

DEV-1545

Beyond Domino Designer

Connect
2017

IBM

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Agenda

- What, Why, How
- The tools
- Developer Workflow
- Demo
- Q & A



What, Why, How

What

Deliver modern looking web & mobile applications, that are:

- Well tested
- Familiar to use
- Frequently updated
- Maintainable by
“typical web developers”

The screenshot shows a modern web application dashboard. On the left is a blue sidebar menu with the 'CoreNG' logo at the top. The menu items include Dashboard, Components, Forms, Layout, Tables, Charts, Maps, and a purchase theme option. The main content area has a header 'Dashboard'. Below the header is a row of six colored cards: pink (Comments: 28), green (Likes: 831), red (Sign Ups: 204), and dark blue (Sales: 85). Underneath this is a chart titled 'Server Load' showing a blue area plot of server load percentage over time from 10:24:50 to 10:25:40. The chart has two sharp peaks around 10:25:10 and 10:25:30. Below the chart is a section titled 'Angular 2 Contributors' with a table. The table columns are Username, Location, Bio, and Email. One contributor listed is 'vsavkin' from Toronto with the bio: 'Victor toys with eclectic programming technologies and obsesses over fonts and keyboard layouts. He also makes Angular.' and 'No Public Email'.

Username	Location	Bio	Email
vsavkin	Toronto	Victor toys with eclectic programming technologies and obsesses over fonts and keyboard layouts. He also makes Angular.	No Public Email

Domino Designer



One ring to rule them all?

Why



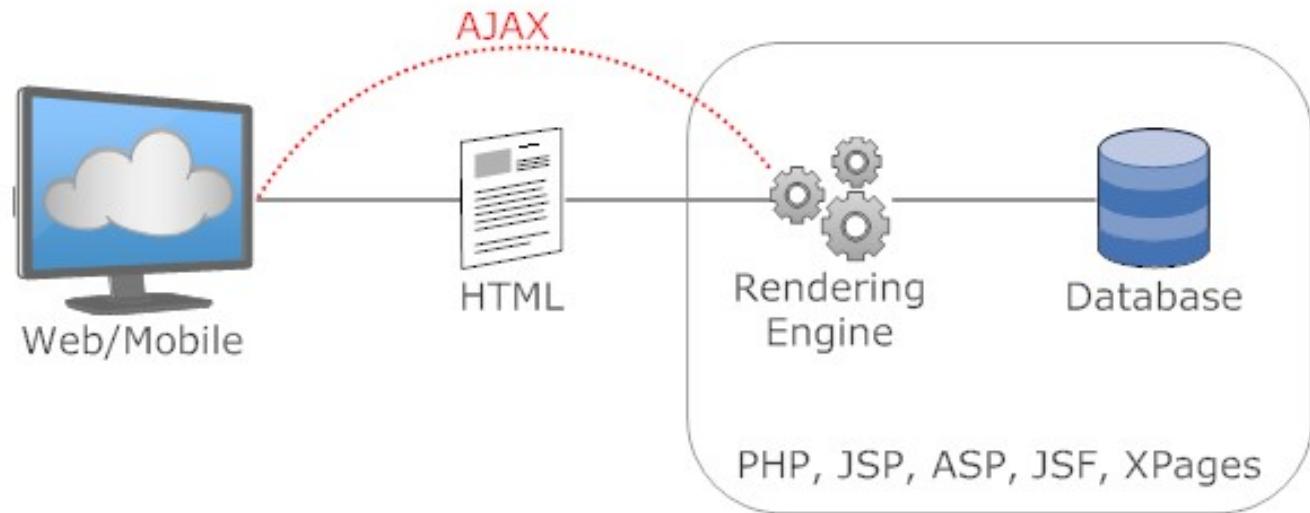
If you are a Hobbit - maybe

JasmineJS
Angular
ReactNative
Selenium
ES2016
ES2015
TypeScript
Webpack
Angular2
React
CD
JavaScript
Cordova
Jenkins
NodeJS
git
npm
Ionic
Gulp
Yeoman
Travis
Grunt
CI
TDD
http/2

Why

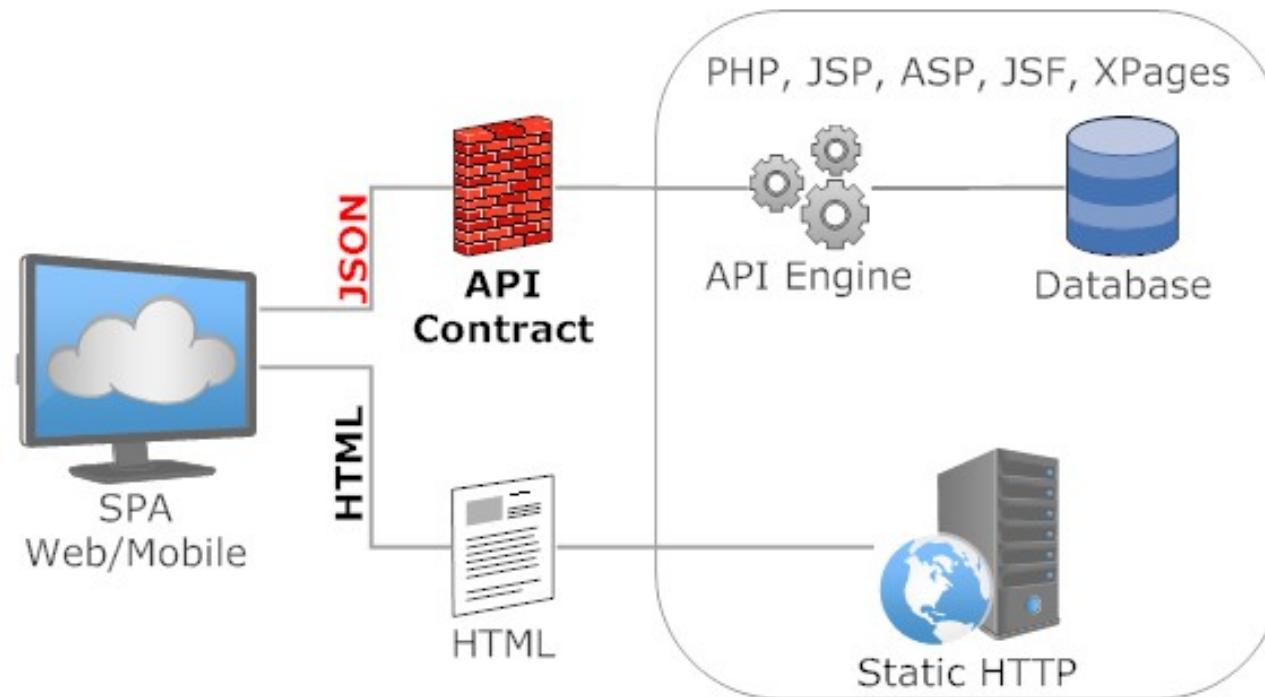
What we have been doing

"Classic" Server Side Rendering



The current fashion

"Single Page App" Rendering



The tools

Developer Toolbox vs. Domino Designer

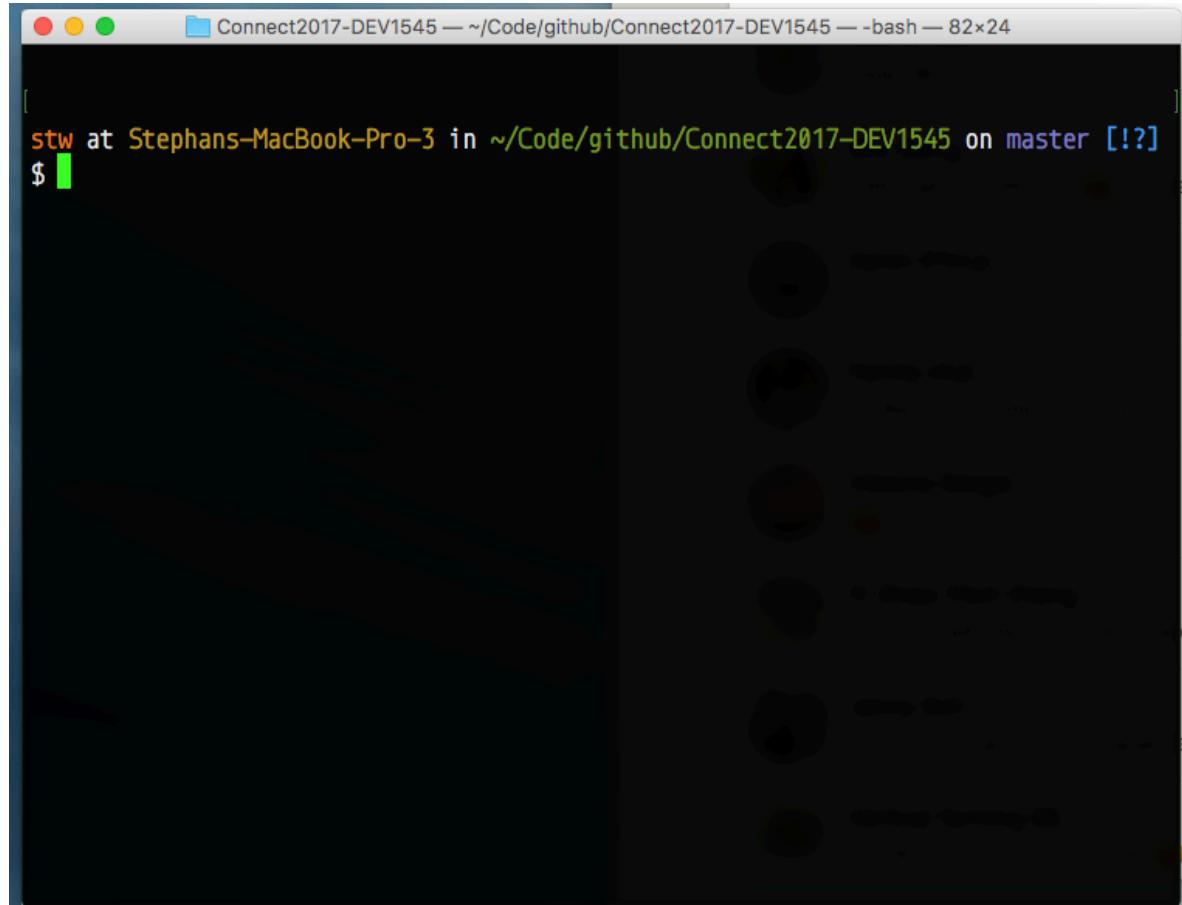


Source: <http://www.strictlytoolboxes.com/>



Source: <https://www.knifecenter.com/>

And there came along....



```
stw at Stephans-MacBook-Pro-3 in ~/Code/github/Connect2017-DEV1545 on master [!?]
```

Install

node.js

<https://nodejs.org>
(currently 6.9.4 LTS)
... and ...
make friends with

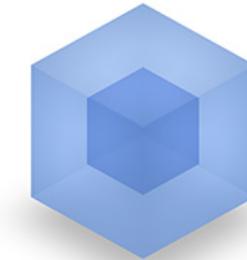
npm

we take it from there

How command line irony

What – JavaScript tooling

- NodeJS
- Webpack
- Gulp
- Wallaby
- Angular
- Npm / yarn



Tooling



A word on tooling

By Konrad Adenauer
German Chancellor
1949 – 1963

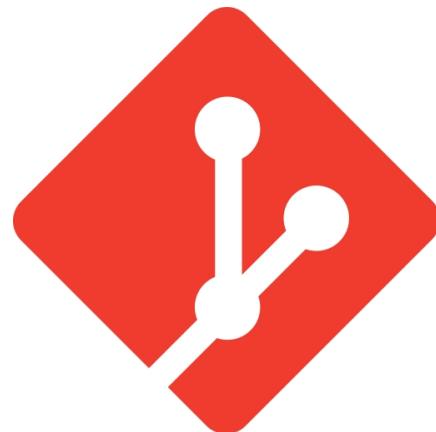
“Was interessiert
mich mein
Geschwätz von
gestern”

Source: By Bundesarchiv,
B 145 Bild-F078072-0004
Katherine Young
CC-BY-SA 3.0, CC BY-SA 3.0 de
<https://commons.wikimedia.org/w/index.php?curid=5356485>

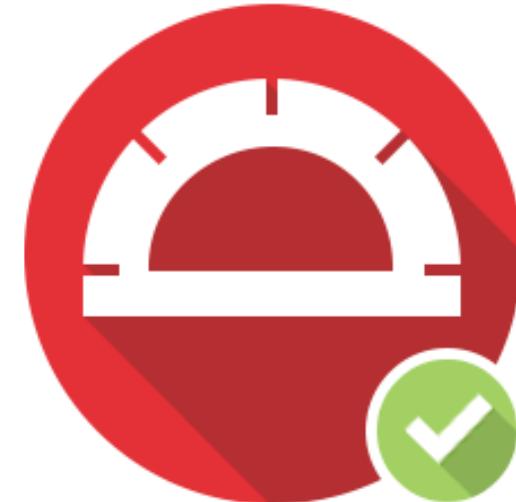
Developer workflow

What – Development flow

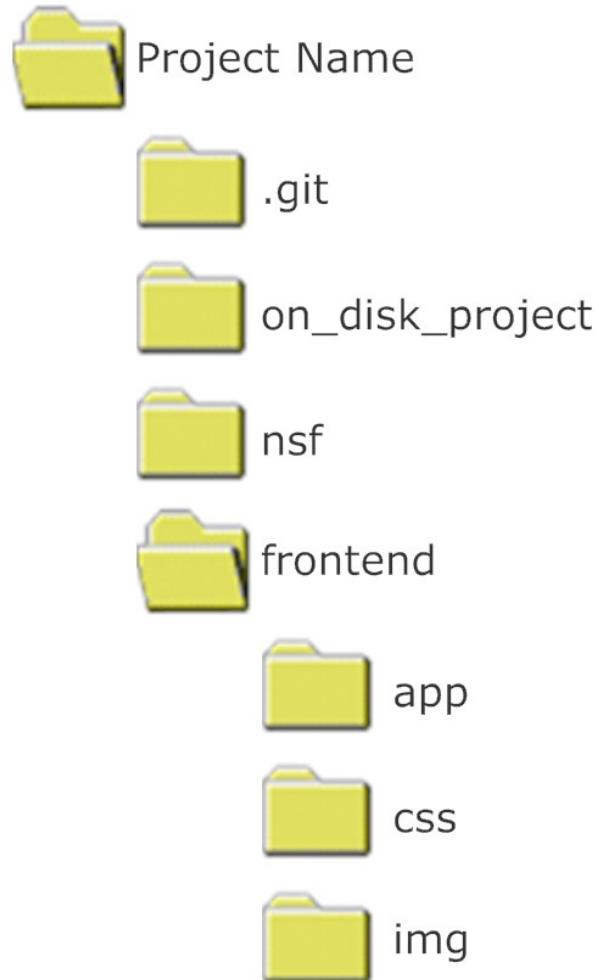
- Project Structure
- Version Control
- Testing
- Lots of testing



Jasmine



Project structure

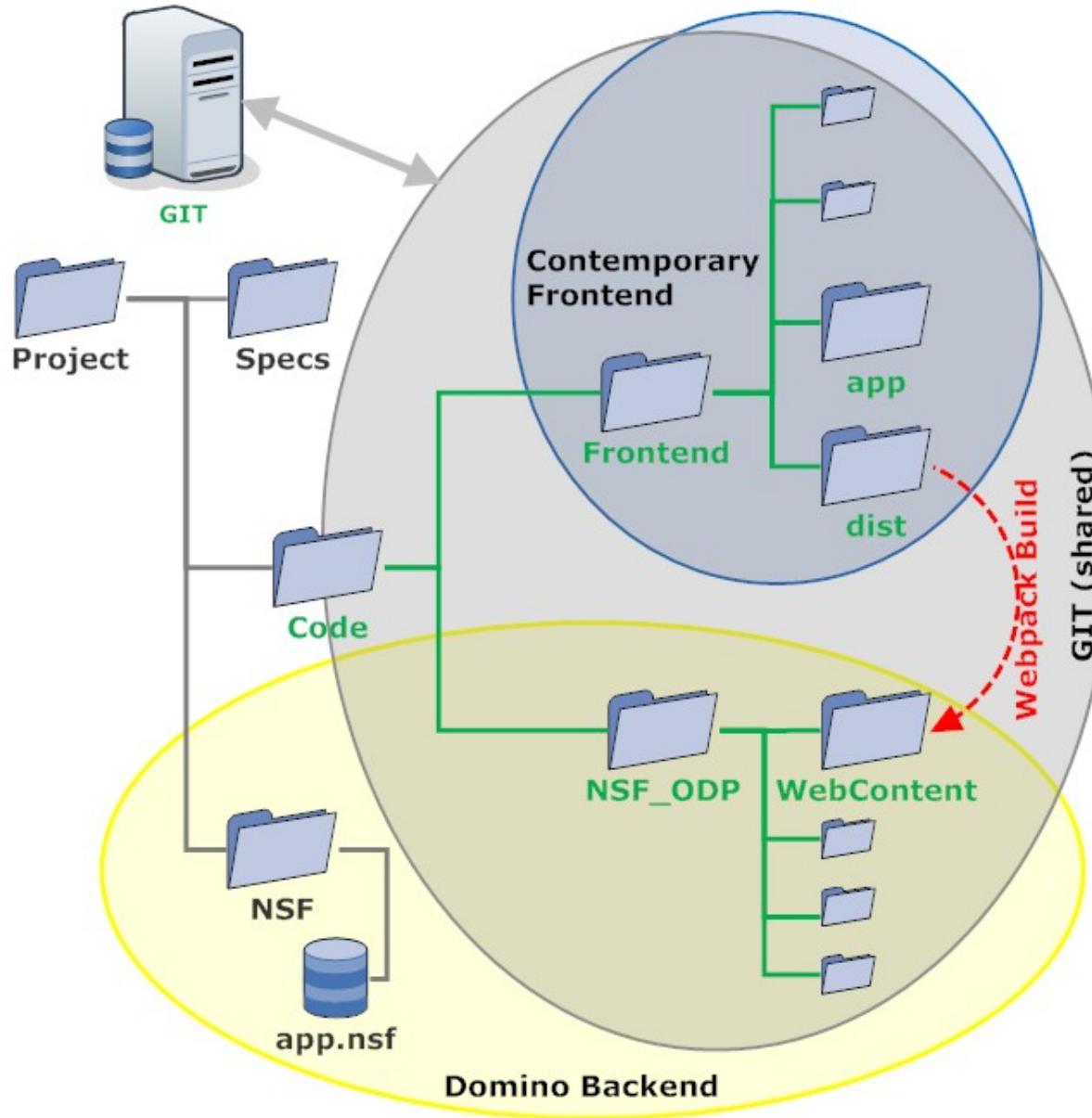


.gitignore

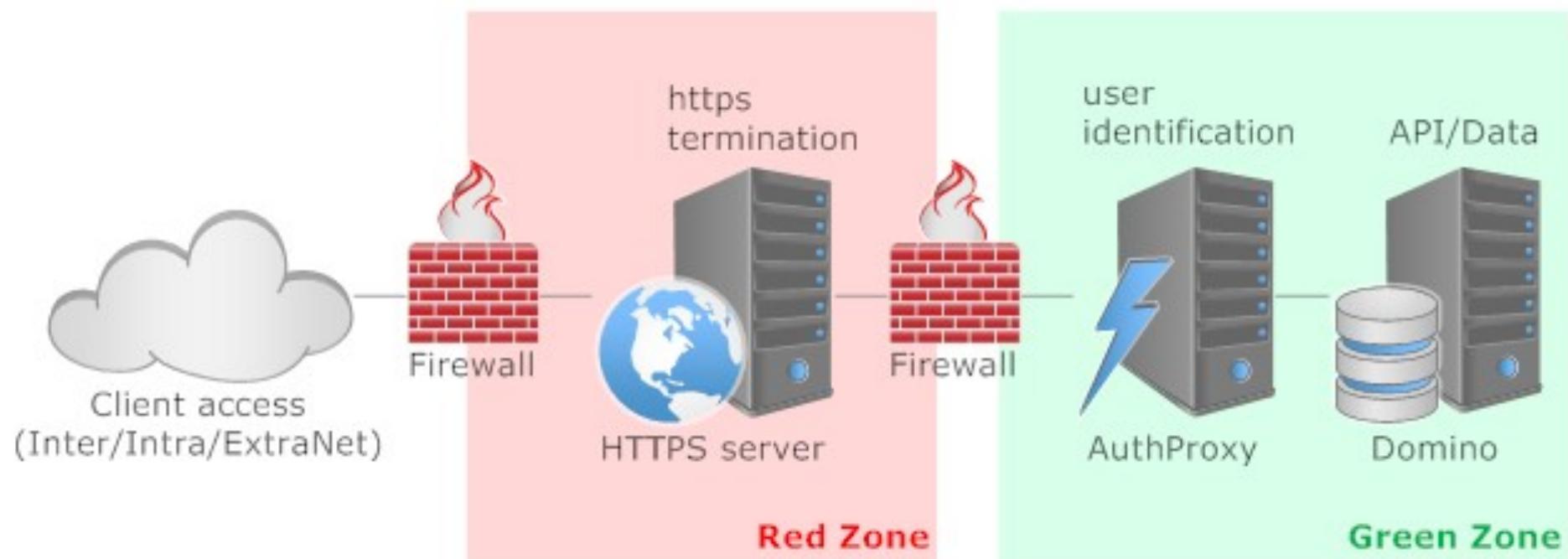
```
.DS_Store  
*.nsf  
Desktop.ini  
.Spotlight-V100  
.Trashes  
Thumbs.db
```

HOW

Deployment Option 1



Deployment Option 2



Comparing deployment options

Single NSF

- Easy deployment
- Domino HTTP stack
- Domino authentication
- Single tier

Front-end / Back-end split

- Easy update of frontend
- http2 capable
- Any authentication
- Multi tier

There is no “one perfect solution”, only choices and consequences



Client - Server API

What I want to send/receive to/from the server:

```
{    "color" : "green",  
    "taste" : "sour",  
    "name"  : "Apple"  
}
```

JSON rulez supreme!
XML is out of fashion
x-www-form-urlencoded
Is kind of lame



How

Backend options

- Agents (if you are hardcore LotusScript)
- XAgents (hardcore SSJS)
- Just views (read only)
- XPages Rest controls
- Domino Access Services
- Custom servlets (Wink or otherwise)
- **SmartNSF** (highly recommended!!!)
- External Java (I like vert.x)

There is no “one perfect solution”, only choices and consequences

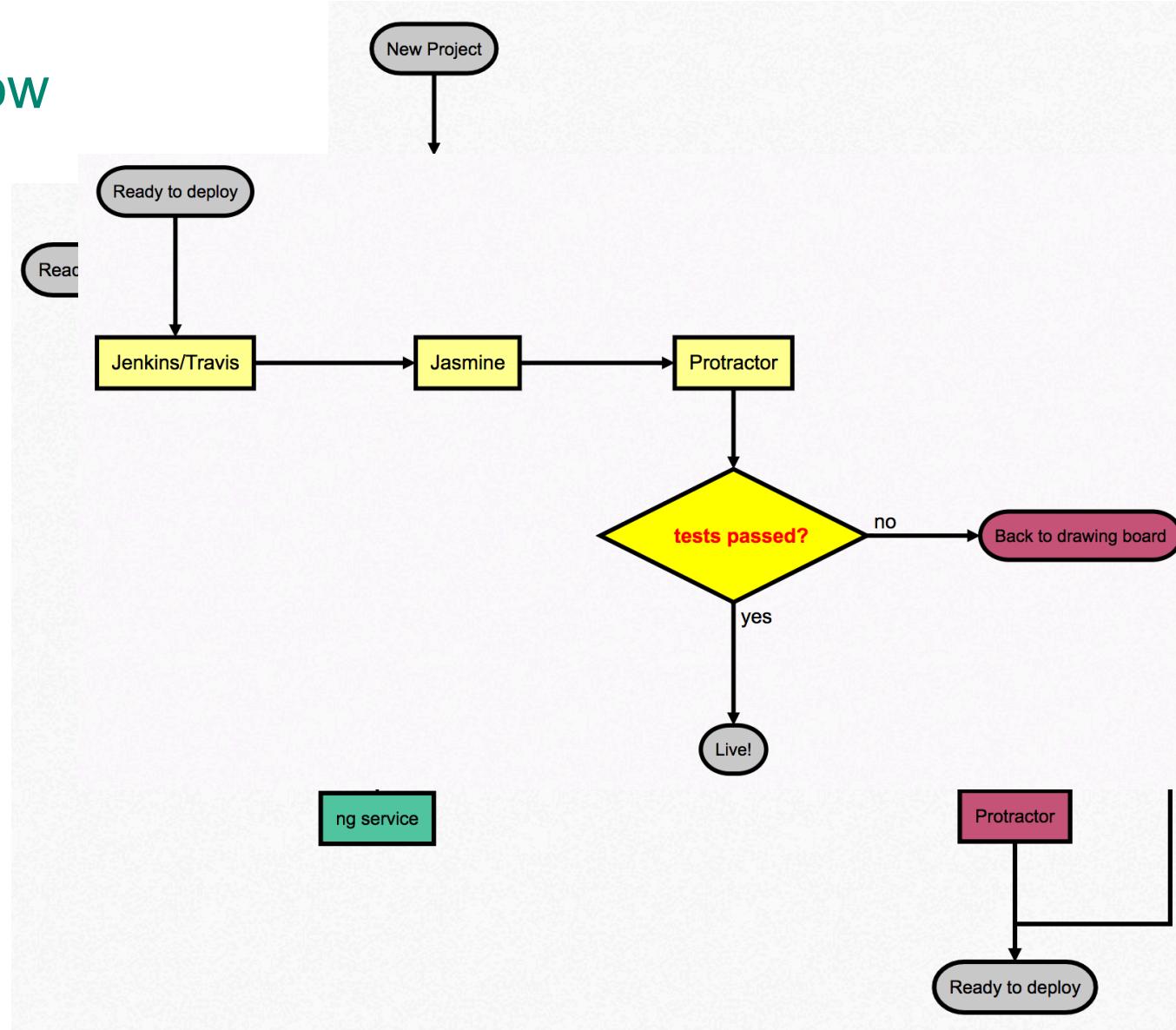
Pro tip:
Be lean on your API



Developer workflow

Easy as 1-2-3

1. Scaffold
2. Code
3. Deploy



Put Domino into CI?

Pro:

- Fresh start
- Known state

Con:

- Heavy operation
- NSF updates hard

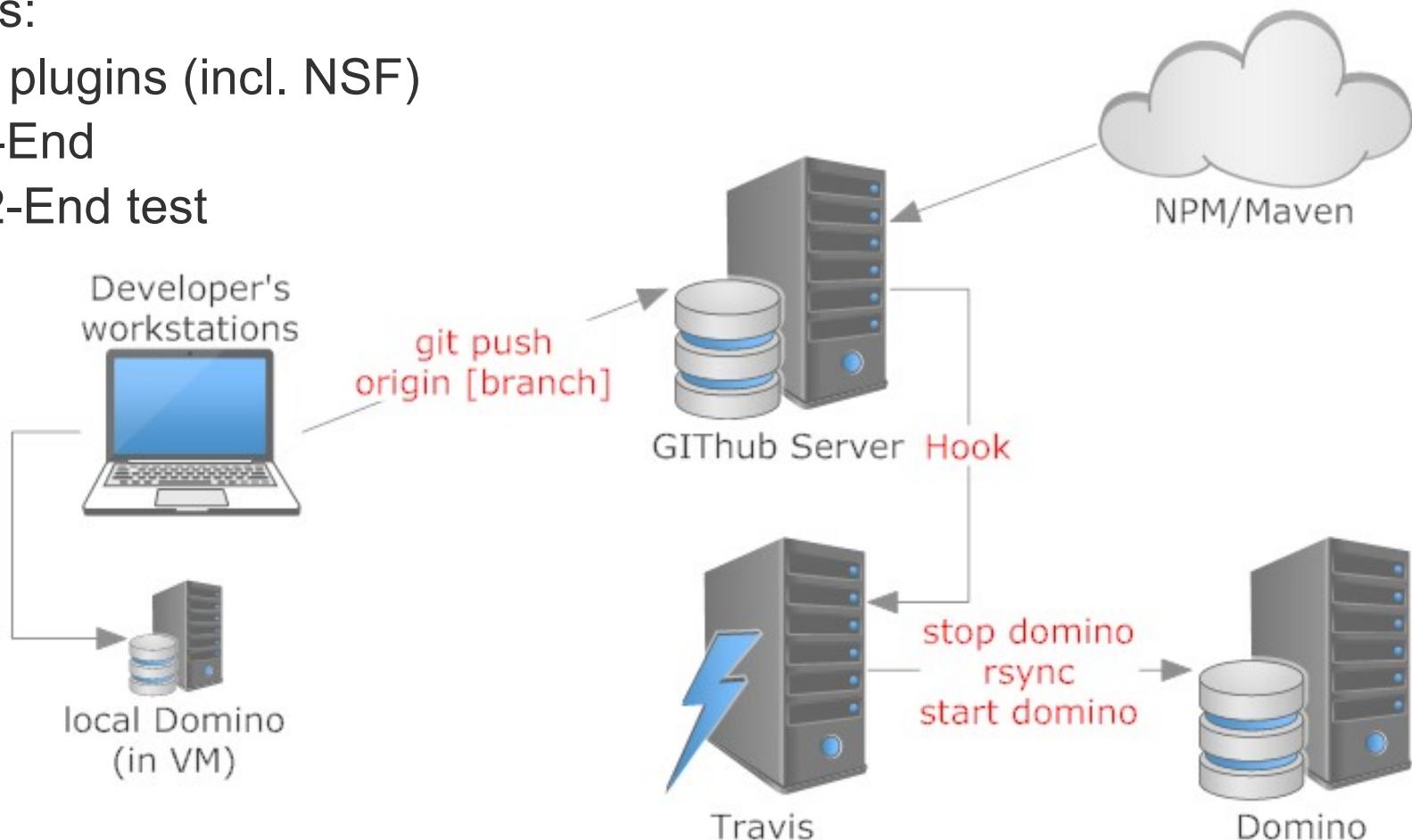
Key consideration:
Do you have date
sensitive operations?

- New documents arrived
- Documents changed
- Test design!



A potential setup

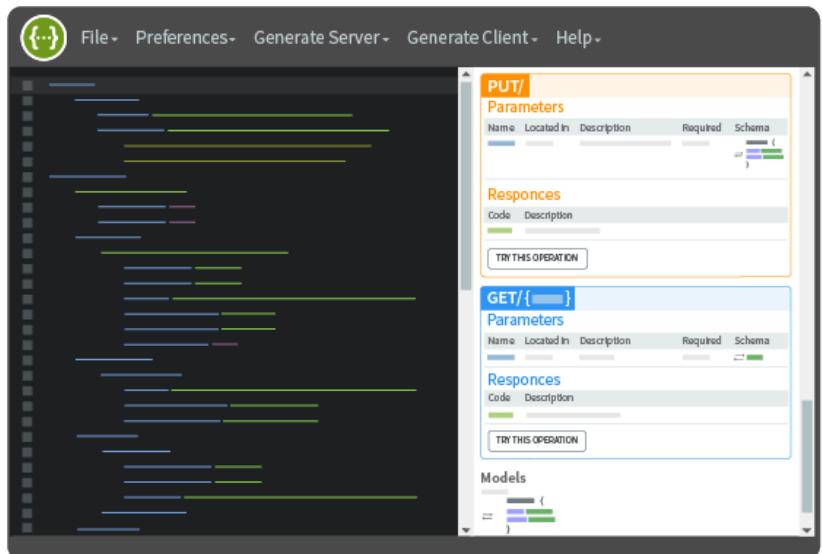
- 3 Projects:
 - OSGi plugins (incl. NSF)
 - Front-End
 - End-2-End test



Data model

Classic Domino

- Forms
- Views



API Driven Web applications:

- Swagger
- Data model
- Action model
- Code generation

HOW

Our Swagger model

```
1  swagger: '2.0'
2  info:
3    version: '1.0.0'
4    title: Domino foodie list
5    description: A sample API for Connect 2017
6    termsOfService: https://notessensei.com/
7    contact:
8      name: The NotesSensei
9      email: stephan@wissel.net
10     url: https://notessensei.com/
11   license:
12     name: Apache-2.0
13     url: https://opensource.org/licenses/Apache-2.0
14   host: food.projectcastle.io
15   basePath: /api
16   schemes:
17     - http
18   consumes:
19     - application/json
20   produces:
21     - application/json
22   paths:
23     /food:
24       get:
25         description: Returns the list of all food items
26         operationId: findFood
27         produces:
28           - application/json
29         parameters:
30           - name: type
31             in: query
32             description: filter the food type
33             required: false
34             type: array
35             items:
36               type: string
37               collectionFormat: csv
38           - name: rows
39             in: query
40             description: maximum number of rows to return
41             required: false
42             type: integer
43             format: int32
44         responses:
45           '200':
46             description: food response
47             schema:
48               type: array
49               items:
50                 $ref: '#/definitions/food'
51             default:
52               description: unexpected error
```

Domino foodie list

A sample API for Connect 2017

Version 1.0.0

Contact information

The NotesSensei

stephan@wissel.net

https://notessensei.com/

Terms of service

https://notessensei.com/

License

Apache-2.0

Paths

/food

GET /food

Description

Returns the list of all food items

Parameters

Name	Located in	Description	Required	Schema
type	query	filter the food type	No	string
rows	query	maximum number of rows to return	No	integer (int32)

Responses

Code	Description	Schema
200	food response	food { }

Swagger Model

```
definitions:  
  food:  
    type: object  
    required:  
      - name  
    properties:  
      code:  
        type: integer  
        format: int32  
      name:  
        type: string  
      taste:  
        type: string  
      color:  
        type: string  
      shape:  
        type: string  
      type:  
        type: string
```

Demo

In Summary

- Contemporary web development requires node.js as tooling
- Version control is your friend
- Make peace with the command line: npm, ng, git, travis ...
- Separate front-end and back-end with a strong API
- Continuous integration & Test Driven development rule

There is a lot to
learn in new world
of web development



How

The background of the slide features a dark teal or black gradient. Overlaid on this are two glowing blue particle streams. One stream forms a diagonal band from the bottom left to the top right. The other stream is more curved and horizontal, extending from the middle left towards the bottom right. Both streams consist of numerous small, glowing blue dots.

Questions?

<https://github.com/Stwissel/connect2017-dev1545>

Thank you!

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Further readings

Would you like to know more?*

The full deck & all the files

The presentation & sample files:

<https://github.com/Stwissel/connect2017-dev1545>

The Swagger Codegen update:

<https://github.com/Stwissel/swagger-codegen>

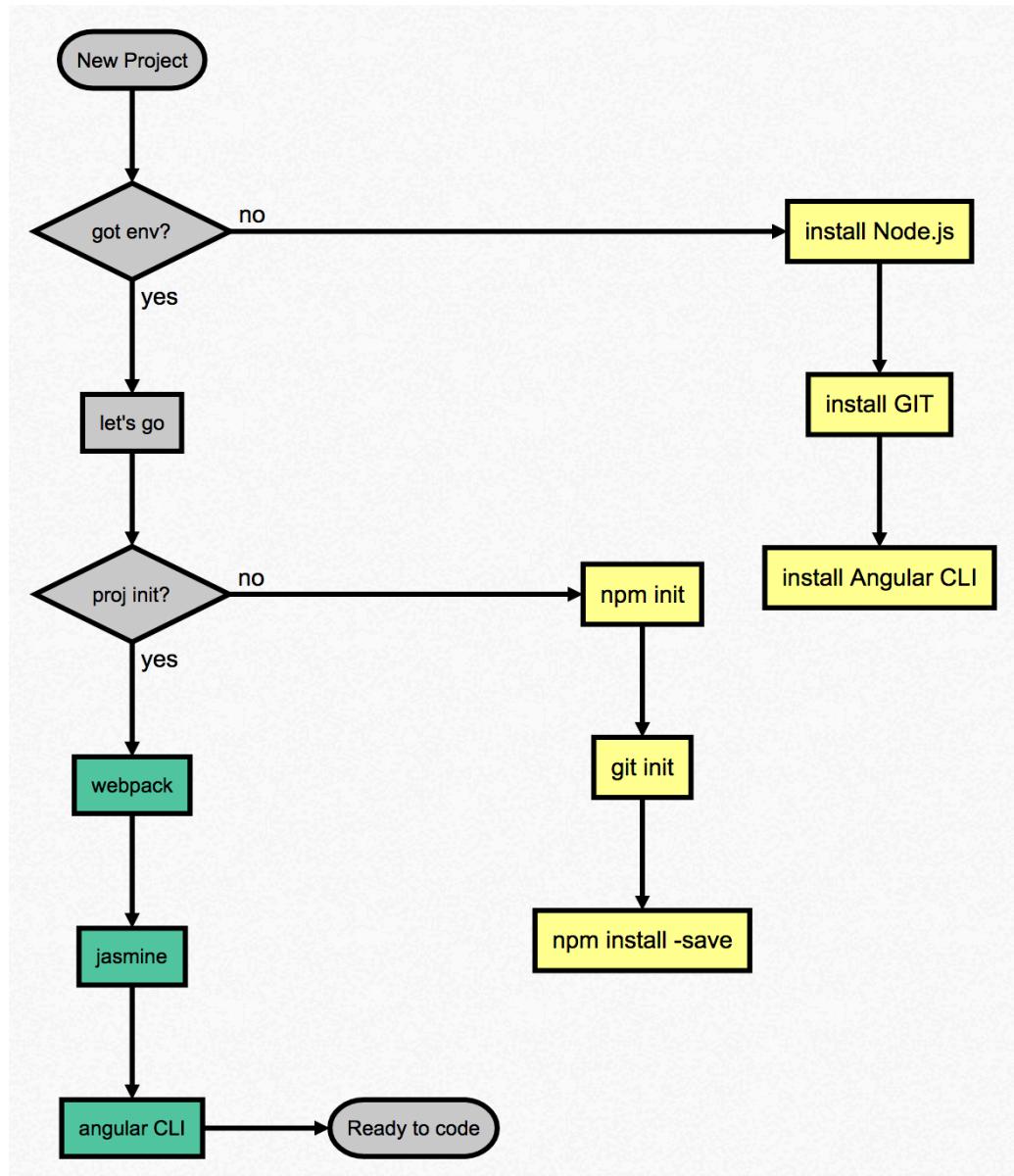
Formly for Angular:

<https://github.com/formly-js/ng-formly>

Tool locations

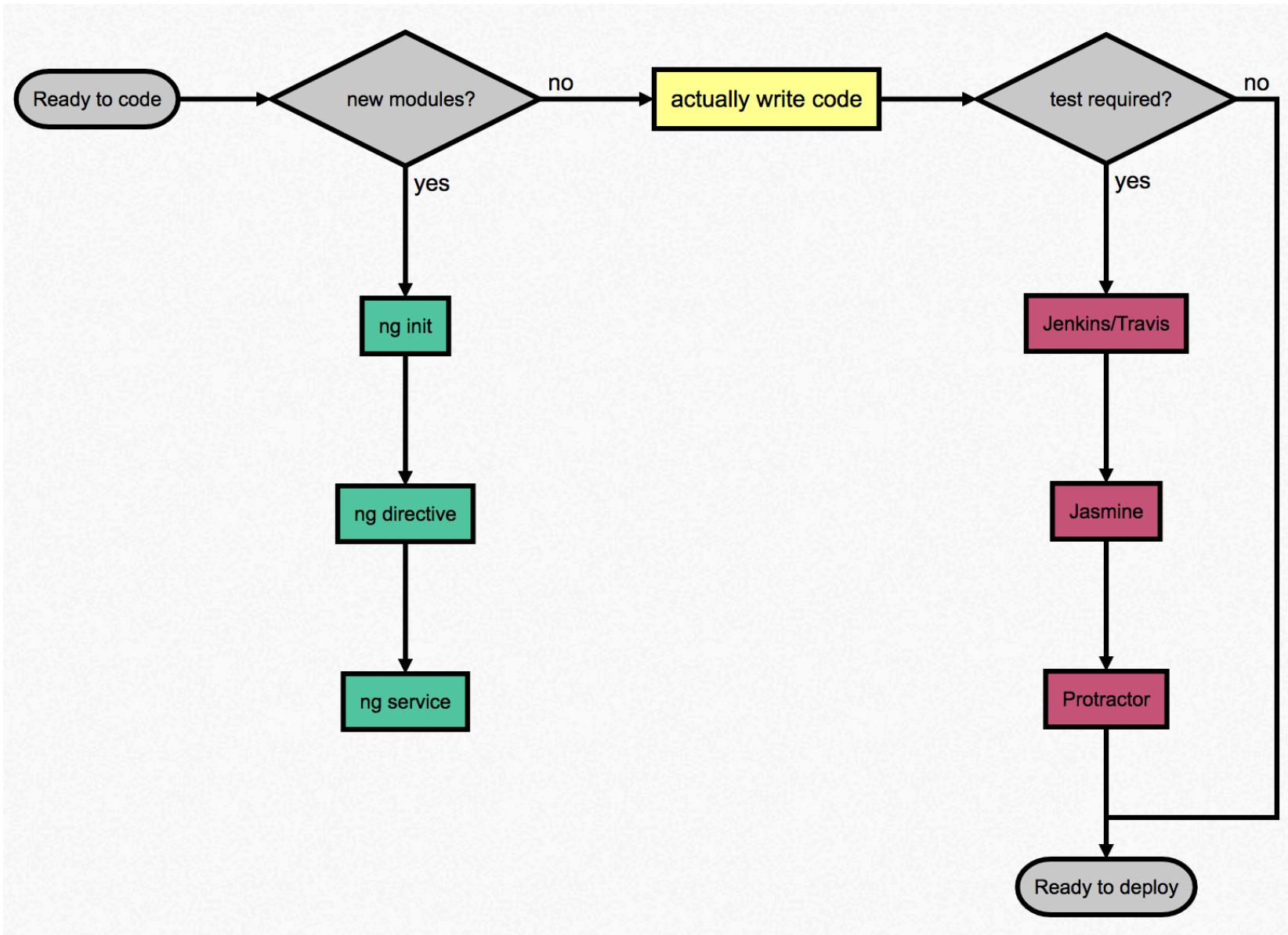
- Node.js: <https://nodejs.org/>
- NPM: <https://www.npmjs.com/>
- Jasmine: <https://jasmine.github.io/>
- Protractor: <https://www.protractortest.org/>
- AngularJS: <https://angular.io/>
- Angular CLI: <https://cli.angular.io/>
- TypeScript: <https://www.typescriptlang.org/>
- Webpack: <https://webpack.js.org/>
- Microsoft Code: <https://code.visualstudio.com/>
- Swagger: <http://swagger.io/>
- Wallaby: <https://wallabyjs.com/>
- GIT: <https://git-scm.com/>
 - Tower: <https://www.git-tower.com/>
 - Sourcetree: <https://www.sourcetreeapp.com/>
- Mustache: <https://mustache.github.io/>

Developer workflow (1/3)



Reference

Developer workflow (2/3)



Developer workflow (3/3)

