

Ember, Rails & JSON-API

An abstract background featuring numerous blue, three-dimensional cubes of varying sizes floating in a dark blue space. The cubes are illuminated from the left, creating a bright blue glow and casting soft shadows. The overall effect is a sense of depth and movement.

Going the extra mile ...

Kiffin Gish

Advanced Software for the Web



About

Please allow me to introduce myself.

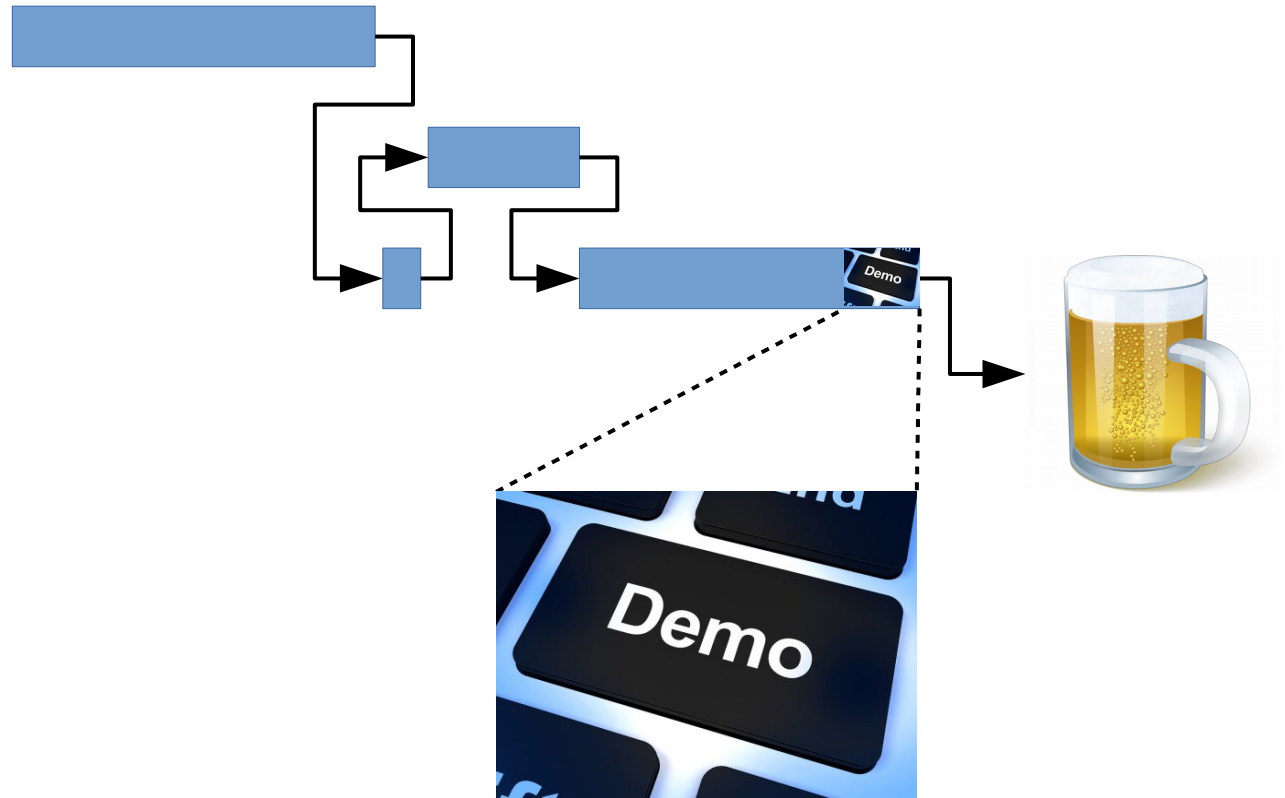
“ Hi there, my name is Kiffin. I started my adventure in the wonderful world of software development back in the days when machine language and assembly were cool. Data was stored on 5.25-inch diskettes where a whopping 160KB was more than you'd ever need.

When the C programming language first came out, I was sold in a second and immediately jumped on the bandwagon. My ever so wise colleagues shook their heads, viewing me as a subversive agitator. I was warned that assembly was the only language for the future and that I would never amount to anything.

Nevertheless I chose to continue on that path of exploration, and after 30+ years of experience in a broad range of programming languages and technologies, I feel that I have acquired a sound basis of knowledge and expertise to help people.

Agenda

- JSON-API
- Rails
- Ember



(If time allows)

Ember Rails App

<https://github.com/kgish/ember-rails-template>

🔗 Going the Extra Mile with Ember, Rails, JSON API and friends

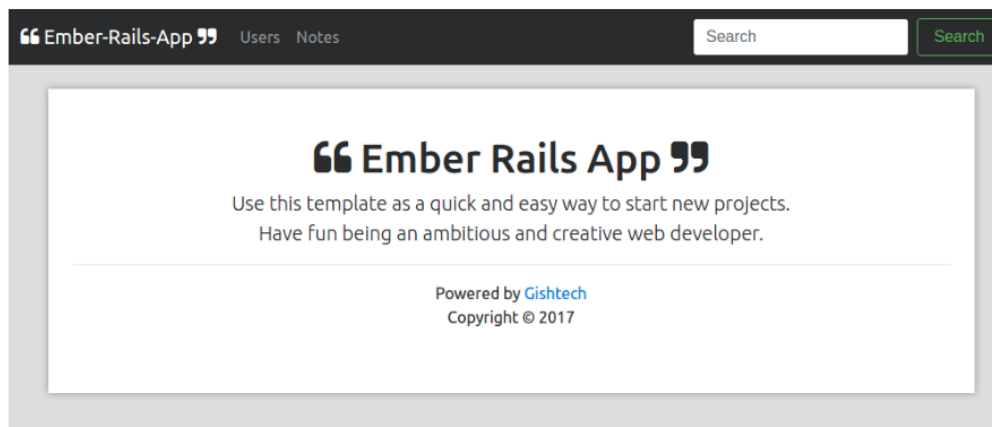
This is a bare-bones template that you can use as a starting point for building your very own impressive ember-rails applications.

It goes well beyond the plain-vanilla templates which I've found in articles, which though very informative and useful to a degree, never go further than the basics.

Also included as part of the deal are concepts like error handling, pagination, CORS, authentication, security and data relationships (the trickiest of all).

Using this approach as a generic basis, you can easily combine the power of the Rails backend with the flexibility of an Ember client interface.

I've also extended the template to use [Sass](#) and [Bootstrap v4 alpha](#), but this can be left out if you prefer.

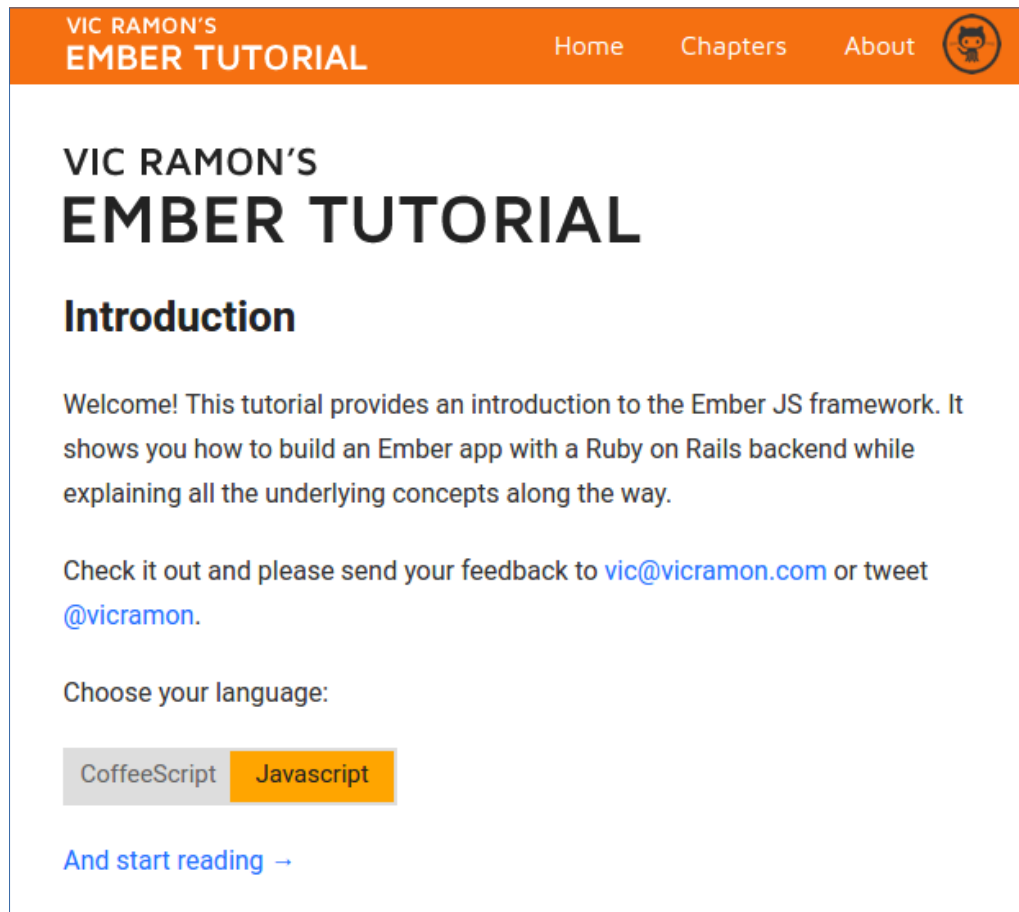


Ember and Rails, apps

<http://www.discourse.org/>



<http://ember.vicramon.com/>



Some technologies




{ json : api }



Bootstrap





```
{json:api}
```

JSON-API, specification

- Specification for how a client should request that resources be fetched or modified, and how a server should respond to those requests.
- Designed to minimize both the number of requests and the amount of data transmitted.
- Requires use of the JSON API media type for exchanging data:

```
Content-Type: application/vnd.api+json
```


JSON-API, update history

- 2013-05-03: Initial draft
- 2013-07-21: Media type registration
- 2014-07-05: RC1
- 2015-02-18: RC2
- 2015-03-16: RC3
- 2015-05-21: RC4
- 2015-05-29: 1.0 Final

JSON-API, data: []

```
    "data": [{
      "type": "articles",
      "id": "1",
      "attributes": {
        "title": "JSON API paints my bikeshed!"
      },
      "relationships": {
        "author": {
          "links": {
            "self": "http://example.com/articles/1/relationships/author",
            "related": "http://example.com/articles/1/author"
          },
          "data": { "type": "people", "id": "9" }
        },
        "comments": {
          "links": {
            "self": "http://example.com/articles/1/relationships/comments",
            "related": "http://example.com/articles/1/comments"
          },
          "data": [
            { "type": "comments", "id": "5" },
            { "type": "comments", "id": "12" }
          ]
        }
      },
      "links": {
        "self": "http://example.com/articles/1"
      }
    }],
```

JSON-API, included: []

```
→ "included": [{  
→   "type": "people",  
→   "id": "9",  
→   "attributes": {  
→     "first-name": "Dan",  
→     "last-name": "Gebhardt",  
→     "twitter": "dgeb"  
→   },  
→   "links": {  
→     "self": "http://example.com/people/9"  
→   }  
→ }, {  
→   "type": "comments",  
→   "id": "5",  
→   "attributes": {  
→     "body": "First!"  
→   },  
→   "relationships": {  
→     "author": {  
→       "data": { "type": "people", "id": "2" }  
→     }  
→   },  
→   "links": {  
→     "self": "http://example.com/comments/5"  
→   }  
→ }, {
```

JSON-API, request

```
GET /articles?include=author HTTP/1.1
```

JSON-API, response

```
HTTP/1.1 200 OK
Content-Type: application/vnd.api+json

{
  "data": [{
    "type": "articles",
    "id": "1",
    "attributes": {
      "title": "JSON API paints my bikeshed!",
      "body": "The shortest article. Ever.",
      "created": "2015-05-22T14:56:29.000Z",
      "updated": "2015-05-22T14:56:28.000Z"
    },
    "relationships": {
      "author": {
        "data": {"id": "42", "type": "people"}
      }
    }
  }],
  "included": [
    {
      "type": "people",
      "id": "42",
      "attributes": {
        "name": "John",
        "age": 80,
        "gender": "male"
      }
    }
  ]
}
```



The diagram illustrates the structure of a JSON-API response. It shows a JSON object with three main properties: 'data', 'relationships', and 'included'. Red arrows point to the 'data' property, the 'relationships' property, and the first object in the 'included' array. Blue arrows point to the 'attributes' property of the first object in the 'data' array and the 'attributes' property of the first object in the 'included' array.

JSON-API, latest specifications

<http://jsonapi.org/format/>

Latest Specification (v1.0)

Status

This page represents the latest published version of JSON API, which is currently version 1.0. New versions of JSON API **will always be backwards compatible** using a *never remove, only add* strategy. Additions can be proposed in our [discussion forum](#).

If you catch an error in the specification's text, or if you write an implementation, please let us know by opening an issue or pull request at our [GitHub repository](#).

Introduction

JSON API is a specification for how a client should request that resources be fetched or modified, and how a server should respond to those requests.

JSON API is designed to minimize both the number of requests and the amount of data transmitted between clients and servers. This efficiency is achieved without compromising readability, flexibility, or discoverability.

JSON API requires use of the JSON API media type ([application/vnd.api+json](#)) for exchanging data.

The word "ember" is written in a red, cursive script font. A small registered trademark symbol (®) is located at the bottom right of the word.

Ember, DS.JSONAPIAdapter (1)

- **Ember Data** is one of the original exemplar implementations.
- There is now an **official adapter** to support json-api.

```
$ ember generate adapter application
```

app/adapters/application.js

```
1 import DS from 'ember-data';
2
3 export default DS.JSONAPIAdapter.extend({
4   namespace: 'api/1'
5 });
```

JS

Ember, DS.JSONAPIAdapter (2)

- Starting with Ember Data 2.3 users can import modules directly into their application instead of accessing modules top level `DS` namespace.

```
// DS.JSONAPISerializer
import JSONAPISerializer from 'ember-data/serializers/json-api';

// DS.JSONAPIAdapter
import JSONAPIAdapter from 'ember-data/adapters/json-api';
```



Ruby on Rails, aka Rails

- Modern framework making it much easier to learn and build advanced web applications
- Out-of-the-box tooling
- Model, View and Controller pattern
- Tons of gems and large community
- Amazing documentation
- Fun



Rails, create new app

Install the new Rails application as usual. Since you will be using Ember for the front end, use the `--api` option for creating an API-only application.

```
$ rails new ember-rails-template -d postgresql --api  
$ cd ember-rails-template
```

Enable CORS and add the following lines to the `Gemfile` :

```
gem 'rack-cors'  
gem 'ember-cli-rails'  
gem 'active_model_serializers', '~> 0.10.0'
```

Install it all:

```
$ bundle install  
$ bundle exec rails db:create
```

Rails, :json_api

To configure it, enter this line of code in `config/environments/development.rb`, `config/environments/test.rb` and `config/environments/production.rb`:

```
ActiveModelSerializers.config.adapter = :json_api
```

Add the following lines to `mime_types.rb`:

```
api_mime_types = %W(  
  application/vnd.api+json  
  text/x-json  
  application/json  
)  
Mime::Type.register 'application/vnd.api+json', :json, api_mime_types
```

Rails, ember frontend

Create and setup the ember front-end as follows, make sure that you are in the Rails route directory.

```
$ ember new frontend --ignore-git  
$ bundle exec rails generate ember:init  
$ cd frontend  
$ ember install ember-cli-rails-addon
```

Finally, modify the `ember-rails-template/config/routes.rb` file to look like this:

```
Rails.application.routes.draw do  
  mount_ember_app :frontend, to: "/"  
end
```

The word "ember" is written in a red, cursive script font. A small registered trademark symbol (®) is located at the bottom right of the word.

Ember, addons

Enter the `frontend` directory and install some usefull ember addons:

```
$ cd frontend  
$ ember install ember-cli-sass  
$ ember install emberx-select  
$ ember install ember-truth-helpers
```

Install Sass, Bootstrap and Moment using bower:

```
$ bower install bootstrap#4.0.0-alpha.6 --save  
$ bower install fontawesome --save  
$ bower install moment --save
```


Ember, sassify

Convert the default Ember stylesheet CSS to SASS:

```
$ mv app/styles/app.css app/styles/app.scss
```

Include bootstrap in the `frontend/app/styles/app.scss` file:

```
@import "../../bower_components/bootstrap/scss/bootstrap";  
@import "responsive";  
  
html,  
body {  
  overflow-x: hidden; /* Prevent scroll on narrow devices */  
}
```

Ember, ember-cli-build.js

Add the following lines to the `ember-cli-build.js` file:

```
app.import('bower_components/tether/dist/js/tether.min.js');  
app.import('bower_components/bootstrap/dist/js/bootstrap.min.js');  
app.import('bower_components/moment/min/moment.min.js');
```

IMPORTANT: make sure that `tether` import goes BEFORE the `bootstrap` import.

Heroku

To configure your EmberCLI-Rails applications for Heroku:

```
$ bundle exec rails generate ember:heroku  
$ git add .  
$ git commit -m"Ran rails generate ember:heroku"
```

Add the NodeJS buildpack and configure NPM to include the bower dependency's executable file.

```
$ heroku buildpacks:clear  
$ heroku buildpacks:add --index 1 heroku/nodejs  
$ heroku buildpacks:add --index 2 heroku/ruby  
$ heroku config:unset SKIP_EMBER
```

You are ready to deploy:

```
$ git push heroku master
```

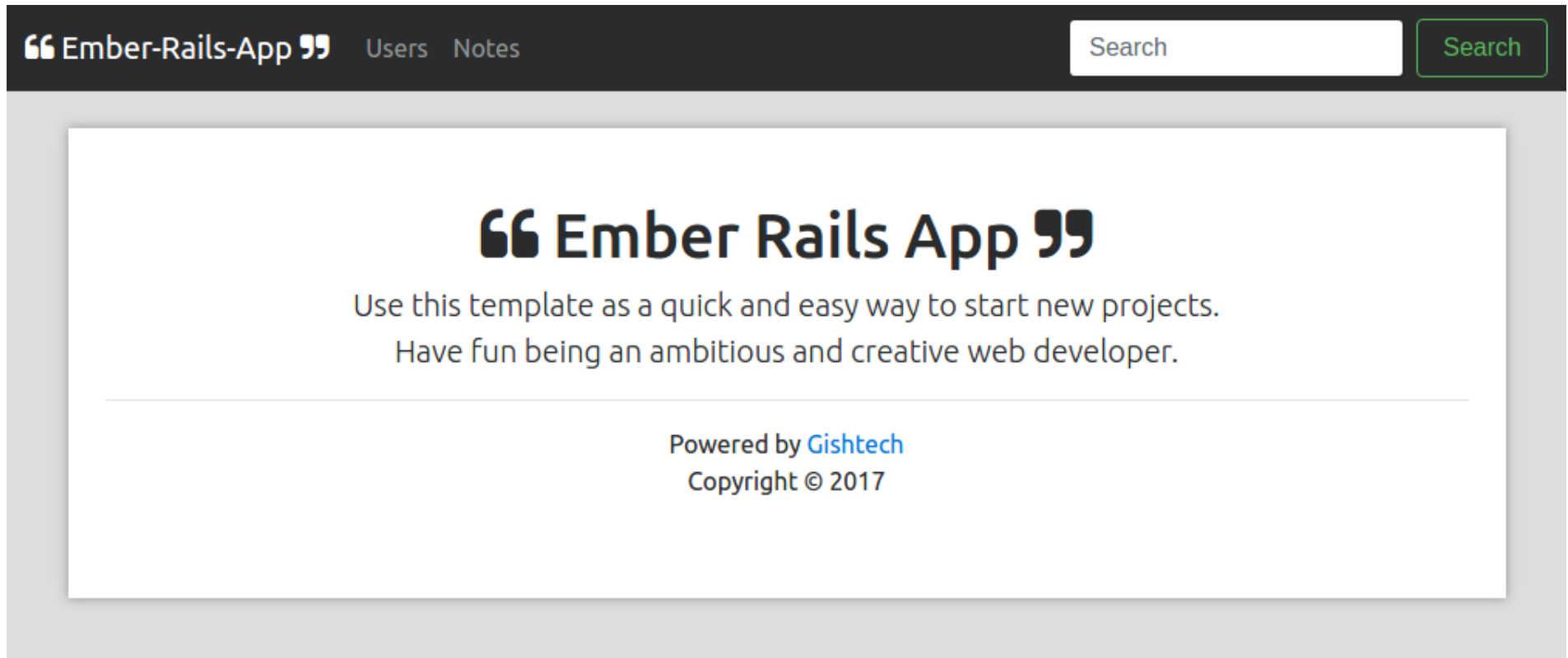
and fire it up:

```
$ heroku open
```

More ...

- Error handling
- Authentication
- Pagination
- Ad infinitum ...

Demo



kgish/ember-rails-template.git



Kiffin Gish
kgish

Full stack developer with management experience ever on the lookout for fun and interesting things to do, and never too old to learn new stuff.

Gishtech
 Gouda, The Netherlands
 kiffin.gish@planet.nl
 <http://www.kiffingish.com>

Overview

Repositories **50**

Stars **20**

Followers **14**

Following **21**

Pinned repositories

Customize your pinned repositories

[gishtech.com](#)

New-and-improved gishtech website built with emberjs and other fun stuff.

JavaScript ★ 1

[openproject-proto_plugin](#)

Forked from opt/openproject-proto_plugin

Exemplary OpenProject plugin demonstrating different ways to extend OpenProject.

Ruby ★ 1

[openproject](#)

Forked from opt/openproject

OpenProject is a web-based project management system built on Ruby on Rails

Ruby

[ember-rails-template](#)

Basic template for setting up a rails application using ember for the front end

Ruby

[ember-cli-annotator](#)

Ember addon for annotating page text

JavaScript

[toolbox-app](#)

Basic portal for collections of tools

Ruby

2nd to last slide

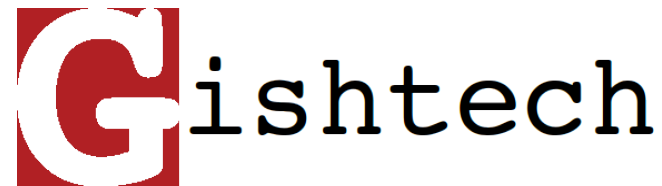
Thanks for your time and patience, I really hope that you enjoyed the presentation.

Looking for an enthusiastic, hard-working, (smart) and young-at-heart freelancer?

Then look me up!

Last slide!

I build slick web-based applications and
platforms to be proud of



<http://gishtech.com>