

**Berlin**

09/11.05.2013

[berlin.codemotionworld.com](http://berlin.codemotionworld.com)



Nikolas.M@rtens.org



Templates don't need to  
<break> your browser

{codemotion}

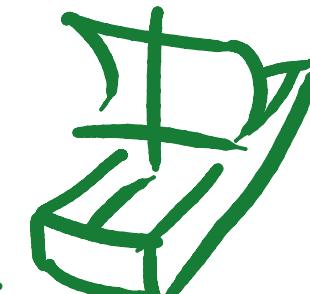
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Why templating?

Why templating?

That ship  
has sailed



Me

M  
e  
g

Nikolas Martens



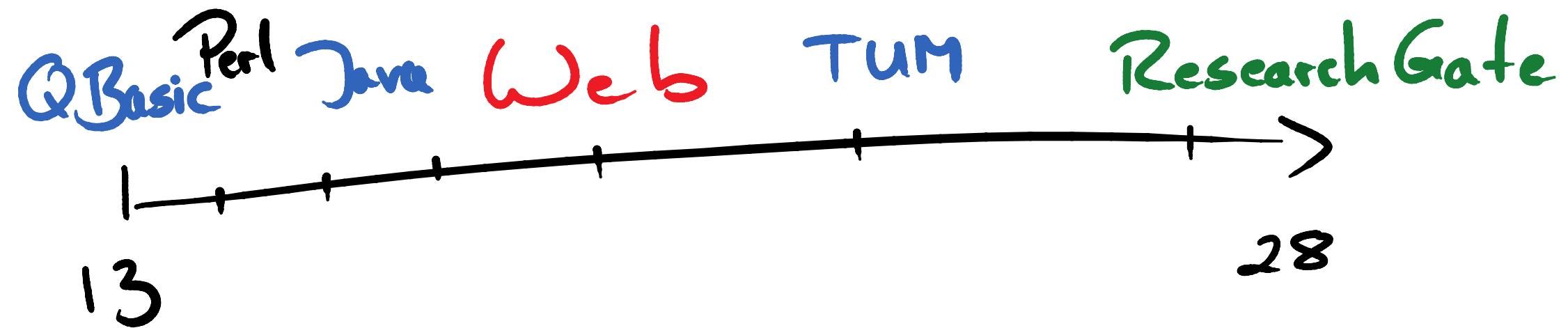
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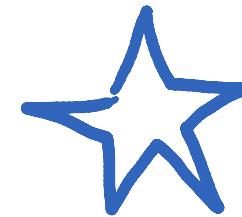
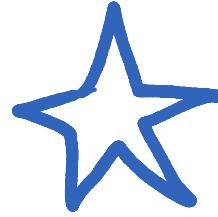
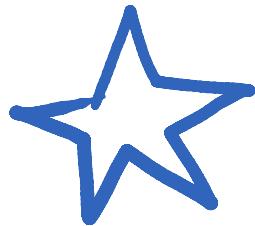
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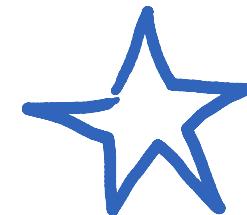
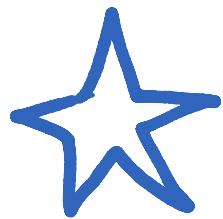


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Experimenting



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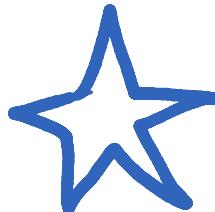
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Experimenting



Software  
Architecture



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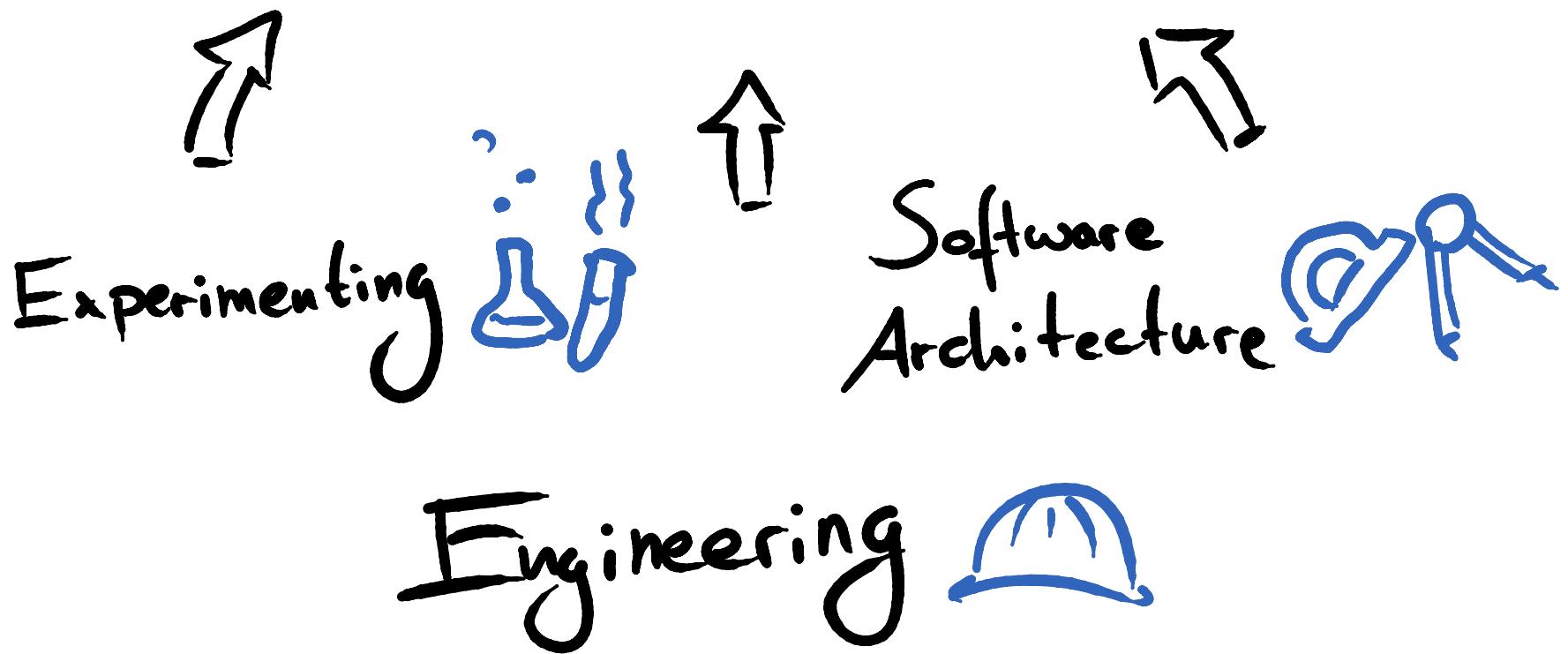
Nikolas.M@rtens.org

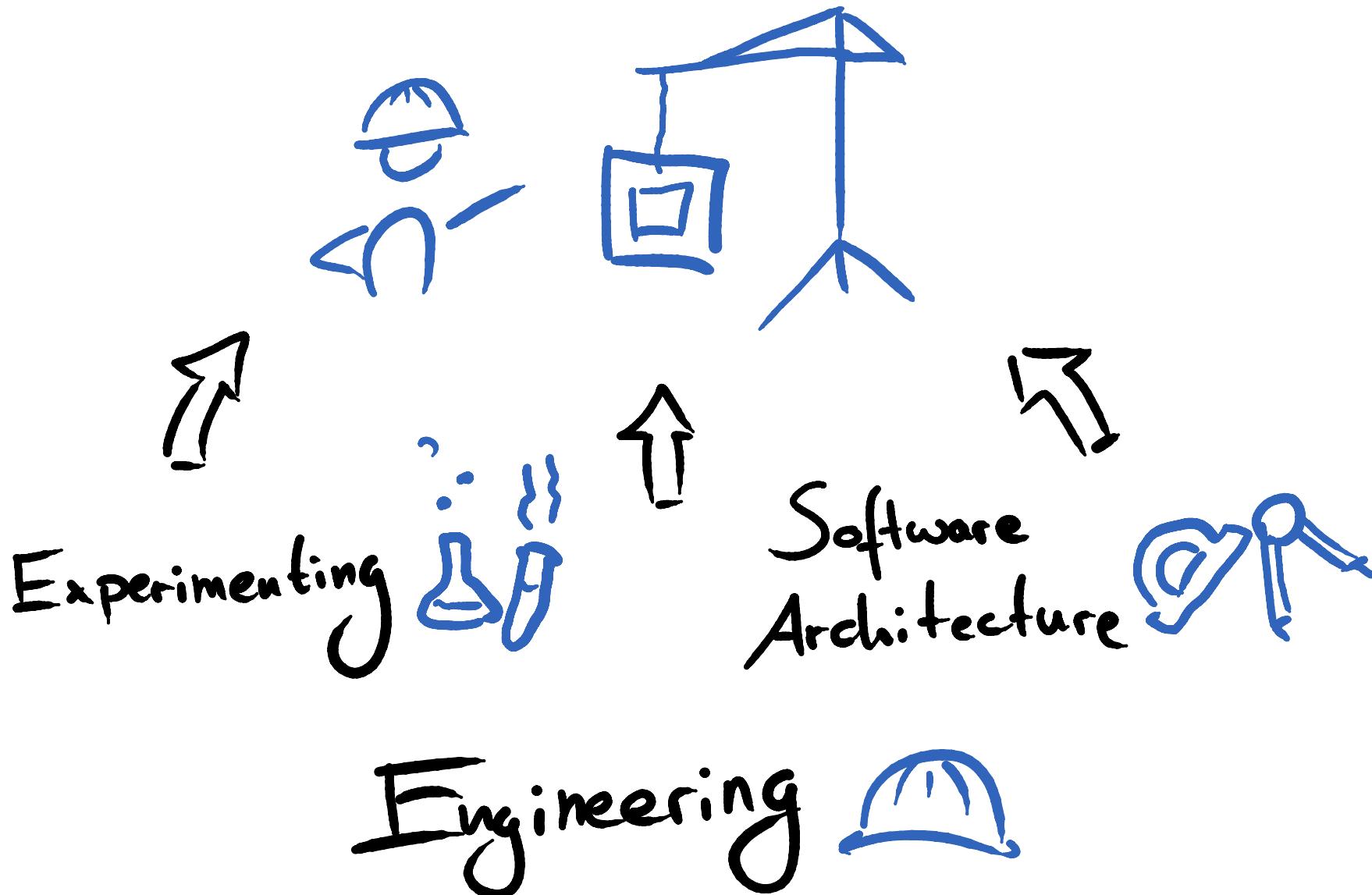
<http://rtens.org>

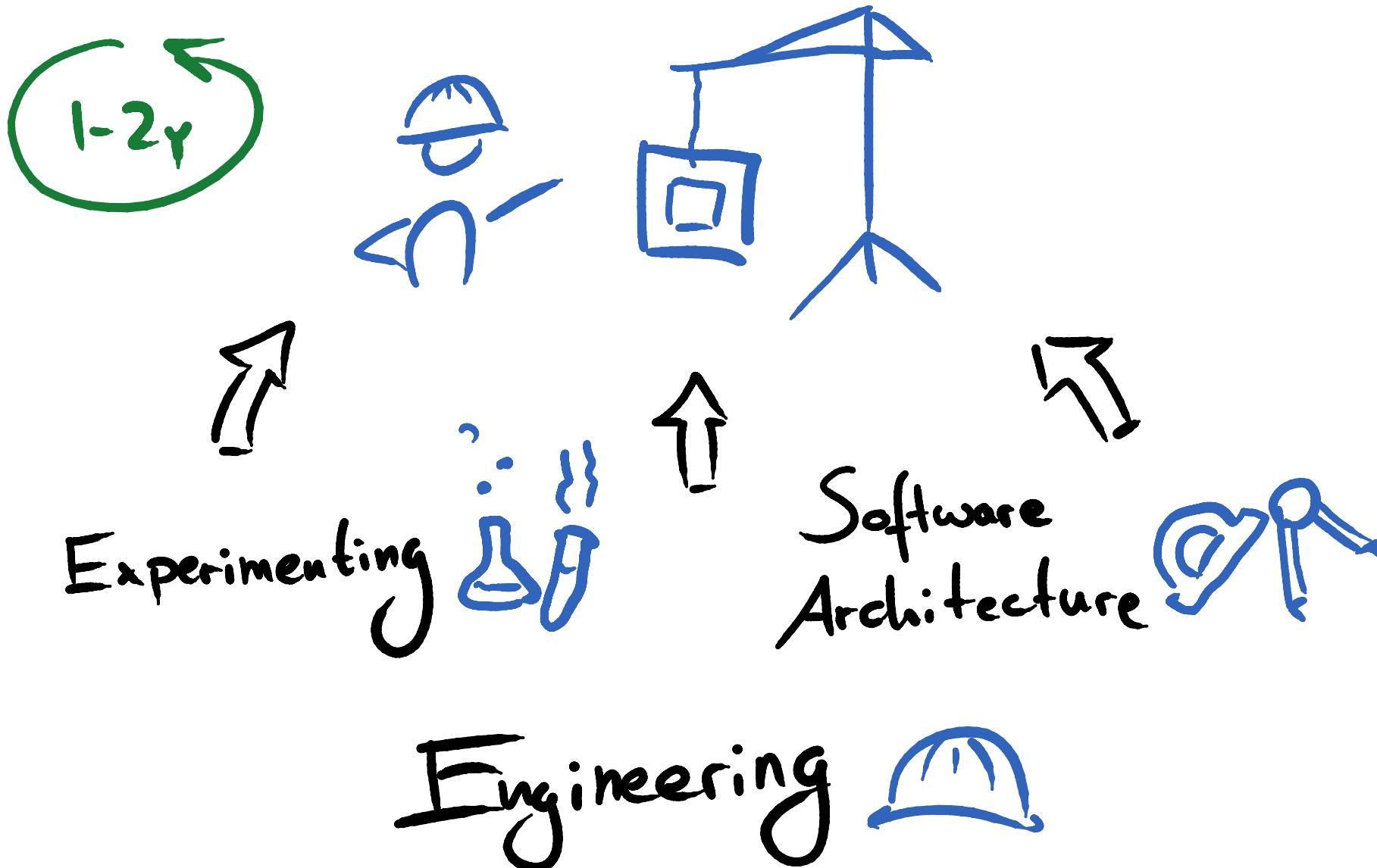
Experimenting

Software  
Architecture

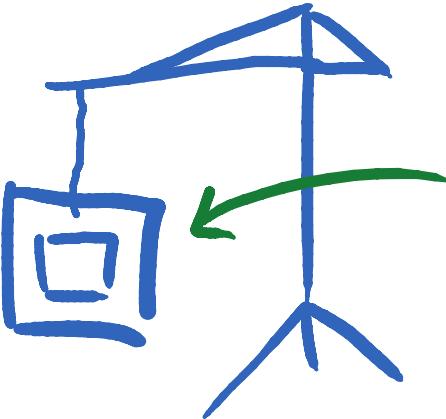
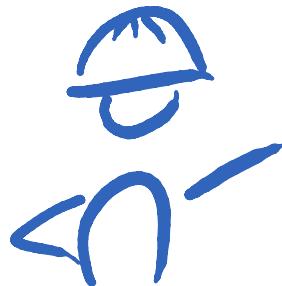
Engineering







1-2y



watoki

Experimenting



Software  
Architecture



Engineering





Suddenly...

The screenshot shows a website for "Working Software". The header includes the company logo ("working software") and a navigation bar with links for Home, Development, Projects, Clients, Hosting, The Team, and Blog. The main content area features a post with the following text:

Energy for Opportunity website is now live! ← Thanks Louis now here is my dad ↗

**Your templating engine sucks and everything you have ever written is spaghetti code (yes, you)**

26 Nov 2011

Templating is a real hot button in the web development community. The only other topic I can think of more prone to sanctimony and religious flame wars is quality control and testing.

The high horses that people usually get on are that all too familiar TLA MVC (Model/View/Controller) architecture and "separation of presentation and business logic".

**Subscribe**  
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WorkingSoftware  
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Email Address \*  
  
Subscribe via Email

Spaghetti?

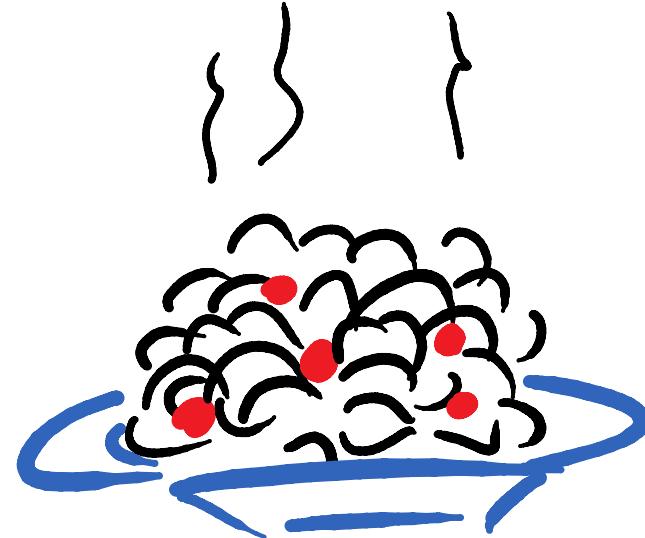
Spaghetti?





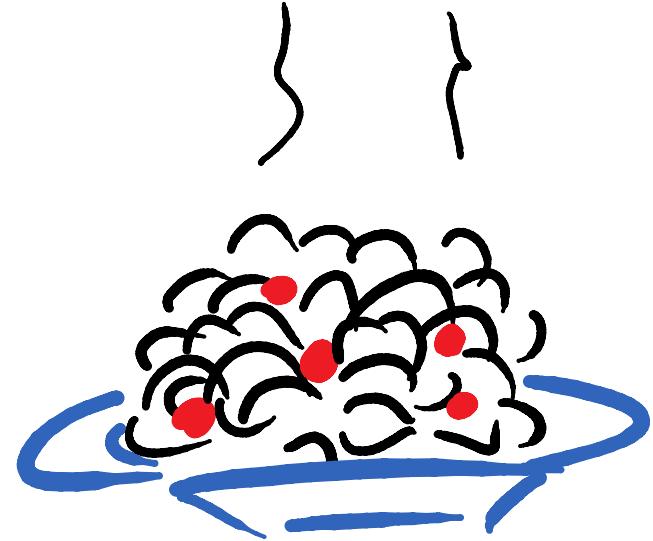
# Spaghetti

```
<?php if($db->fetchOne('select count(*) from messages')) { ?>
    <h1>There are no messages</h1>
<?php } else { ?>
    <?php $messages = $db->fetchAll('select * from messages'); ?>
    <h1>There are <?php echo count($messages); ?> messages:</h1>
    <ul>
        <?php foreach ($messages as $message) { ?>
            <li>From <?php echo $message['from']; ?></li>
        <?php } ?>
    </ul>
<?php } ?>
```

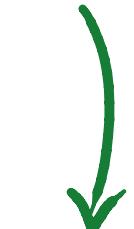


What I want

```
<?php if($db->fetchOne('select count(*) from messages')) { ?>
<h1>There are no messages</h1>
<?php } else { ?>
<?php $messages = $db->fetchAll('select * from messages'); ?>
<h1>There are <?php echo count($messages); ?> messages:</h1>
<ul>
<?php foreach ($messages as $message) { ?>
    <li>From <?php echo $message['from']; ?></li>
<?php } ?>
</ul>
<?php } ?>
```



What I get



!"

```
<?php if($db->fetchOne('select count(*) from messages')) { ?>
    <h1>There are no messages</h1>
<?php } else { ?>
    <?php $messages = $db->fetchAll('select * from messages'); ?>
    <h1>There are <?php echo count($messages); ?> messages:</h1>
    <ul>
        <?php foreach ($messages as $message) { ?>
            <li>From <?php echo $message['from']; ?></li>
        <?php } ?>
    </ul>
<?php } ?>
```



I can fix it!



```
<?php if($db->fetchOne('select count(*) from messages')) { ?>
    <h1>There are no messages</h1>
<?php } else { ?>
    <?php $messages = $db->fetchAll('select * from messages'); ?>
    <h1>There are <?php echo count($messages); ?> messages:</h1>
    <ul>
        <?php foreach ($messages as $message) { ?>
            <li>From <?php echo $message['from']; ?></li>
        <?php } ?>
    </ul>
<?php } ?>
```



```
<? $messages = $messageStore->getAll(); ?>
```

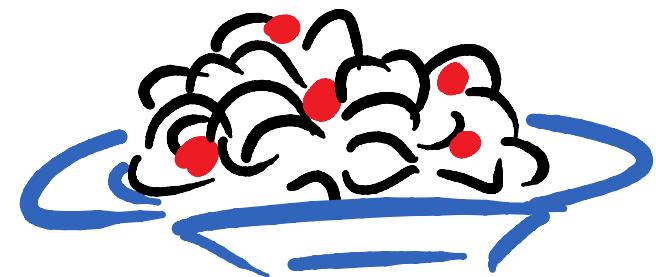
```
<? if (count($messages)) { ?>
    <h1>There are no messages</h1>
<? } else { >
    <h1>There are <?= count($messages) ?> messages:</h1>
    <ul>
        <? foreach ($messages as $message) { ?>
            <li>From <?= $message['from']; ?></li>
        <?php } ?>
    </ul>
<php } ?>
```



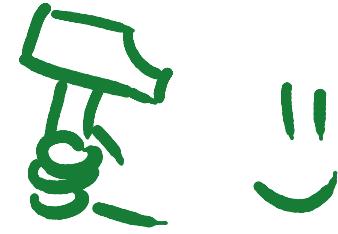
```
<? $messages = $messageStore->getAll(); ?>
```

Side dish

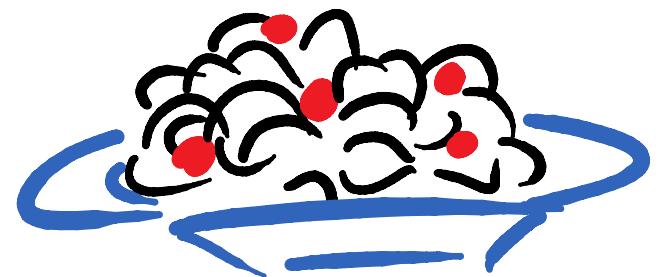
```
<? if (count($messages)) { ?>
    <h1>There are no messages</h1>
<? } else { >
    <h1>There are <?= count($messages) ?> messages:</h1>
    <ul>
        <? foreach ($messages as $message) { ?>
            <li>From <?= $message['from']; ?></li>
        <?php } ?>
    </ul>
<php } ?>
```



```
<? $messages = $messageStore->getAll(); ?>
```

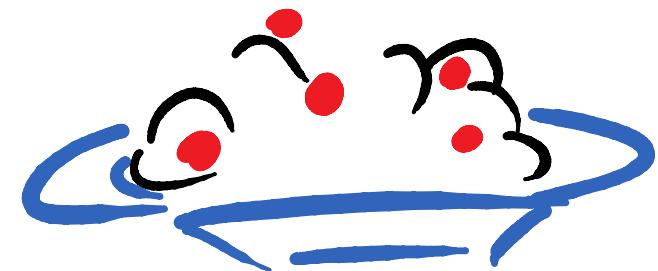


```
<? if (count($messages)) { ?>
    <h1>There are no messages</h1>
<? } else { ?
    <h1>There are <?= count($messages) ?> messages:<h1>
    <ul>
        <? foreach ($messages as $message) { ?>
            <li>From <?= $message['from']; ?></li>
        <?php } ?>
    </ul>
<php } ?>
```



```
<? $messages = $store->getMessages();  
  
$model = array(  
    'messageCount' => count($messages),  
    'messages' => $messages  
); ?>
```

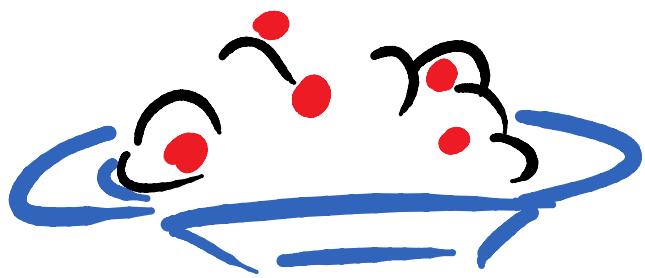
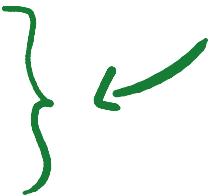
```
{{^messageCount}}  
    <h1>There are no messages</h1>  
{{/messageCount}}{{#messageCount}}  
    <h1>There are {{messageCount}} messages:<h1>  
    <ul>  
        {{#messages}}  
            <li>From {{from}}</li>  
        {{/messages}}  
    </ul>  
{{/messageCount}}
```



```
<? $messages = $store->getMessages();  
  
$model = array(  
    'messageCount' => count($messages),  
    'messages' => $messages  
); ?>
```

## View Model

```
{{^messageCount}}  
    <h1>There are no messages</h1>  
{{/messageCount}}{{#messageCount}}  
    <h1>There are {{messageCount}} messages:</h1>  
    <ul>  
        {{#messages}}  
            <li>From {{from}}</li>  
        {{/messages}}  
    </ul>  
{{/messageCount}}
```



Why all the fuss?

Why all the fuss?

Maintainability



How **easy** is it to  
understand what it's supposed to do

Maintainability

```
<? $messages = $messageStore->getAll(); ?>
```

```
<? if (count($messages)) { ?>
    <h1>There are no messages</h1>
<? } else { >
    <h1>There are <?= count($messages) ?> messages:<h1>
    <ul>
        <? foreach ($messages as $message) { ?>
            <li>From <?= $message['from']; ?></li>
        <?php } ?>
    </ul>
<php } ?>
```

```
{^messageCount}
    <h1>There are no messages</h1>
{/messageCount}
{#messageCount}
    <h1>There are {{messageCount}} messages:<h1>
    <ul>
        {{#messages}}
            <li>From {{from}}</li>
        {{/messages}}
    </ul>
{/messageCount}
```

```
<? $messages = $messageStore->getAll(); ?>  
  
<? if (count($messages)) { ?>  
    <h1>There are no messages</h1>  
<? } else { >  
    <h1>There are <?= count($messages) ?> messages:<h1>  
    <ul>  
        <? foreach ($messages as $message) { ?>  
            <li>From <?= $message['from']; ?></li>  
        <?php } ?>  
    </ul>  
<php ?>
```

'cause less  
clutter

more readable

```
{|^messageCount}  
    <h1>There are no messages</h1>  
{/messageCount}  
{#messageCount}  
    <h1>There are {{messageCount}} messages:<h1>  
    <ul>  
        {{#messages}}  
            <li>From {{from}}</li>  
        {{/messages}}  
    </ul>  
{/messageCount}
```

How **easy** is it to **read** the code  
to understand what it's **supposed** to do

**Readability**

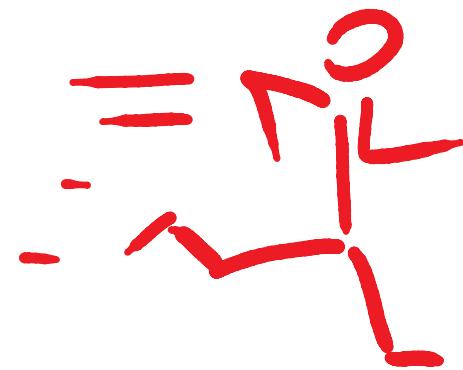
How **easy** is it to **run** the code  
to understand what it's **supposed** to do

**Readability** = 

How **easy** is it to **run** the code  
to understand what it's supposed to do



# Runability



How **easy** is it to **run** the code  
to understand what it's supposed to do

Runability TDD, anyone?

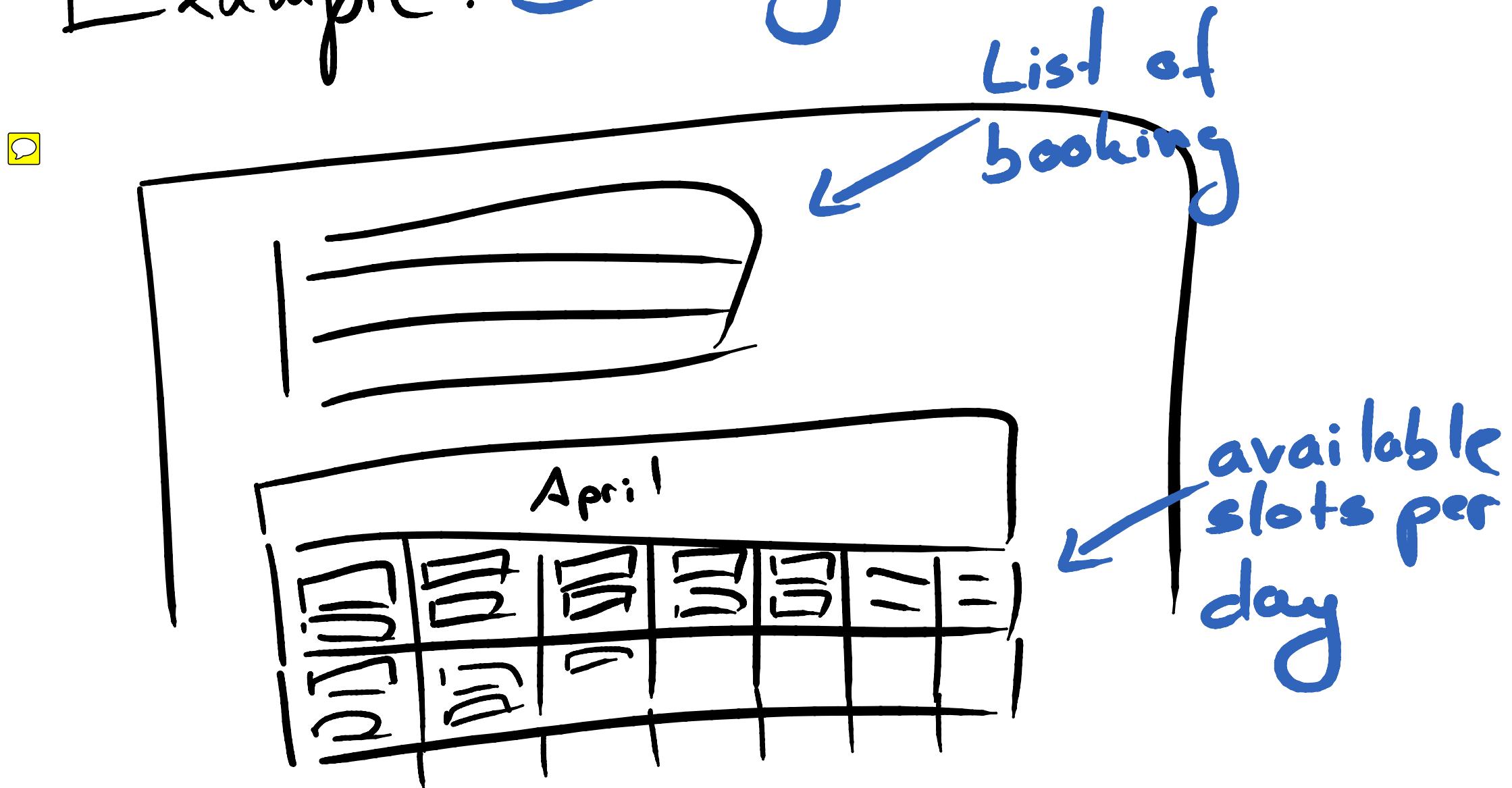
Example : Booking tool

Example : Booking tool

List of  
booking

available  
slots per  
day

# Example : Booking tool



Let's use {{mustache}}}

# Let's use {{mustache}}}

```
<div>
  {{^hasBookings}}
    <div class="alert">You have no bookings.</div>
  {{/hasBookings}}

  {{#hasBookings}}
    <table class="open-bookings table table-striped">
      {{#bookings}}
        <tr>
          <td>{{date}}</td>
          <td>{{slot}}</td>
          <td><a href="#">cancel</a></td>
        </tr>
      {{/bookings}}
    </table>
  {{/hasBookings}}
</div>
```

```
<div>
  {{^hasBookings}}
    <div class="alert">You have no bookings.</div>
  {{/hasBookings}}

  {{#hasBookings}}
    <table class="open-bookings table table-striped">
      {{#bookings}}
        <tr>
          <td>{{date}}</td>
          <td>{{slot}}</td>
          <td><a href="#">cancel</a></td>
        </tr>
      {{/bookings}}
    </table>
  {{/hasBookings}}
</div>
```

Let's use {{mustache}}

looks quite  
readable...

```
<div>
  {{^hasBookings}}
    <div class="alert">You have no bookings.</div>
  {{/hasBookings}}

  {{#hasBookings}}
    <table class="open-bookings table table-striped">
      {{#bookings}}
        <tr>
          <td>{{date}}</td>
          <td>{{slot}}</td>
          <td><a href="#">cancel</a></td>
        </tr>
      {{/bookings}}
    </table>
  {{/hasBookings}}
</div>
```

Let's use {{mustache}}

looks quite  
readable...  
but is it runnable?

Let's run it!

# Your bookings

{{^hasBookings}}

You have no bookings. Click on an available slot below to book it.



{{/hasBookings}} {{#hasBookings}} {{#bookings}} {{/bookings}}

Date	Slot	
{{date}}	{{slot}}	cancel

{{/hasBookings}}

## Availability

available    1 spot left    full    booked by you

{{#months}}

← {{caption}}

  {{#prevAction}} {{/prevAction}} {{#nextAction}} {{/nextAction}}

→ {{caption}}

### {{name}}

Monday

Tuesday

Wednesday

Thursday

Firday

Saturday

Sunday

{{#weeks}}

{{number}}

{{#days}} {{/days}}

{{#slots}}

{{name}}  
({{available}})

{{/slots}}

{{/weeks}}

{{/months}}

# Your bookings

{{"hasBookings"}}

You have no bookings. Click on an available slot below to book it.

It's broken



{{/hasBookings}} {{#hasBookings}} {{#bookings}} {{/bookings}}

Date	Slot	
{{date}}	{{slot}}	cancel

{{/hasBookings}}

## Availability

available    1 spot left    full    booked by you

{{#months}}

← {{caption}}

{{#prevAction}} {{/prevAction}} {{#nextAction}} {{/nextAction}}

→ {{caption}}

**{{name}}**

Monday

Tuesday

Wednesday

Thursday

Firday

Saturday

Sunday

{{#weeks}}

{{number}}

{{#days}} {{/days}}

{{#slots}}

{{name}}  
({{available}})

{{/slots}}

{{/weeks}}

{{/months}}

# Your bookings

{{"hasBookings}}

You have no bookings. Click on an available slot below to book it.

{{/hasBookings}} {{#hasBookings}} {{#bookings}} {{/bookings}}

Date	Slot	
{{date}}	{{slot}}	cancel

{/hasBookings}

## Availability

available    1 spot left    full    booked by you

{{#months}}

← {{caption}}

{{#prevAction}} {{/prevAction}} {{#nextAction}} {{/nextAction}}

→ {{caption}}

**{{name}}**

Monday

Tuesday

Wednesday

Thursday

Firday

Saturday

Sunday

{{#weeks}}

{{number}}

{{#days}} {{/days}}

{{#slots}}

{{name}}  
({{available}})

{{/slots}}

{{/weeks}}

{{/months}}



everything is  
mixed up



# Your bookings

{{"hasBookings"}}

You have no bookings. Click on an available slot below to book it.

{{/hasBookings}} {{#hasBookings}} {{#bookings}} {{/bookings}}

Date	Slot	
{{date}}	{{slot}}	cancel

{{/hasBookings}}

## Availability

available    1 spot left    full    booked by you

{{#months}}

← {{caption}}

{{#prevAction}} {{/prevAction}} {{#nextAction}} {{/nextAction}}

→ {{caption}}

{{name}}

Monday

Tuesday

Wednesday

Thursday

Firday

Saturday

Sunday

{{#weeks}}

{{number}}

{{#days}} {{/days}}

{{#slots}}

{{name}}  
({{available}})

{{/slots}}

{{/weeks}}

{{/months}}

uh glay!

everything is  
mixed up



# Your bookings

{{"hasBookings"}}

You have no bookings. Click on an available slot below to book it.

{{"/hasBookings"}}

Date	Slot	
{{date}}	{{slot}}	cancel

{{"/hasBookings"}}

## Availability

available    1 spot left    full    booked by you

{{#months}}

← {{caption}}

  {{#prevAction}} {{/prevAction}} {{#nextAction}} {{/nextAction}}

→ {{caption}}

**{{name}}**

Monday

Tuesday

Wednesday

Thursday

Firday

Saturday

Sunday

  {{#weeks}}

  {{number}}

  {{#days}} {{/days}}

  {{#slots}}

    {{name}}  
    ({{available}})

  {{/slots}}

  {{/weeks}}

  {{/months}}

So What?

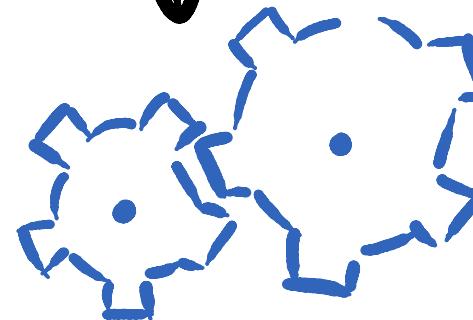
What's the problem?

What's the problem?

{}{html}{}{}

What's the problem?

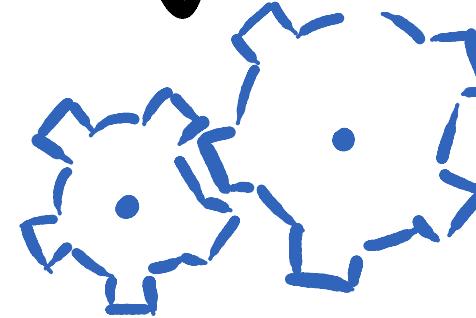
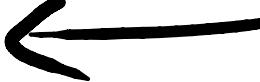
{}{html}{}  
↓



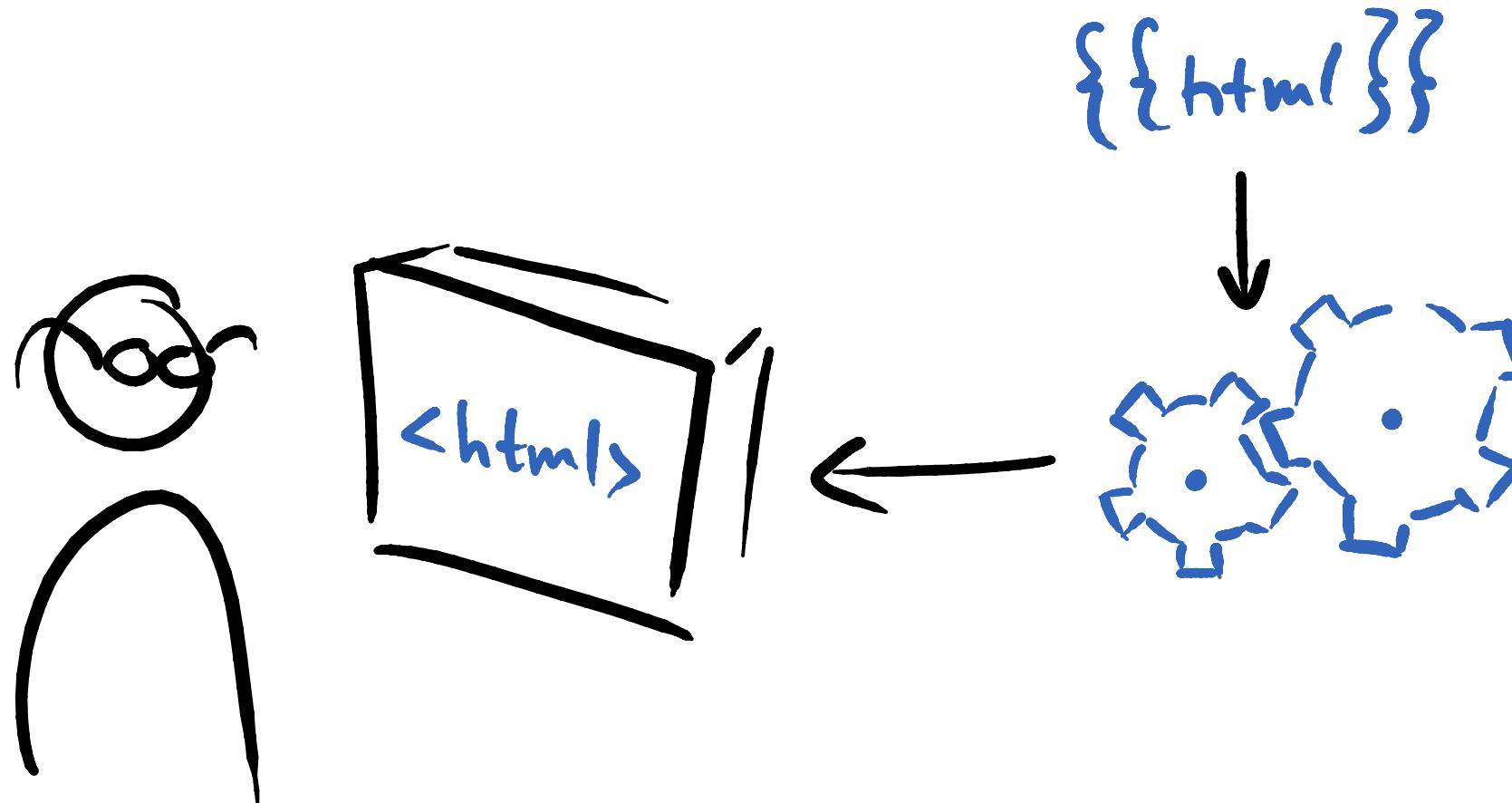
What's the problem?

{}{html}{}  
↓

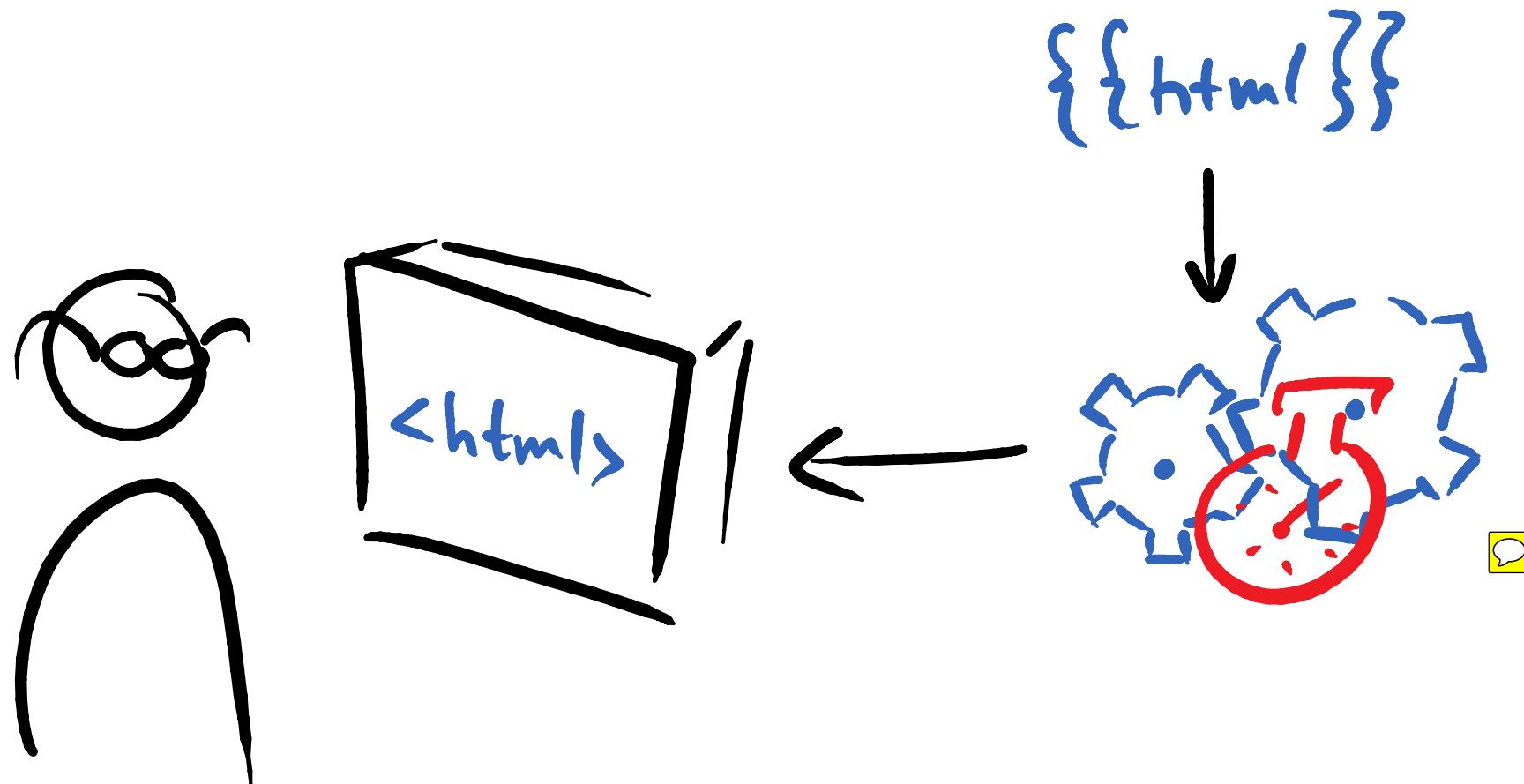
<html>



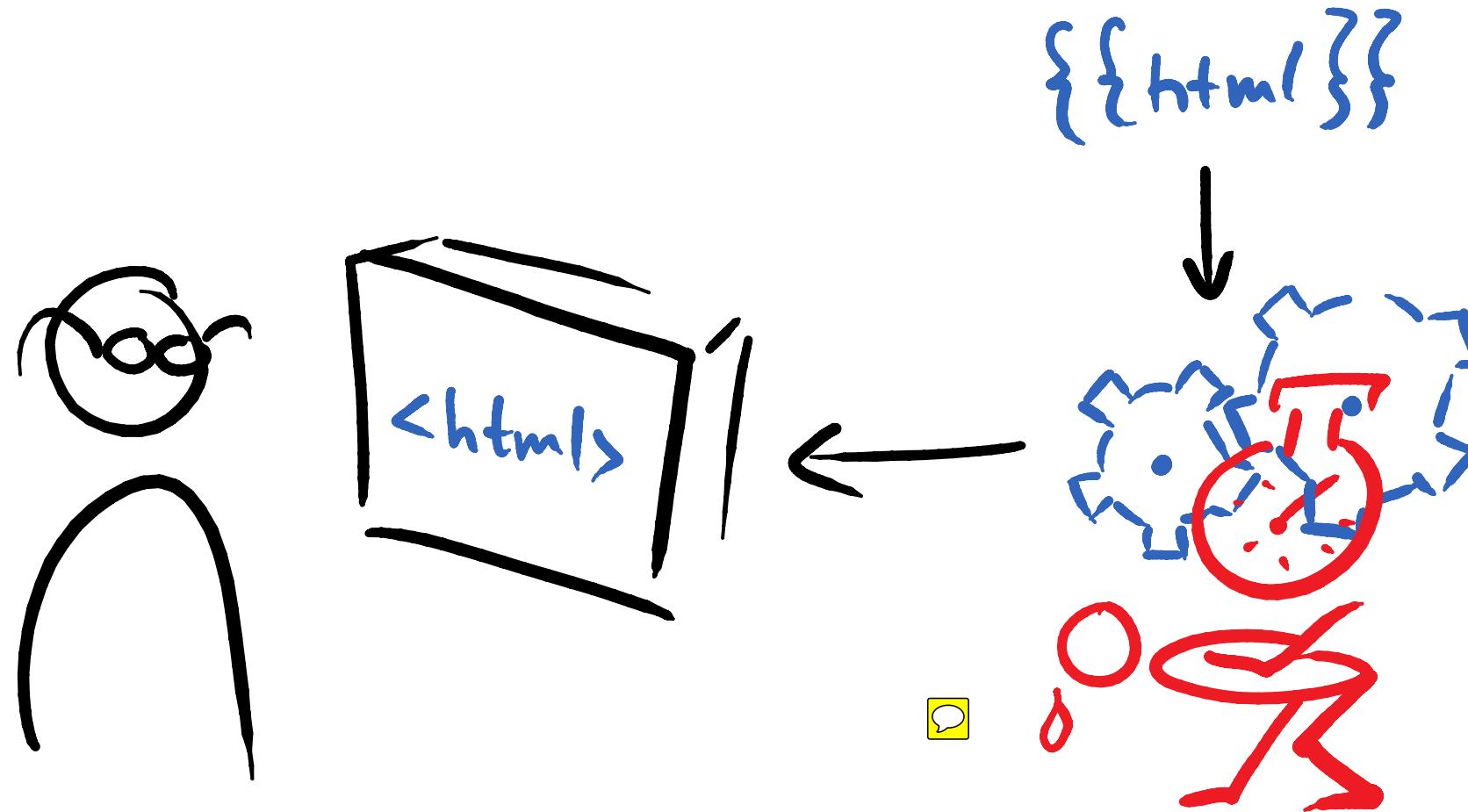
What's the problem?



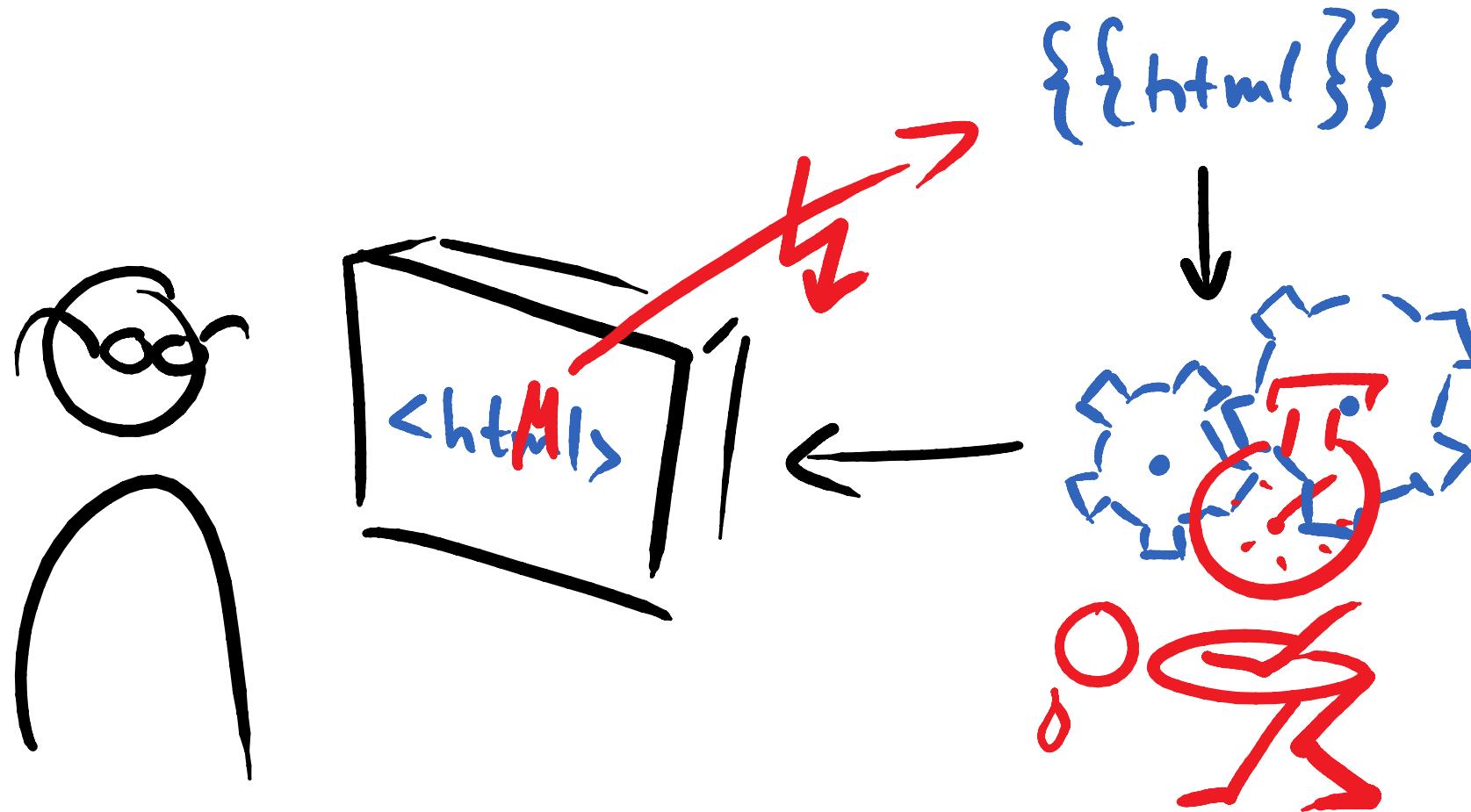
What's the problem?



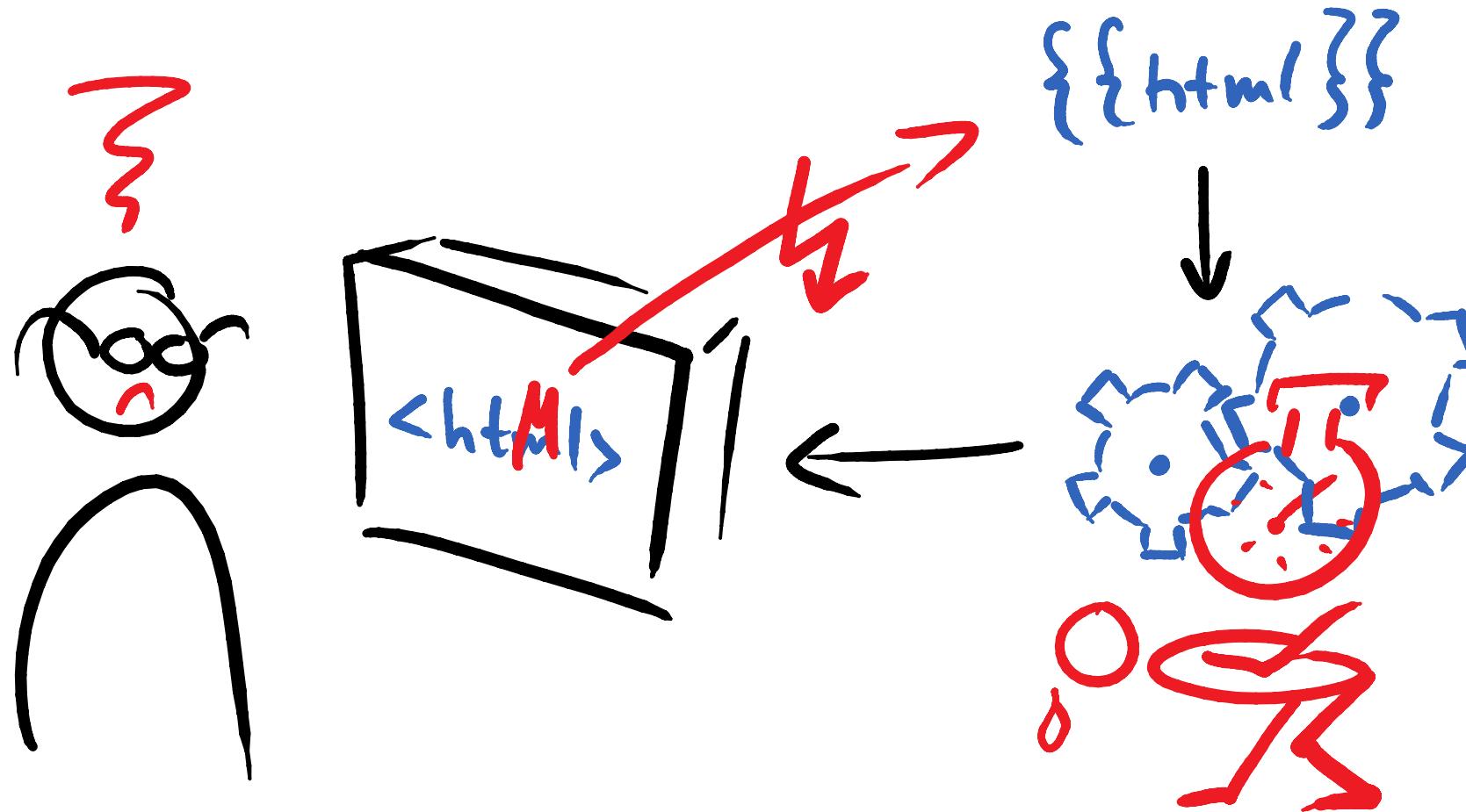
What's the problem?



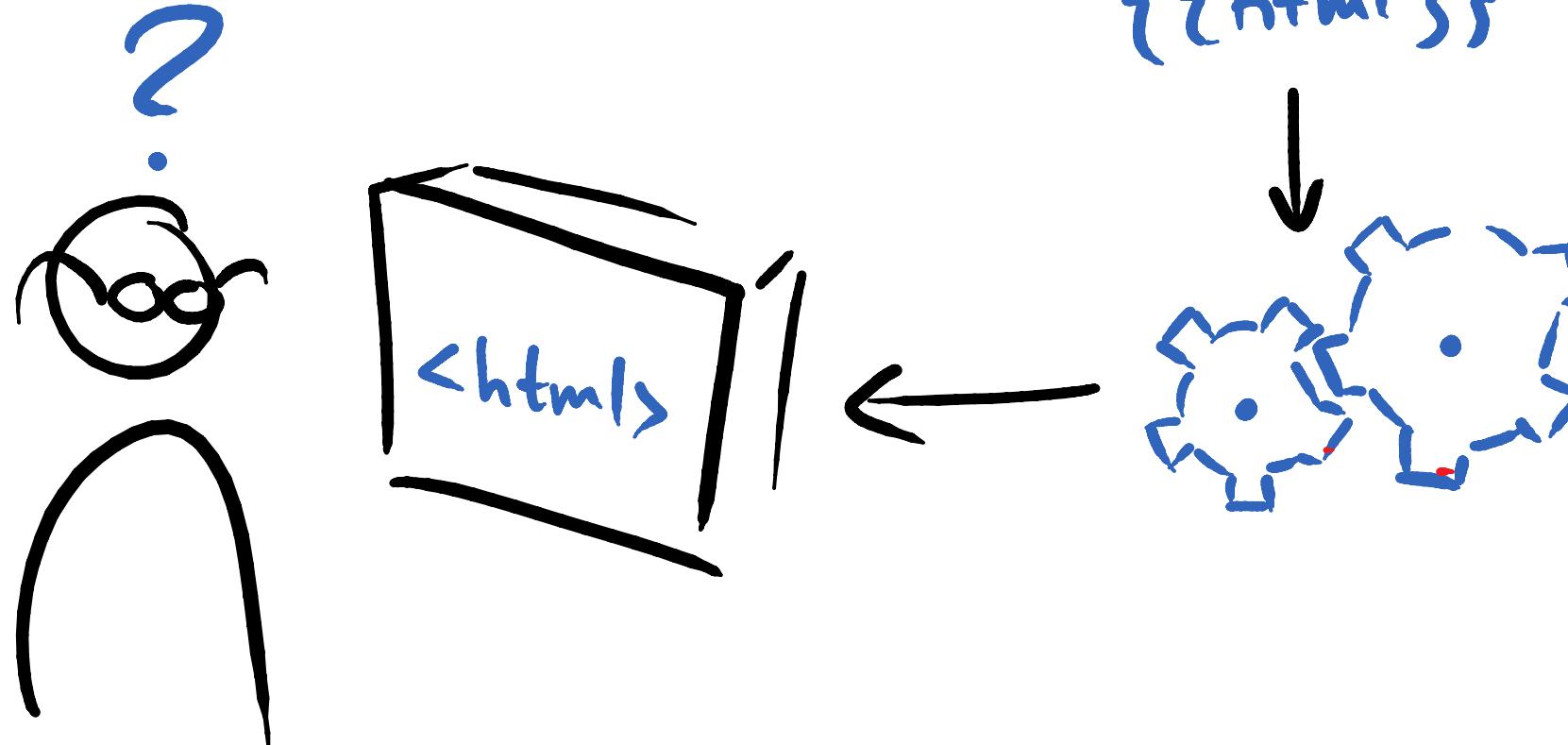
What's the problem?



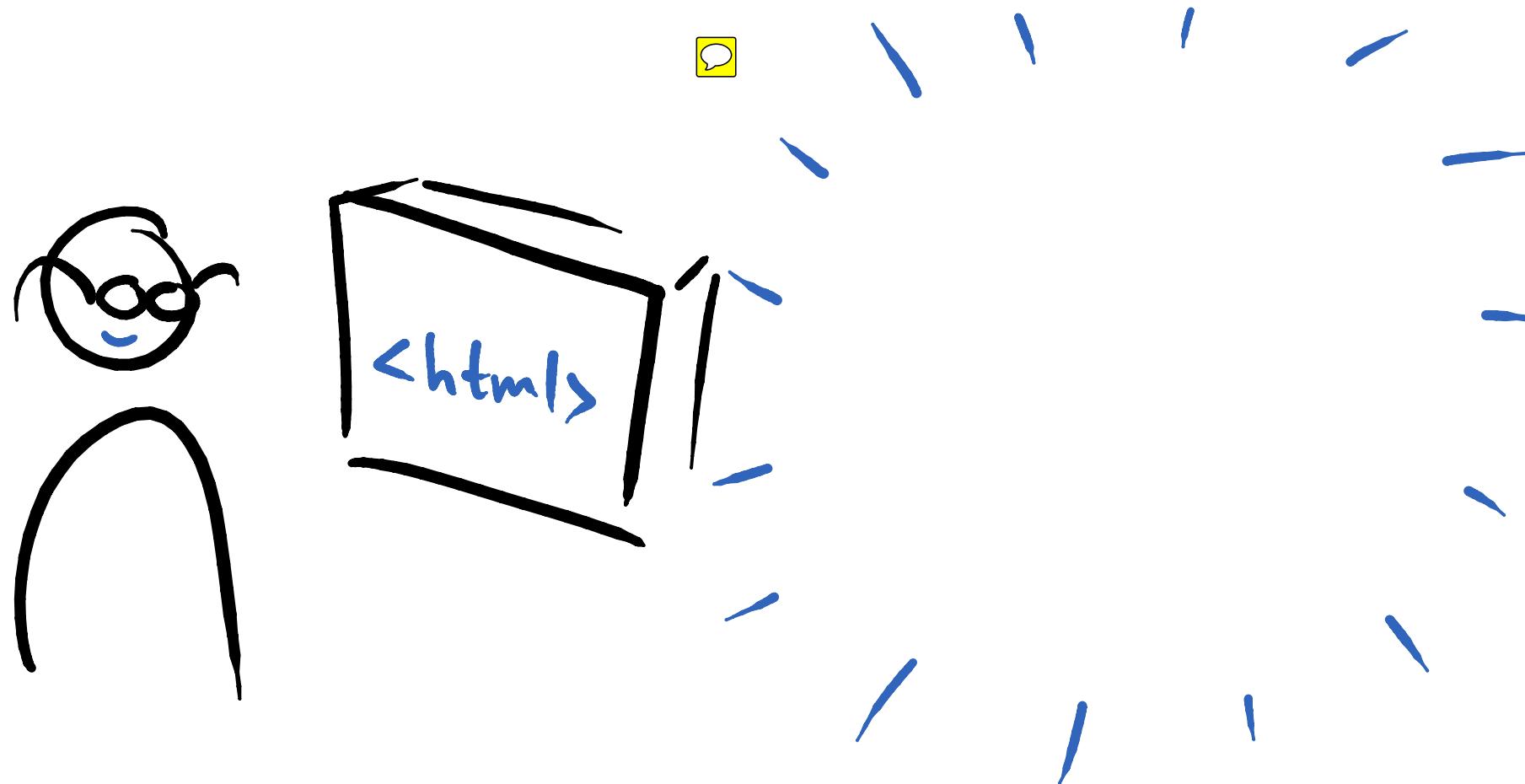
What's the problem?



How can we make it better?



How can we make it better?





## Your bookings

You have no bookings. Click on an available slot below to book it.

Date	Slot	
2.3.2013	14h - 19h	cancel
3.3.2013	14h - 19h	cancel

How it's supposed  
to look like

## Availability

available    1 spot left    full    booked by you

← February

March

April →

Monday	Tuesday	Wednesday	Thursday	Firday	Saturday	Sunday
1	2					
<span>9h - 13h (3)</span>	<span>9h - 13h (1)</span>					
<span>14h - 18h (0)</span>	<span>14h - 18h (0)</span>					

## Your bookings

You have no bookings. Click on an available slot below to book it.

Date	Slot	
2.3.2013	14h - 19h	cancel
3.3.2013	14h - 19h	cancel

## Availability

available    1 spot left    full    booked by you

← February		March					April →	
Monday	Tuesday	Wednesday	Thursday	Firday	Saturday	Sunday		
1	2							
9h - 13h (3)	9h - 13h (1)							
14h - 18h (0)	14h - 18h (0)							

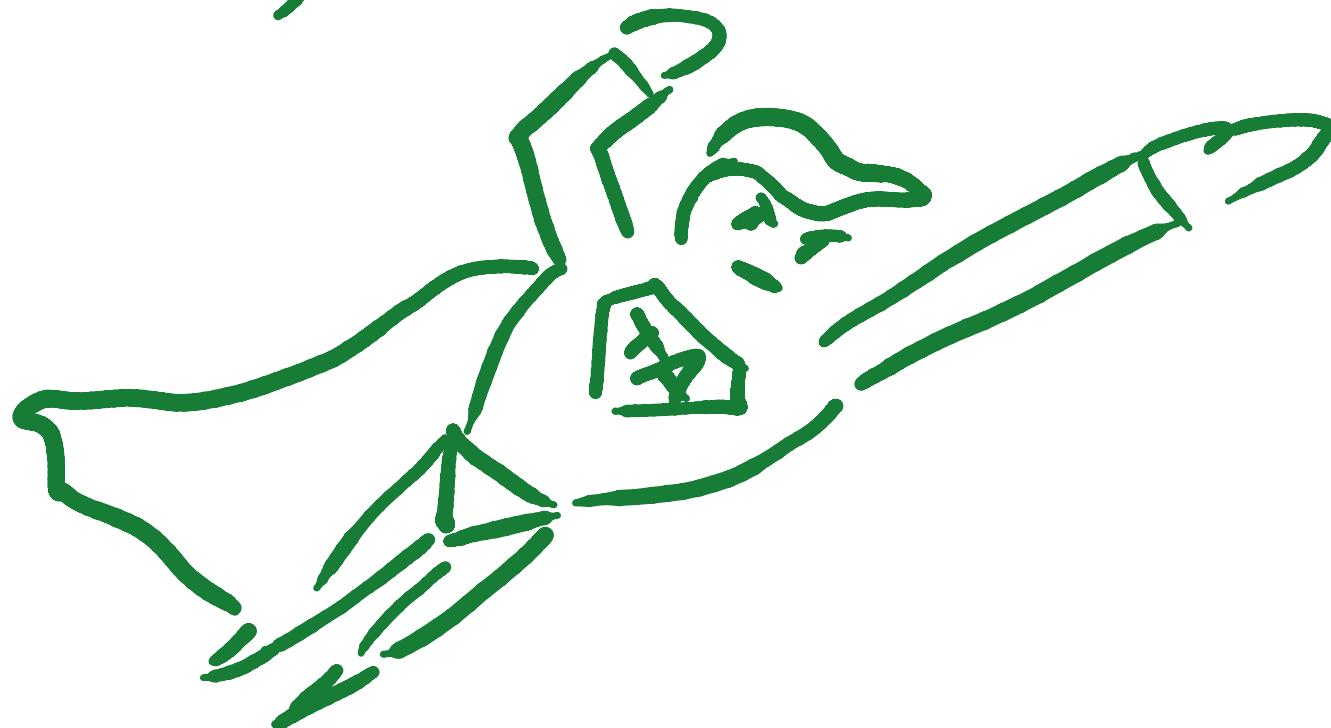
How it's supposed  
to look like:

Let's use THIS  
as template

How?

How?

Template Animation ▶



Template ...  
What?



"Animate" your template

# "Animate" your template

Your bookings

You have no bookings. Click on an available slot below to book it.

Date	Slot	Action
2.3.2013	14h - 19h	cancel
3.3.2013	14h - 19h	cancel

Availability

available | 1 spot left | full | booked by you

← February      March      April →

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	2					
9h - 13h (3)	9h - 13h (1)					
14h - 18h (0)	14h - 18h (0)					

Template

Pure HTML

# "Animate" your template

Your bookings

You have no bookings. Click on an available slot below to book it.

Date	Slot	Action
2.3.2013	14h - 19h	cancel
3.3.2013	14h - 19h	cancel

Availability

available | 1 spot left | full | booked by you

← February      March      April →

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	2					
9h - 13h (3)	9h - 13h (1)					
14h - 18h (0)	14h - 18h (0)					

```
bookings: [  
  { date: '2010-05-10',  
    slot: '9h - 14h' }  
,  
 months: [  
  { name: 'April'  
  ... }  
] ...
```

↑ View  
Model

# "Animate" your template

Your bookings

You have no bookings. Click on an available slot below to book it.

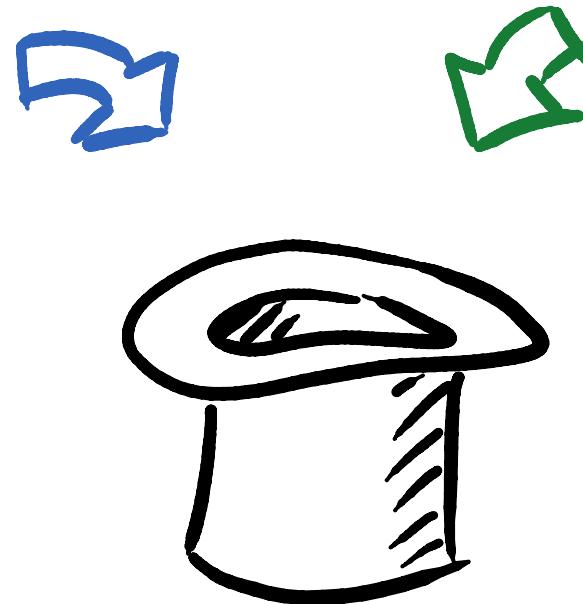
Date	Slot	Action
2.3.2013	14h - 19h	cancel
3.3.2013	14h - 19h	cancel

Availability

available | 1 spot left | full | booked by you

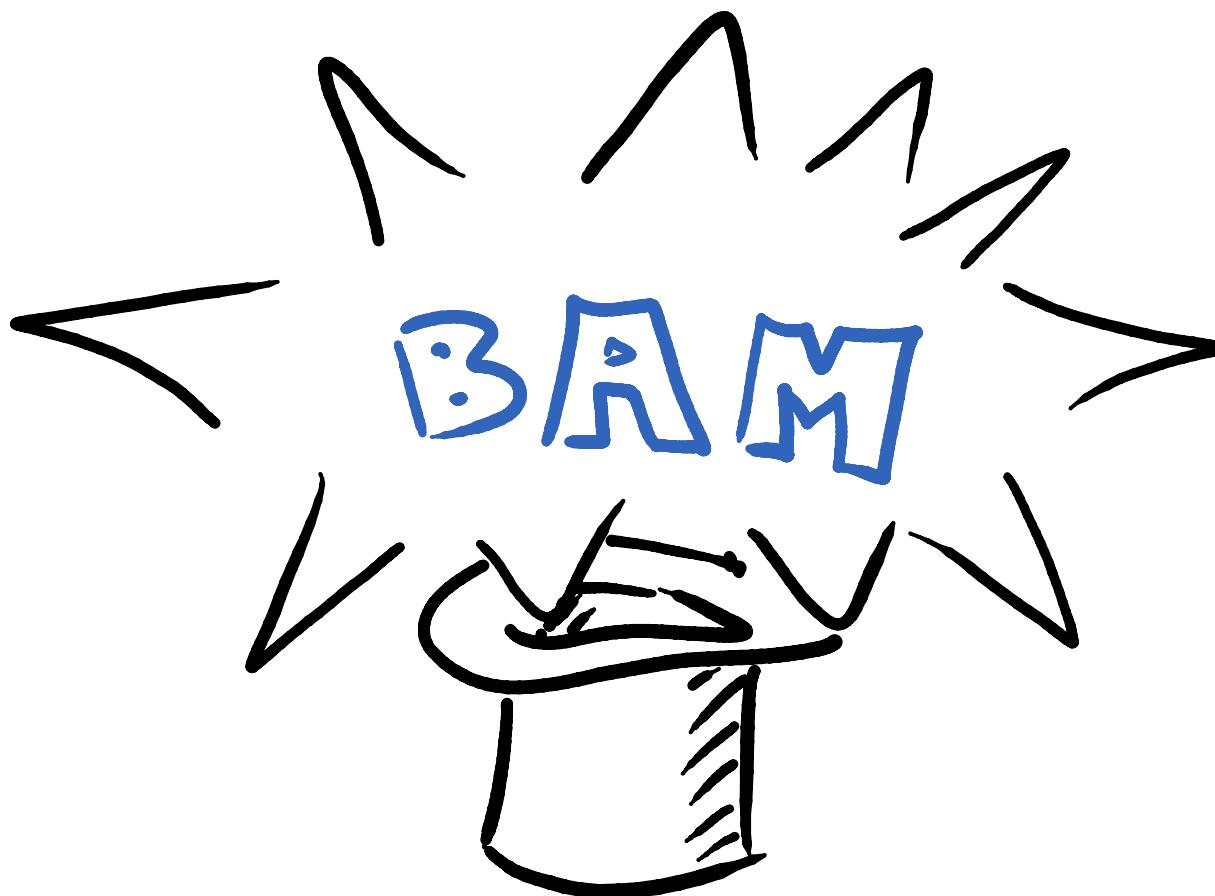
← February      March      April →

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	2					
9h - 13h (3)	9h - 13h (1)					
14h - 18h (0)	14h - 18h (0)					



```
bookings: [  
  { date: '2010-05-10',  
    slot: '9h - 14h' }  
,  
 months: [  
  { name: 'April'  
  ... }  
] ...
```

"Animate" your template



# "Animate" your template

## Deine Buchungen

Datum	Zeitraum
24.05.2013	Vormittag      absagen

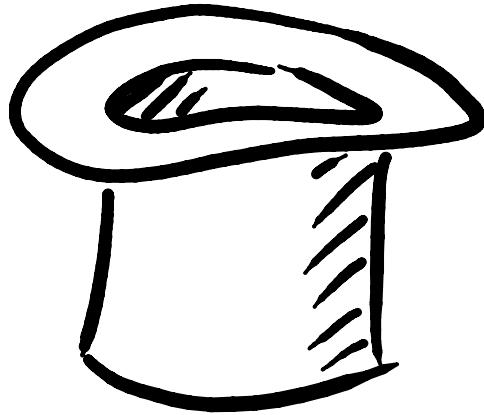
## Verfügbare Zeiträume

verfügbar noch 1 Platz verfügbar nicht verfügbar von Dir gebucht

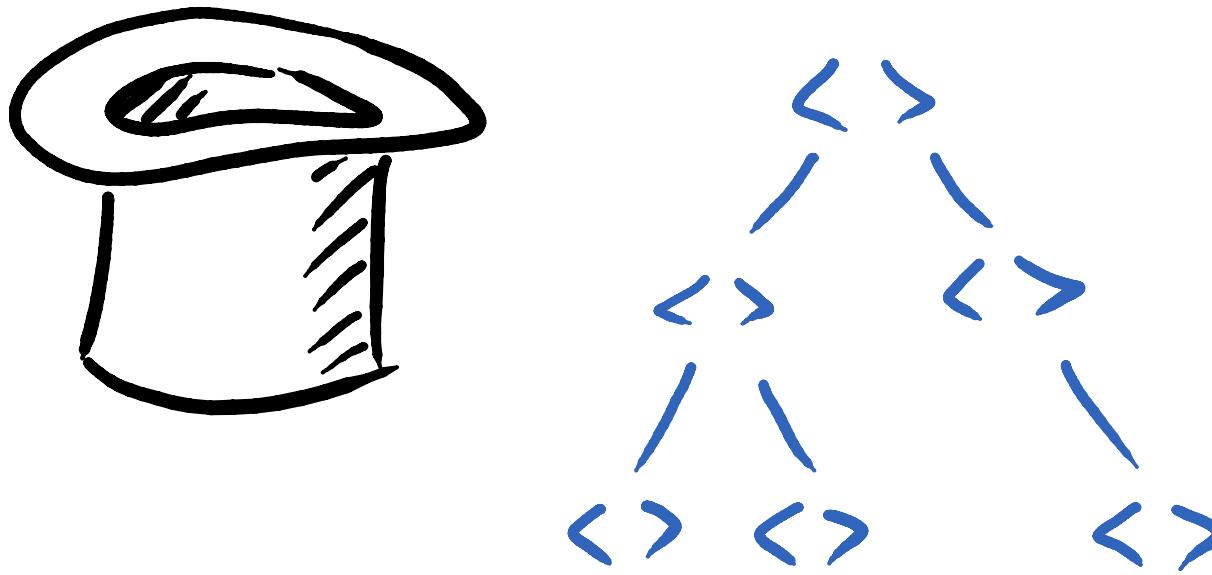
Mai							Juni →
Montag	Dienstag	Mittwoch	Donnerstag	Freitag	Samstag	Sonntag	
		1	2	3	4	5	
6	7	8	9	10	11	12	
				Vormittag (2) Nachmittag (1)			
13	14	15	16	17	18	19	
Vormittag (2)	Vormittag (3)	Vormittag (3)	Vormittag (3)	Vormittag (3)			
Nachmittag (3)							
20	21	22	23	24	25	26	
	Vormittag (3)	Vormittag (3)	Vormittag (3)	Vormittag (2) Nachmittag (2)			
				Nachmittag (3)	Nachmittag (3)	Nachmittag (3)	
27	28	29	30	31			
Vormittag (3)	Vormittag (3)	Vormittag (3)		Vormittag (3)			
Nachmittag (3)	Nachmittag (3)	Nachmittag (3)		Nachmittag (3)			



# DOM Manipulation

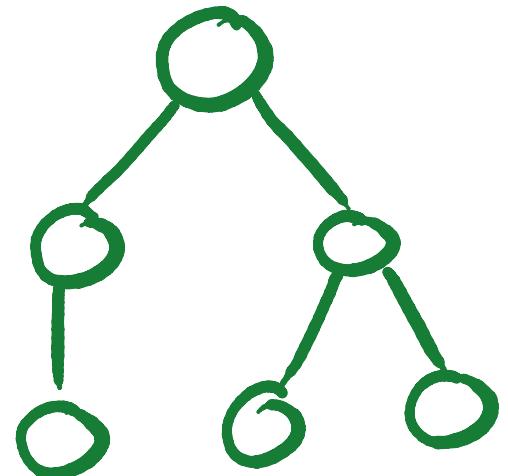


# DOM Manipulation

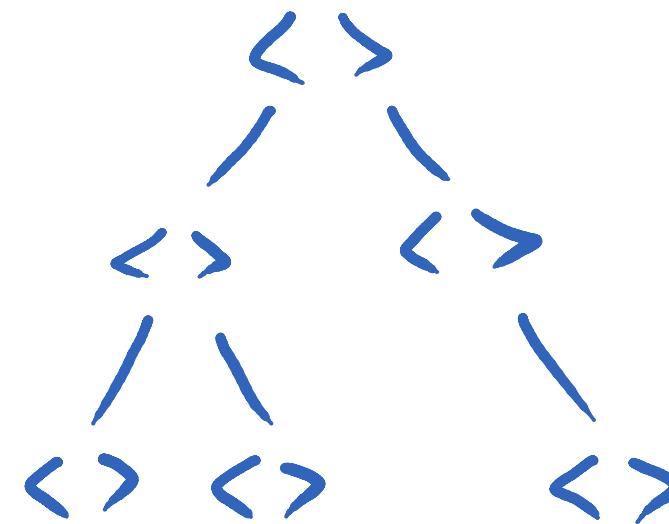
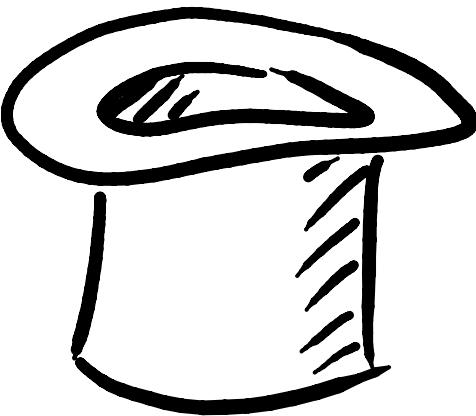


DOM Tree

# DOM Manipulation

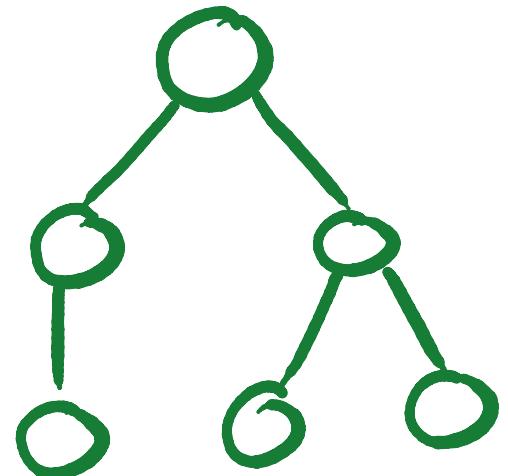


View Model

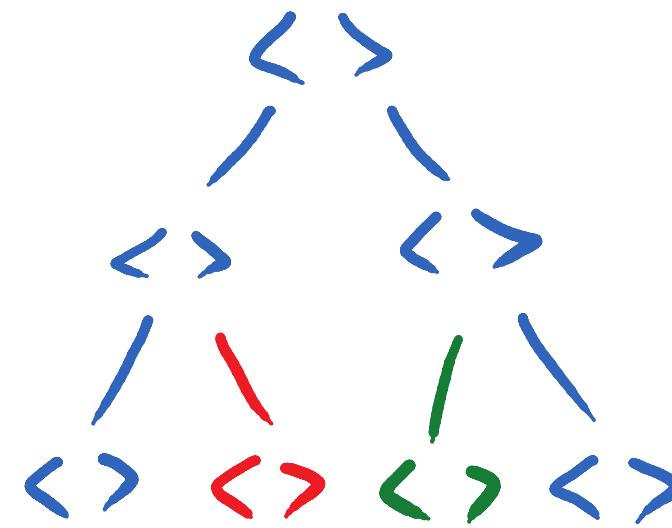
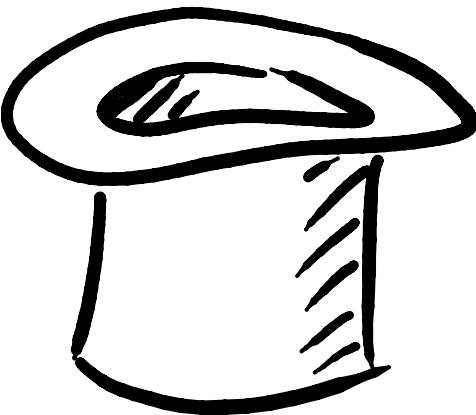


DOM Tree

# DOM Manipulation

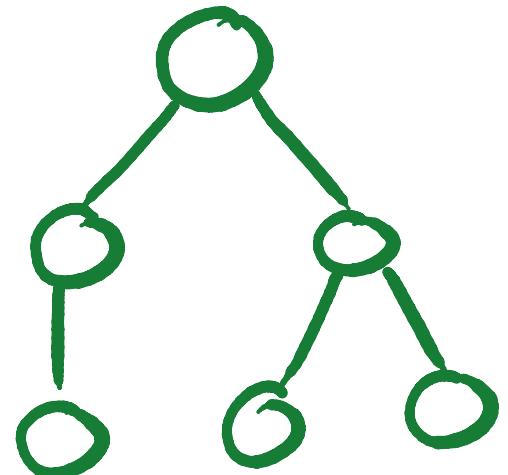


View Model

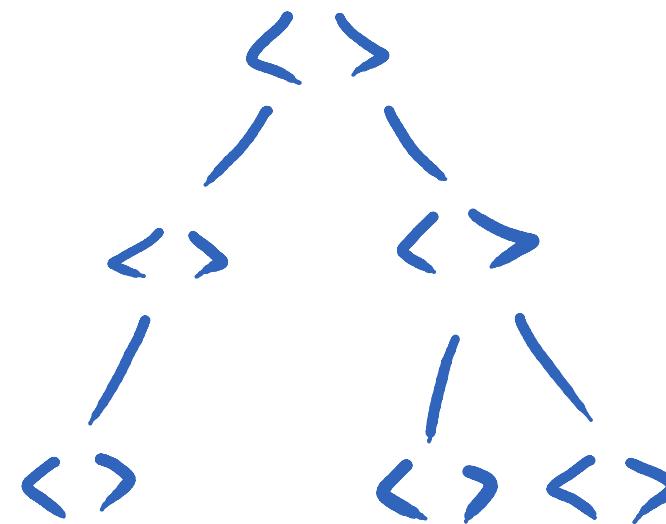
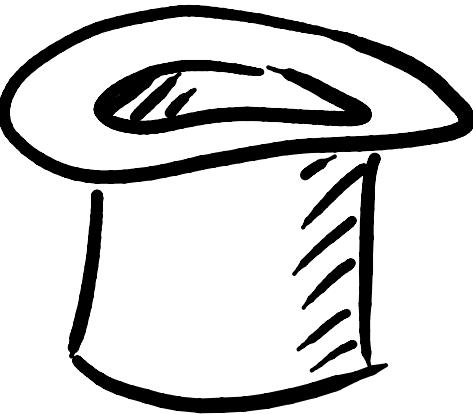


DOM Tree

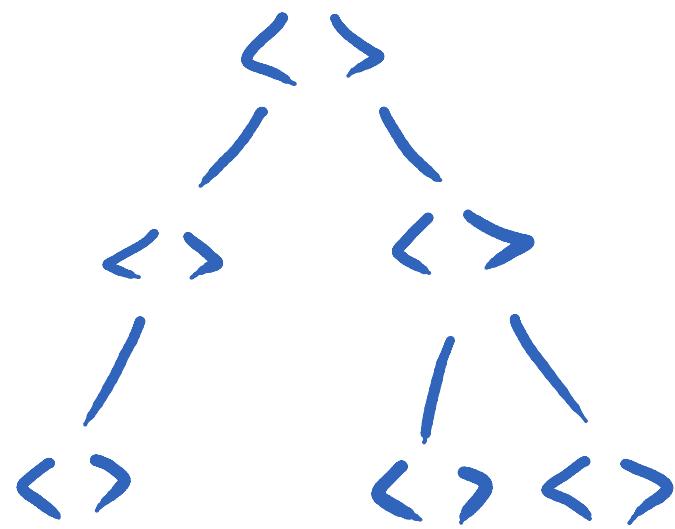
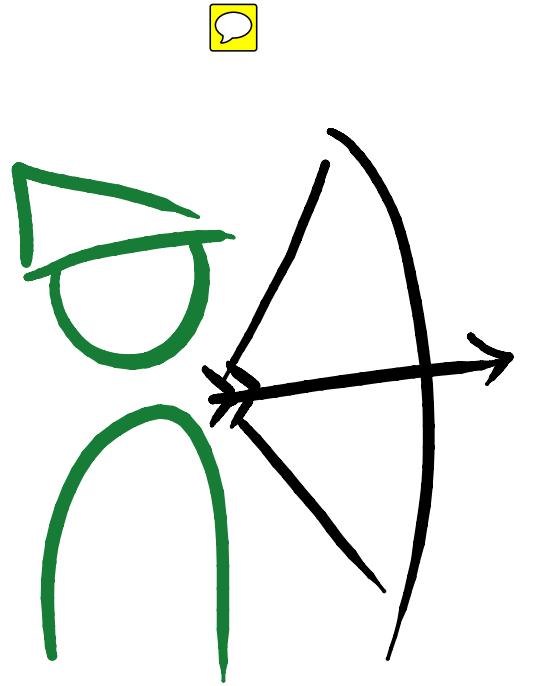
# DOM Manipulation

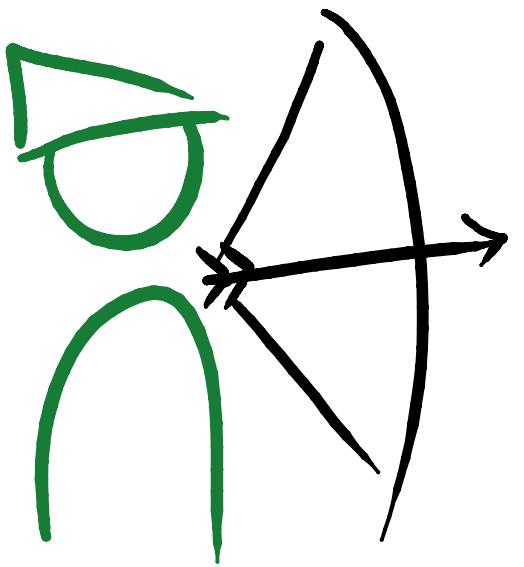


View Model

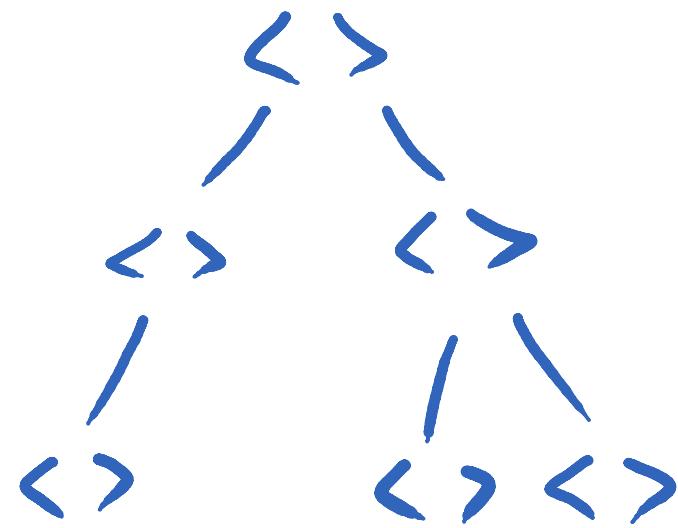


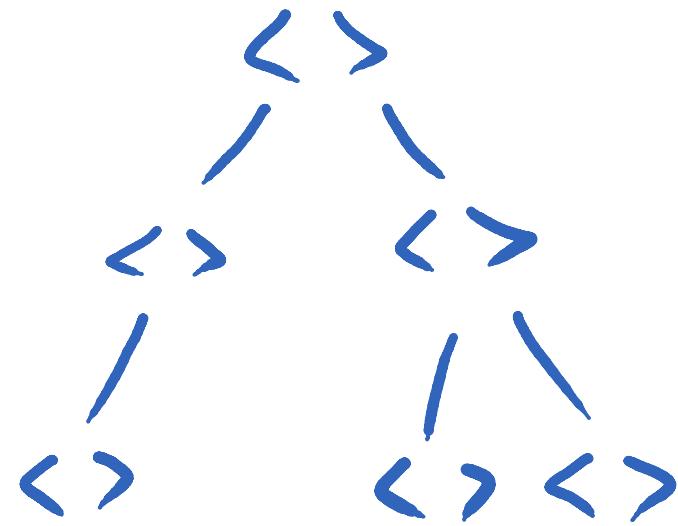
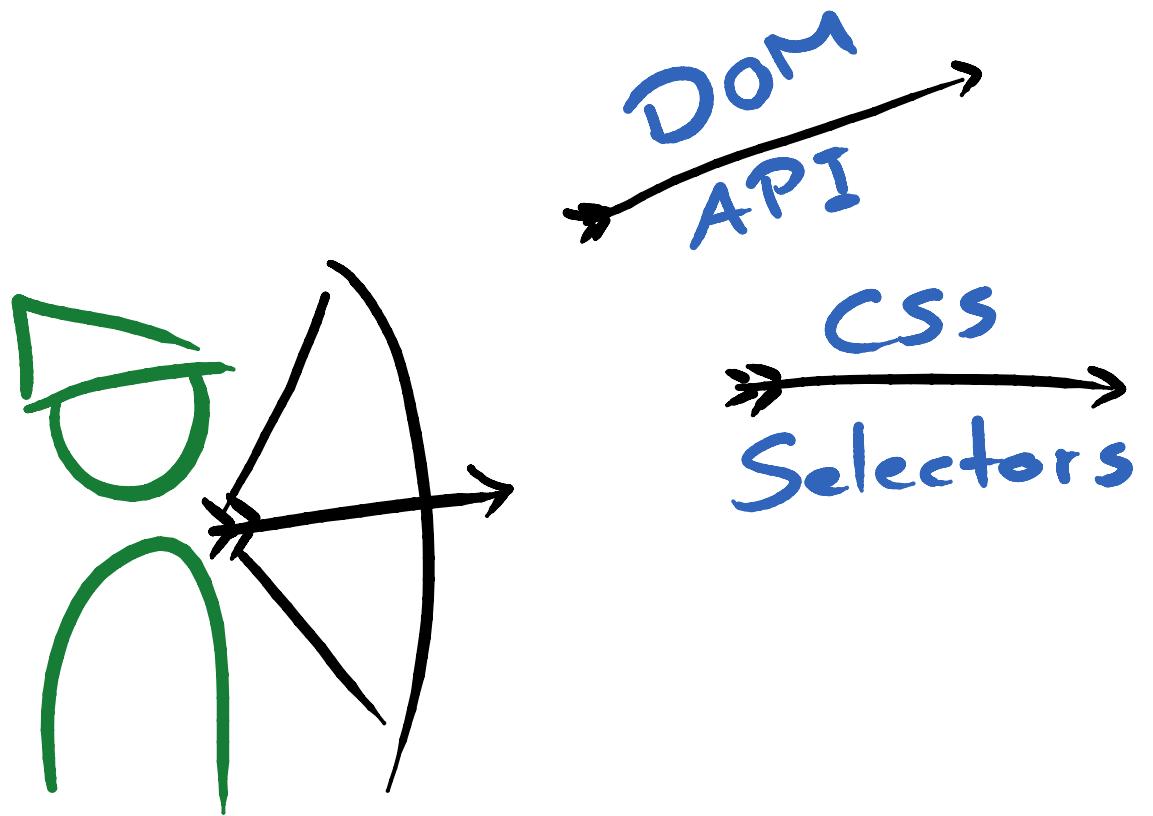
DOM Tree

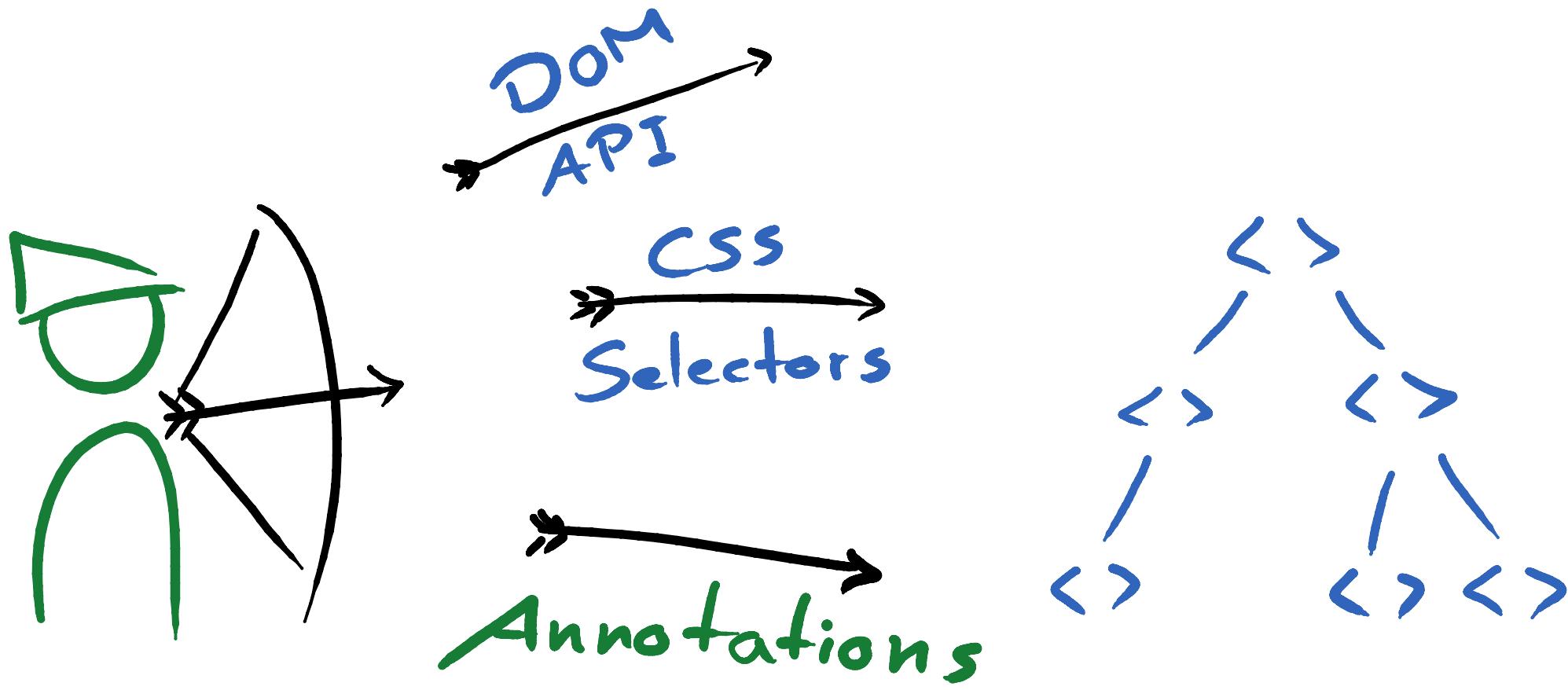


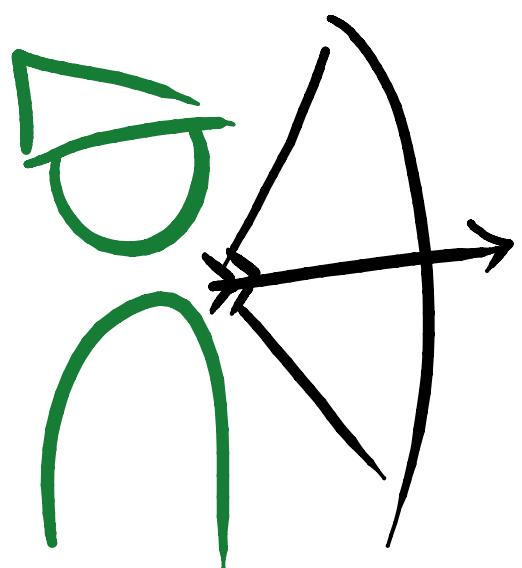


css  
Selectors

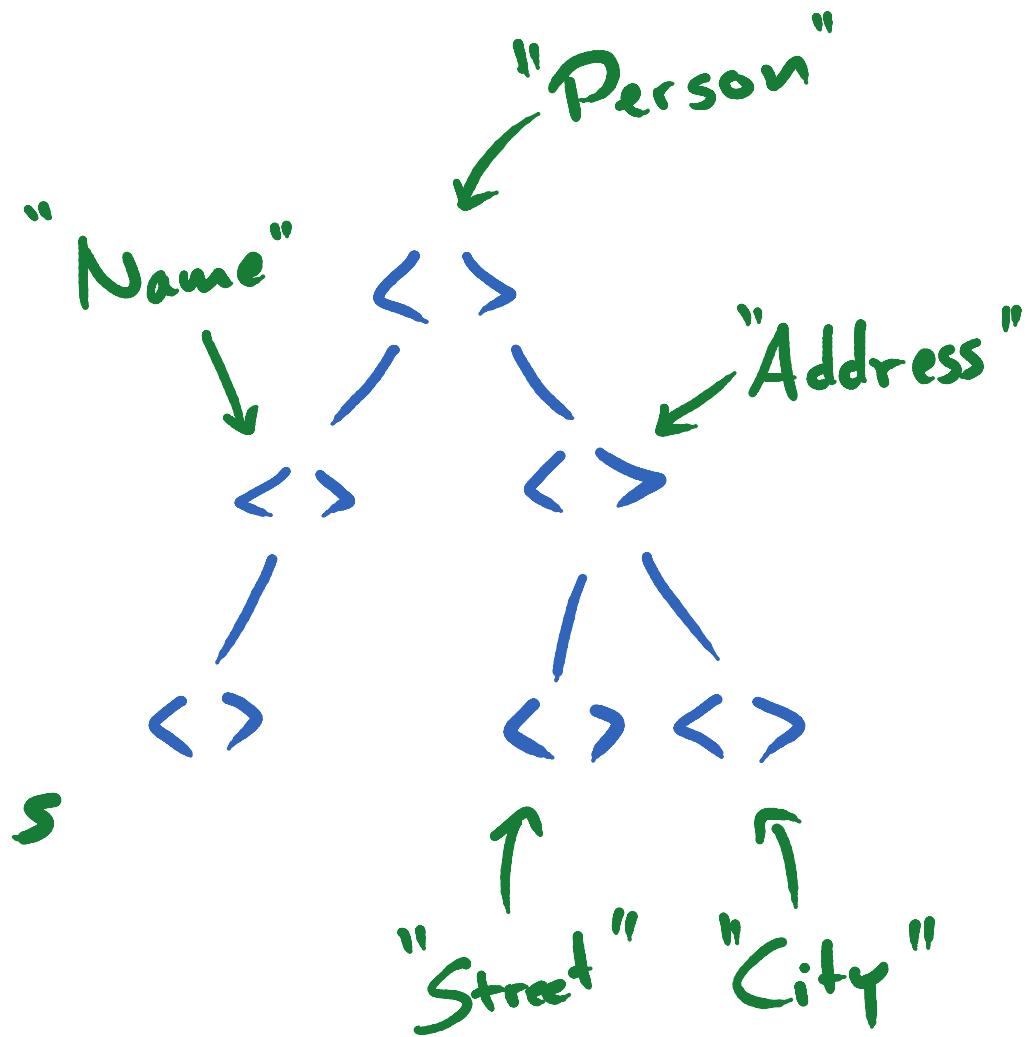








Dom API  
CSS  
Selectors  
Annotations



Template

```
<div>
    Name: <span>John Wayne</span>
    Homepage: <a href="http://johnwayne.com">
        <span>johnwayne.com</span>
    </a>
</div>
```

```
{  
  person: {  
    name: "John Wayne",  
    url : {  
      href: "http://johnwayne.com",  
      caption: "johnwayne.com"  
    }  
  }  
}
```

← View Model |

```
<div>  
  Name: <span>John Wayne</span>  
  Homepage: <a href="http://johnwayne.com">  
    <span>johnwayne.com</span>  
  </a>  
</div>
```

```
{  
  person: {  
    name: "John Wayne",  
    url : {  
      href: "http://johnwayne.com",  
      caption: "johnwayne.com"  
    }  
  }  
}
```

*Annotations*

```
<div property="person">  
  Name: <span property="name">John Wayne</span>  
  Homepage: <a property="url" href="http://johnwayne.com">  
    <span property="caption">johnwayne.com</span>  
  </a>  
</div>
```

# View Model

```
{  
  person: {  
    name: "John Wayne",  
    url : {  
      href: "http://johnwayne.com",  
      caption: "johnwayne.com"  
    }  
  }  
}
```

# Annotated Template

```
<div property="person">  
  Name: <span property="name">John Wayne</span>  
  Homepage: <a property="url" href="http://johnwayne.com">  
    <span property="caption">johnwayne.com</span>  
  </a>  
</div>
```

View  
Model ~ Animation ~ Annotated  
Template

```
{  
  person: {  
    name: "John Wayne",  
    url : {  
      href: "http://johnwayne.com",  
      caption: "johnwayne.com"  
    }  
  }  
}
```

```
<div property="person">  
  Name: <span property="name">John Wayne</span>  
  Homepage: <a property="url" href="http://johnwayne.com">  
    <span property="caption">johnwayne.com</span>  
  </a>  
</div>
```

View  
Model ~ Animation ~ Annotated  
Template

```
{  
  person: {  
    name: "John Wayne",  
    url : {  
      href: "http://johnwayne.com",  
      caption: "johnwayne.com"  
    }  
  }  
}
```

nested  
objects <=>

```
<div property="person">  
  Name: <span property="name">John Wayne</span>  
  Homepage: <a property="url" href="http://johnwayne.com">  
    <span property="caption">johnwayne.com</span>  
  </a>  
</div>
```

nested  
elements

View Model → mapping → Annotated Template



```
{  
  person: {  
    name: "John Wayne",  
    url : {  
      href: "http://johnwayne.com",  
      caption: "johnwayne.com"  
    }  
  }  
}
```

nested  
objects

```
<div property="person">  
  Name: <span property="name">John Wayne</span>  
  Homepage: <a property="url" href="http://johnwayne.com">  
    <span property="caption">johnwayne.com</span>  
  </a>  
</div>
```

nested  
elements

there's an app for that

View Model → mapping → Annotated Template

```
{  
  person: {  
    name: "John Wayne",  
    url : {  
      href: "http://johnwayne.com",  
      caption: "johnwayne.com"  
    }  
  }  
}
```

nested  
objects

```
<div property="person">  
  Name: <span property="name">John Wayne</span>  
  Homepage: <a property="url" href="http://johnwayne.com">  
    <span property="caption">johnwayne.com</span>  
  </a>  
</div>
```

nested  
elements

tempan

tempa n



template animation

watoki/tempan



template animation

web application toolkit



watoki / tempan



template animation

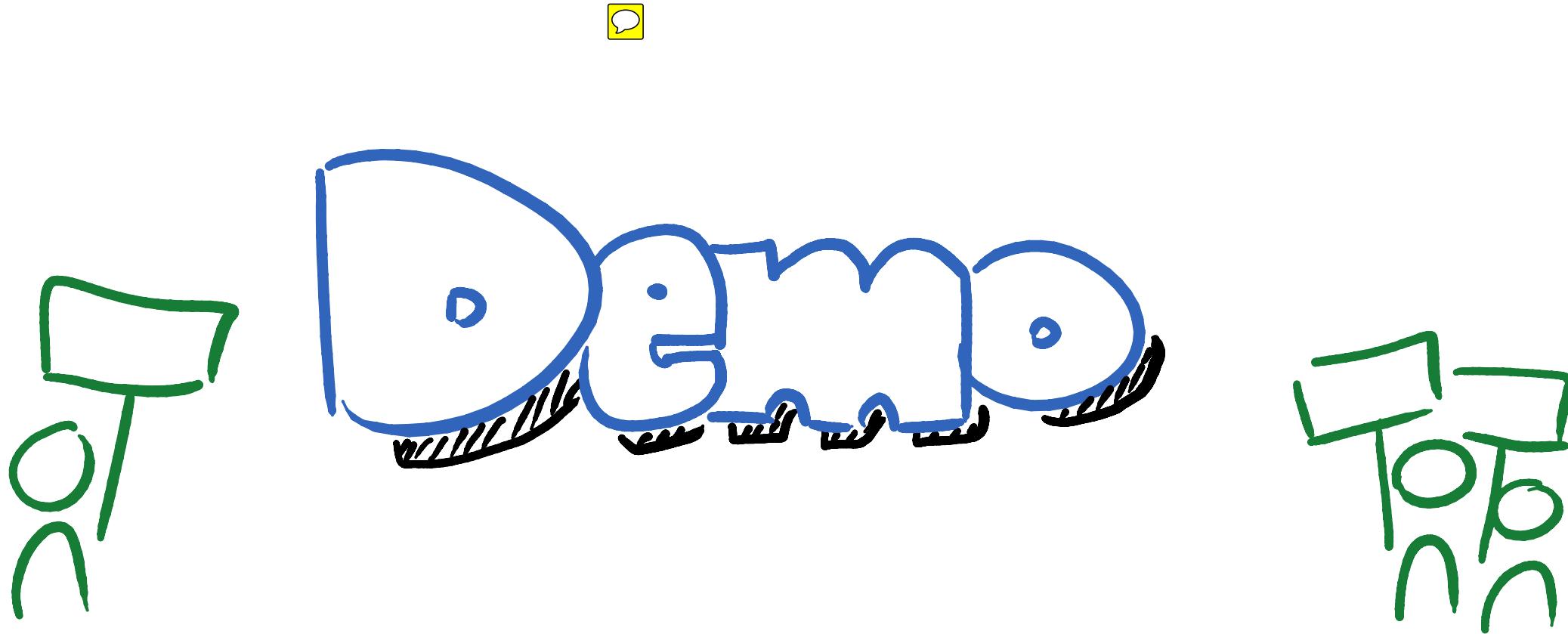
web application toolkit



github.com/watoki/tempan



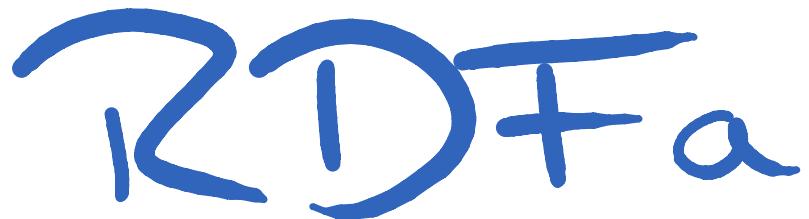
template animation



One last thing

This is almost...

```
<div property="person">
    Name: <span property="name">John Wayne</span>
    Homepage: <a property="url" href="http://johnwayne.com">
        <span property="caption">johnwayne.com</span>
    </a>
</div>
```



```
<div vocab="http://schema.org/">
  <div property="person" typeof="Person">
    Name: <span property="name">John Wayne</span>
    Homepage: <a property="url" href="http://johnwayne.com">
      <span property="caption">johnwayne.com</span>
    </a>
  </div>
</div>
```

# Questions!

Ask now or ping me later

[rtens.org](http://rtens.org)

