

ThoughtWorks®

Reducing Passive Interruptions





ThoughtWorks®



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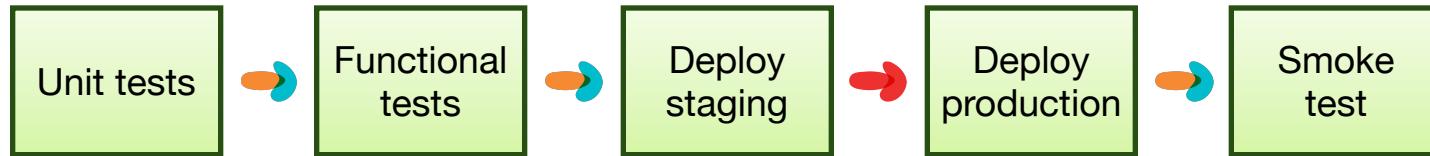


“

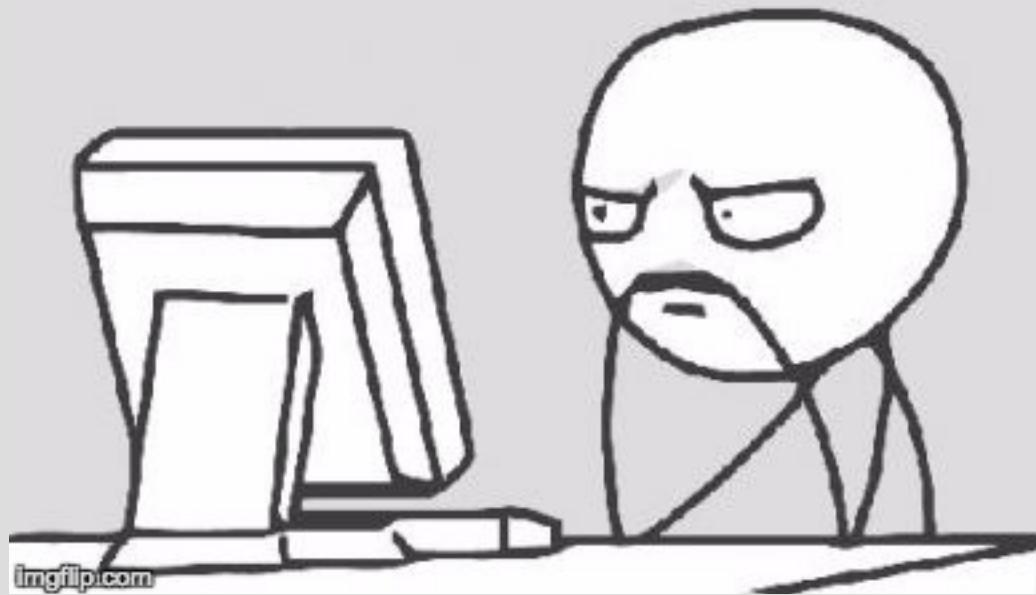
Modern software development includes automated testing strategies and automated **deployment pipelines** that take the friction out of the deployment process

”

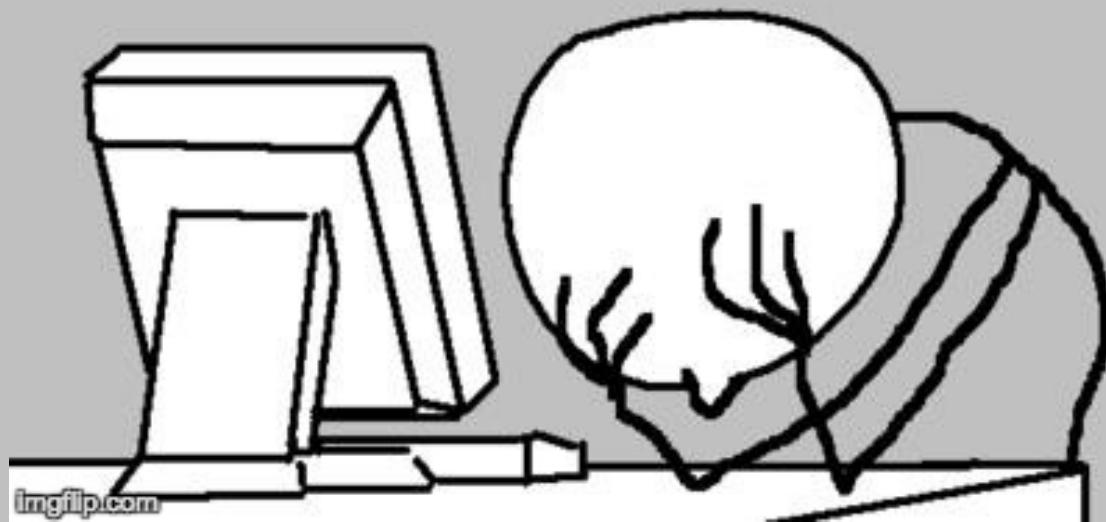
Mary Poppendieck



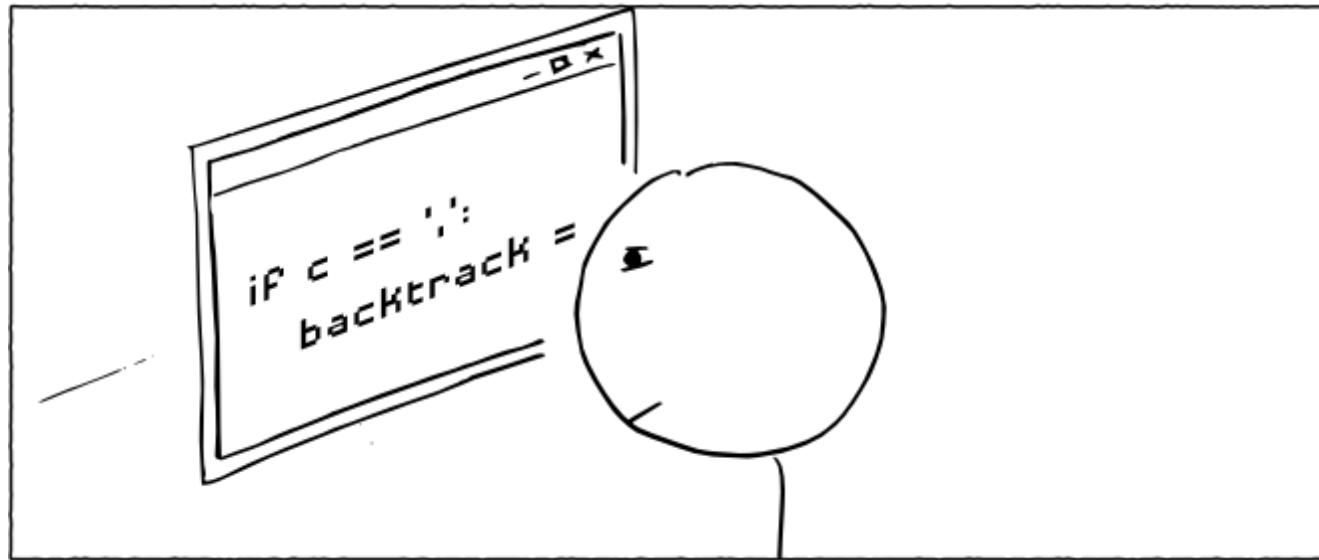
THIS IS JOHN



PLEASE, I'M TRYING TO WORK!



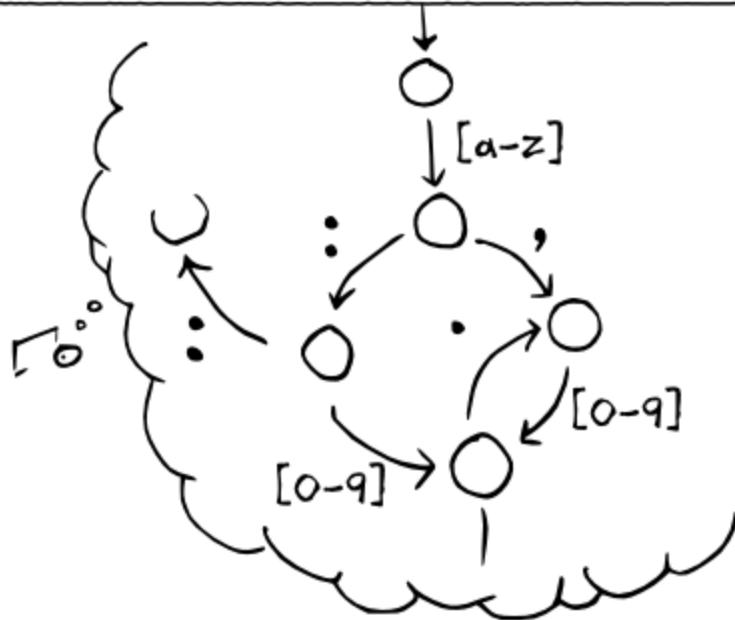
Come on... It's just a few seconds!

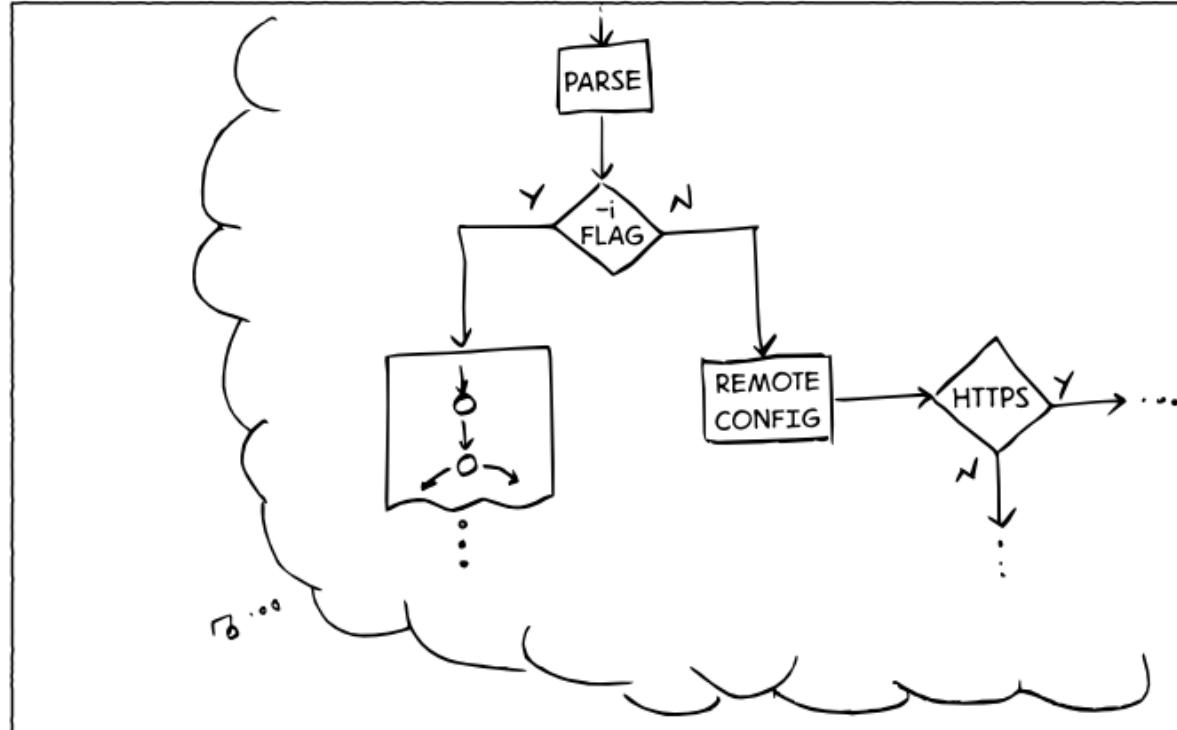


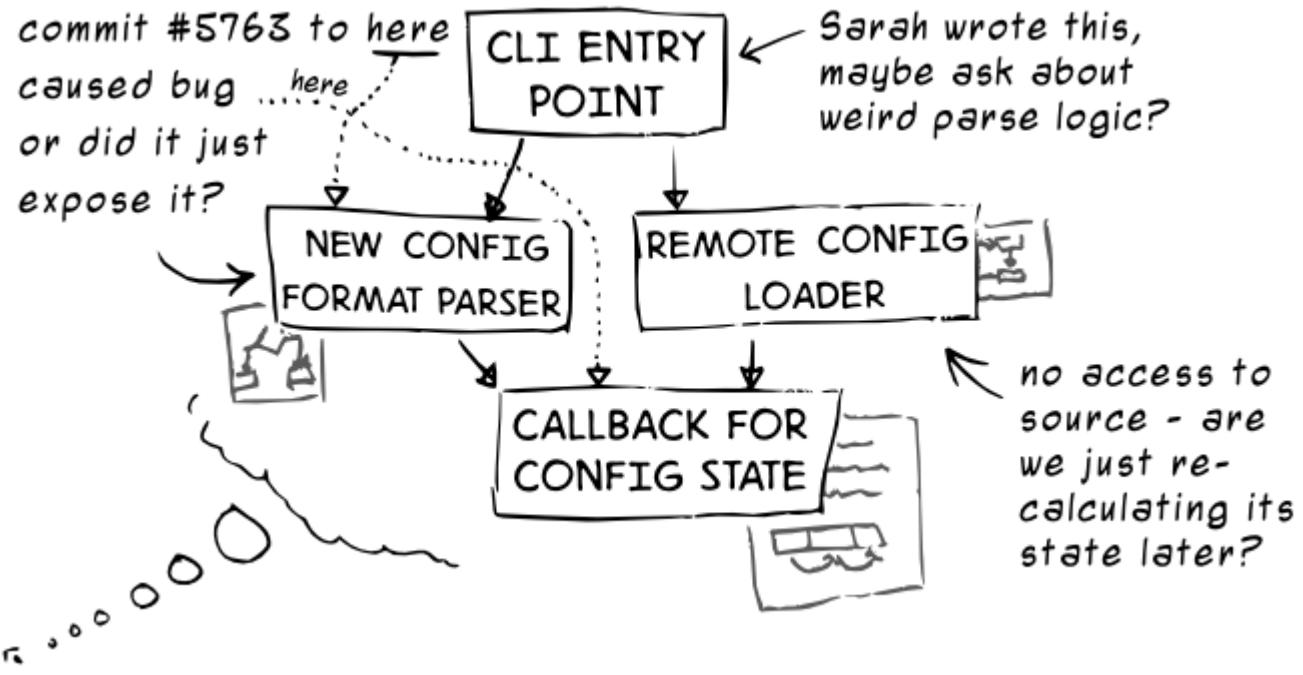
if c == ',':
backtrack = 1



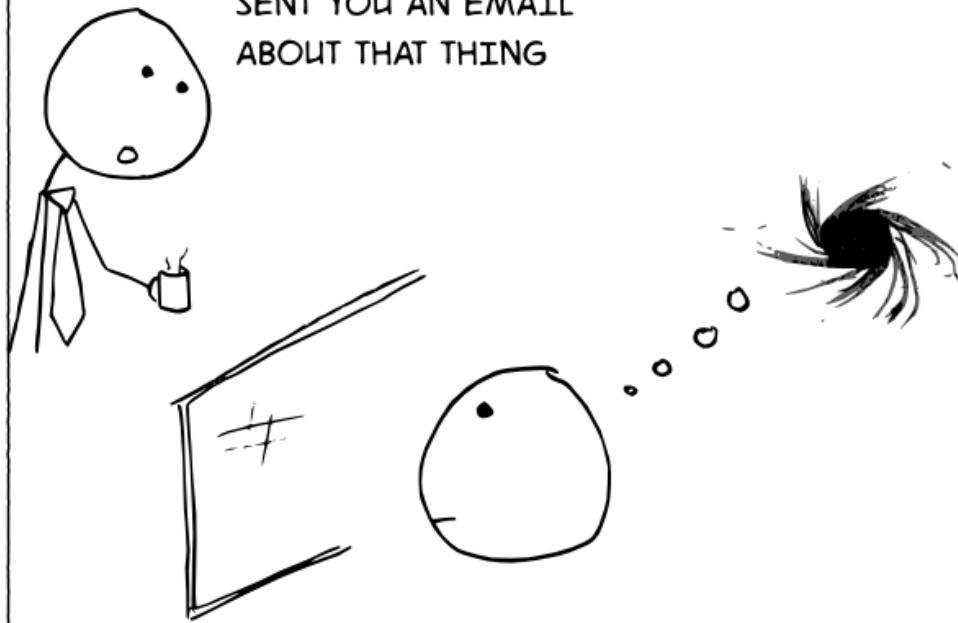
...so if the current character is
a comma, we set the back-
tracking flag...

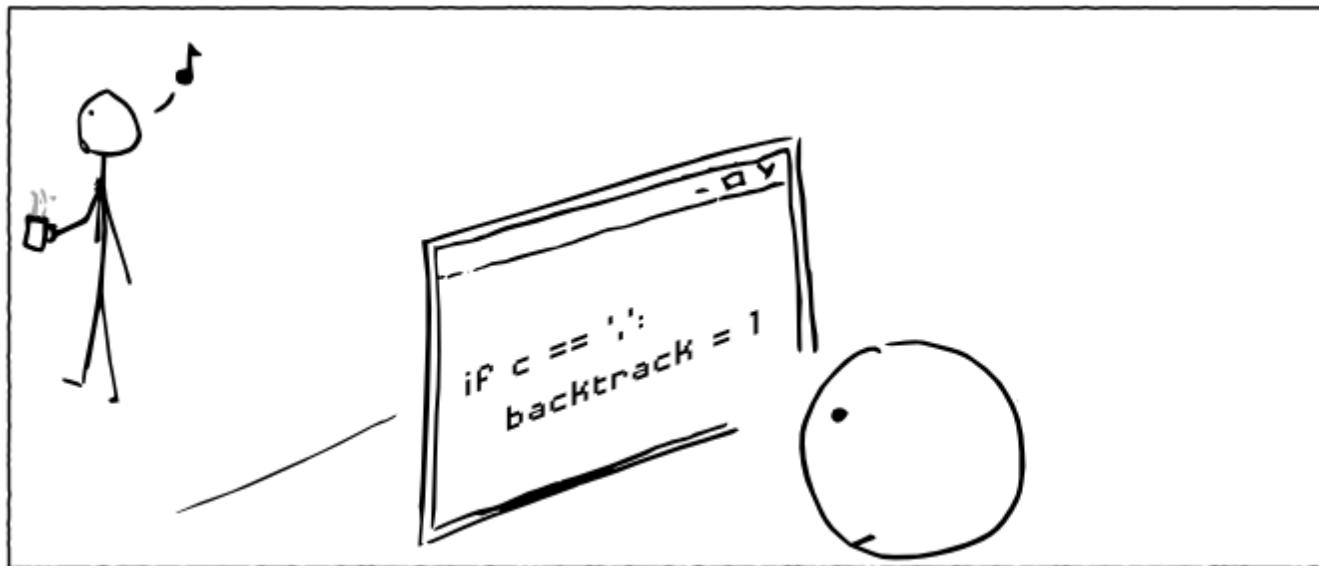






HEY, SO I JUST
SENT YOU AN EMAIL
ABOUT THAT THING





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heeris.id.au

Programmer Interrupted

2013-01-19

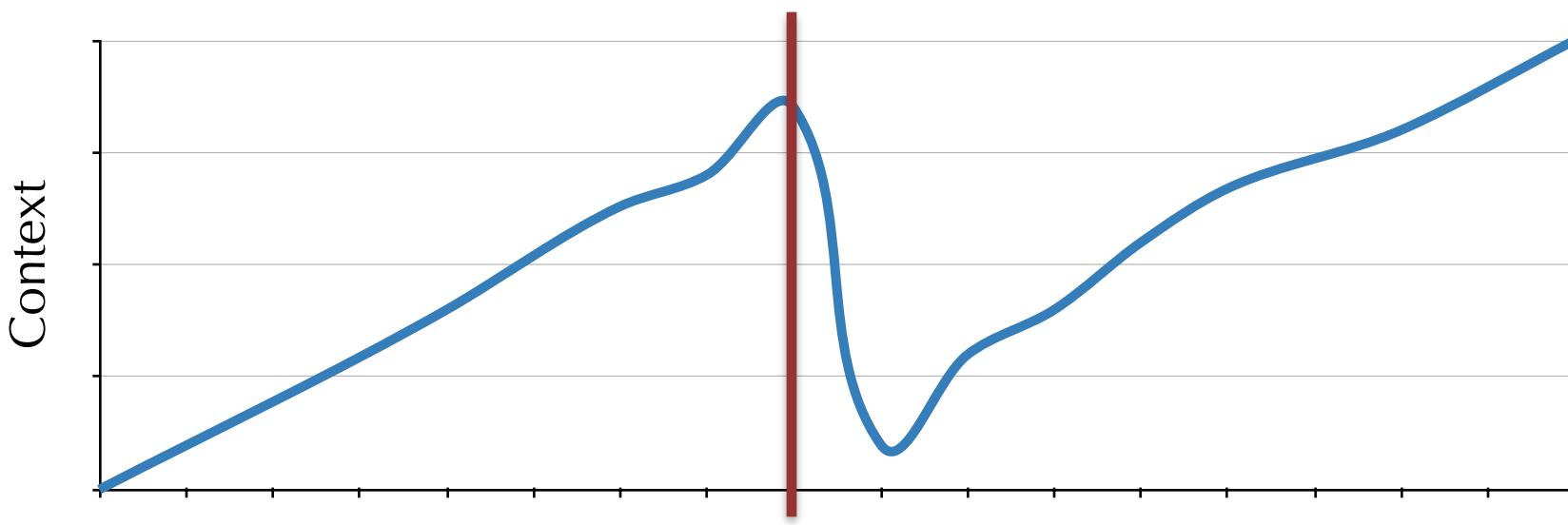
by Chris Parnin

“ A programmer takes between **10-15 minutes** to start editing code after resuming work from an interruption ”



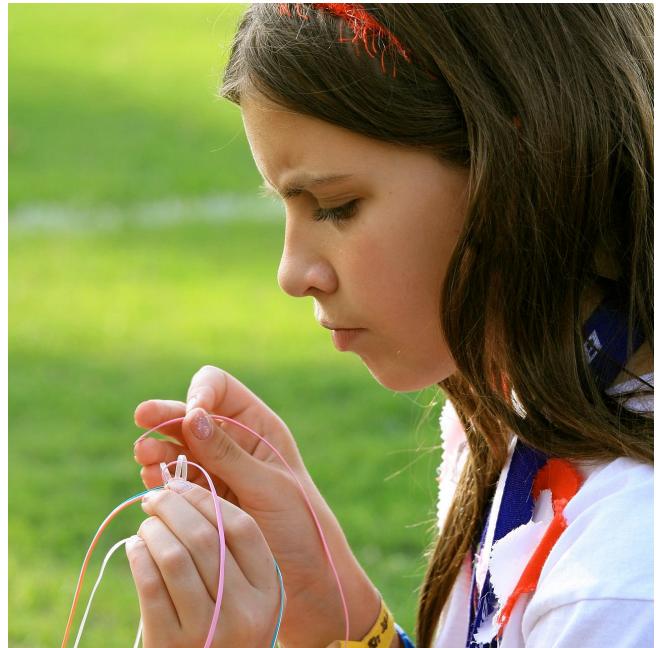
Unacceptable!

Every time you are **interrupted**
you lose the context



Flow

(...) is the mental state of operation in which a person performing an activity is **fully immersed in a feeling of energized focus**, full involvement, and enjoyment in the process of the activity.



"Scout Girl in Concentration"
by Randy

DO NOT DISTURB

I'm on a tight schedule today

Exceptions in case of emergency are permitted

Emergency Checklist:

- Are you on fire and I'm the only one that can put you out?
- Am I on fire and don't realize it?
- Is it the second coming?

FAQ:

Q: How's it going?

A: Good

Q: What are you working on?

A: Stuff

Q: How's stuff going?

A: See answer 1

Q: Do dolphins sleep?

A: Yes, they are mammals and they do sleep.

Have a nice day :)

DO NOT DISTURB

I'm on a tight schedule today

Exceptions in case of emergency are permitted

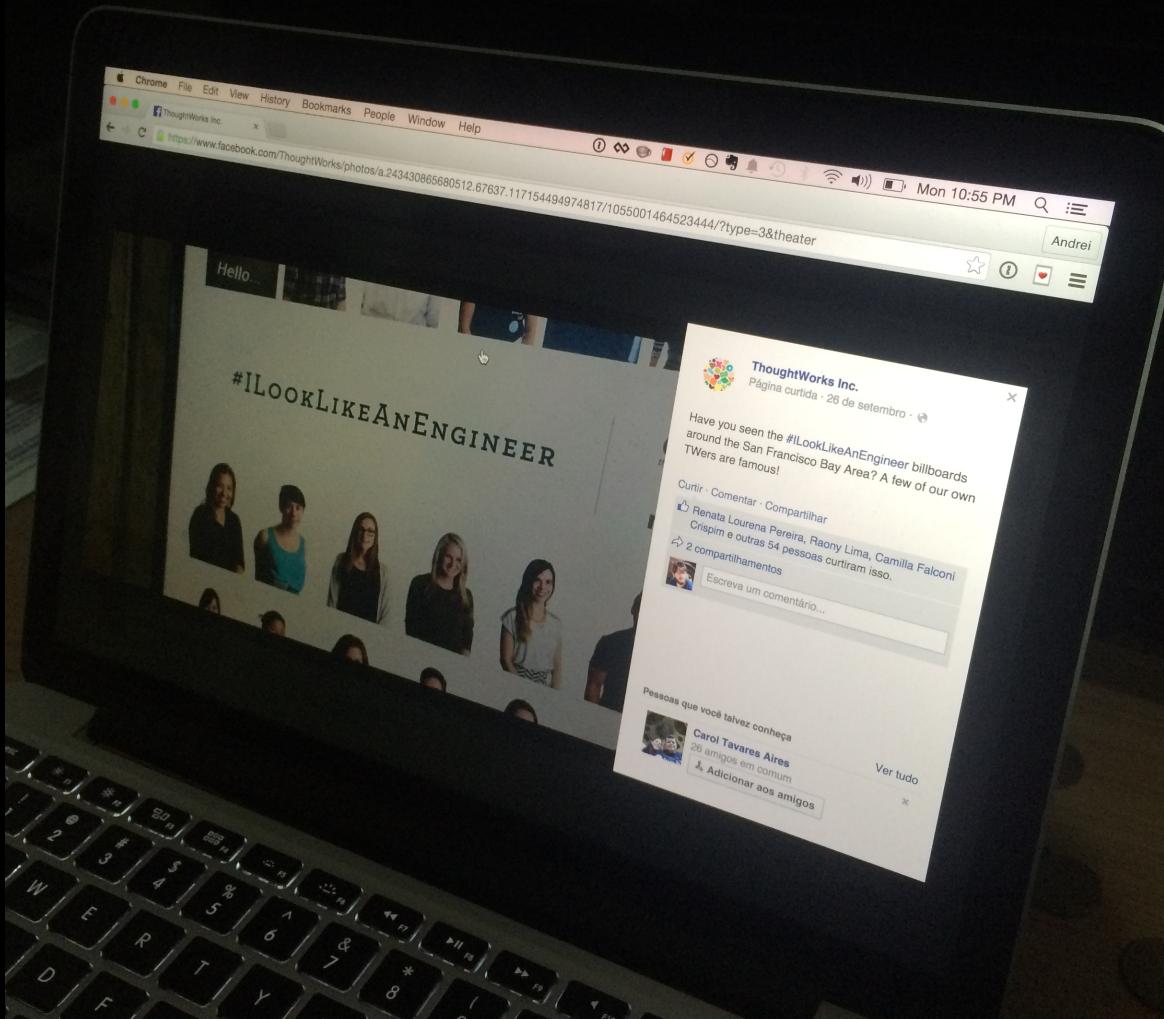
Emergency Checklist:

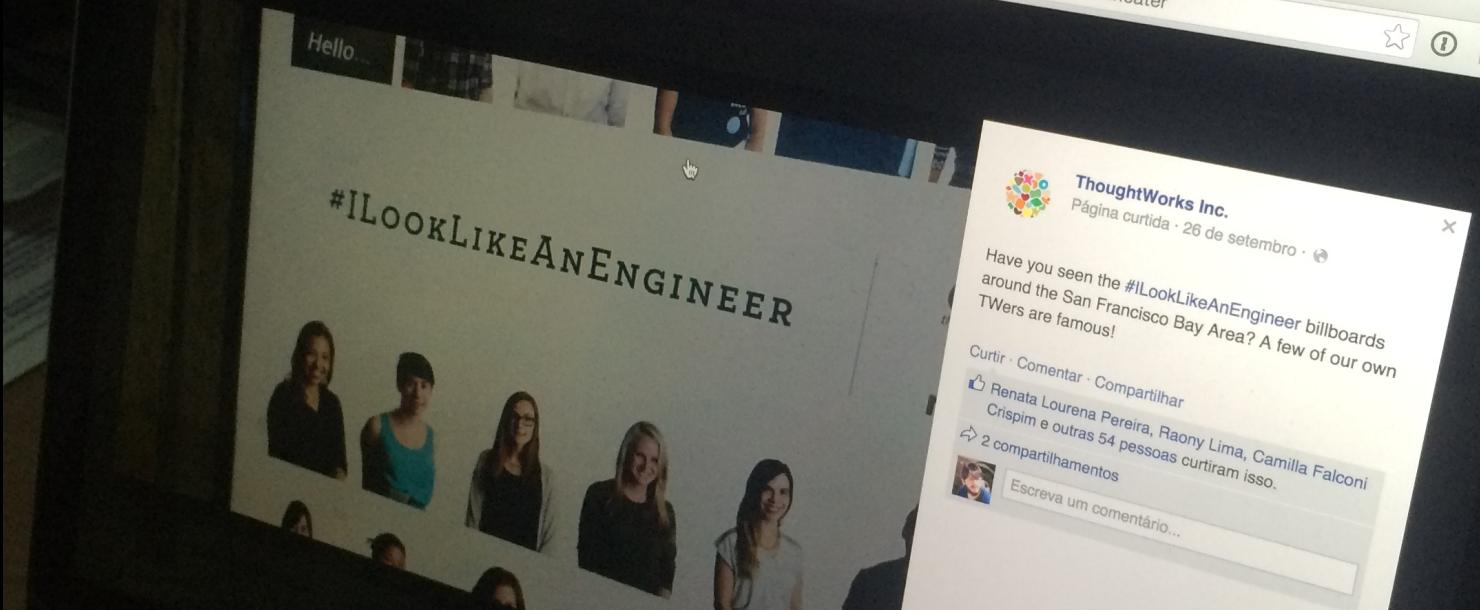
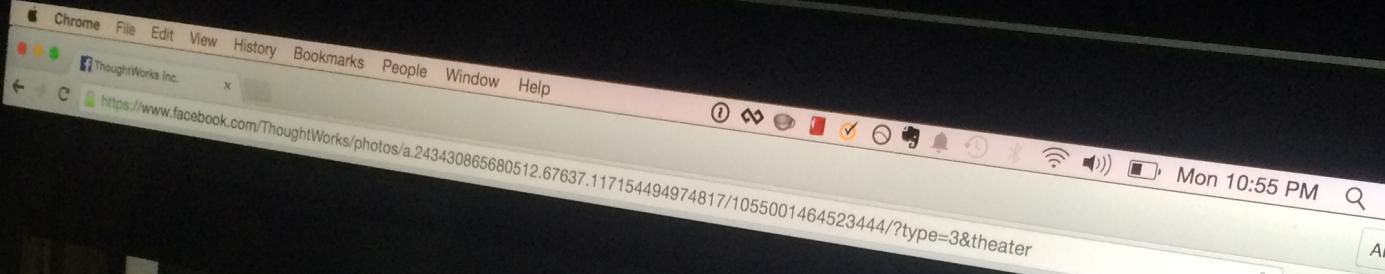
- Are you on fire and I'm the only one that can put you out?
- Am I on fire and don't realize it?
- Is it the second coming?

FAQ:

Q: How's it going?

A: Good





ThoughtWorks Inc.

Página curtida · 26 de setembro ·

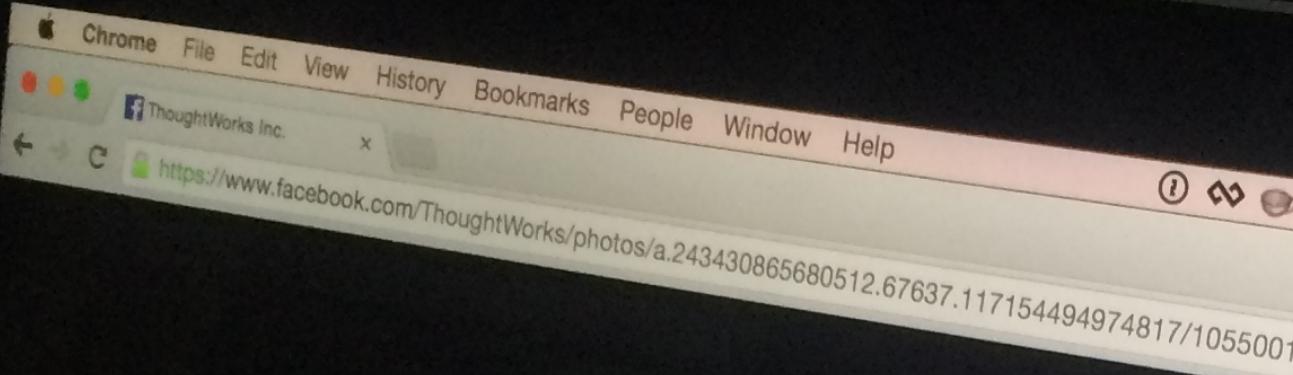
Have you seen the #ILookLikeAnEngineer billboards around the San Francisco Bay Area? A few of our own TWers are famous!

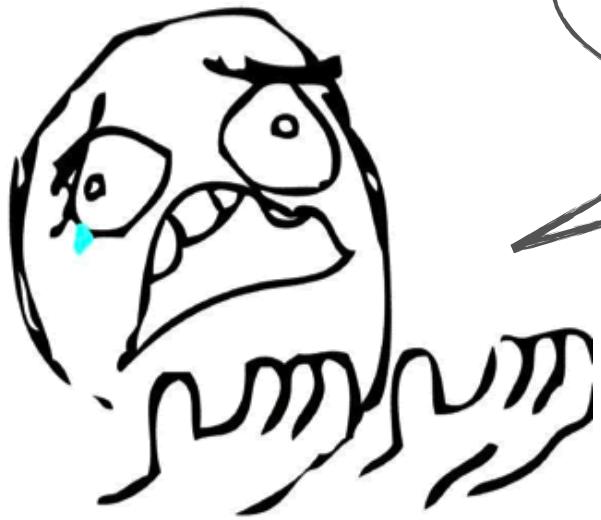
Curtir · Comentar · Compartilhar

Renata Lourena Pereira, Raony Lima, Camilla Falconi Crispim e outras 54 pessoas curtiram isso.

2 compartilhamentos

Escreva um comentário...





It's because my
server takes
4 minutes to restart!



Coding



4 minutes



Verifying





Verifying

While you're waiting for the feedback,
you are actually being **interrupted!**

Passive Interruption

Period of time in which we are interrupted, waiting for a
feedback in order to resume our flow of thinking

Hypothesis

NO!

I'm not being interrupted because I can think about the next steps while I'm waiting

The passive interruption has **similar effect** of the interruption caused by a person

NO!

I'm not being interrupted because I can think about the next steps while I'm waiting

Are you sure



Code

Verify

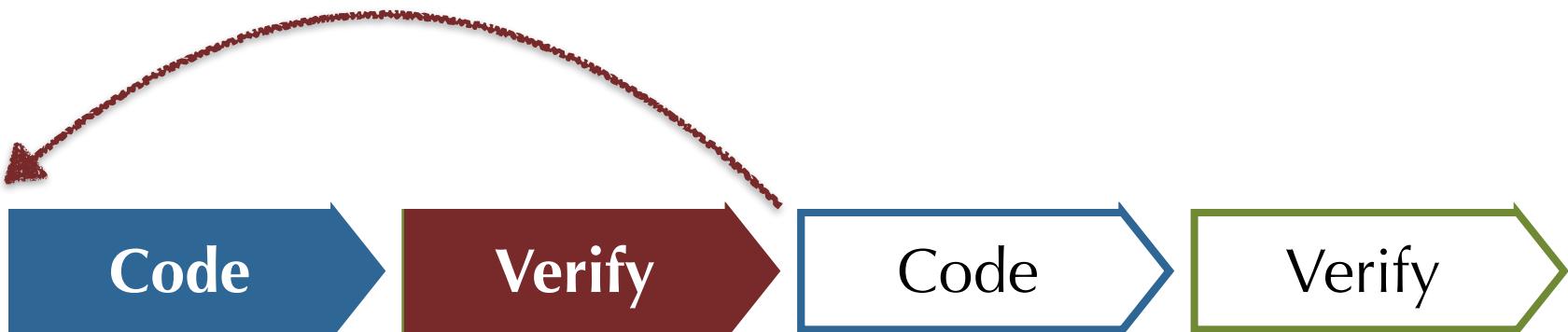
Code

Verify

NO!

I'm not being interrupted because I can think about the next steps while I'm waiting

Are you sure



Hypothesis

The passive interruption has
similar effect of the interruption
caused by a person

NO!

Well, you can write a lot of code and after that you
can test it all together

NO!

Well, you can write a lot of code and after that you can test it all together

Are you sure



NO!

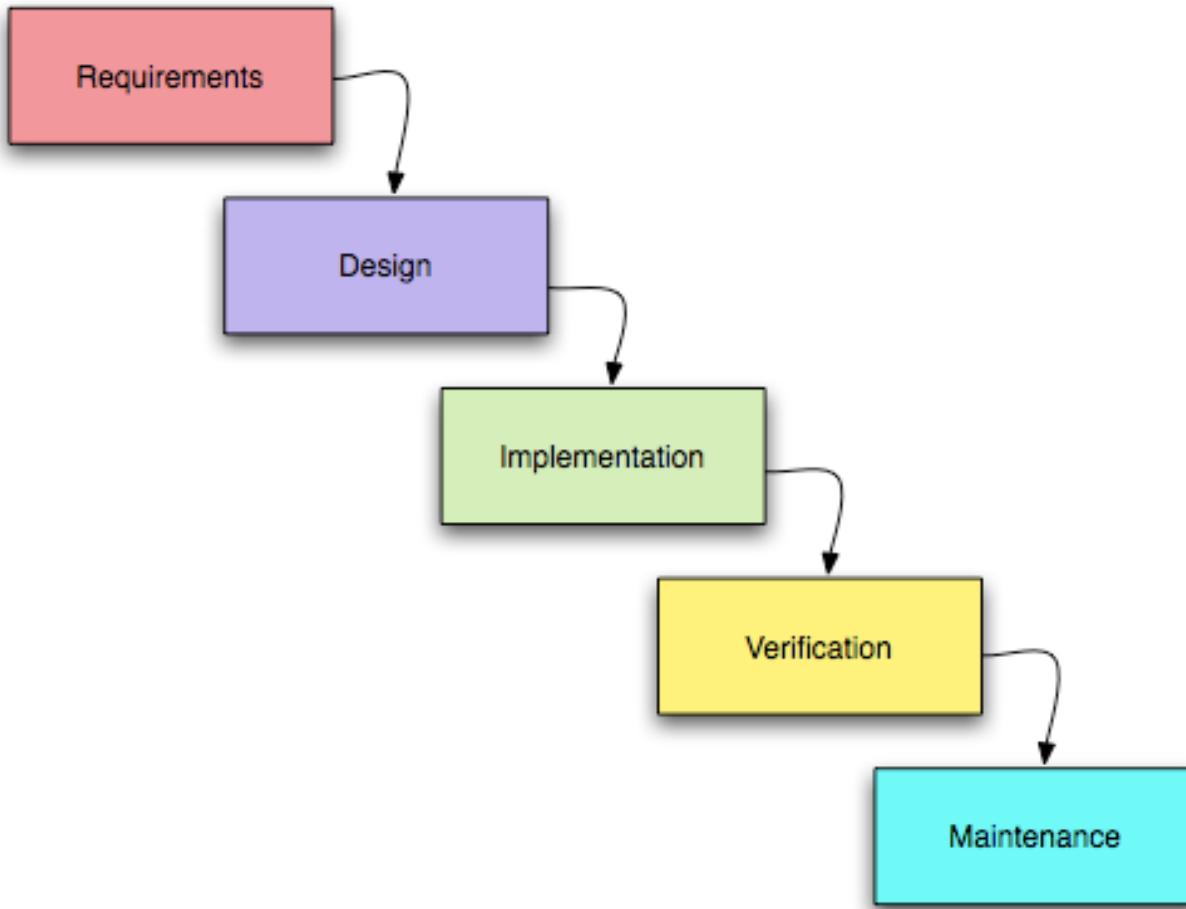
Well, you can write a lot of code and after that you can test it all together

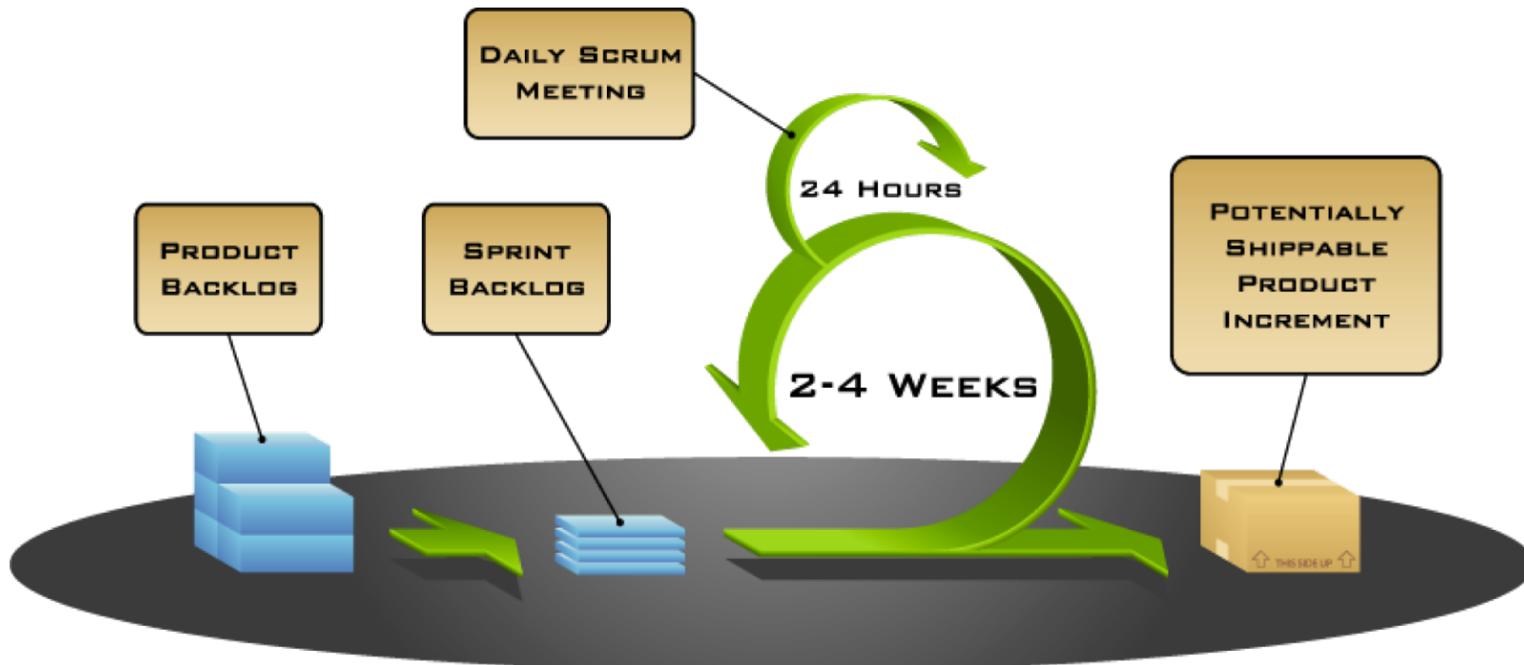
Are you sure



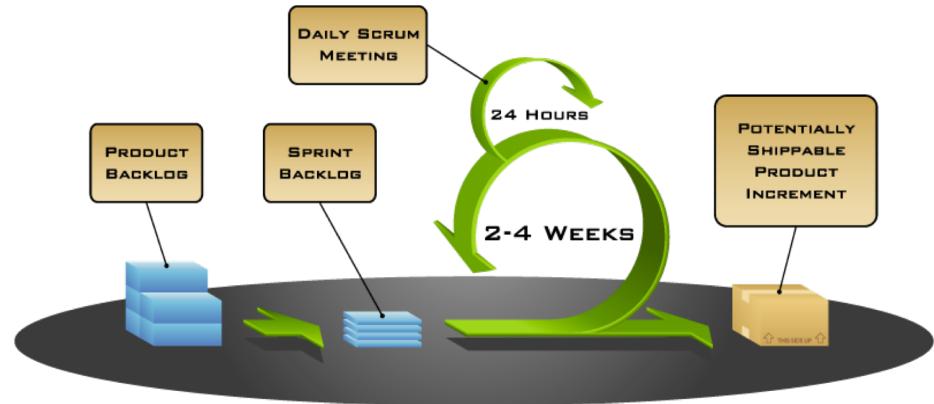
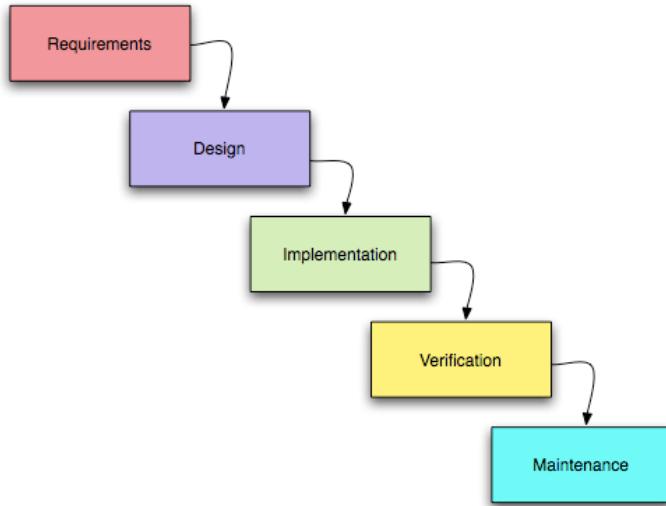
Code

Verify



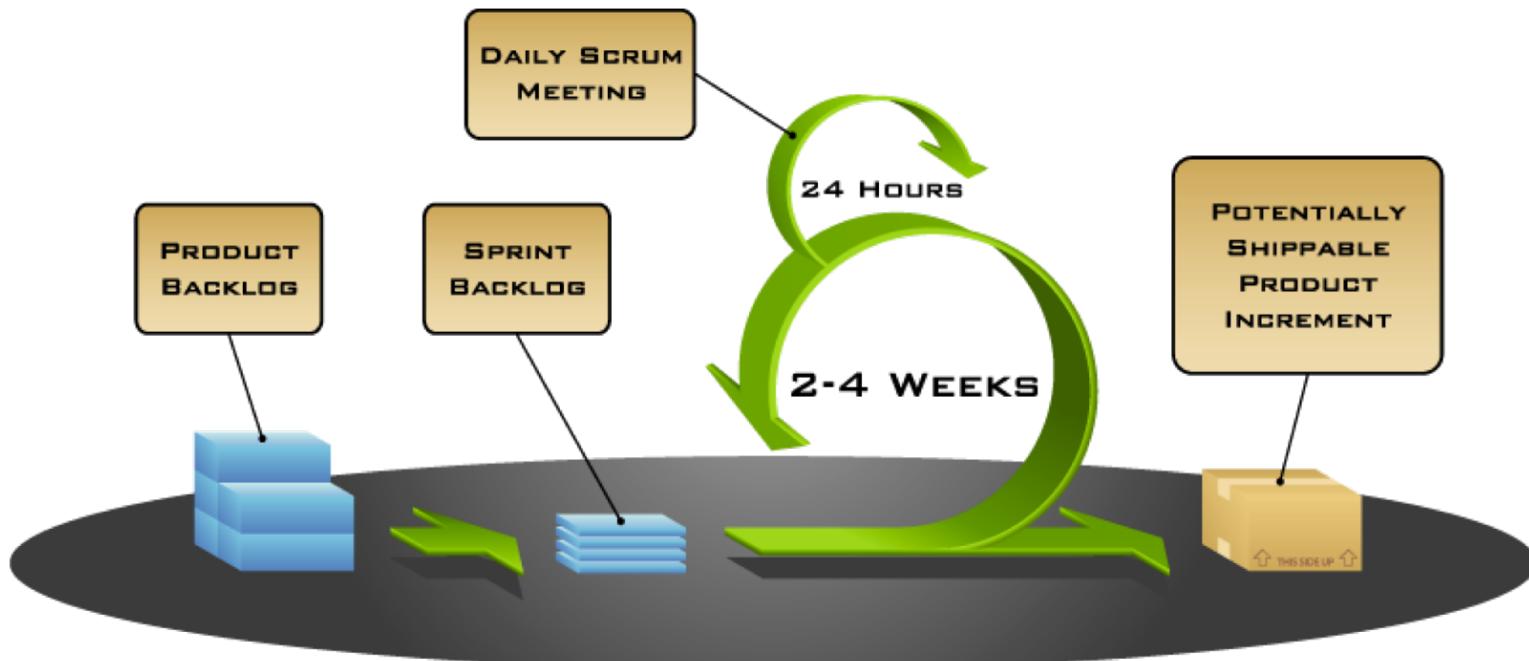


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“ Much of agile thinking is about setting up **feedback** loops so that we can learn more quickly ”

Martin Fowler



NO!

It isn't because you can write a lot of code and after that you can test it

Are you sure



Code

Verify

NO!

It isn't because you can write a lot of code and after that you can test it

Are you sure



baby steps!

How long do you have to wait to receive the feedback of a code line that you just wrote?



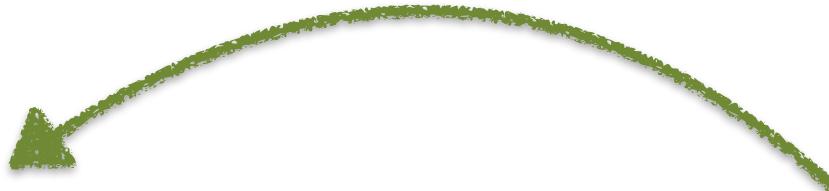
How long do you have to wait to receive the feedback of a code line that you just wrote?



How long do you have to wait to receive the feedback of a code line that you just wrote?



Coding



30 seconds?



Verifying





Bret Victor
@worrydream

“ To design quickly and confidently, we need to be able to try out ideas and verify hypotheses
as fast as we think of them ”

Conditions for Flow

“ The task at hand must have clear and
immediate feedback ”

from Wikipedia

I love utopias. Not because they show us the path,
but because they point us the right direction



WHAT DO WE WANT?



WHAT DO WE WANT? INSTANT FEEDBACK!



WHAT DO WE WANT? INSTANT FEEDBACK!



**HOW WILL WE
ACHIEVE THAT?**



WHAT DO WE WANT? INSTANT FEEDBACK!



**HOW WILL WE
ACHIEVE THAT?**



INSTANT FEEDBACK!



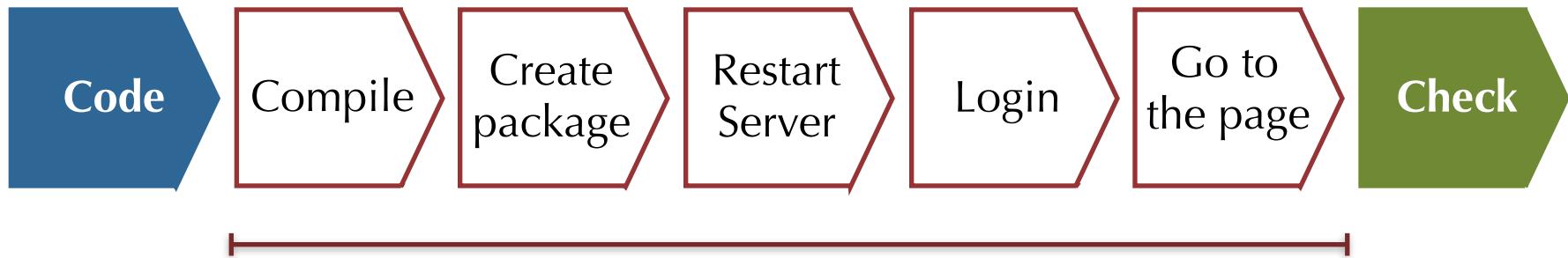
**USING THE SAME
OLD TOOLS!**



Back in 2007...



Verifying

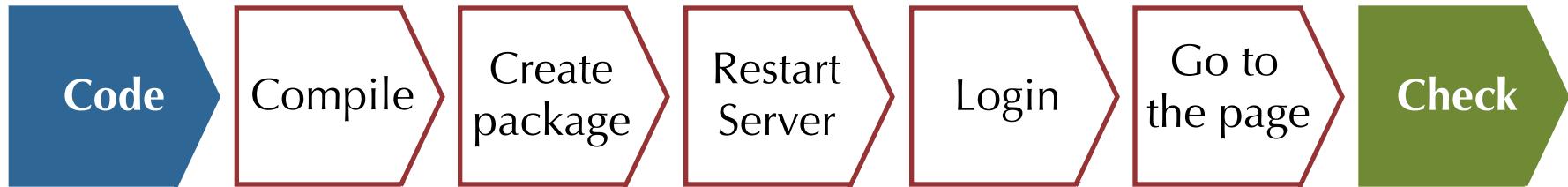


(4 minutes of passive interruption)

Recently...

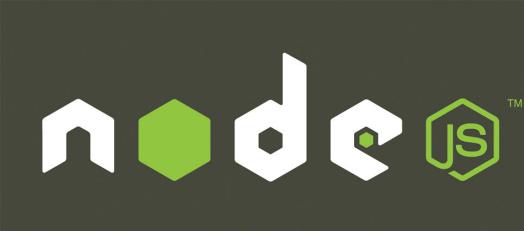


Verifying

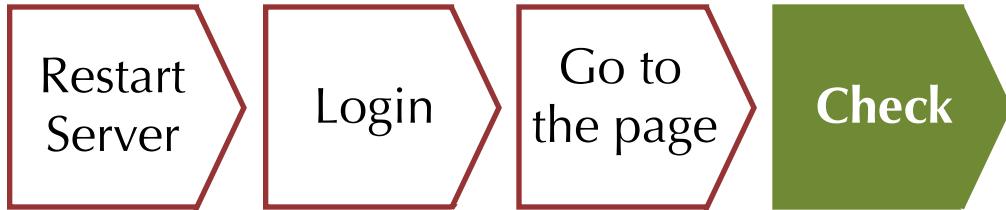
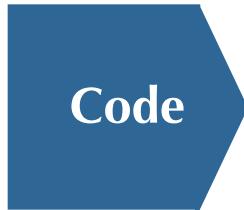


No compilation process

Recently...



Verifying

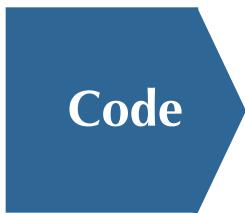
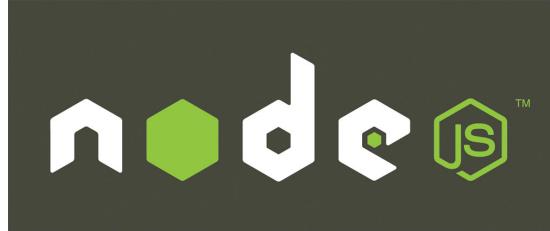


Nodemon automatically reloads the server

Recently...

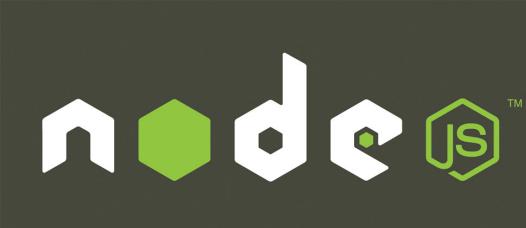


Verifying

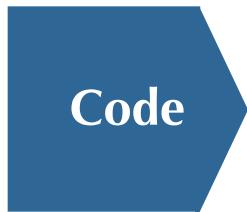


Use of permalink

Recently...

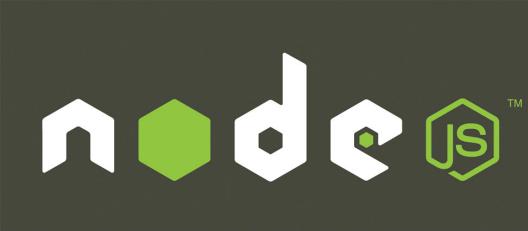


Verifying



Use of permalink

Recently...



Verifying



(1 second of passive interruption)



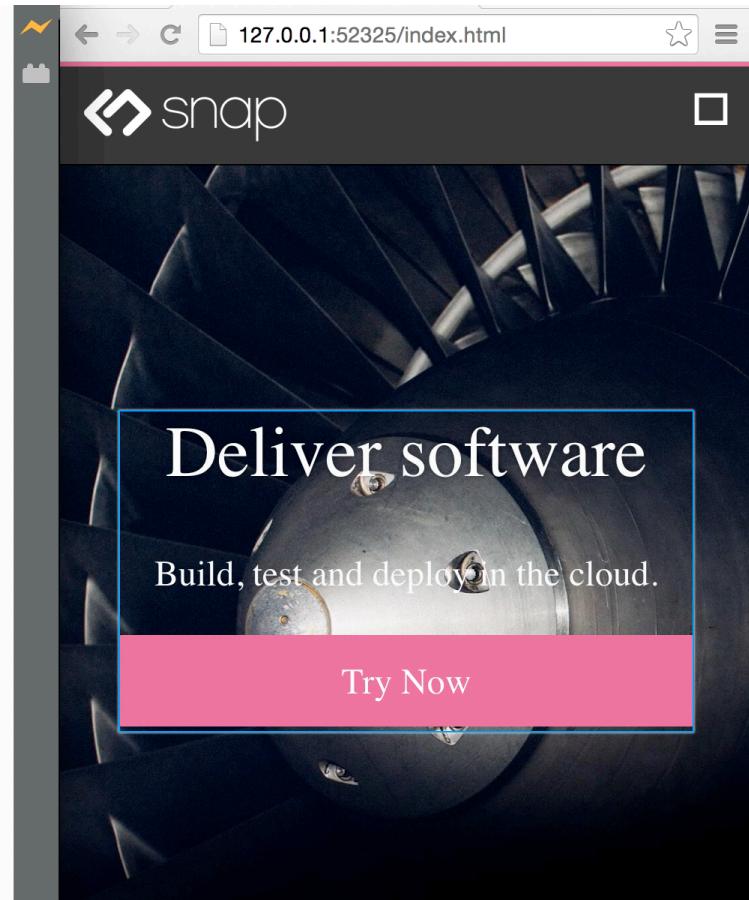
Brackets



Live Preview

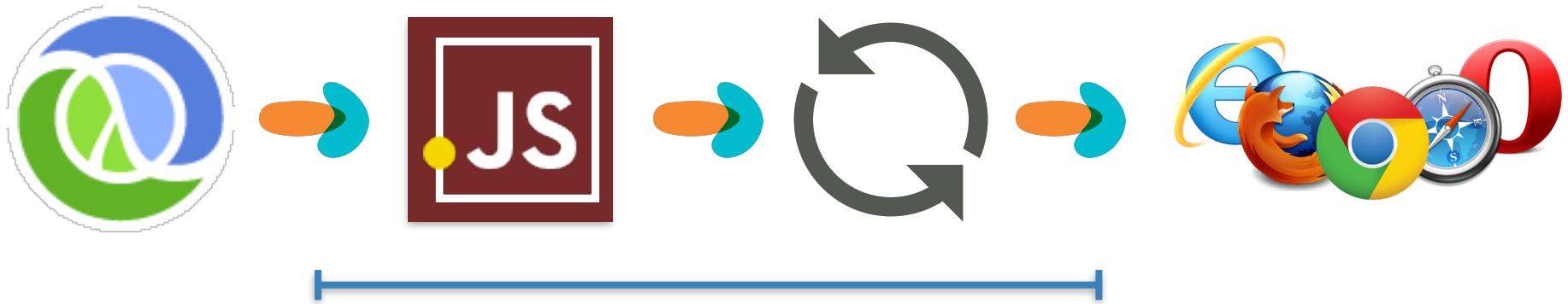
Get a real-time connection to your browser. Make changes to CSS and HTML and you'll instantly see those changes on screen.

```
69      data-400="opacity: 0.1;"  
70      class="background">></div>  
71  <div class="inner">  
72    <div class="hero-content">  
73  
74  
75  
76  
77  <h1>  
78    Deliver software  
79  </h1>  
80  
81  |  
82  
83  
84  
85  <p class="subheading">Build,
```





Clojure



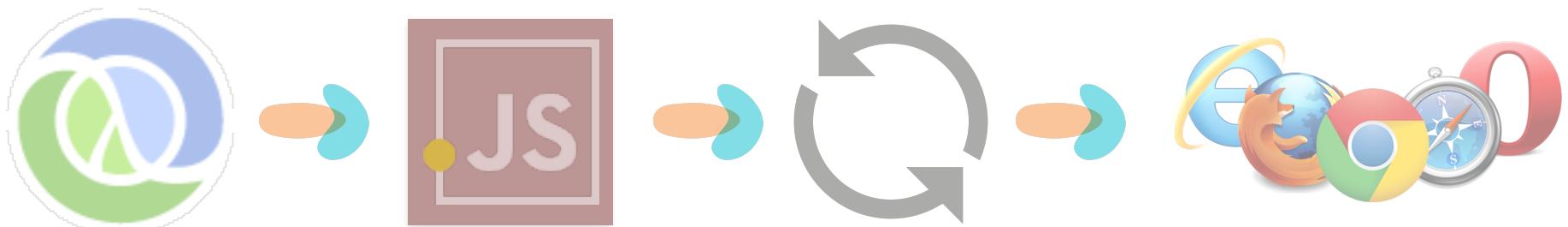
Passive interruption



Clojure

Figwheel

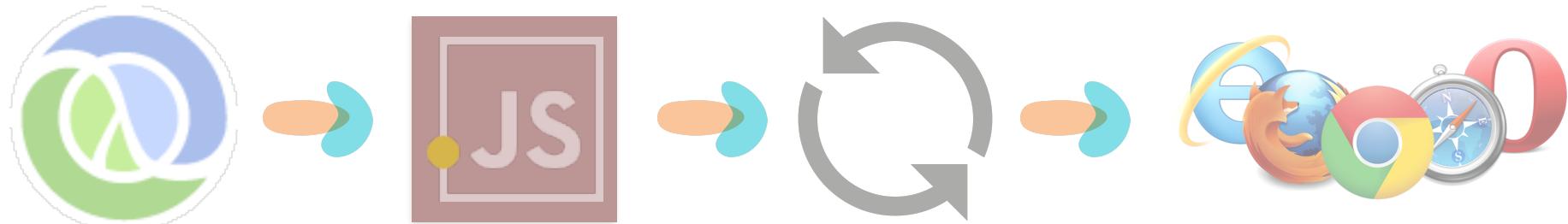
Bruce Hauman
@bhauman





Clojure

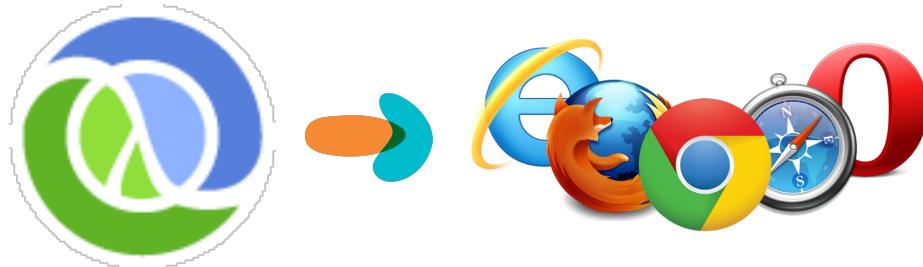
Figwheel builds your ClojureScript code and hot loads it
into the browser as you are coding!





Clojure

Figwheel builds your ClojureScript code and hot loads it
into the browser as you are coding!

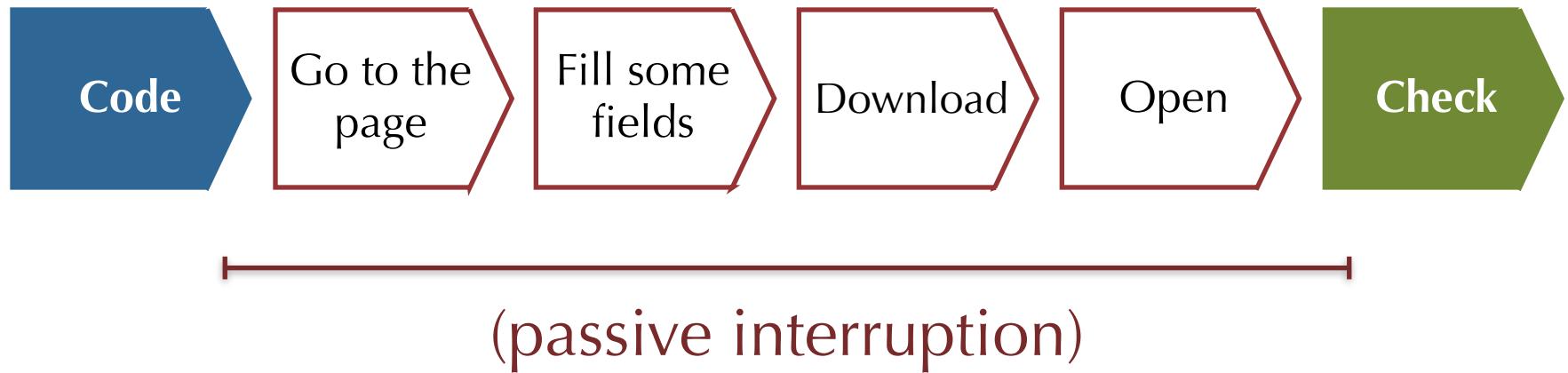


Cool... But I have a
application to maintain

I cannot just change the
technologies that we use

Generating a pdf report

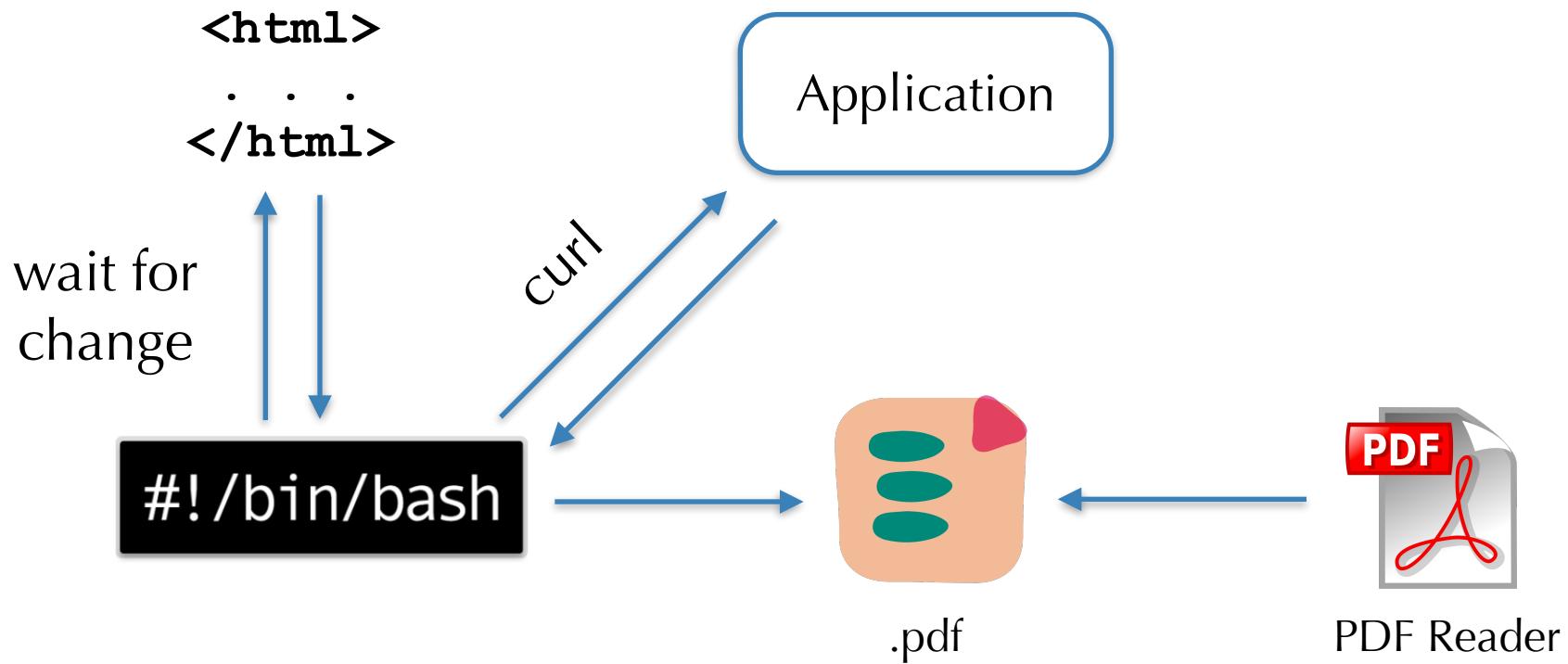
Generating a pdf report



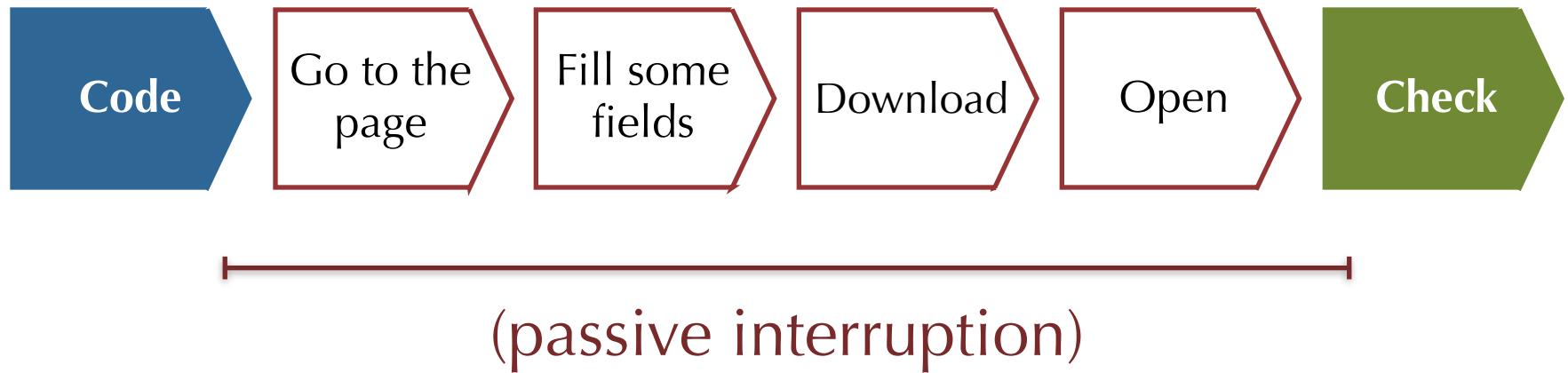
Generating a pdf report



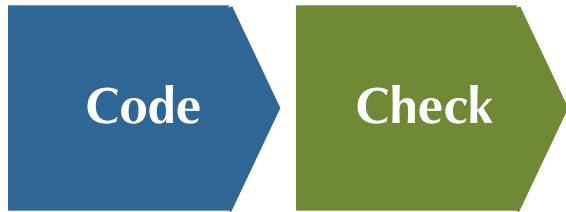
Generating a pdf report



Generating a pdf report

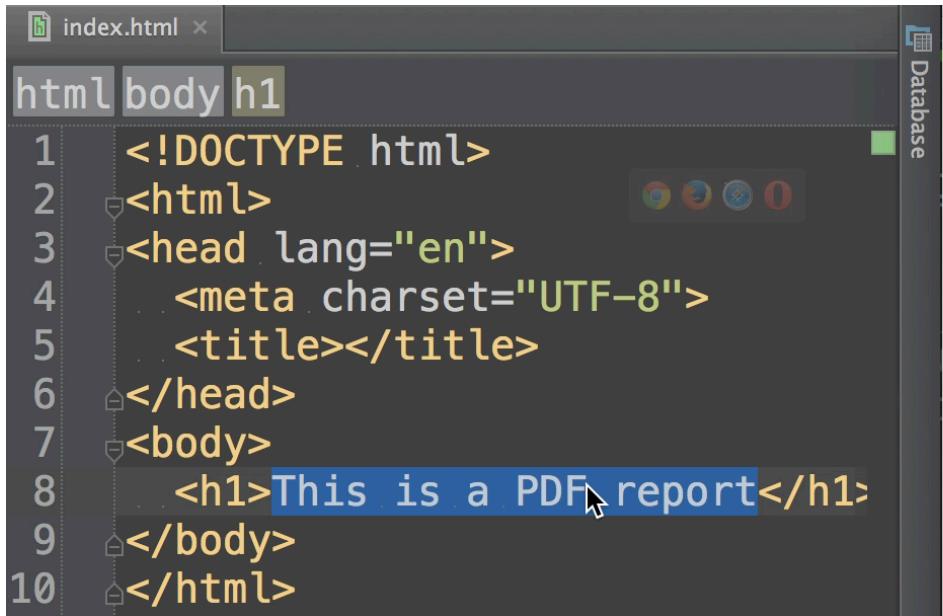


Generating a pdf report



Immediate Feedback!

Generating a pdf report



```
index.html x Database
html body h1
1 <!DOCTYPE html>
2 <html>
3   <head lang="en">
4     <meta charset="UTF-8">
5     <title></title>
6   </head>
7   <body>
8     <h1>This is a PDF report</h1>
9   </body>
10  </html>
```

This is a PDF report

CRUD for Companies

(create, read, update and delete)

CRUD for Companies

Home Company

Name Search + Add

Name	State	City

Search

Home Company

New Company

Name

Number

State

City

Save changes Cancel

Insert

Home Company

Name Search + Add

Name	State	City
ThoughtWorks	PE	Recife

Verify

CRUD for Companies

Home Company

Name Search

+ Add

Name	State	City

Search

+ Add

City	Recife

CRUD for Companies

Home Company

New Company

Name	ThoughtWorks
Number	13.134.133/0001
State	PE
City	Recife

Save changes **Cancel**

Home Company

Name	
Name	State

Search

+ Add

State	City
PE	Recife

CRUD for Companies

A hand-drawn wireframe of a company management application interface.

The top navigation bar includes "Home" and "Company" buttons. On the left, there's a sidebar with a "Name" input field and a table with four rows and one column, labeled "Name". The main content area has a search bar with "Name: ThoughtWorks" and a "Search" button. To the right of the search bar is a "+ Add" button. Below these elements is a table with three columns: "Name", "State", and "City". The first row contains the header labels, and the second row contains the data: "ThoughtWorks", "PE", and "Recife".

Name	State	City
ThoughtWorks	PE	Recife

CRUD for Companies

Home Company

Name Search + Add

Name	State	City

Search

Home Company

New Company

Name

Number

State

City

Save changes Cancel

Insert

Home Company

Name Search + Add

Name	State	City
ThoughtWorks	PE	Recife

Verify

Writing the "save" method

```
5  public void save() {  
6      // First line|  
7  
8  }
```

Writing the "save" method

Home Company

Name Search

+ Add

Name	State	City

Home Company

New Company

Name

Number

State

City

Save changes Cancel

Home Company

Name Search

+ Add

Name	State	City
ThoughtWorks	PE	Recife

Search



Insert



Verify

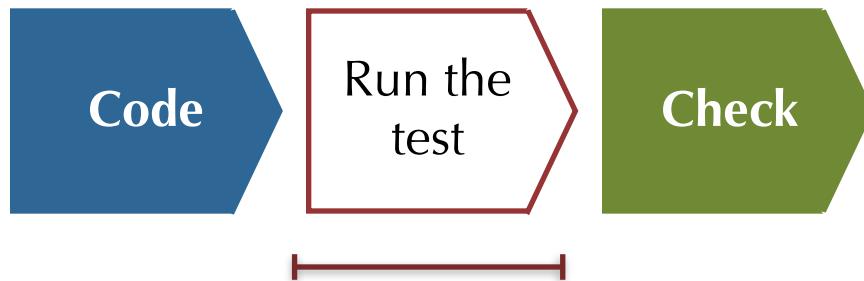
(passive interruption)

Writing the "save" method

```
5  public void save() {  
6      // First line|  
7  
8  }
```

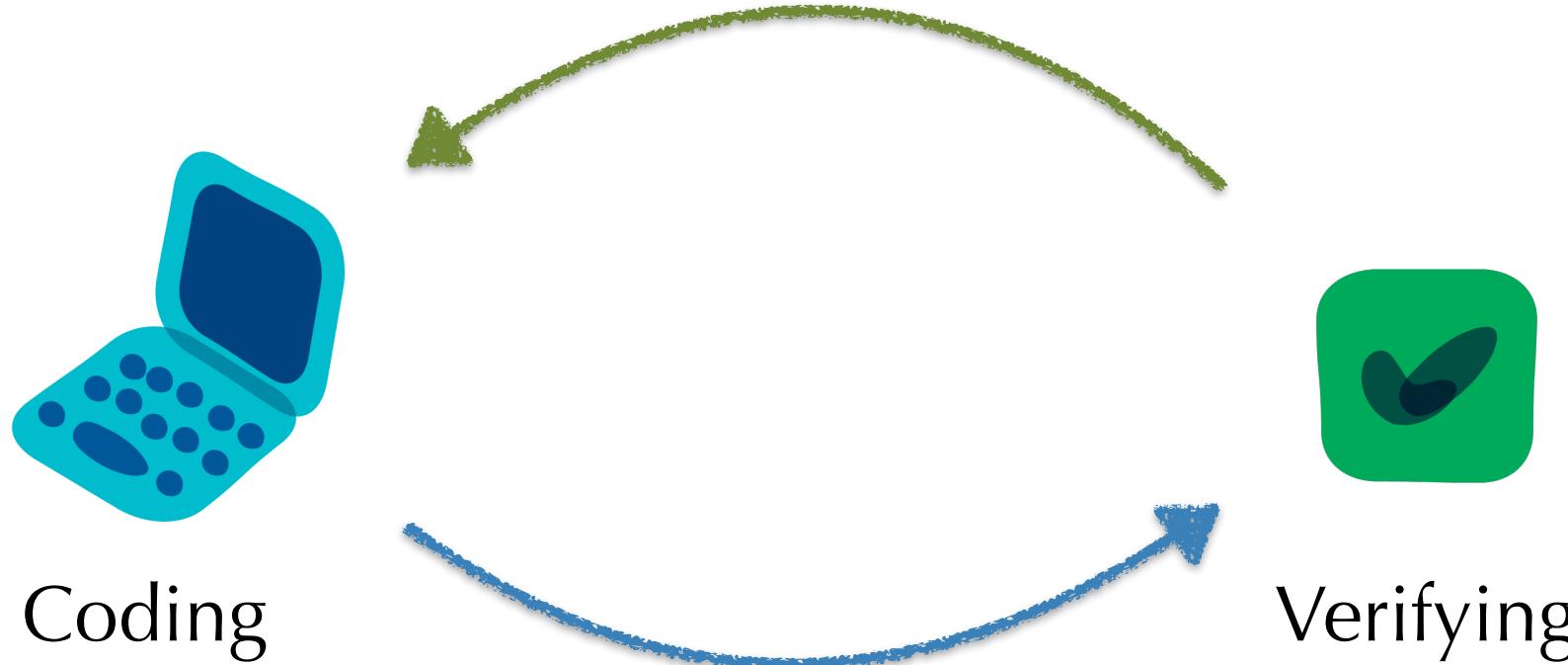
```
7 @Test  
8 public void saveTest() {  
9  
10 }
```

Writing the "save" method



(passive interruption)

How long do you have to wait to finish the execution of an automated test?



How long do you have to wait to finish the execution of an automated test?



Coding



30 seconds?



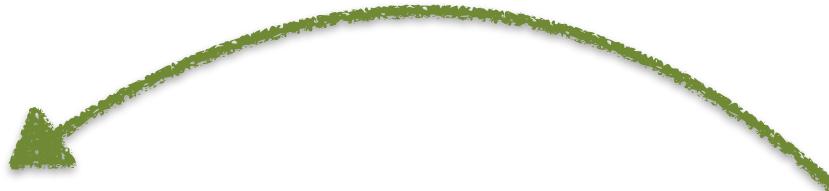
Verifying



How long do you have to wait to finish the execution of an automated test?



Coding



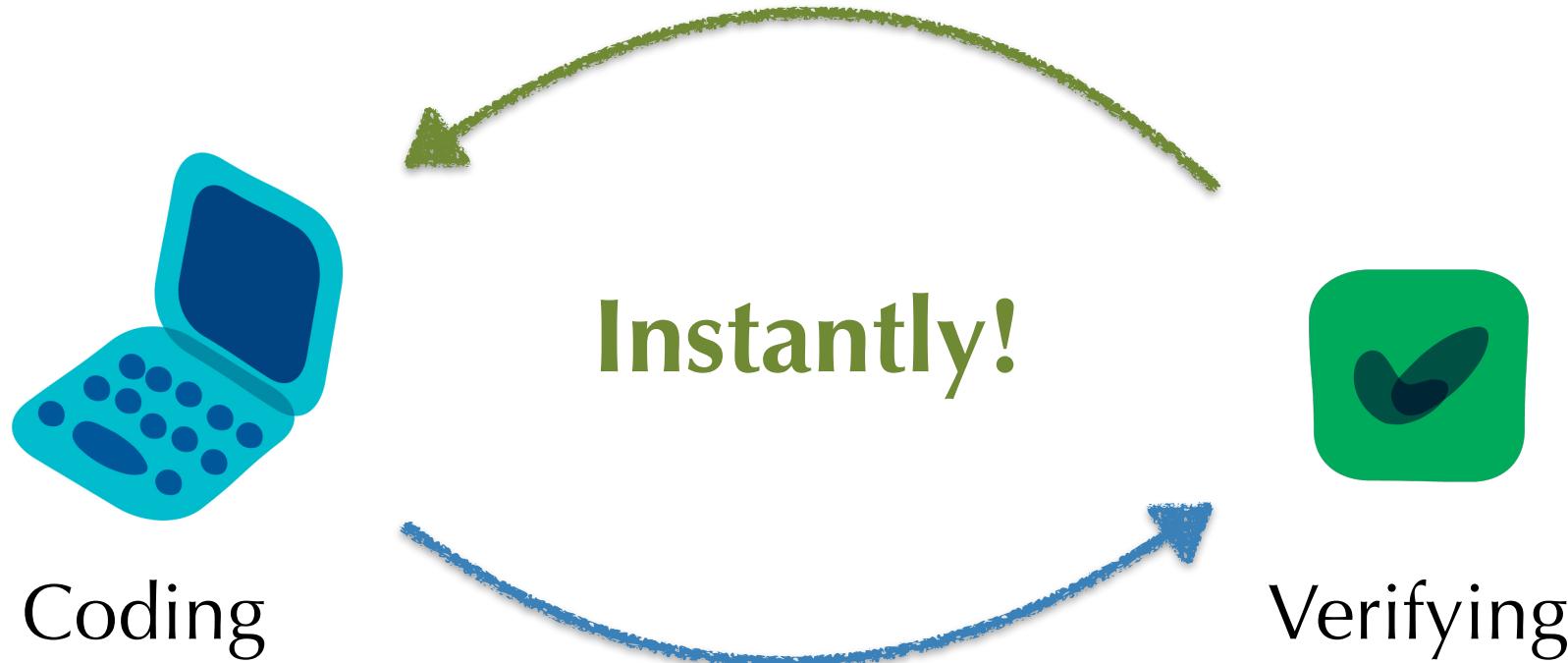
15 seconds?



Verifying



How long do you have to wait to finish the execution of an automated test?



Test Time

03 September 2014

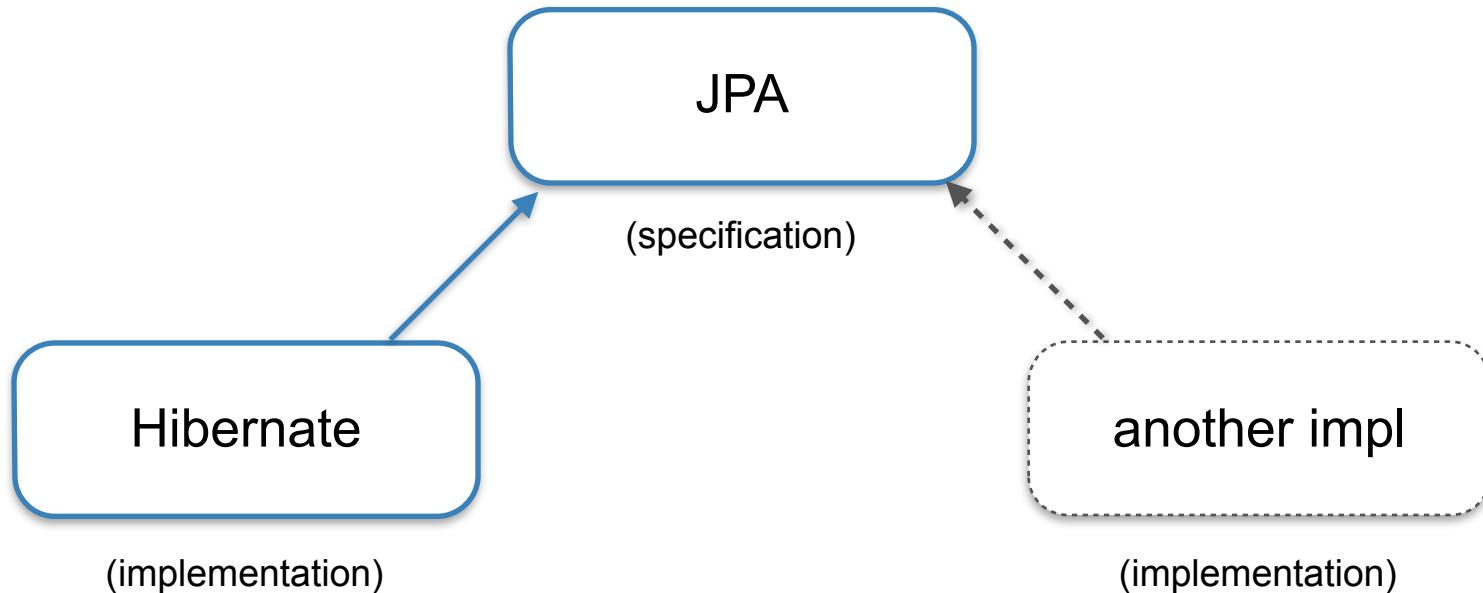
by Robert C. Martin (Uncle Bob)

“ If it (test) takes ten seconds just to start testing, toss it! ”
Allow ***nothing*** to slow down your tests.

Running an automated test

```
5  public void save() {  
6      // First line|  
7  
8  }
```

Running an automated test



Running an automated test

Hibernate →

Running an automated test

Hibernate



(17 seconds for one class)

Running an automated test

Hibernate



(17 seconds for one class)

Raiden JPA ➔

Running an automated test

Hibernate



(17 seconds for one class)

Raiden JPA



(3 seconds for one class)

Writing the JavaScript to call the save

```
function save() {  
    // First line  
}
```

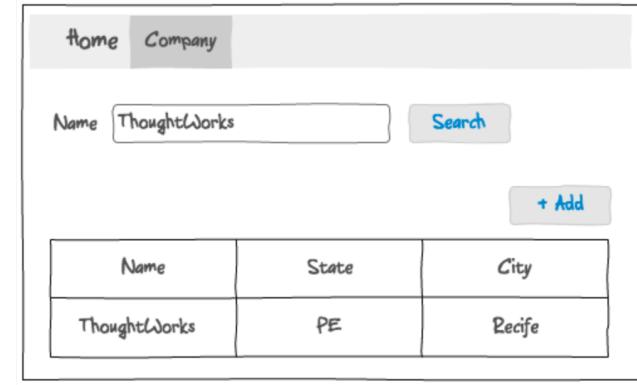
Writing the JavaScript to call the save



A screenshot of a web application interface. At the top, there are two tabs: "Home" and "Company". Below the tabs, there is a search bar with a placeholder "Name" and a "Search" button. To the right of the search bar is a blue button labeled "+ Add". Below the search bar is a table with three columns: "Name", "State", and "City". There are four rows of data in the table.



A screenshot of a web application interface titled "New Company". It contains fields for "Name" (with "ThoughtWorks" typed in), "Number" (with "13.134.133/0001" typed in), "State" (with "PE" selected from a dropdown), and "City" (with "Recife" typed in). At the bottom are "Save changes" and "Cancel" buttons.



A screenshot of a web application interface showing the results of the search. The table now has one row, corresponding to the company "ThoughtWorks" with state "PE" and city "Recife".

Search



Insert



Verify

(passive interruption)

Writing the JavaScript to call the save

Home Company

Name Search

+ Add

Name	State	City

Home Company

New Company

Name

Number

State

City

Save changes Cancel

Home Company

Name Search

+ Add

Name	State	City
ThoughtWorks	PE	Recife

Search



Insert



Verify

Which step takes more time?

Writing the JavaScript to call the save

Home Company

Name Search

+ Add

Name	State	City

Home Company

New Company

Name

Number

State

City

Save changes Cancel

Home Company

Name Search

+ Add

Name	State	City
ThoughtWorks	PE	Recife

Search

Insert

Verify

Which step takes more time?

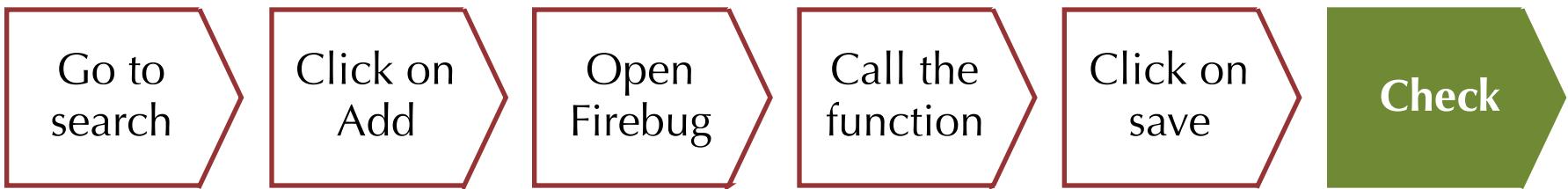
Writing the JavaScript to call the save

```
dev.fill = function() {
    if (location.href.contains('companies/new')) {
        $('#name').val('Empresa ' + new Date().getTime());
        $('#legalNumber').val('00.000.000/0001');

        $('.state').val('PE');
        $('.state').change();
        $('#city option:contains("Recife")').waitForExist(function() {
            $(this).attr('selected', 'selected');
        });

        $('#address').val('Rua Boa Viagem, 2000');
        $('#postalCode').val('00000-000');
    }
}
```

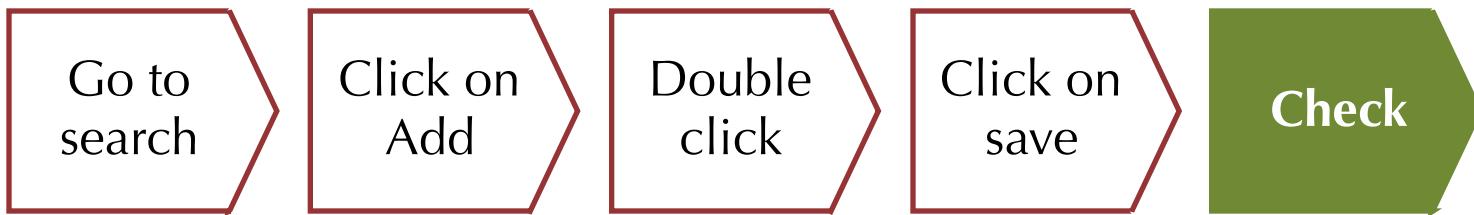
Writing the JavaScript to call the save



Writing the JavaScript to call the save



Writing the JavaScript to call the save



It's not just about the
right tools...

It's about be aware of the
passive interruptions

... and reduce them!

Gracias!



ThoughtWorks® is hiring!

<http://join.thoughtworks.com/>



@andreitognolo

github.com/andreitognolo

andreitognolo@gmail.com

References

- **Bret Victor** - <http://vimeo.com/36579366>
- **Martin Fowler** - <http://martinfowler.com/bliki/FrequencyReducesDifficulty.html>
- **Chris Parnin** - <http://blog.ninlabs.com/2013/01/programmer-interrupted/>
- **Flow** - [https://en.wikipedia.org/wiki/Flow_\(psychology\)](https://en.wikipedia.org/wiki/Flow_(psychology))
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