



progress engine
we will develop it

#tceh

2016

Врубиться в Ruby

Лекция 4

Лекция 4



- Основы протокола HTTP, его будущее
- Основы HTML и CSS
- JavaScript и CoffeeScript
- JS-фреймворки - что есть интересного
- Что такое REST
- Основы SQL (PostgreSQL, MySQL)
- Что такое NoSQL (RethinkDB)
- Что такое KVS (Redis, Tarantool)
- Самое первое rails-приложение

ОСНОВЫ протокола HTTP

Протокол HTTP

Метод URI HTTP/Версия

GET / HTTP/1.1

где

GET - метод

/ - URI (Uniform Resource Identifier,
унифицированный идентификатор ресурса)

1.1 - версия протокола

HTTP response message

status line
(protocol
status code
status phrase)

header
lines

data, e.g.,
requested
HTML file

```
HTTP/1.1 200 OK\r\n
Date: Sun, 26 Sep 2010 20:09:20 GMT\r\n
Server: Apache/2.0.52 (CentOS)\r\n
Last-Modified: Tue, 30 Oct 2007 17:00:02
      GMT\r\n
ETag: "17dc6-a5c-bf716880"\r\n
Accept-Ranges: bytes\r\n
Content-Length: 2652\r\n
Keep-Alive: timeout=10, max=100\r\n
Connection: Keep-Alive\r\n
Content-Type: text/html; charset=ISO-8859-
      1\r\n
\r\n
data data data data data ...
```

Протокол HTTP2



- 1 - http2 - бинарный протокол
- 2 - Mozilla и Google заявили, что они будут поддерживать только http2 с TLS-шифрованием
- 3 - протокол будет поддерживать сжатие данных
- 4 - нет необходимости использовать шардинг запросов (http 1 позволяет использовать не более 6-8 одновременных запросов)
- 5 - http2-сервера будут обратно совместимы с http 1-браузерами
- 6 - протокол сделан на базе протокола Google SPDY

Дополнительные ссылки

<https://habrahabr.ru/post/221427/> - описание http2

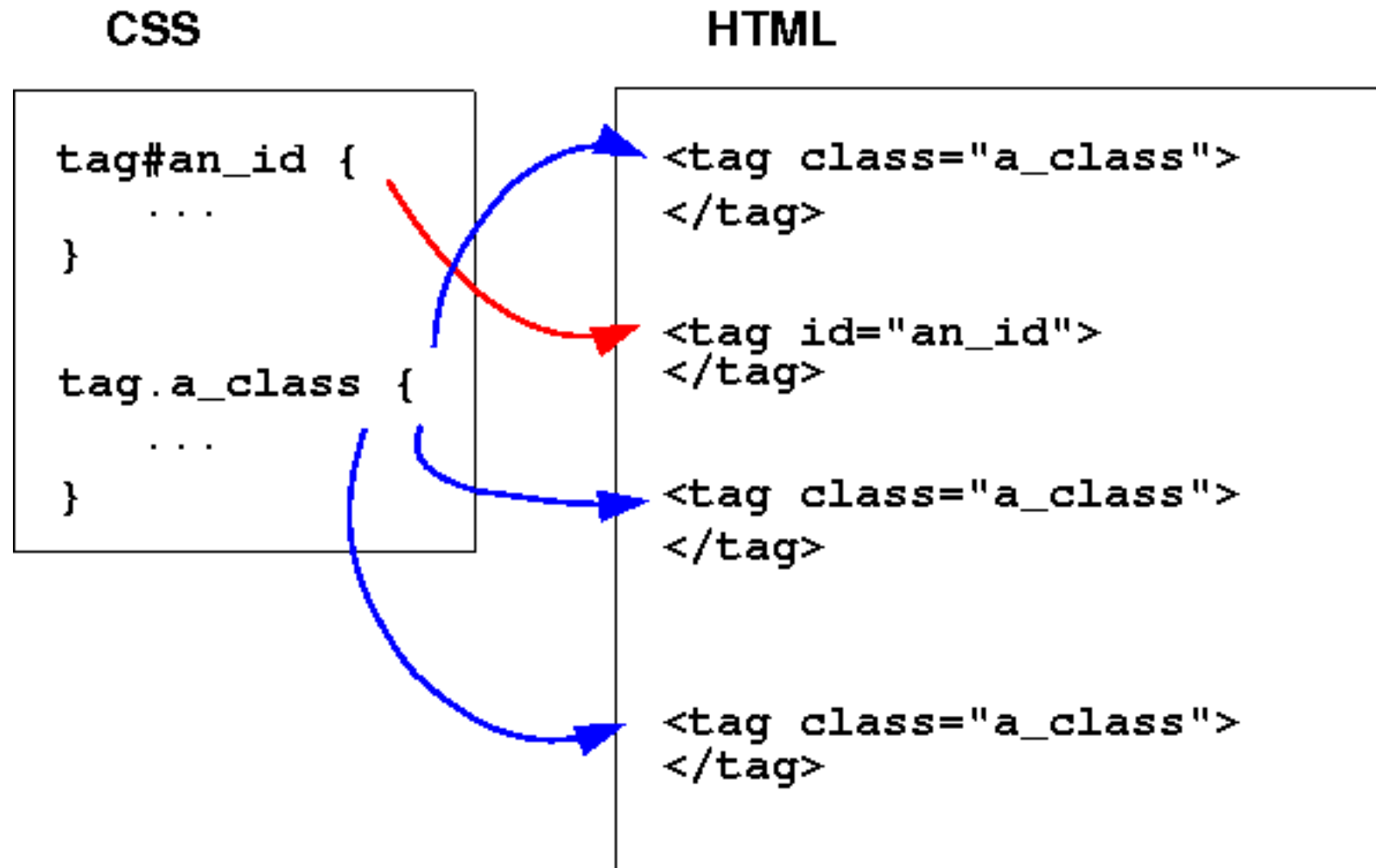
<https://http2.akamai.com/demo> - сравнение скорости
http1 и http2

HTML, CSS и JavaScript

HTML

```
1 <!DOCTYPE html>
2 <html>
3 <meta charset="utf-8">
4 <title>Example Web Page</title>
5 <body>
6
7 <p>This is an example paragraph</p>
8
9 </body>
10 </html>
11
```

CSS



CSS

The diagram illustrates the components of a CSS declaration: `a { background-color: yellow; }`. Labels and arrows identify the parts:

- selector**: A bracket above the `a`.
- property**: A blue bracket above `background-color`.
- value**: A green bracket above `yellow`.
- declaration end**: A downward arrow pointing to the closing curly brace `}`.
- declaration start**: An upward arrow pointing to the opening curly brace `{`.
- property/value separator**: An upward arrow pointing to the colon `:`.
- declaration separator**: An upward arrow pointing to the semicolon `;`.

JavaScript

Example Code-run

```
console.log("Adding code to the queue");  
setTimeout(function() { // Added somewhere in Heap  
    console.log("Running next code from queue");  
}, 0);
```

```
function a(x) { // Added somewhere in Heap  
    console.log("a() frame added to stack");  
    b(x);  
    console.log("a() frame removed from stack");  
}
```

```
function b(y) { // Added somewhere in Heap  
    console.log("b() frame added to stack");  
    console.log("Value passed in is " + y);  
    console.log("b() frame removed from stack");  
}
```

```
console.log("Starting work for this stack");  
a(42);  
console.log("Ending work for this stack");
```

```
Adding code to the queue  
Starting work for this stack  
a() frame added to stack  
b() frame added to stack  
Value passed in is 42  
b() frame removed from stack  
a() frame removed from stack  
Ending work for this stack  
Running next code from queue
```

SCSS / Sass + CoffeeScript

Yes, it's true, Rails 3.1 is going to ship with CoffeeScript and SCSS in the box for use with the new asset pipeline. It's bad ass.

less than a minute ago via Tweetie for Mac ☆ Favorite ↺ Retweet ↻ Reply



DHH
dhh

Coffee Script

CoffeeScript

"Javascript in a simple way"

```
foo ->  
  bar 'foo'  
, -> 'bar'
```

```
foo ->  
bar 'foo'  
, -> 'bar'
```

```
foo -> bar 'foo'  
  
, -> 'bar'
```

Compiled Javascript

```
foo(function() {  
  return bar('foo');  
}, function() {  
  return 'bar';  
});
```

```
foo(function() {});  
  
bar('foo', function() {  
  return 'bar';  
});
```

```
foo(function() {  
  return bar('foo', function() {  
    return 'bar';  
  });  
});
```

SCSS

SCSS

```
1  section {  
2    height: 100px;  
3    width: 100px;  
4  
5    .class-one {  
6      height: 50px;  
7      width: 50px;  
8  
9      .button {  
10       color: #074e68;  
11     }  
12   }  
13 }
```

CSS

```
1  section {  
2    height: 100px;  
3    width: 100px;  
4  }  
5  
6  section .class-one {  
7    height: 50px;  
8    width: 50px;  
9  }  
10  
11 section .class-one .button {  
12   color: #074e68;  
13 }
```

JS Frameworks

- 1 - Angular.js от Google
- 2 - Backbone.js
- 3 - Ember.js
- 4 - React.js от Facebook
- 5 - Flux (различные версии)
- 6 - Redux.js
- 7 - Ractive.js от Guardian
- 8 - Mithril.js
- 9 - Knockout.js
- 10 - Spine.js
- 11 - Riot.js
- 12 - Mootools.js

JS Frameworks

<http://todomvc.com>

REST <==> CRUD

REpresentative State Transfer

HTTP METHODS – CRUD in REST

Methods	CRUD	Example
GET	Fetch all or any resource	GET /user/ - Fetch all GET /user/1 – Fetch User 1
POST	Create a Resource	POST /user?name=user1&age=20
PUT	Update a Resource	PUT /user/1? name=changed-user1&age=22
DELETE	Delete a Resource	DELETE /user/1
HEAD	Fetch Metainfo as header	HEAD /user
OPTIONS	Fetch all VERBS allowed	OPTIONS /user

Databases - SQL & NoSQL

SQL

ISBN	title	author	format	price
9780992461225	JavaScript: Novice to Ninja	Darren Jones	ebook	29.00
9780994182654	Jump Start Git	Shaumik Daityari	ebook	29.00

SQL - основные команды

```
SELECT * from users WHERE user_id = 1;
```

```
INSERT INTO book (  
    `ISBN`, `title`, `author`  
)  
VALUES (  
    '9780992461256',  
    'Full Stack JavaScript',  
    'Colin Ihrig & Adam Bretz'  
);
```

SQL - основные команды

```
UPDATE book  
SET price = 19.99  
WHERE ISBN = '9780992461256';
```

```
DELETE FROM book  
WHERE publisher_id = 'SP001';
```

SQL Базы данных

MySQL / MariaDB

PostgreSQL

Oracle

MS SQL Server

Interbase / Firebird

NoSQL

```
{  
  ISBN: 9780992461225,  
  title: "JavaScript: Novice to Ninja",  
  author: "Darren Jones",  
  format: "ebook",  
  price: 29.00  
}
```

NoSQL - примеры команд

```
db.book.insert({  
  ISBN: "9780992461256",  
  title: "Full Stack JavaScript",  
  author: "Colin Ihrig & Adam Bretz"  
});
```

NoSQL Базы данных

RethinkDB

MongoDB

Cassandra

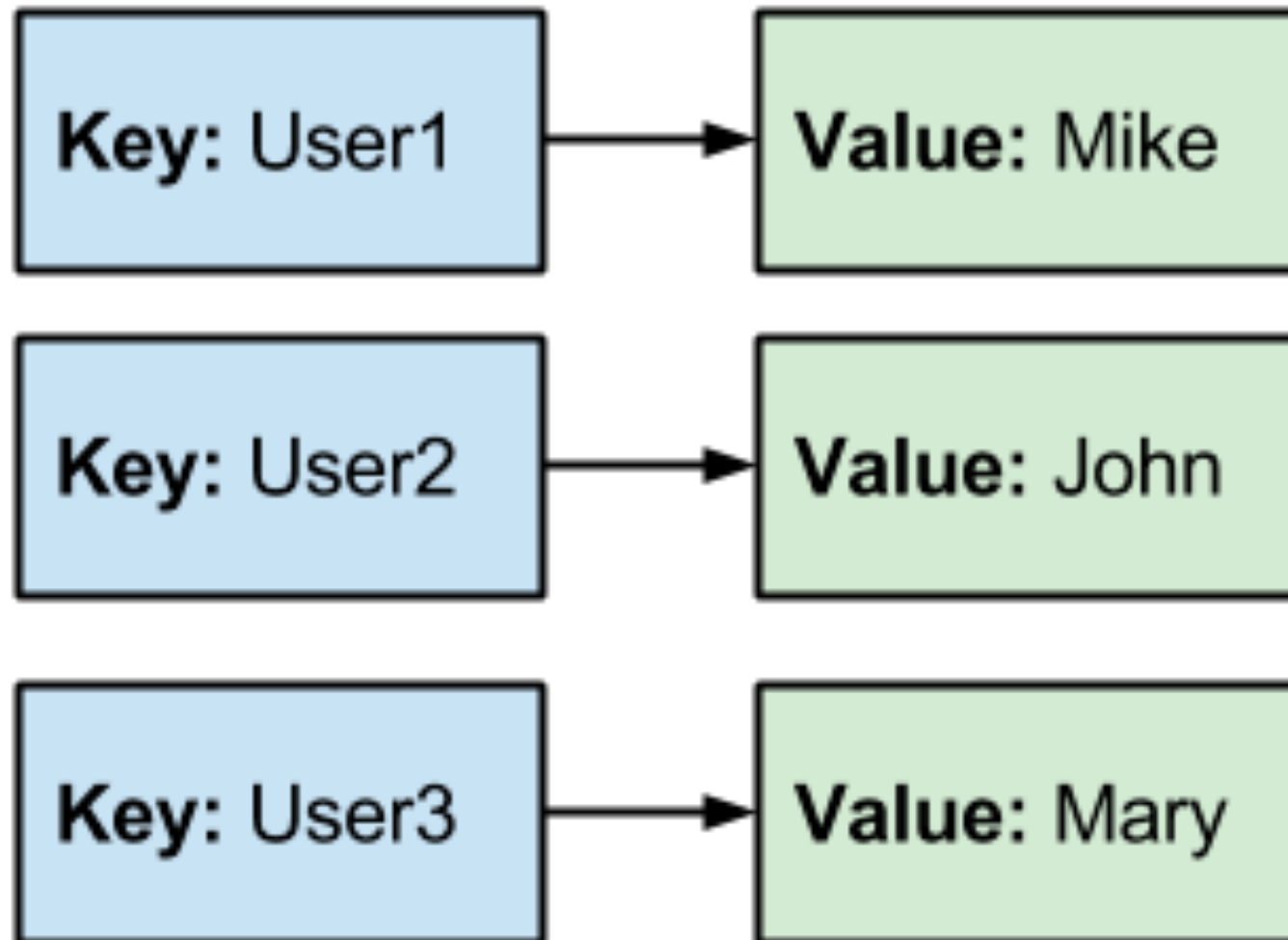
CouchBase

CouchDB

Aerospike

KVS (Key-Value Store)

KVS



KVS - Хранилища

Redis

Tarantool от mail.ru

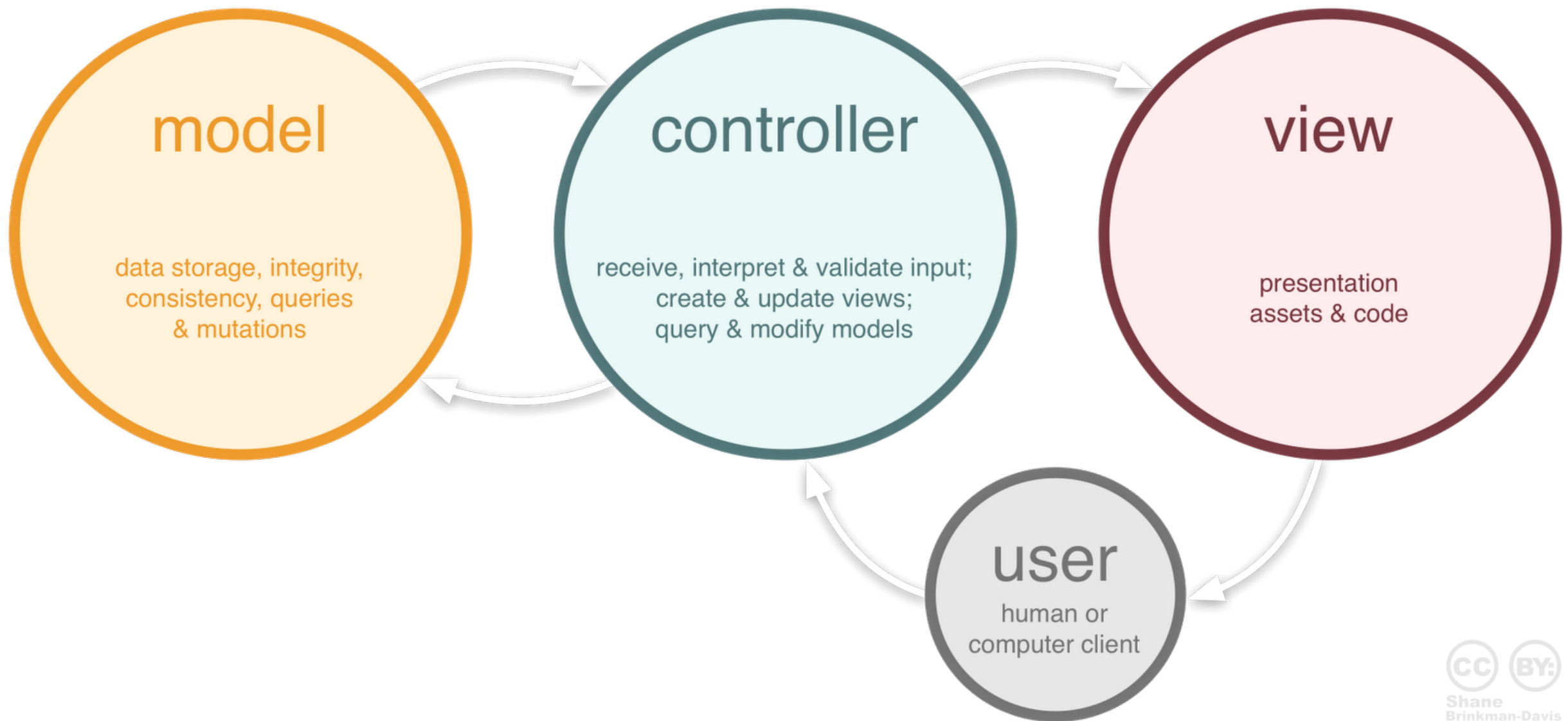
RIAK

Aerospike

Сравнение NoSQL, KVS

<http://kkovacs.eu/cassandra-vs-mongodb-vs-couchdb-vs-redis>

MVC



Первое rails-приложение

Первое rails-приложение

```
rails new first_app
```

Домашнее задание

1 - Прочитать

<https://www.sitepoint.com/sql-vs-nosql-differences/>

2 - Прочитать <https://habrahabr.ru/post/152477/>

Вопросы?

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