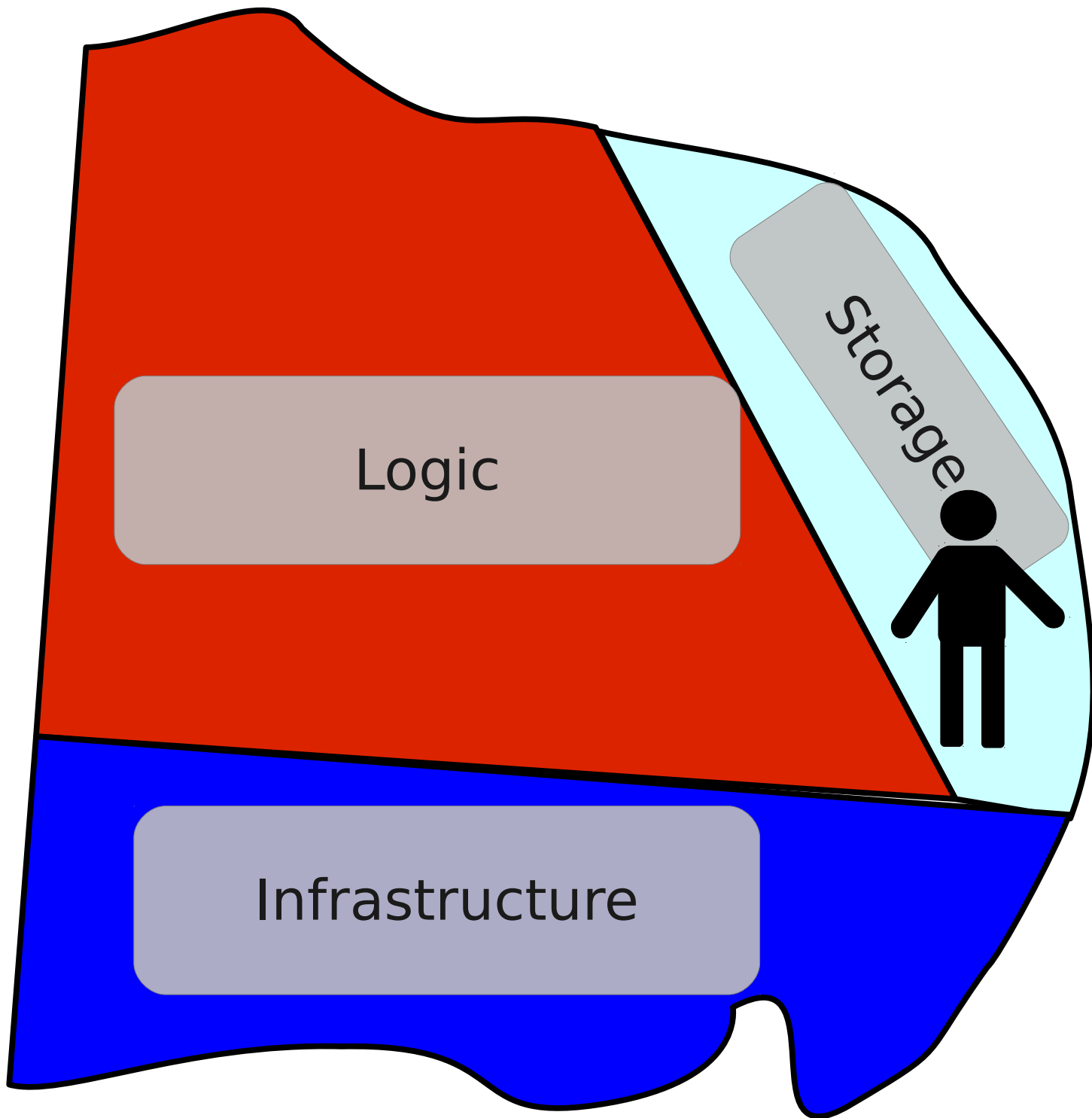


- Framework written in Ruby
- set of **functionality** to help write web applications
 - Connecting to the database (ActiveRecord)
 - Generating HTML (ERB)
 - Pays attention to security
 - ... and so much more!
- **M**odel **V**iew **C**ontroller
- You write in **Ruby**



Web Server



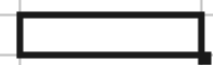


A tall, slightly wobbly stack of papers and documents is positioned on a light-colored wooden surface. The stack is composed of numerous sheets of white paper, with some pages showing signs of age or discoloration. The edges of the papers are uneven, and the stack is taller than it is wide. The background is a plain, light-colored wall.

Storing all your
data...

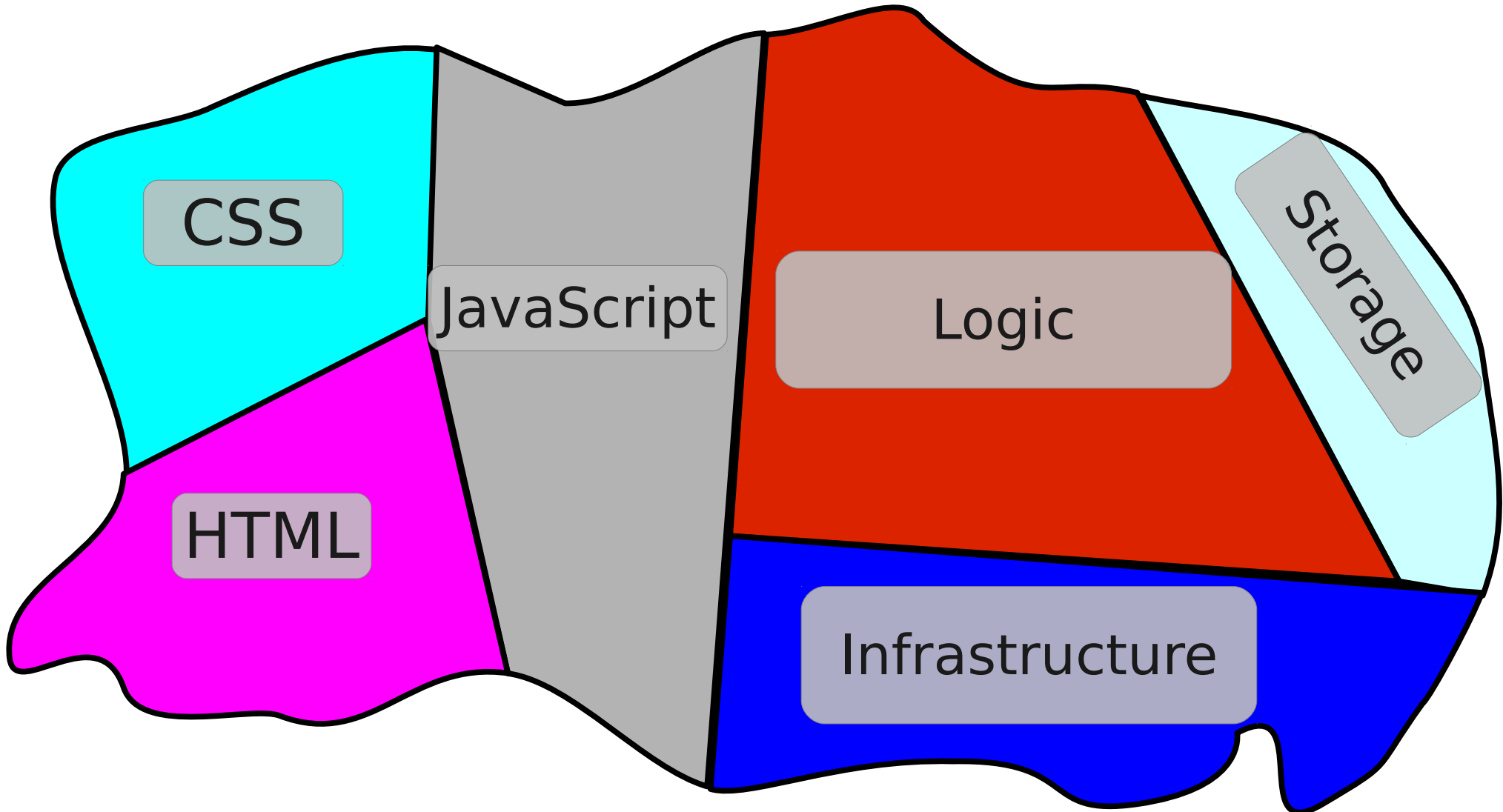
	A	B	C	D	E	F	G	H	I	J	K
1	id	name	Twitter_handle	Bio	Address	Picture	Comment				
2	1	Tobi	@PragTob	IT-Student	Berlin		likes green				
3	2	Fanny	@fannivunicor	French expa	Berlin		J'adore Rails...				
4	3	Anja	@_tyranja_	Magdeburg							
5	4	Tobi	@PragTob	IT-Student	Berlin		likes green				
6	5	Fanny	@fannivunicor	French expa	Berlin		J'adore Rails...				
7	6	Anja	@_tyranja_	Magdeburg							
8	7	Tobi	@PragTob	IT-Student	Berlin		likes green				
9	8	Fanny	@fannivunicor	French expa	Berlin		J'adore Rails...				
10	9	Anja	@_tyranja_	Magdeburg							
11	10	Tobi	@PragTob	IT-Student	Berlin		likes green				
12	11	Fanny	@fannivunicor	French expa	Berlin		J'adore Rails...				
13	12	Anja	@_tyranja_	Magdeburg							
14	13	Tobi	@PragTob	IT-Student	Berlin		likes green				
15	14	Fanny	@fannivunicor	French expa	Berlin		J'adore Rails...				
16	15	Anja	@_tyranja_	Magdeburg							
17	16	Tobi	@PragTob	IT-Student	Berlin		likes green				
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26	25	Tobi	@PragTob	IT-Student	Berlin		likes green				
27	26	Fanny	@fannivunicor	French expa	Berlin		J'adore Rails...				
28	27	Anja	@_tyranja_	Magdeburg							
29	28	Tobi	@PragTob	IT-Student	Berlin		likes green				
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31	30	Anja	@_tyranja_	Magdeburg							
32	31	Tobi	@PragTob	IT-Student	Berlin		likes green				
33	32	Fanny	@fannivunicor	French expa	Berlin		J'adore Rails...				
34	33	Anja	@_tyranja_	Magdeburg							
35	34	Tobi	@PragTob	IT-Student	Berlin		likes green				
36	35	Fanny	@fannivunicor	French expa	Berlin		J'adore Rails...				
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38	37	Tobi	@PragTob	IT-Student	Berlin		likes green				
39	38	Fanny	@fannivunicor	French expa	Berlin		J'adore Rails...				

...in giant tables

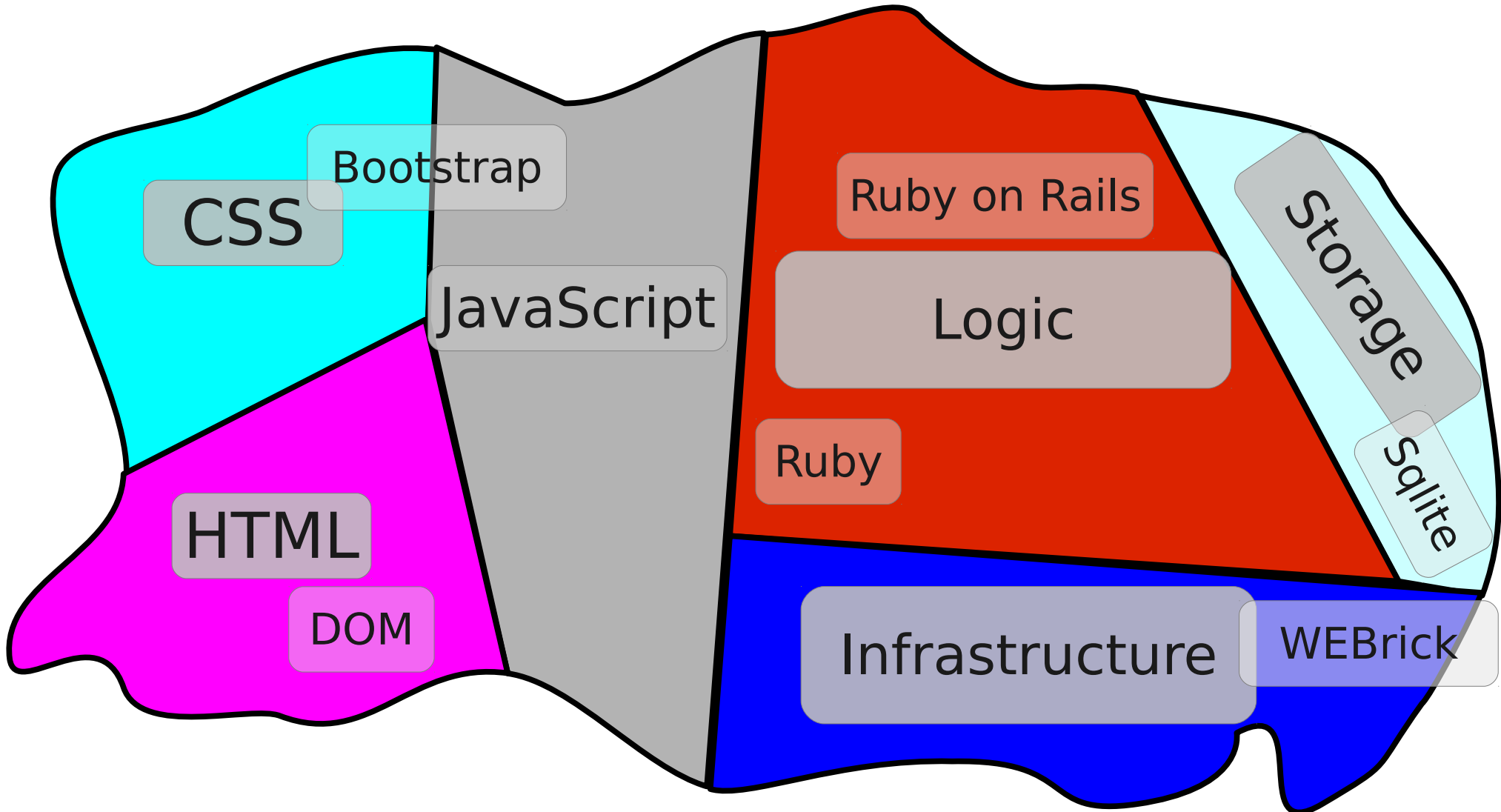


Recap

Web Application Landscape



Web Application Landscape

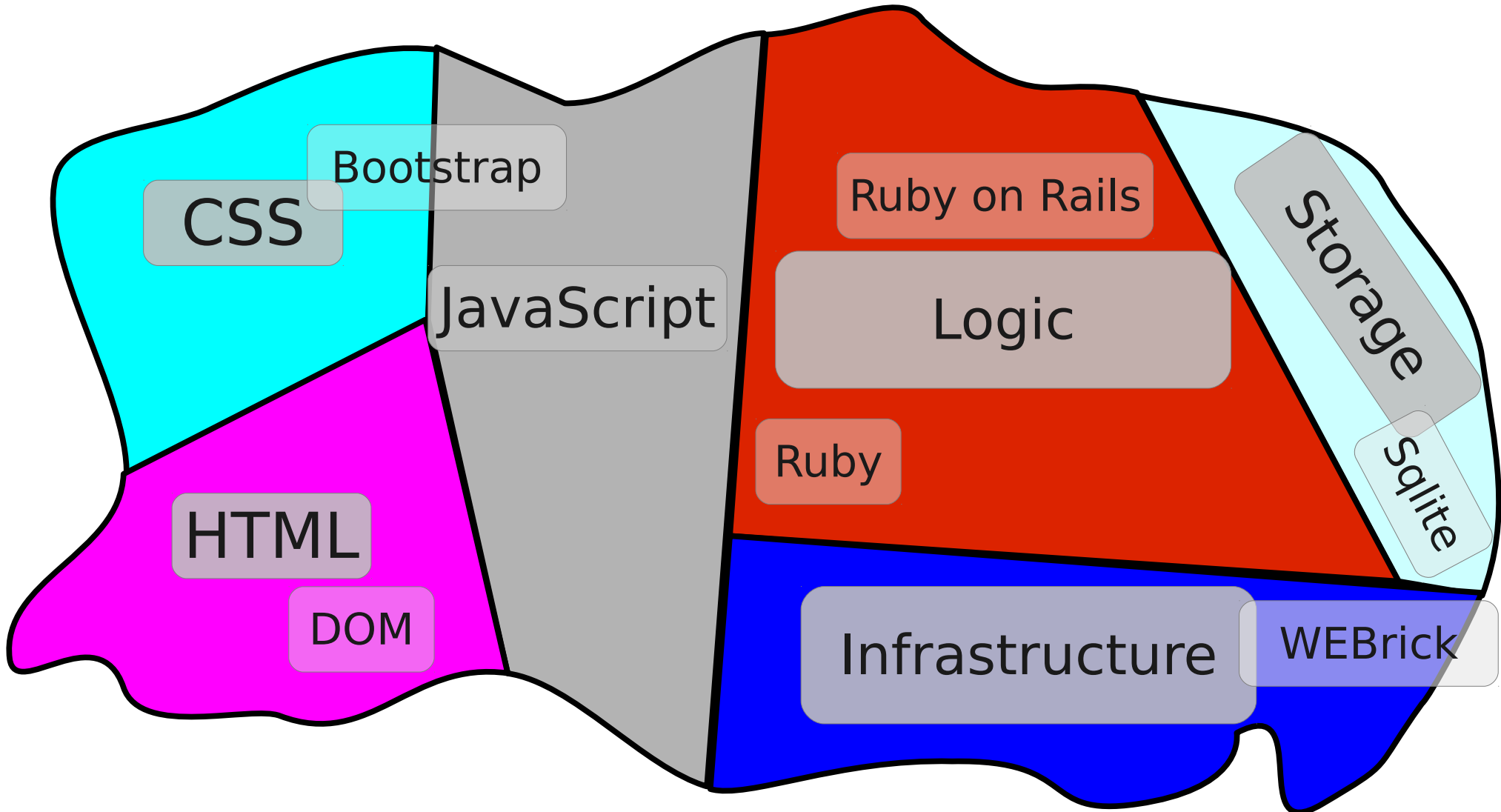


Bento Box Exercise



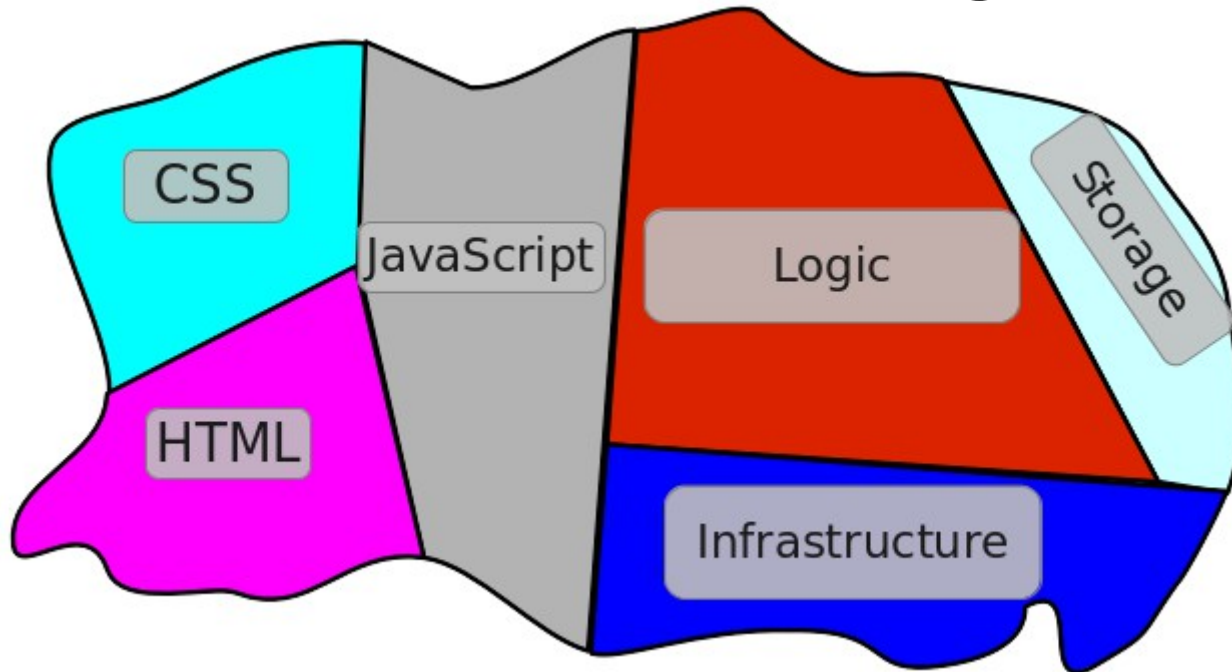
- Sort technologies and associated words into the landscape
- 5 minutes time

Web Application Landscape

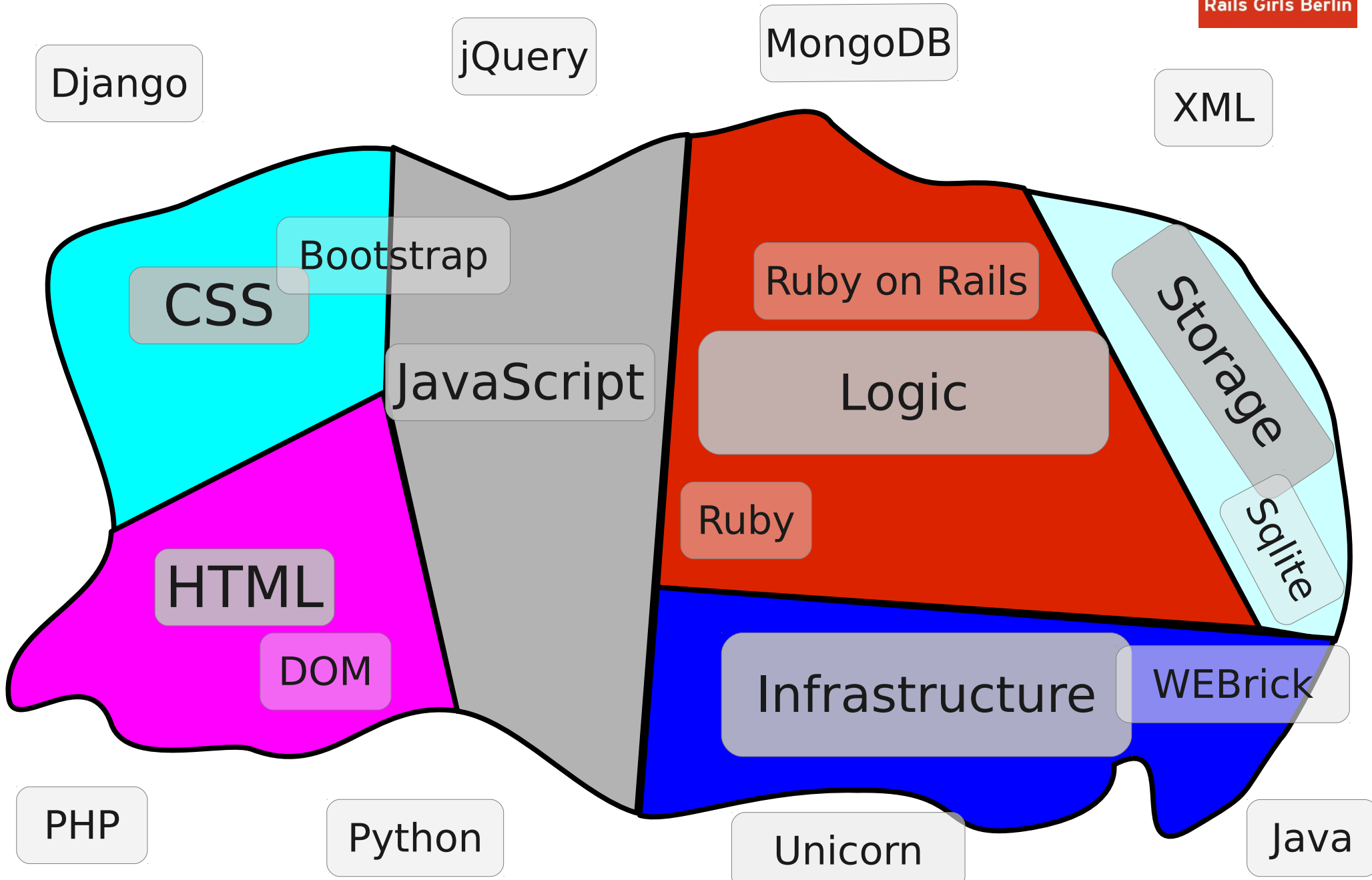


Bento Box Exercise

- jQuery
- Django
- Unicorn
- PHP
- Python
- XML
- Java
- MongoDB



Web Application Landscape



Django

jQuery

MongoDB

XML

CSS

Bootstrap

Ruby on Rails

JavaScript

Logic

Storage

HTML

Ruby

Sqlite

DOM

Infrastructure

WEBrick

PHP

Python

Unicorn

Java

Question time



Where to go from here?



- I gather resources **here**, such as:
 - <http://pragtob.github.io/rails-beginner-cheatsheet/>
 - <http://ruby.railstutorial.org/>
 - <http://rubymonk.com/>
 - <http://www.codeschool.com/courses/rails-for-zombies>
 - <http://rubykoans.com/>
 - <http://railscasts.com/>
- Rails Girls Berlin project groups



Thank you and enjoy
coding!

Tobias Pfeiffer
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[listen to me talking about learning Ruby \(German\)](#)

Photo credit



- <http://www.flickr.com/photos/captainkimo/5918836159/>
- <http://www.flickr.com/photos/weppos/7486411688/>
- <http://www.flickr.com/photos/railsgirlsberlin/7882839698/in/photostream>
- <http://www.flickr.com/photos/nirak/644336486/>