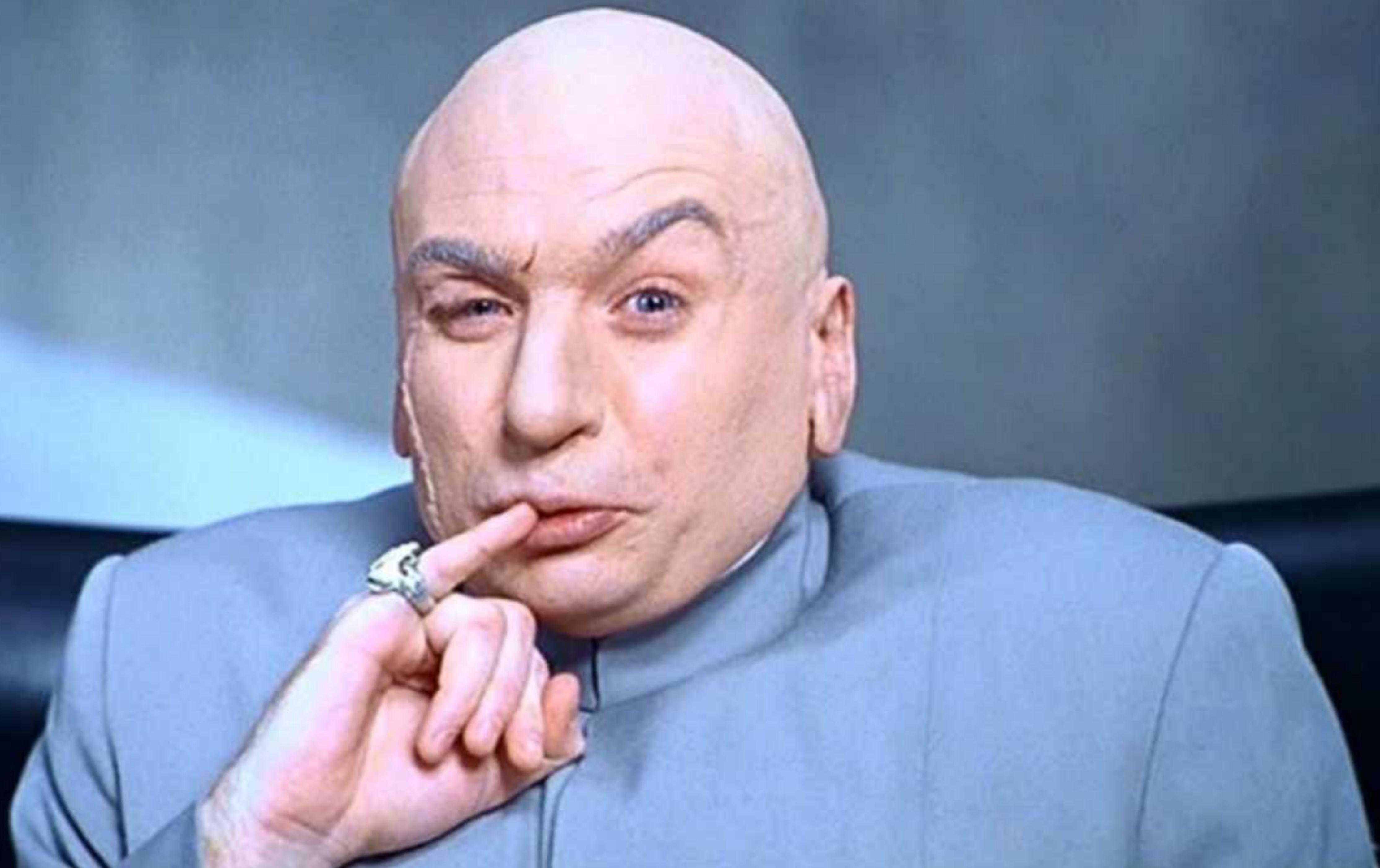




ADVENTURES IN SEO AND SINGLE-PAGE WEB APPS

MATTI@VAADIN.COM,  [@MATTITAHVONEN](https://twitter.com/mattitahvonen), [GITHUB.COM/MSTAHV](https://github.com/mstahv)



- Why this topic?

Over 10 years at Vaadin with SPAs

Over 20 years hacking web

Nicolas Fränkel



vaadin >

Forum

Blog

Wiki

Meetup

Framework

Elements

Community

Adventures in SEO



9/6/16 8:00 AM



TL;DR: Vaadin was hardly SEO-friendly in the past. Not any more!

Bookmarking pages

Bookmarking is as old as www itself. Being able to bookmark a specific product does make sense to bookmark a specific product. Following the shop example, here's what happens:

1. A servlet is mapped on a specific URL
2. When the URL /product/real/boat is called, the method parses the URL and says for the product "real/boat"

- things you'll learn

1. What are SPAs and why they are problematic with search engines?
2. You learn to consider if SPAs is really the best fit for your requirements. *)
3. Traditional and modern ways to make your SPA cope with search engines
4. SPAs **can** be search engine compatible!

*) I hope I don't get fired questioning SPAs 😊

- SEO?

- Lot of things affect how well your page is found, too wide subject for conference presentation
- Cheating or helping search engines and users?
- In this session:
 - On-Page SEO (in SPAs)
 - SoMe social media integration (related)

- do you need SEO?

- Not necessarily!
- Web app vs web site
- Often quite black and white
- 71.3% of vaadin.com visitors come via search engines!

SINGLE-PAGE WEB APPS?

- A single-page application (SPA)
 - No page reloads, “full AJAX” web apps
 - JavaScript powered client side “rendering”
 - New data (or views) loaded with XHR/JSONP/
Websocket
 - **Faster interaction -> desktop like UX**

WELCOME QuickTickets Dashboard

Username Password

Remember me

MyController.java

```
@RestController
@RequestMapping("/analytics")
public class AnalyticsController {
    @Autowired
    PatientsRepository patientsRepository;

    @RequestMapping(path = "/age",
        method = RequestMethod.GET)
    public Response getByAge() {
        ...
    }

    @RequestMapping(path = "/length",
        method = RequestMethod.GET)
    public Response getByLength() {
        ...
    }
    ...
}
```

my-view.template.html

```
<nav>
    <a href="/analytics/age" routerLink="true"
    <a href="/analytics/doctor" routerLink="true"
    <a href="/analytics/gender" routerLink="true"
</nav>
    ...

```

my-view.css

```
nav {
    justify-content: center;
    text-transform: uppercase;
    margin-bottom: 50px;
} ...
```

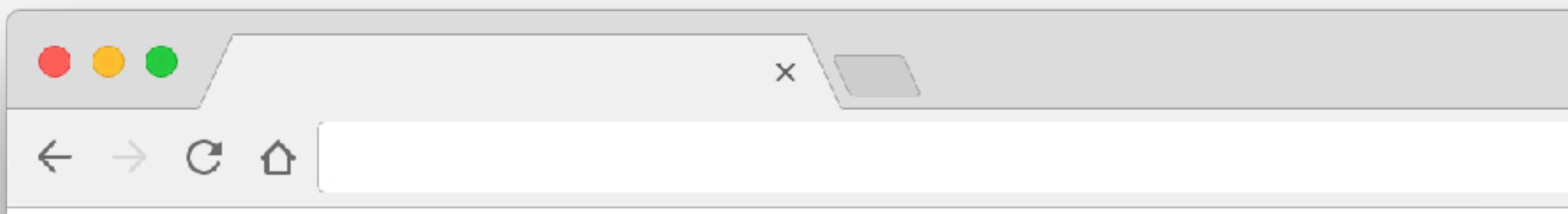
my-view.js

```
getAnalytics(grouping: string = 'age') {
    return this.http
        .get(`${this.config.API_URL}/analytics`)
        .map(res=>res.json()); vaadin>
} ...
```

FIGHT FOR FSSIMPLICITY

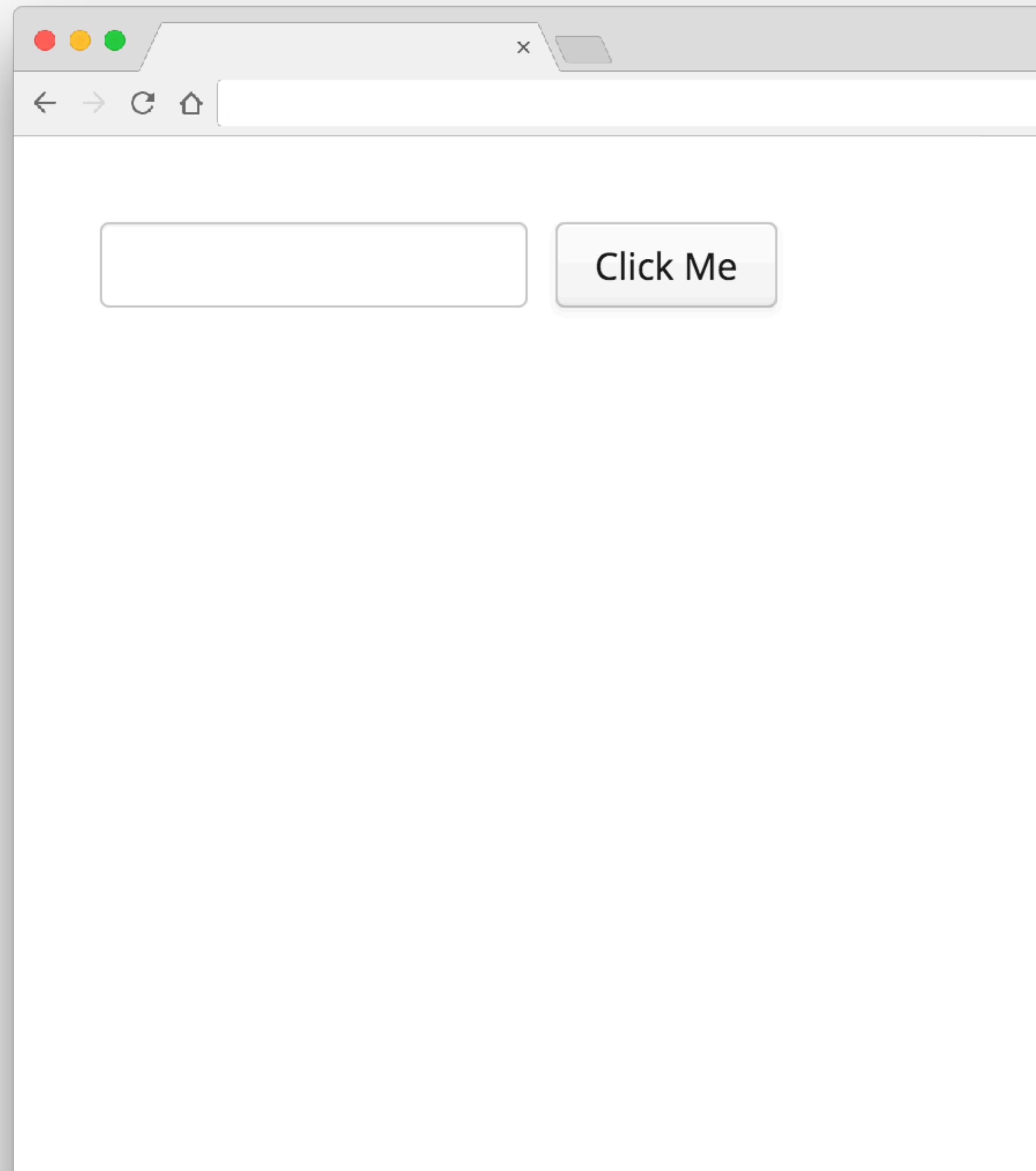
vaadin}>

```
new TextField();  
new Button("Click me");
```

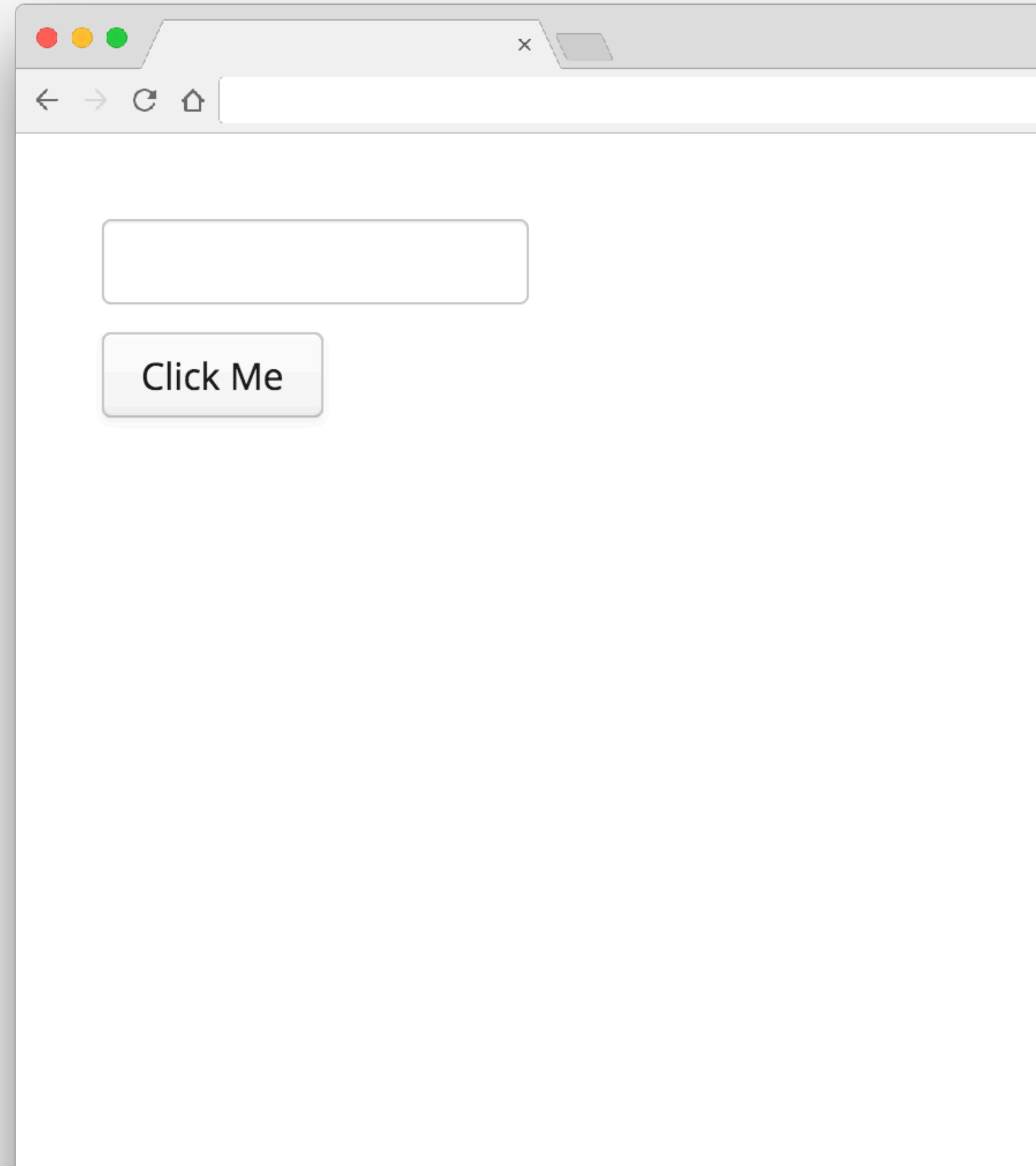


Click Me

```
new HorizontalLayout(  
    new TextField(),  
    new Button("Click me")  
);
```

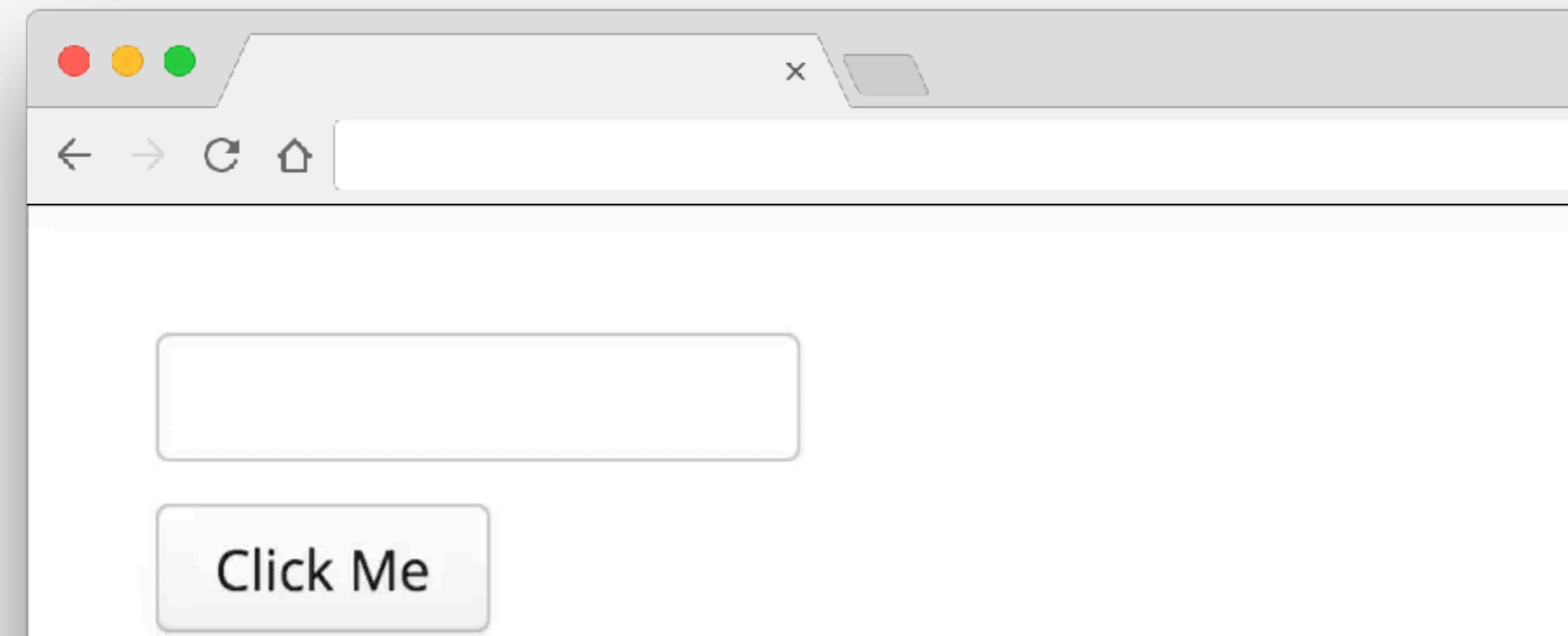


```
new VerticalLayout(  
    new TextField(),  
    new Button("Click me")  
);
```



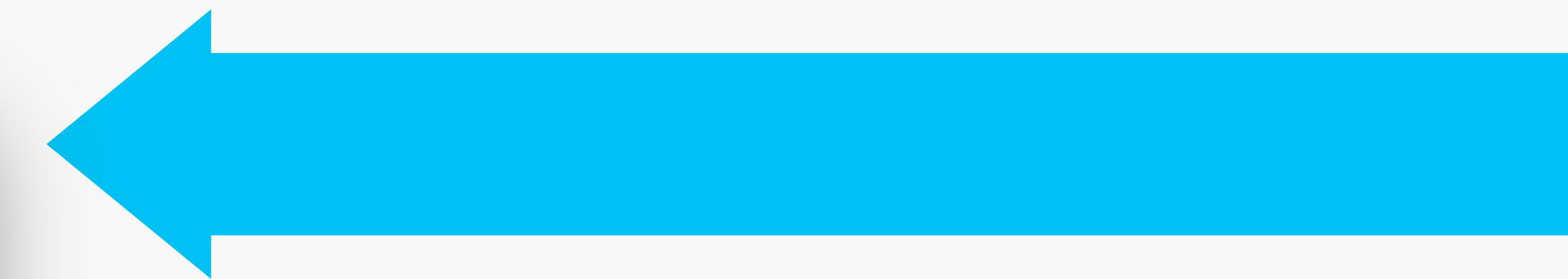
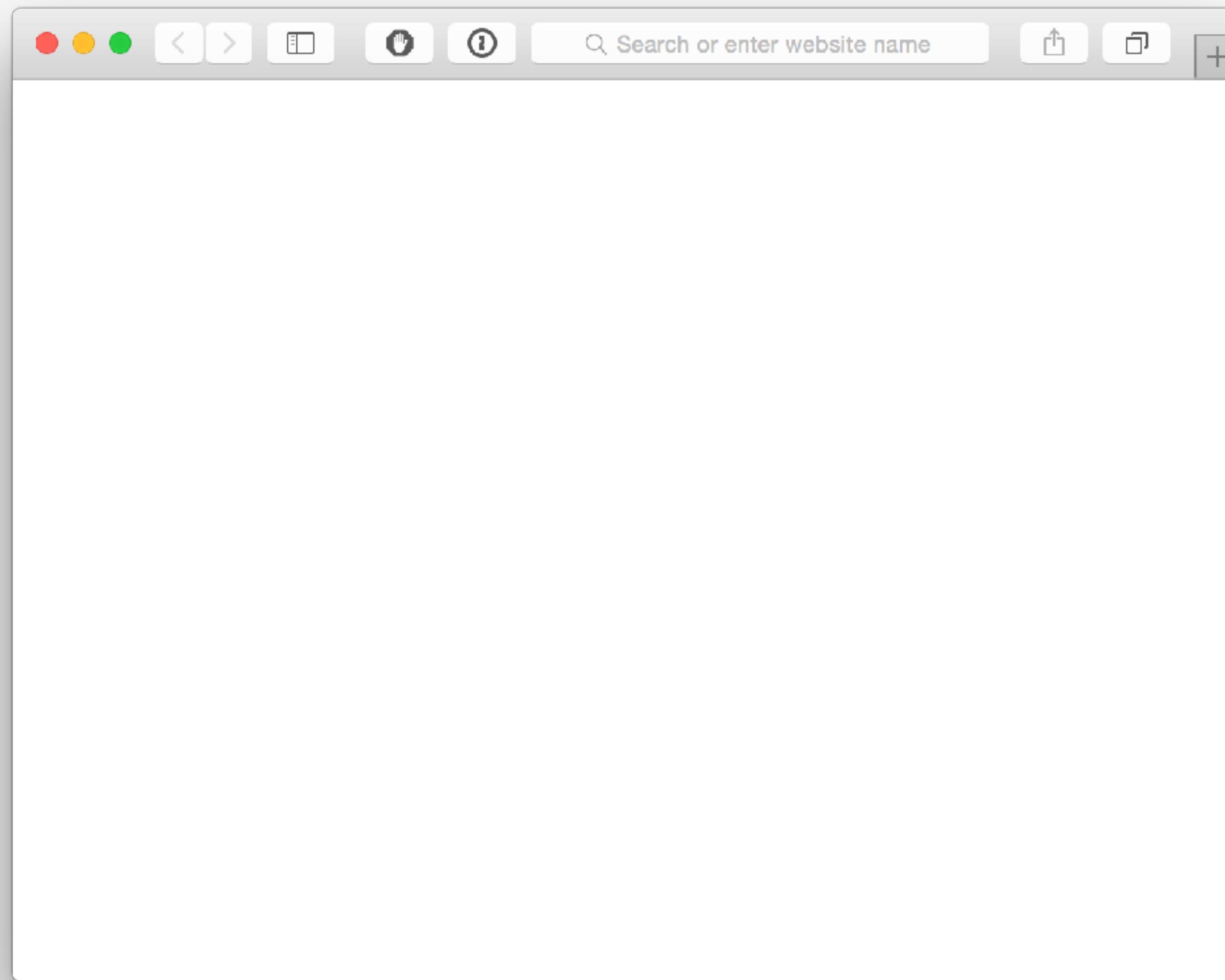
```
layout = new VerticalLayout();
textField = new TextField();
button = new Button("Click Me");

button.addClickListener(click ->
    layout.addComponent(
        new Label(textField.getValue())))
);
```



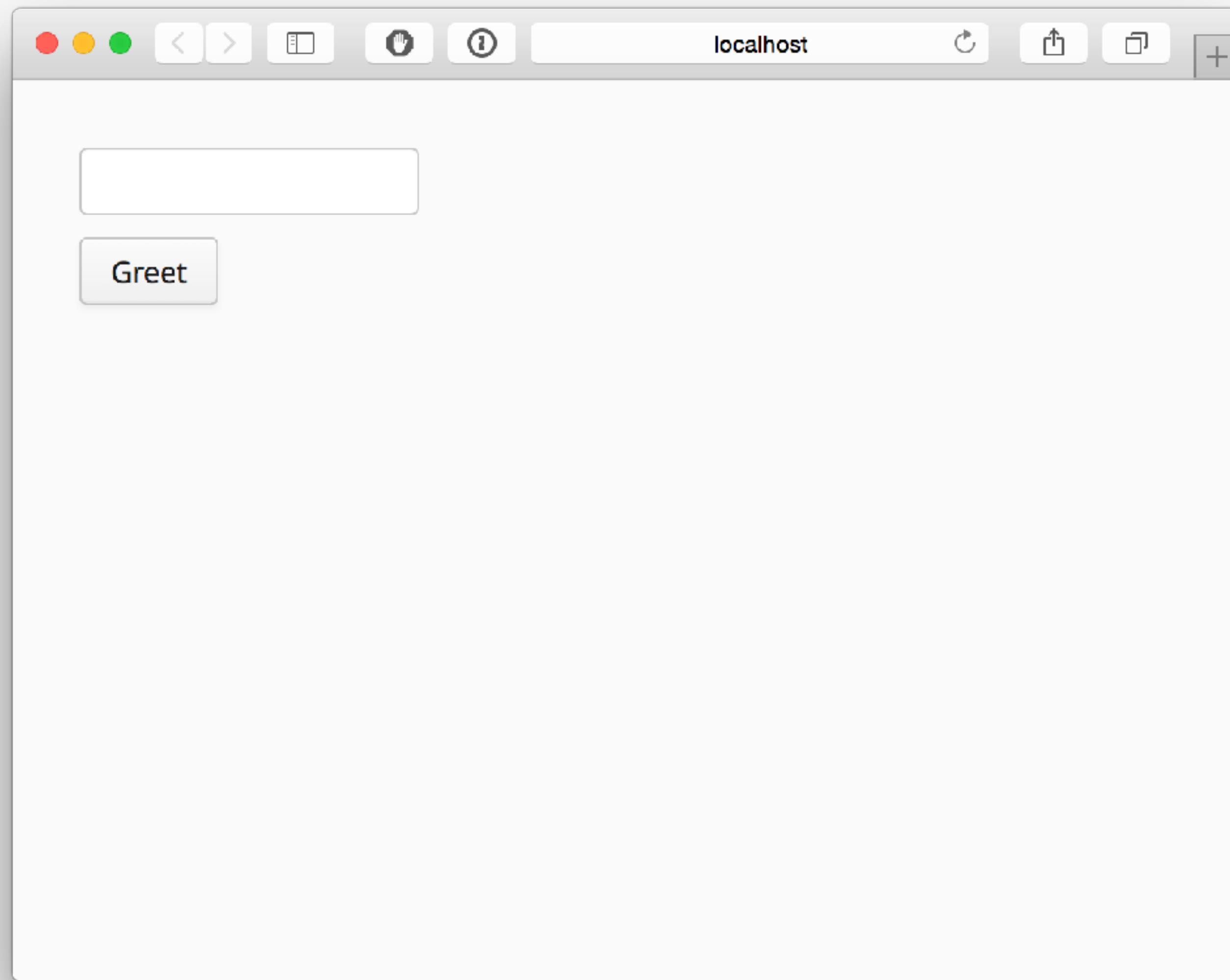
```
TextField name = new TextField();
Button button = new Button("Greet");
layout.addComponents(name, button);

button.addClickListener(click -> {
    Notification.show("Hi, " + name.getValue());
});
```

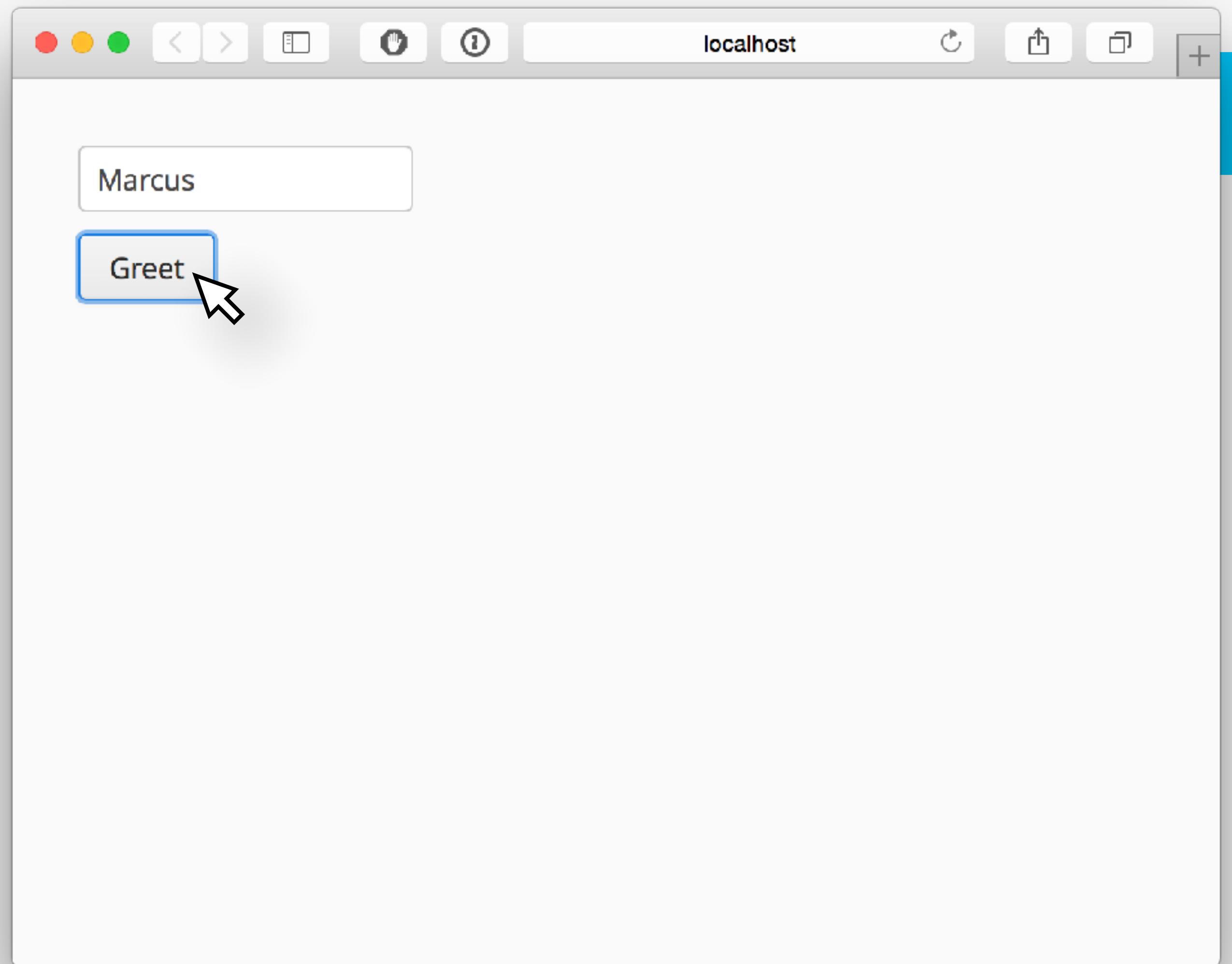


Initial HTML
CSS
JavaScript
(provided by the
Framework)

~300k



vaadin}>

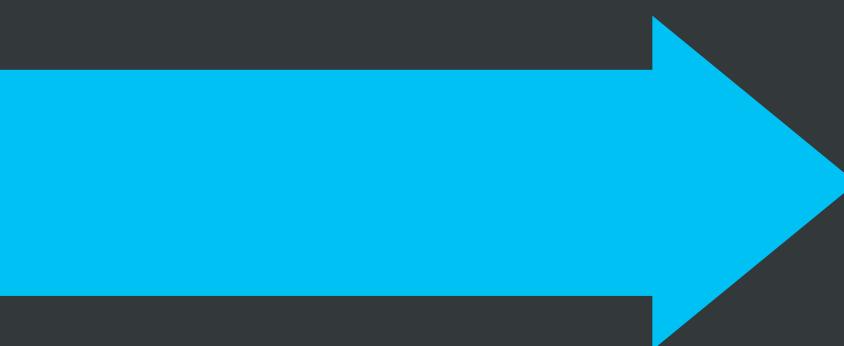


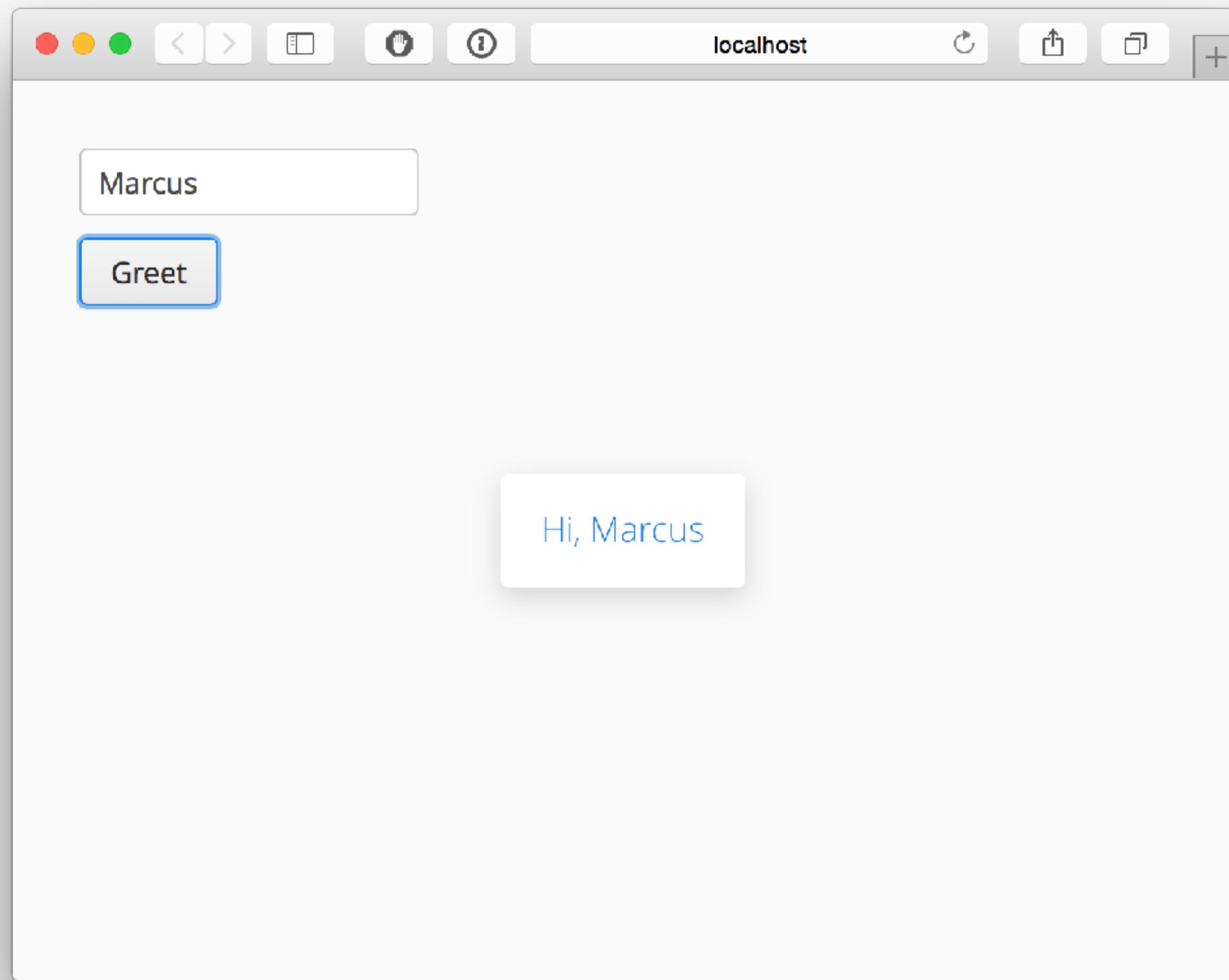
{name: {value: 'Marcus'},
button: {event: 'clicked'}}

261 bytes

```
TextField name = new TextField();  
Button button = new Button("Greet");  
layout.addComponent(name, button);
```

```
button.addClickListener(click -> {  
    Notification.show("Hi, " + name.getValue());  
});
```





```
{name: {value: 'Marcus'},  
button: {event: 'clicked'}}
```

261 bytes

```
{new: [  
  {notification: 'Hi, Marcus'}  
]}  
267 bytes
```

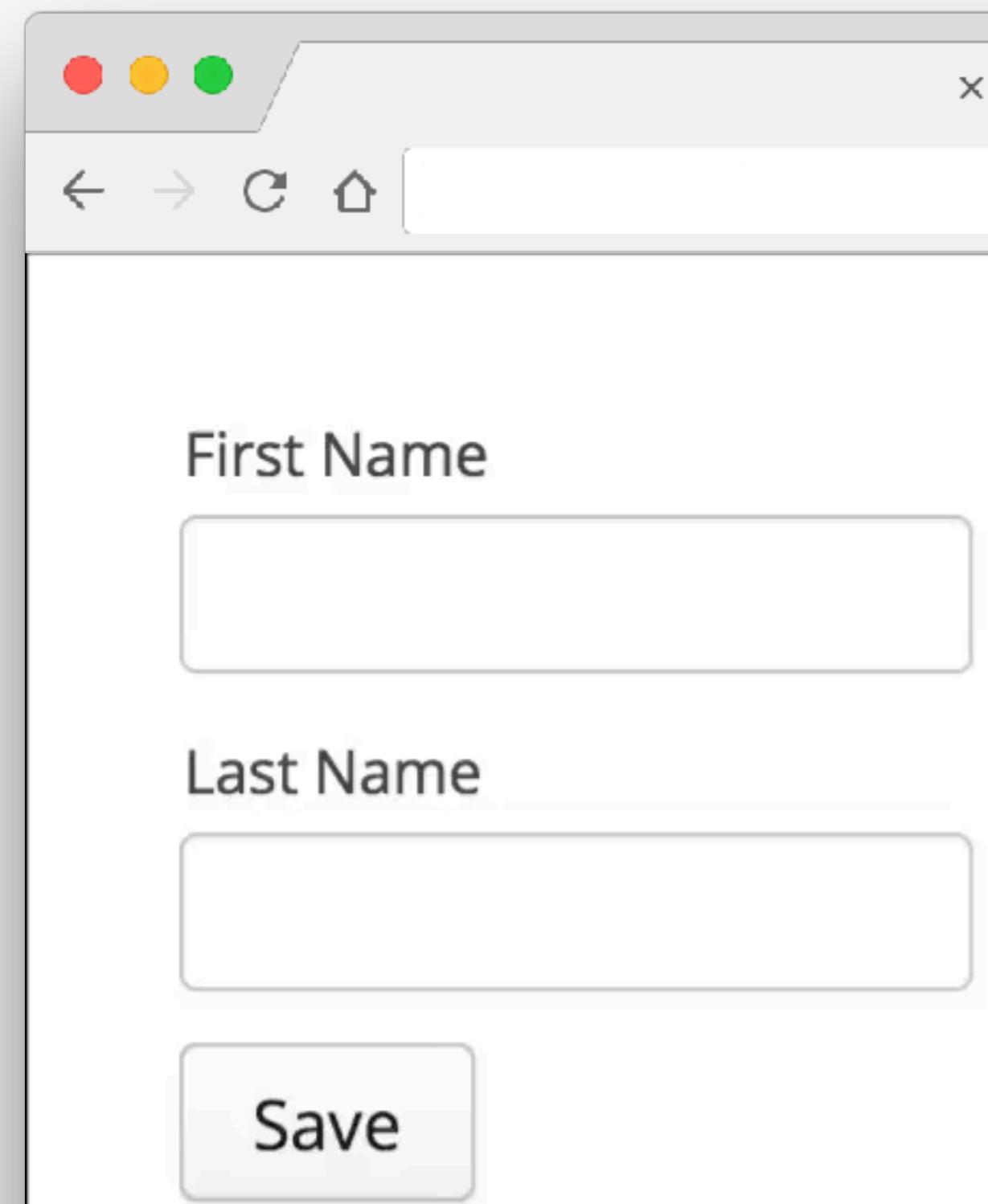
```
private TextField firstName;  
private TextField lastName;
```

```
person = new Person();
```

```
binder = new Binder<>(  
    Person.class);
```

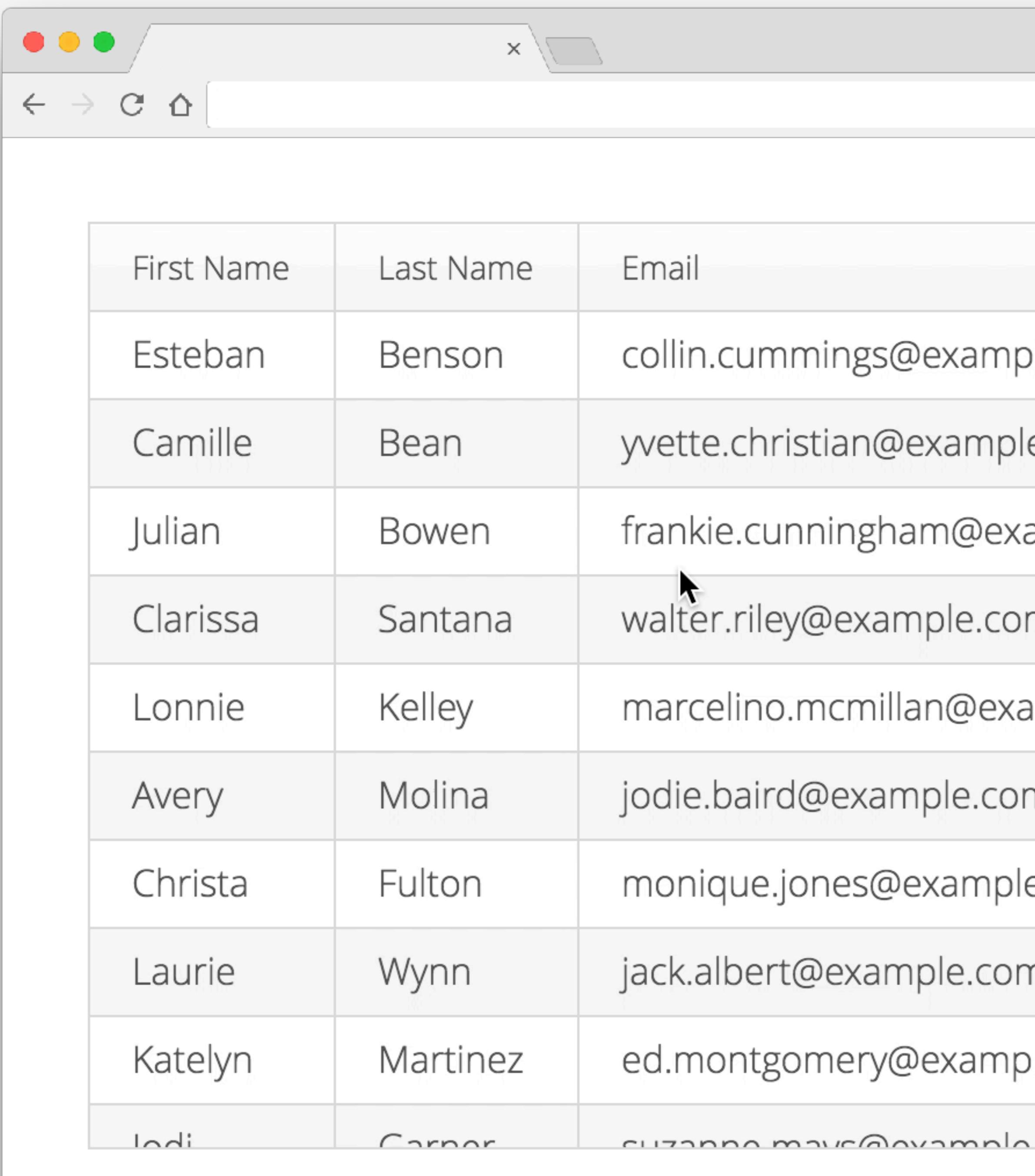
```
binder.bindInstanceFields(this);
```

```
save = new Button("Save", e -> {  
    Notification.show(person.toString());  
});
```



```
@Autowired  
private PersonService service;
```

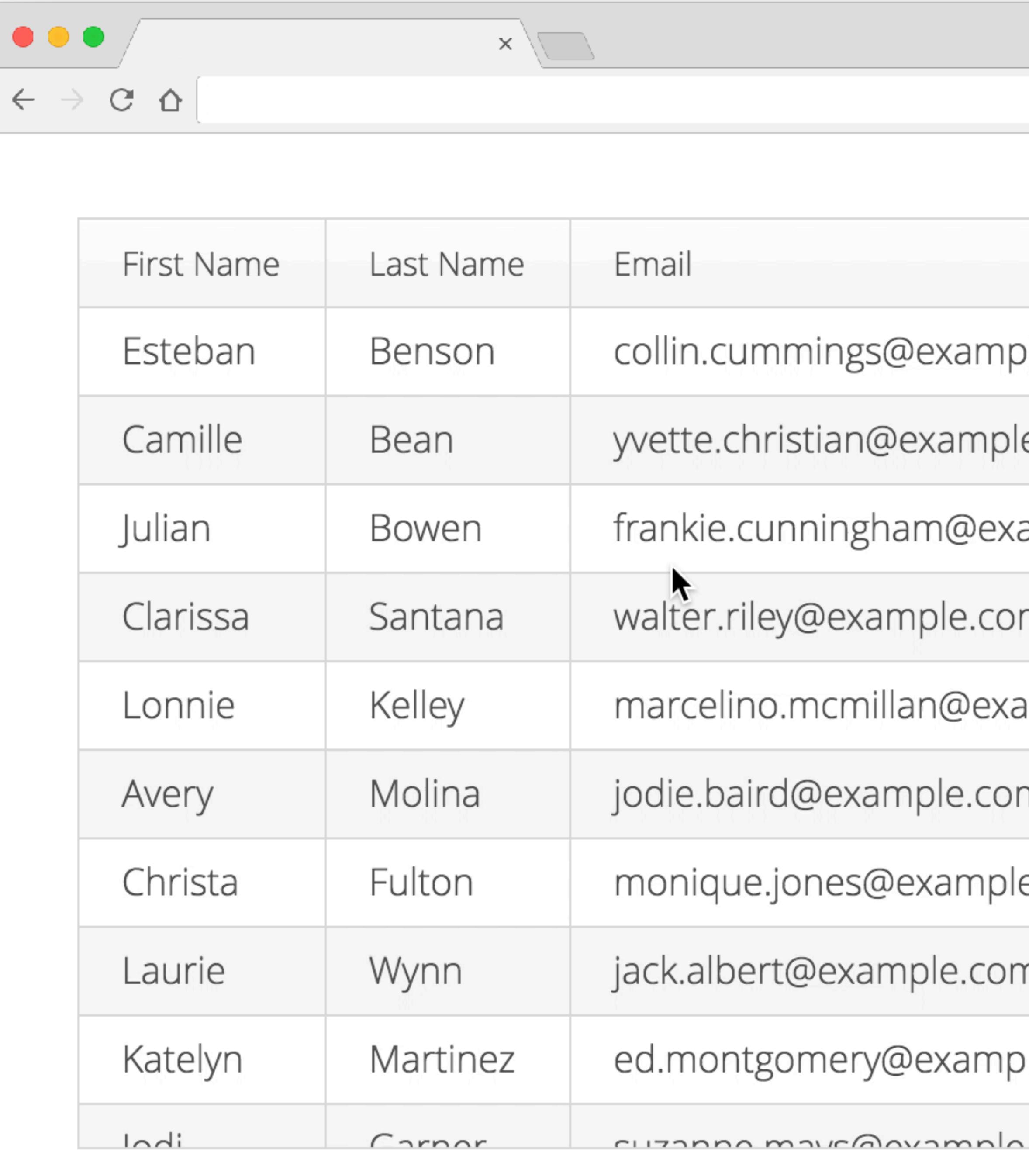
```
Grid<Person> grid = new Grid<>();  
// If you want custom columns  
grid.addColumn("First name",  
    Person::getFirstName);  
grid.addColumn("Last name",  
    Person::getLastName);  
grid.addColumn("Email",  
    Person::getEmail);  
  
grid.setItems(service.getPeople());
```



First Name	Last Name	Email
Esteban	Benson	collin.cummings@example.com
Camille	Bean	yvette.christian@example.com
Julian	Bowen	frankie.cunningham@example.com
Clarissa	Santana	walter.riley@example.com
Lonnie	Kelley	marcelino.mcmillan@example.com
Avery	Molina	jodie.baird@example.com
Christa	Fulton	monique.jones@example.com
Laurie	Wynn	jack.albert@example.com
Katelyn	Martinez	ed.montgomery@example.com
Iodi	Corpor	suzanne.mays@example.com

```
@Autowired  
private PersonService service;
```

```
Grid<Person> grid = new Grid<>();  
  
grid.setDataSource(  
    grid.addColumn("First name",  
        new BackEndDataSource<>(  
            Person::getFirstName));  
    grid.addColumn("Last name",  
        q.getOffset(),  
        Person::getLastname);  
    grid.addColumn("Email",  
        q.getLimit(),  
        Person::getEmail);  
    q -> service.count()));
```

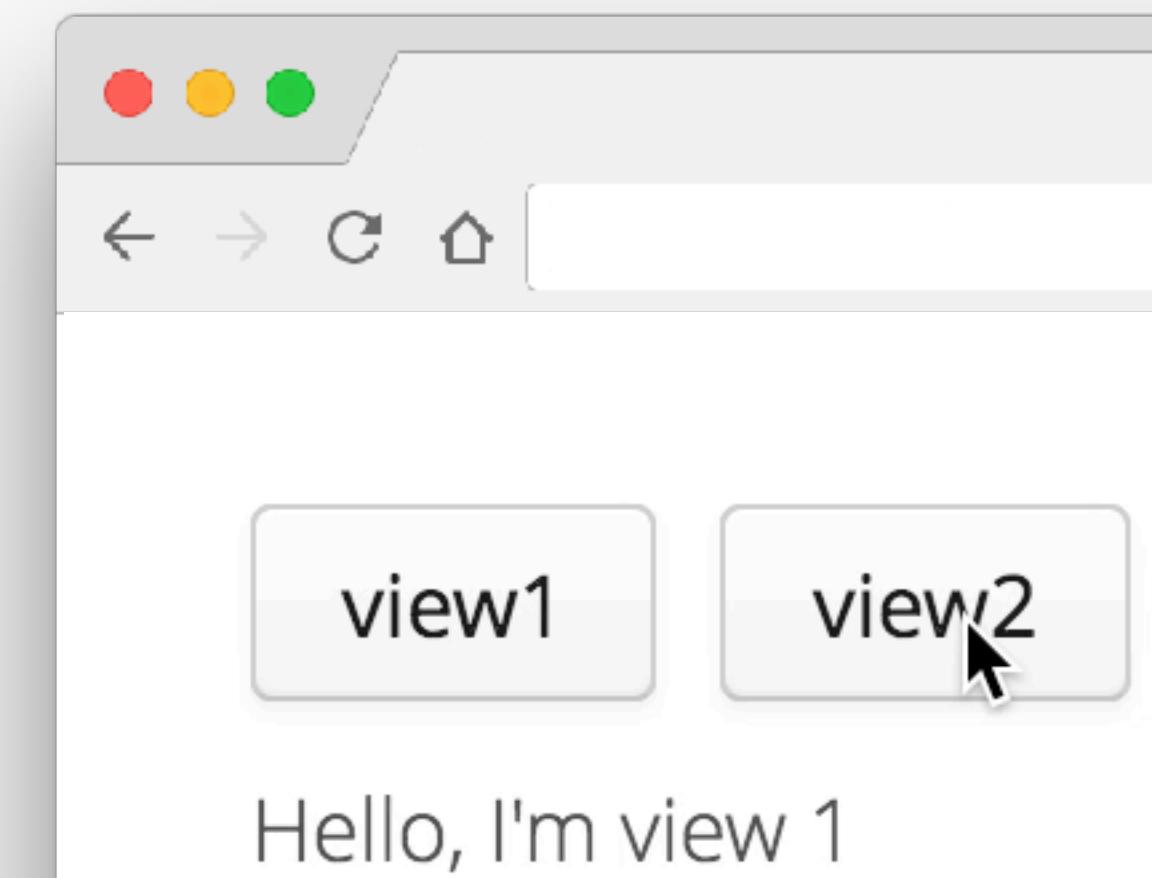


First Name	Last Name	Email
Esteban	Benson	collin.cummings@example.com
Camille	Bean	yvette.christian@example.com
Julian	Bowen	frankie.cunningham@example.com
Clarissa	Santana	walter.riley@example.com
Lonnie	Kelley	marcelino.mcmillan@example.com
Avery	Molina	jodie.baird@example.com
Christa	Fulton	monique.jones@example.com
Laurie	Wynn	jack.albert@example.com
Katelyn	Martinez	ed.montgomery@example.com
Iodi	Corpor	suzanne.mays@example.com

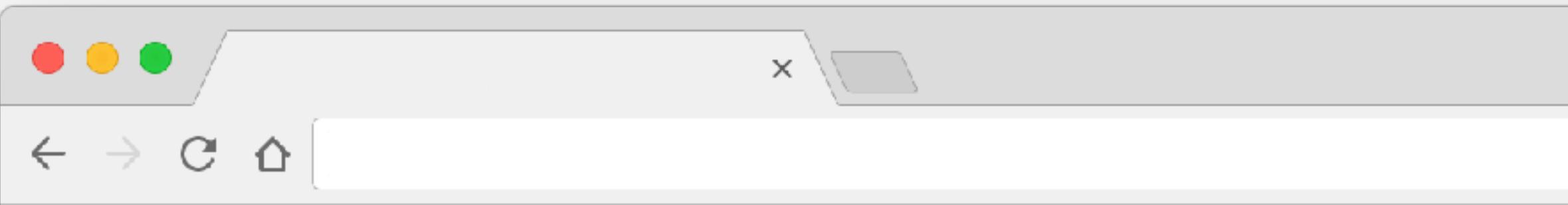
```
navBar = new HorizontalLayout();
navBar.addComponent(
    new Button("view1",
        click -> nav.navigateTo(""))));
navBar.addComponent(
    new Button("view2",
        click -> nav.navigateTo("view2")));
```

```
CssLayout navOutlet = new CssLayout();
addComponents(navBar, navOutlet);
```

```
nav = new Navigator(this, navOutlet);
nav.addView("", 
    new DemoView("Hello, I'm view 1")));
nav.addView("view2",
    new DemoView("Hello, I'm view 2"));
```



```
$v-background-color:  
  hsl(210, 0%, 100%);
```

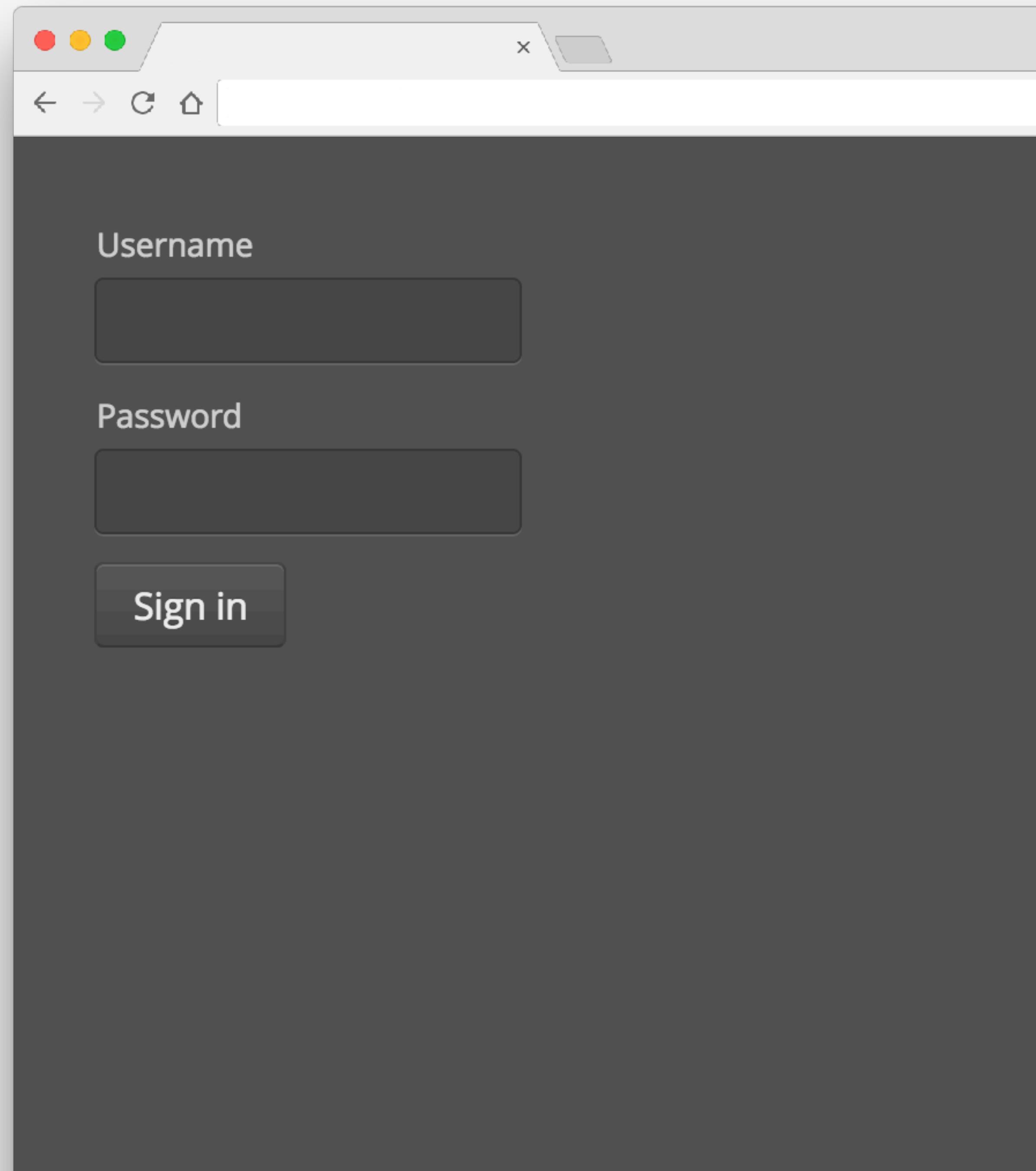


Username

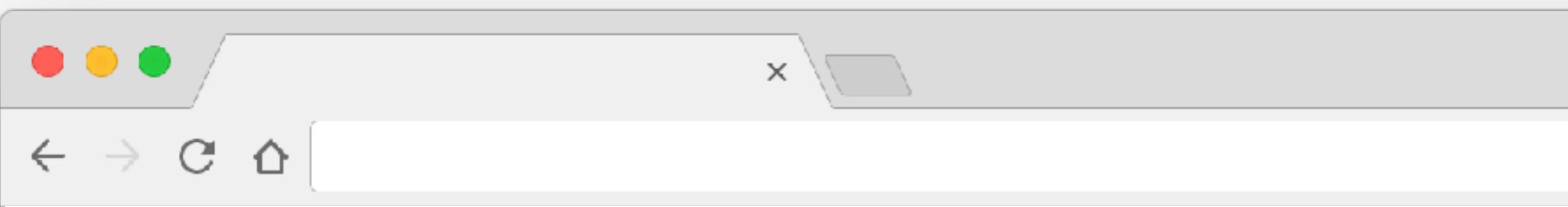
Password

Sign in

```
$v-background-color:  
  hsl(210, 0%, 33%);
```



```
$v-background-color:  
  hsl(210, 0%, 100%);  
$v-border: 2px solid v-shade;  
$v-border-radius: 0;  
$v-bevel: false;  
$v-gradient: false;  
$v-shadow: false;
```



Username

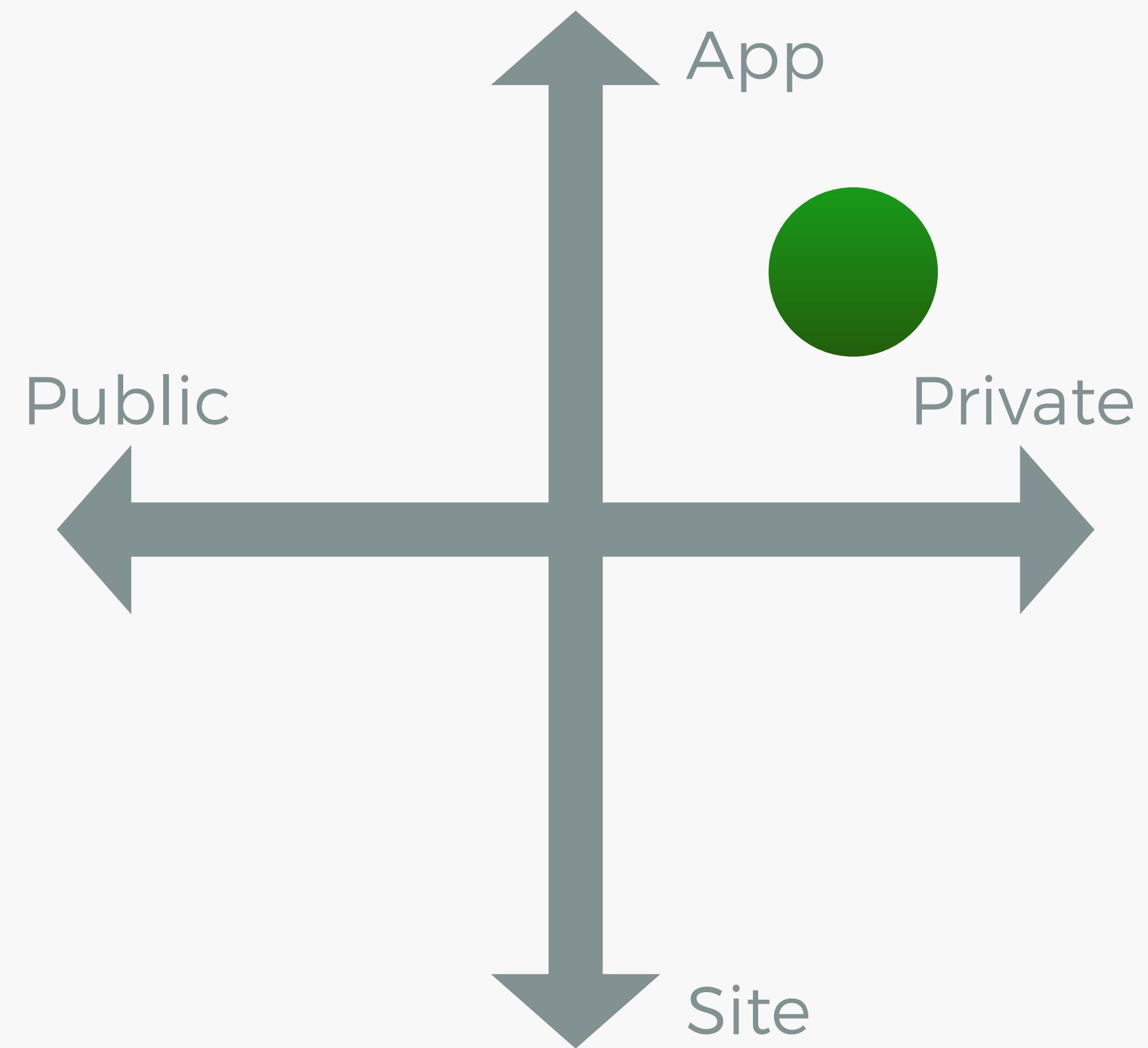
Password

Sign in

- SPA challenges
 - Initial load time
 - Multiple languages
 - Except in Vaadin's approach
 - Client-Server programming model
 - Except in Vaadin's approach
 - Back button support
 - Deep linking
 - Analytics
 - **Search engine optimisation**

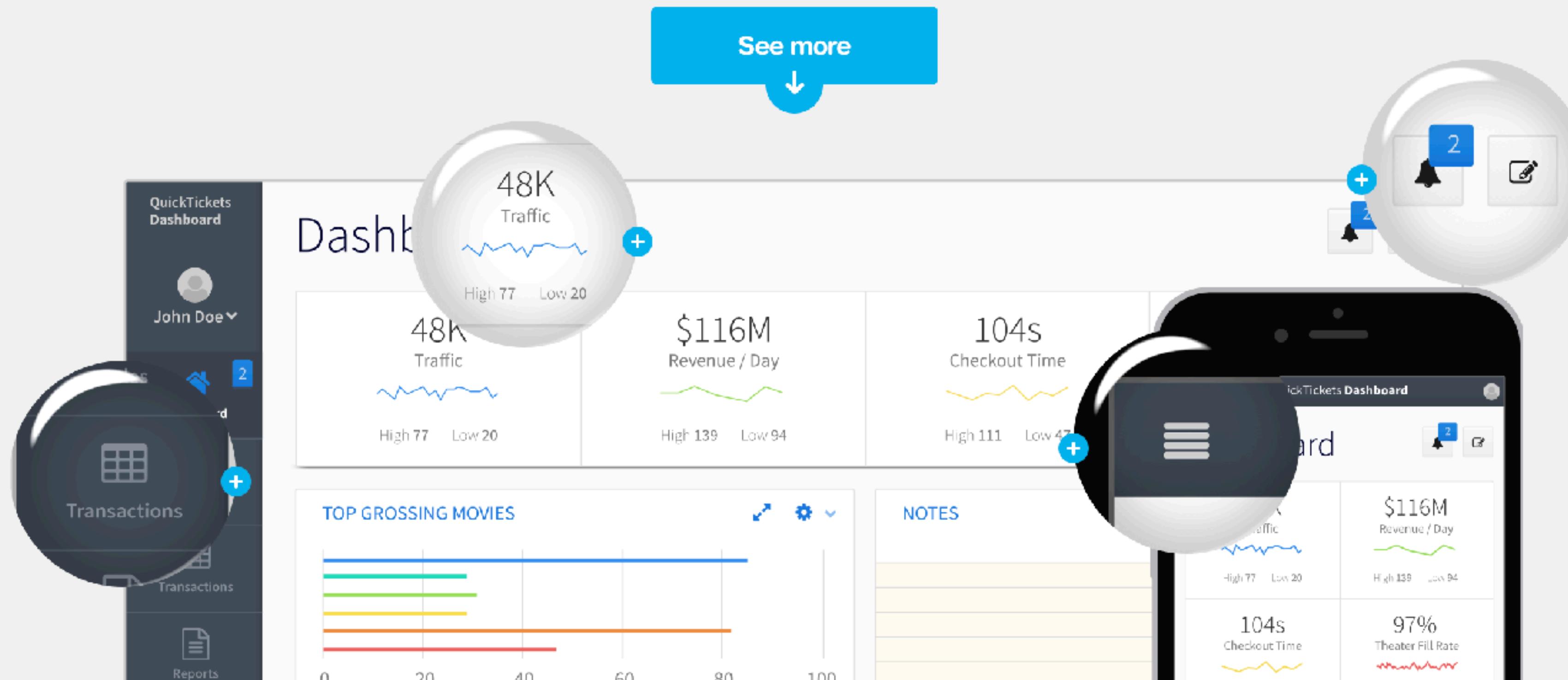
- SPA is not always the best solution!

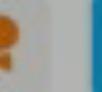
- Site vs app
- Public vs private
- Sweet spot is private web app
- Consider “hybrid solutions”



User interface components for web apps

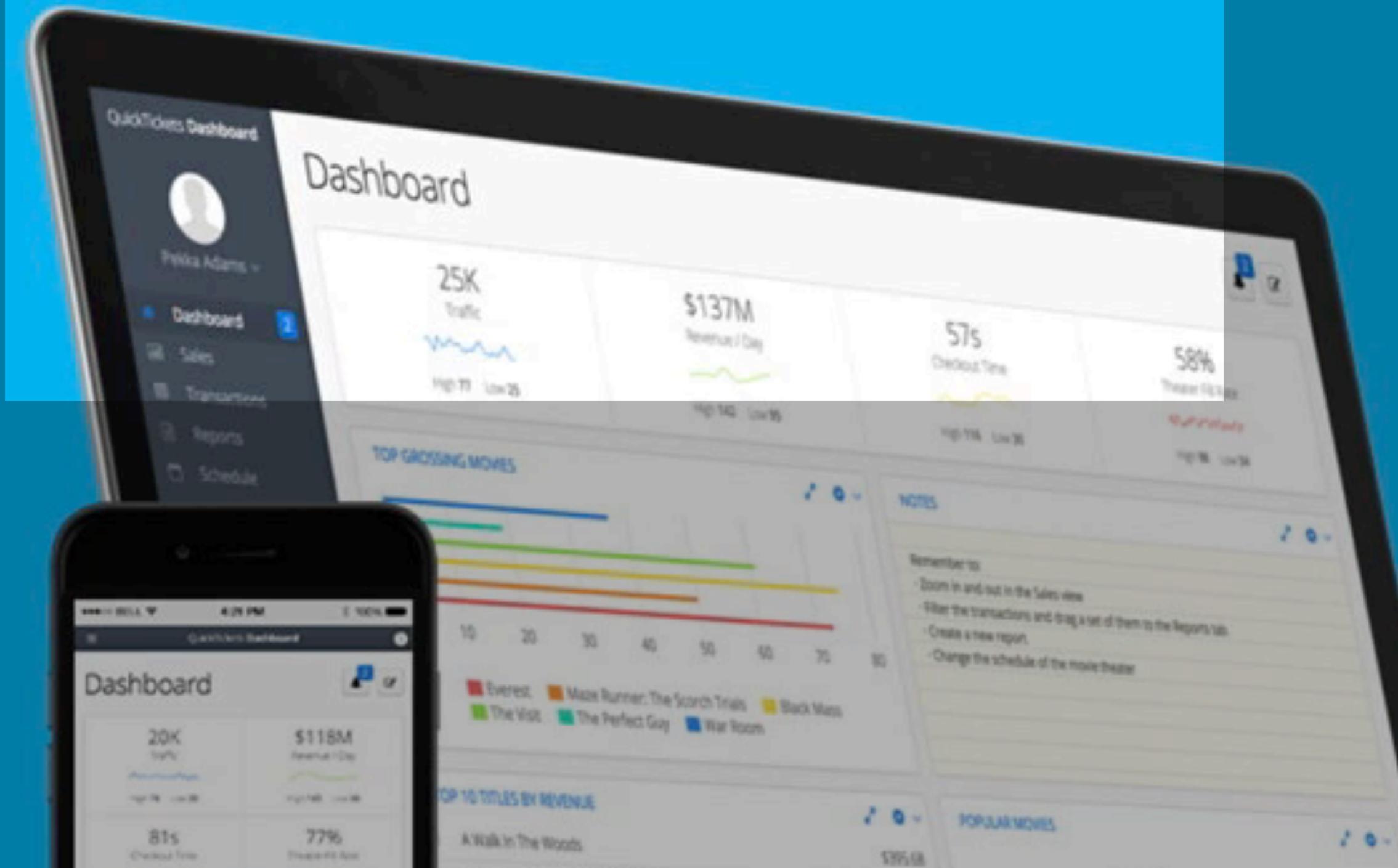
Build your apps in Java



[Demo](#) [Get started](#) [Tutorial](#) [Docs](#) [Add-ons](#) [Comparison](#)

Vaadin Framework

#1 Java Web UI Framework for Business Applications



QuickTickets Demo

A responsive demo application built using server-side Java with Vaadin. Showcasing big data, data visualization, drag 'n' drop and other Vaadin features.

vaadin.com

Twitter #vaadin Dev Mode On Splits! Paimion Rasti Harjoituspäiväkirja OL-UT Forum - vaadin.com WH

vaadin > Framework Elements Community Services Pro Tools Company 157 Matti Tahvonen 🔍

Forum Blog Wiki Meetup Contribute Webinars

Search Forum 🔍

MOST RECENT Chart from SQLContainer by Tatu Lund, 11 minutes ago

Recent Posts My Posts

Vaadin Forum

Categories + New Category

Category	UNREAD	TOPICS
01. Announcements	281	361
02. Miscellaneous	5,038	6,458
03. Framework	11,295	13,383
04. Elements	129	133
05. Theming	850	898
06. Designer	160	165
07. Testbench	230	265

Get Help

Screenshot of the Vaadin Add-ons directory page.

The page title is "Add-ons".

Header navigation includes: vaadin >, Framework, Elements, Community, Services, Pro Tools, Company, 157 notifications, Matti Tahvonen profile, and a search icon.

Top menu links: Demo, Get started, Tutorial, Docs, Add-ons, Comparison.

Main content area features a "Vaadin Spreadsheet" component preview with the description: "Let users create, edit, link and share Excel documents online." It includes a small icon of a spreadsheet grid with an "f(x)" formula.

Search bar with filters: UI Components (checked), Data Components, Themes, Tools, Miscellaneous.

Sort options: A-Z, Top Downloads, Highest Rated, Most Recent (selected).

Search results: 651 add-ons found.

Visible add-on cards:

- Miscellaneous**: failover-vaadin by Martin Vyšný (Browser-side fail-over)
- UI Components**: DecimalField by The Croc (Restrict user from entering anything other than number and decimal separator)
- Tools**: Vaadin Spring Boot by Vaadin Ltd (Spring Boot support for Vaadin applications)

Bottom navigation tabs: Tools, UI Components, UI Components, UI Components.

SPA ⚡ SEO

WHY?



SPA ⚡ SEO

- Crawling + JavaScript
- Deep linking
- DOM in SPAs

- Crawling + JavaScript rendering

- Traditionally no JS support at all in bot
- Bots are getting better, e.g. content in Vaadin apps today:
 - Google ✓
 - Bing/Yahoo ✓
 - Yandex ❌
 - Related : most social media integrations ❌

- Deep linking

- Happens automatically in traditional web sites
- SPAs have no real page changes, no natural URLs
- Traditionally hacked with URI fragments (with hack² for SEO)
- HTML5 History API solves this
 - IE 11+ & other modern browsers

- DOM in SPAs

- Components libraries often used in SPAs don't necessarily use tag names relevant for bots (A, H1/H2..., TITLE, META tags)
- Navigating to another view might not happen with a link click, but with other element click, scrolling, gesture...
- Some content/links not always visible

SPA & SEO HOW?

- SPA SEO techniques
 - Generic SEO techniques apply.
 - Helping bots to crawl your site:
 - deep linking
 - “hashbang”
 - History API
 - Sitemaps
 - Content:
 - Providing extra data for bots
 - <noscript>,<title> <meta> tags
 - serving custom non-SPA content for bots
 - Pre-rendering

#!HASHBANG!

- Curiosity

#1 search engine company is
probably the #1 SPA advocate.

- Hashbang technique
 1. special syntax of hash part of url means SE should consider it as a “page”
 2. Special hacks in browser (with iframes) to add entries to browser’s history (back button support)
 3. special rules to convert hash into query parameter
 4. special rules for the server side to render the same content for SE



google groups orienteering lidar



All

Images

Videos

News

Maps

More

Settings

Tools

About 316 results (0,62 seconds)

Contour generation for orienteering maps - Google Groups

<https://groups.google.com/d/topic/lastools/0U84YljDvJo> ▾

Jun 1, 2016 - LASTools - efficient tools for LiDAR processing › ... I'm with the Rocky Mountain
Orienteering Club and I've been playing around with LASTools, ...

UAV-LiDAR - Google Groups

<https://groups.google.com/forum/#!msg/lastools/2ajPRuf4bWg/oVFKLIFvHAQJ> ▾

Jan 29, 2015 - Google Groups allows you to create and participate in online forums and email- based
... Click on a group's star icon to add it to your favorites. 0 ...

Server will never get the part starting from #

Workflow to process LiDAR - Google Groups

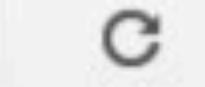
<https://groups.google.com/d/topic/lastools/u27XzHhmNRE> ▾

Apr 2, 2012 - Click on a group's star icon to add it to your favorites. 0 ... LASTools - efficient tools for
LiDAR processing › ... Another orienteering mapper! :-).

Twitter #vaadin Dev Mode On Splits! Paimion Rasti Harjoituspäiväkirja OL-UT Forum - vaadin.com WH +

groups.google.com

Google Search for messages  1 

Groups    

LAStools - efficient tools for LiDAR processing › UAV-LiDAR

10 posts by 9 authors 

★ **David Hildebrand** I am looking for information comparing UAV LiDAR systems and acquisition compared with conventional airborne LiDAR. The cost of 1/30/15

★ **ol...@nps.edu** for purposes of discussion: the big limiting factor in accuracy seems to be the platform position and pointing (GPS, IMU), not the lidar. lower 1/30/15

★ **Terje Mathisen** should be possible to make pretty good UAV scans of smaller areas, in my case suitable for local/sprint orienteering maps (i.e. less than a 1/30/15

★ **黃洪宇** The following papers may be relevant: 1. Wallace, L., Lucieer, A., and Watson, C. (2014). Evaluating tree detection and segmentation routines on 1/30/15

★ **a.cottin** We've used the two UAV LiDAR systems that exist on the market, the VUX-1 and the YellowScan. At Carbomap, we consider these two systems 1/30/15

★ **Lewis Graham** The LIDAR scanning technology itself is rapidly approaching the sUAS cost realm. It is positioning that remains the problem. Unlike framing 1/30/15

★ **Lewis Graham** Please note that my below comment assumes you want to maximize the accuracy potential of the laser range finder. If not, then of course 1/30/15

★ **Aaron Reyna** Pros: 80 grand for the YellowScan unit. Very low noise level Low power Really cool team willing to work with you 40 Pulses per second. 3/24/15

★ **Murray Webster** Hi, I've had a search but keep getting Error 503 from <http://yellowscan.lavionjaune.com/> I would like to look at the technical spec pdf if 3/24/15

 **Martin Isenburg** 4/17/15  

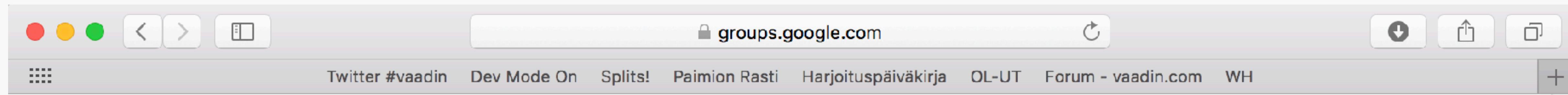
★ Hello,

Just came across this article on a project that seems to match this thread well:

"The purpose of the UAV LIDAR Project, is to complete the development and field testing of an unmanned Aerial Vehicle based LIDAR prototype in the intense jungle environment of Guatemala."

- `#! ↱ ?_escaped_fragment_=`
 1. Bot detects #! urls as logical pages
 2. Bot converts #! into special query parameter
`?_escaped_fragment_=`
 3. Server returns a “pre-rendered” version for
`_escaped_fragment_` parameters
 4. Search engine displays hashbang URLs

- Escaped fragment rendering:



Google Groups

RE: [LAStools] UAV-LiDAR

Martin Isenburg

Apr 16, 2015 4:38 PM

Posted in group: [LAStools - efficient tools for LiDAR processing](#)

Hello,

Just came across this article on a project that seems to match this thread well:

"The purpose of the UAV LIDAR Project, is to complete the development and field testing of an unmanned Aerial Vehicle based LIDAR prototype in the intense jungle environment of Guatemala."

<http://www.g-eos.org/2015/04/2015-uav-lidar-project-guatemala.htm>

Anyone in this forum know more about this. I am especially curious as I am writing this email from "nearby" Costa Rica ... (-;

Martin @rapidlasso

- Hashbang technique
 - Kind of solves the SPAs SEO incompatibility
 - Heavy to implement
 - Invented by Google in 2009
 - Deprecated by Google in 2015 (but still functional)
 - GoogleBot (and some other crawlers) understand JS and actually render the page
 - HTML5 History API and normal URLs!

HTML5 HISTORY API

- History API

- JS API to access browsers history (with certain limitations of course)
- `history.back()`, `history.forward()`
- supports adding new entries and listening to changes
 - browser support since IE 10

- History API: pushState method
 - Adds new entry to history
 - parameters:
 - state object
 - title
 - URL

- History API: replaceState method
 - Modifies the current entry in history
 - otherwise like pushState

- History API: PopState event

- Technically in window: `window.onpopstate`
- catch back/forward button click
- Naturally can be used to track just “in-page” navigation

- History API for SPA deep linking
 - Much cleaner solution than hashbang style
 - You should use it today, unless really old browsers needs to be supported
 - Together with possible JS support in bots, **no server side hacks or pre-rendering needed**

- History API: usage example

- Vaadin Framework 7: History add-on
 - Low level support
 - Navigator support: automatic modern SPA deep linking
- Will be supported by default in Vaadin 8
- Code examples...

HOW ABOUT META TAGS?

AKA

WE STILL NEED
THE SERVER-SIDE

Not just with Vaadin Framework :-)

- Meta tags?

- Provides extra details for crawlers and other bots

```
<head>-
  · <title>SEO · test: · basic · title</title>-
  · <meta · name="description" · content="This · is · the · description · for · view ·"->
  · <meta · name="og:type" · content="website">-
  · <meta · name="og:url" · content="http://virit.in/seo-test/second">-
  · <meta · name="og:title" · content="Seo · title · for · second · view">-
  · <meta · name="og:description" · content="This · is · the · description · for · vi ·"->
  · <meta · name="og:image" · content="http://v4.tahvonен.fi/boat.png">-
  · <meta · name="twitter:card" · content="summary">-
  · <meta · name="twitter:site" · content="http://virit.in/seo-test/second">-
  · <meta · name="twitter:title" · content="Seo · title · for · second · view">-
```

- Meta tags and bots
 - GoogleBot at least sometimes seems to pick up dynamically generated meta tags
 - No-go with social media bots like Twitter and Google
 - For perfect SEO, you'll still need the server side.

- Meta tags example
 - The code...

SPA SEO: TIPS AND TRICKS

- Tip 1: Think like the bot
 - If you want to see what a certain page looks like for bots, paste the URL directly to browser
 - All relevant state for a logical page must be in URL for the server

- Tip 2: Ensure pages are referred
 - SPAs often contain dynamic content
 - Menus
 - Lazy loaded content
 - Bots most probably never see dynamically loaded content!
 - SPAs don't necessarily use A elements for navigation

- Tip 3: Sitemaps

- Standard xml files that describe your site content
- Submitted to search engines manually or preferably with a hint in robots.txt file
- Easiest way to ensure your whole SPA is indexed

- Tip 4: Server generated meta tags
 - Not all search engine bots support JavaScript either, you'll get at least something relevant for the index
 - For most social media meta tags, only server side generated tags are valid (open graph, twitter etc)

- Tip 5: Server side pre-rendering

- Heavy to implement, consider if you aim for best possible SEO
- Strategies:
 - Manually with server side code, user agent detection or hash bang urls
 - “Shadow URL” with redirect to SPA
 - PhantomJS pre-rendering, prerender.io
 - <https://github.com/greengerong/prerender-java>



THANK YOU

MATTI@VAADIN.COM, [@MATTITAHVONEN](https://twitter.com/mattitahvonen), [GITHUB.COM/MSTAHV](https://github.com/mstahv)

40% of Fortune 100 companies use Vaadin

Apache 2.0

150k+ active developers

#2 Java Web Framework

according to Open HUB stats

vaadin}>

- things you'll learn
 1. What it takes to build a modern web app
 2. The building blocks of Vaadin
 3. How to build a full stack app in 30 minutes

MODERN WEB APPS

WELCOME QuickTickets Dashboard

Username Password

Remember me

MyController.java

```
@RestController
@RequestMapping("/analytics")
public class AnalyticsController {
    @Autowired
    PatientsRepository patientsRepository;

    @RequestMapping(path = "/age",
        method = RequestMethod.GET)
    public Response getByAge() {
        ...
    }

    @RequestMapping(path = "/length",
        method = RequestMethod.GET)
    public Response getByLength() {
        ...
    }
}
```

my-view.template.html

```
<nav>
    <a href="/analytics/age" routerLink="true"
    <a href="/analytics/doctor" routerLink="true"
    <a href="/analytics/gender" routerLink="true"
</nav>
    ...
```

my-view.css

```
nav {
    justify-content: center;
    text-transform: uppercase;
    margin-bottom: 50px;
} ...
```

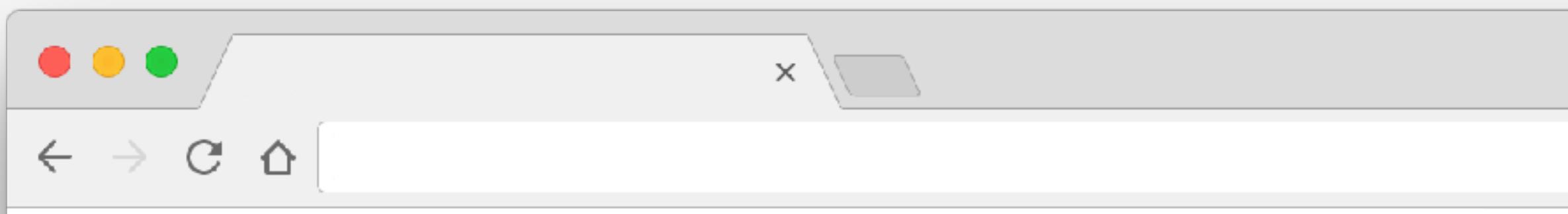
my-view.js

```
getAnalytics(grouping: string = 'age') {
    return this.http
        .get(`${this.config.API_URL}/analytics`)
        .map(res=>res.json()); vaadin>
}
```

FIGHT FOR FSSIMPLICITY

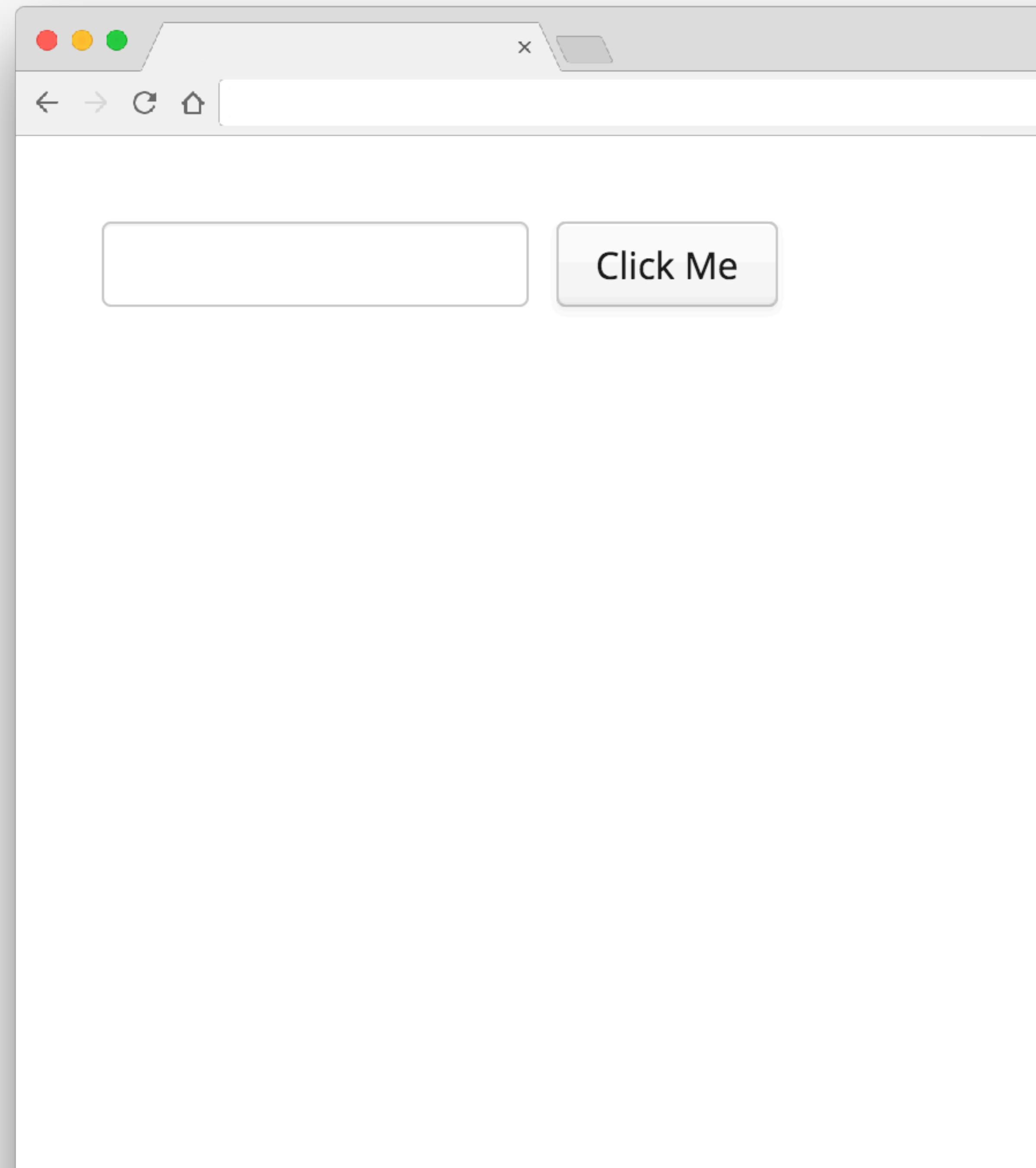
vaadin}>

```
new TextField();  
new Button("Click me");
```

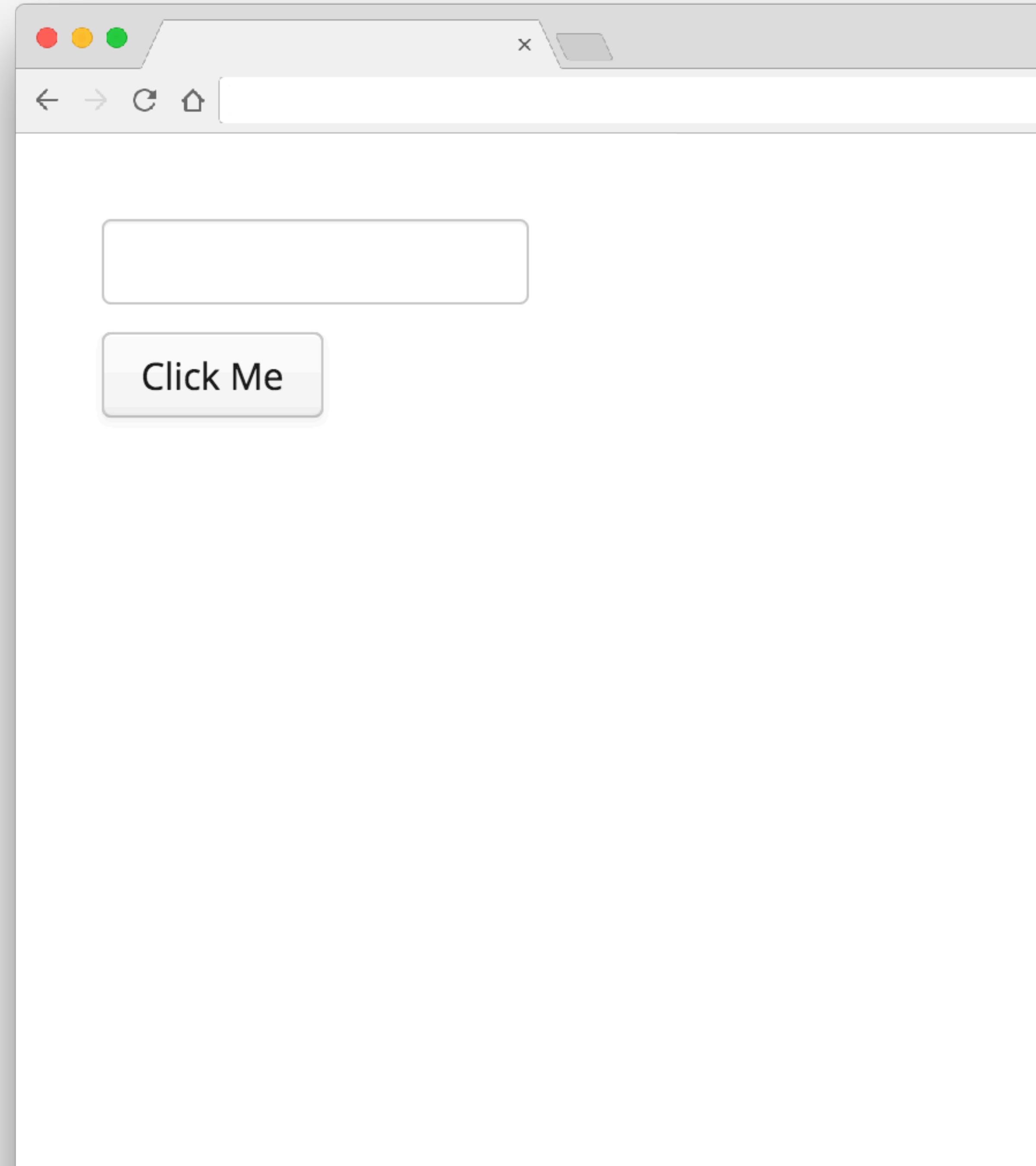


Click Me

```
new HorizontalLayout(  
    new TextField(),  
    new Button("Click me")  
);
```

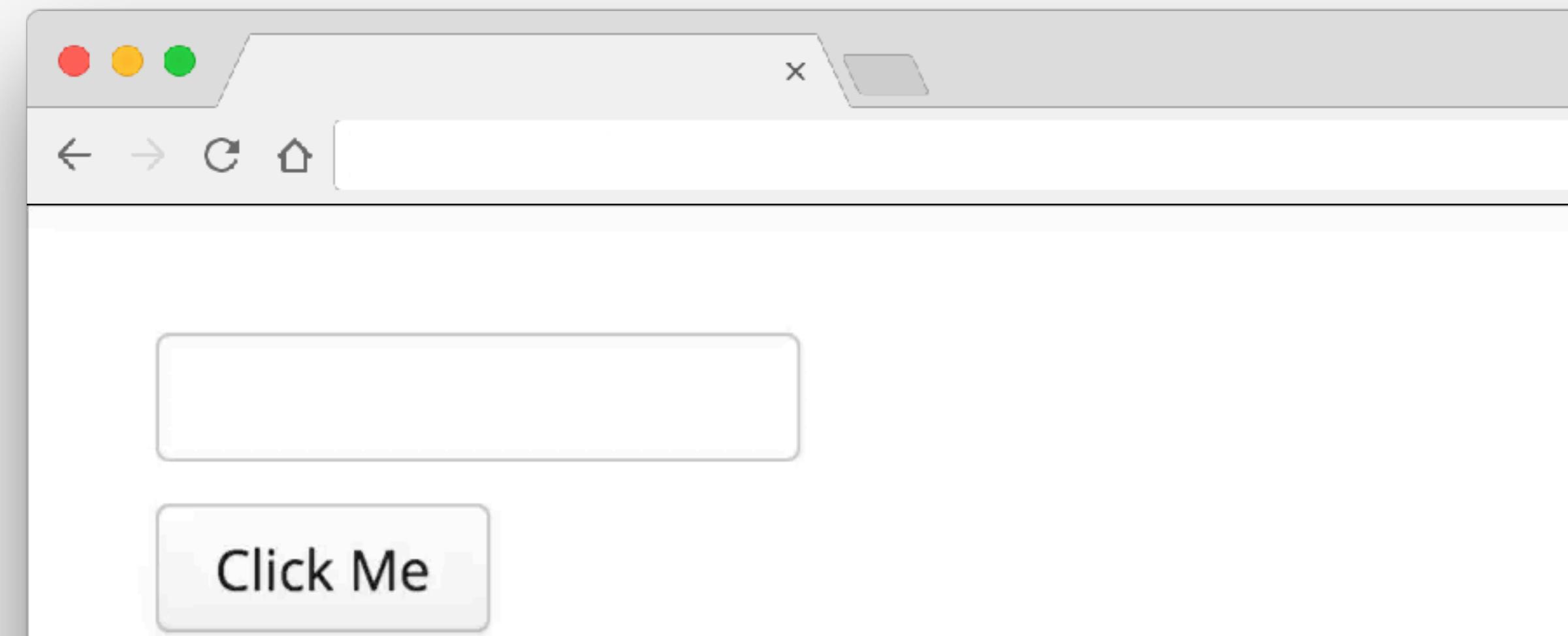


```
new VerticalLayout(  
    new TextField(),  
    new Button("Click me")  
);
```

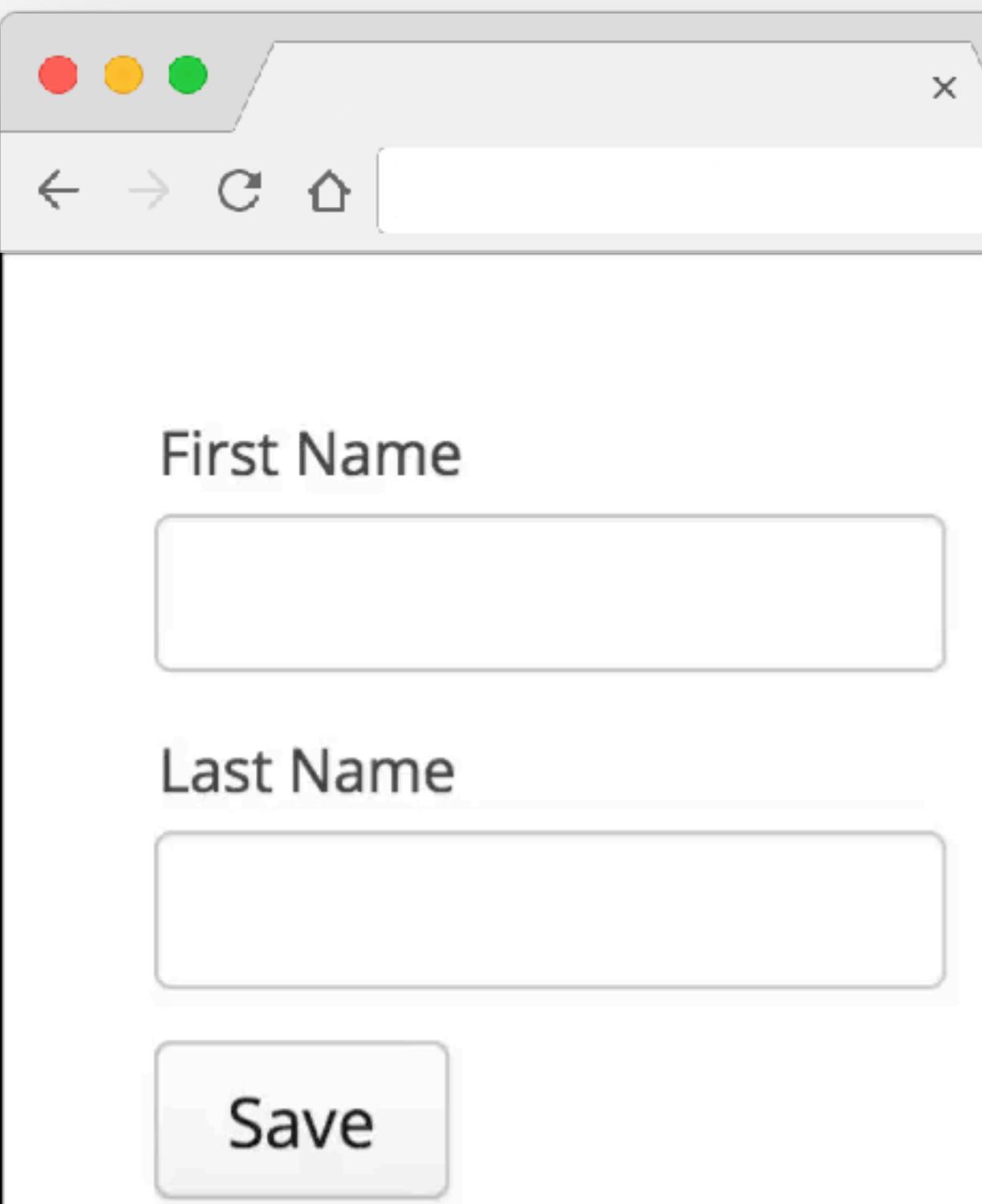


```
layout = new VerticalLayout();
textField = new TextField();
button = new Button("Click Me");

button.addClickListener(click ->
    layout.addComponent(
        new Label(textField.getValue())))
);
```

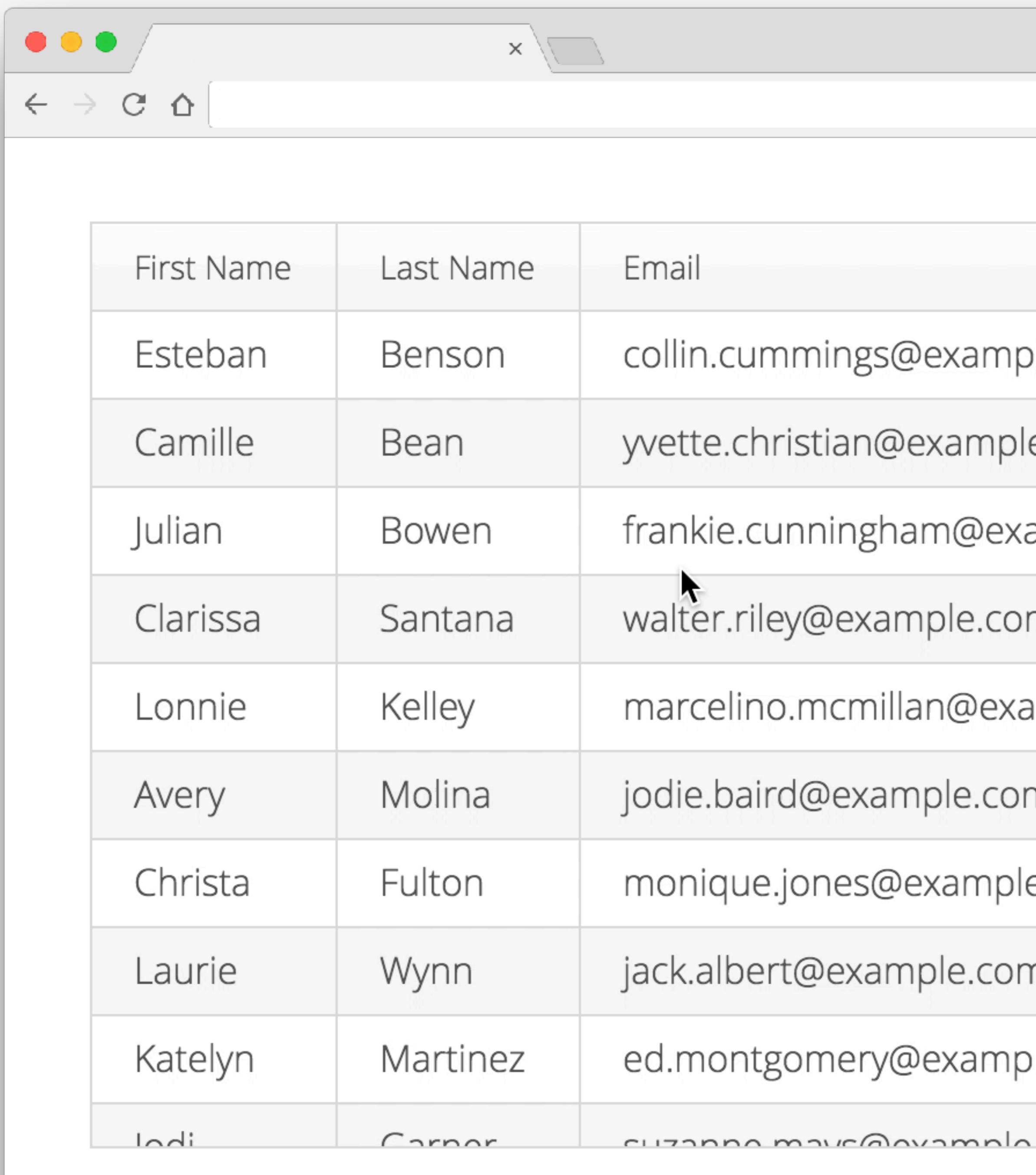


```
private TextField firstName;  
private TextField lastName;  
  
---  
  
person = new Person();  
  
binder = new BeanBinder<>(  
    Person.class);  
  
binder.bindInstanceFields(this);  
  
save = new Button("Save", e -> {  
    // try-catch  
    binder.writeBean(person);  
  
    Notification.show(  
        person.toString());  
});
```



```
@Autowired  
private PersonService service;
```

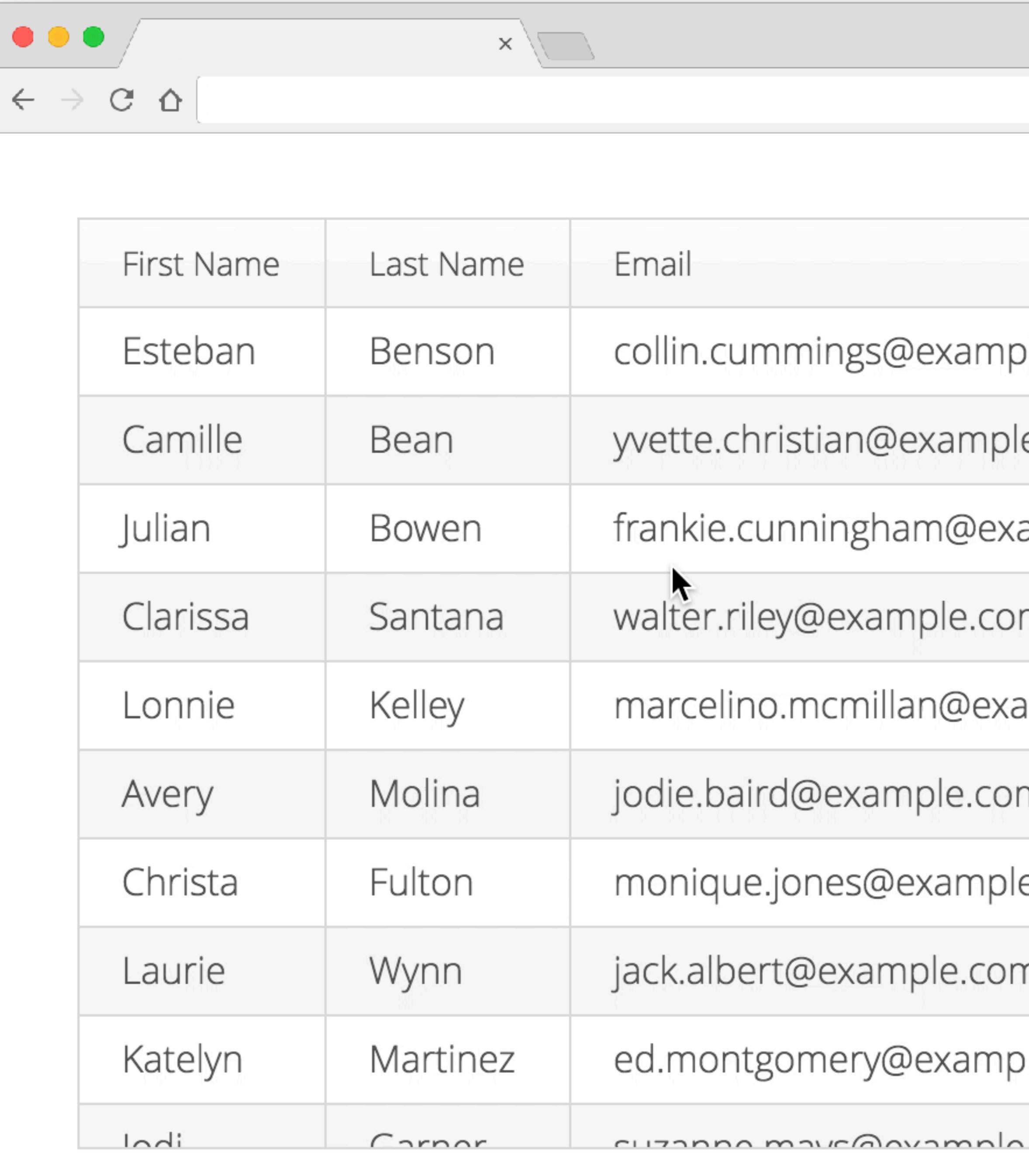
```
Grid<Person> grid = new Grid<>();  
  
grid.addColumn("First name",  
    Person::getFirstName);  
grid.addColumn("Last name",  
    Person::getLastName);  
grid.addColumn("Email",  
    Person::getEmail);  
  
grid.setItems(service.getPeople());
```



First Name	Last Name	Email
Esteban	Benson	collin.cummings@example.com
Camille	Bean	yvette.christian@example.com
Julian	Bowen	frankie.cunningham@example.com
Clarissa	Santana	walter.riley@example.com
Lonnie	Kelley	marcelino.mcmillan@example.com
Avery	Molina	jodie.baird@example.com
Christa	Fulton	monique.jones@example.com
Laurie	Wynn	jack.albert@example.com
Katelyn	Martinez	ed.montgomery@example.com
Iodi	Casper	suzanne.mays@example.com

```
@Autowired  
private PersonService service;
```

```
Grid<Person> grid = new Grid<>();  
  
grid.setDataSource(  
    grid.addColumn("First name",  
        new BackEndDataSource<>(  
            Person::getFirstName));  
    grid.addColumn("Last name",  
        q.getOffset(),  
        Person::getLastname);  
    grid.addColumn("Email",  
        q.getLimit(),  
        Person::getEmail);  
    q -> service.count()));
```

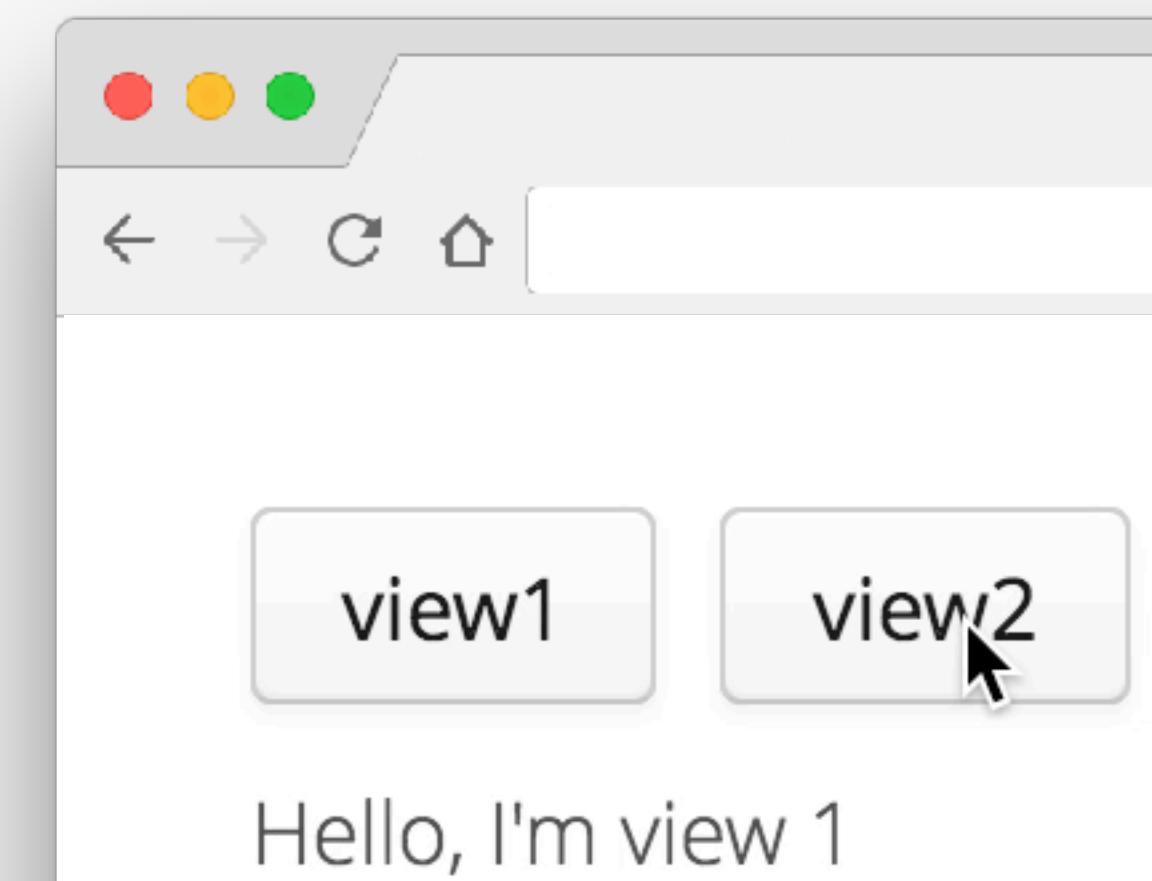


First Name	Last Name	Email
Esteban	Benson	collin.cummings@example.com
Camille	Bean	yvette.christian@example.com
Julian	Bowen	frankie.cunningham@example.com
Clarissa	Santana	walter.riley@example.com
Lonnie	Kelley	marcelino.mcmillan@example.com
Avery	Molina	jodie.baird@example.com
Christa	Fulton	monique.jones@example.com
Laurie	Wynn	jack.albert@example.com
Katelyn	Martinez	ed.montgomery@example.com
Iodi	Corpor	suzanne.mays@example.com

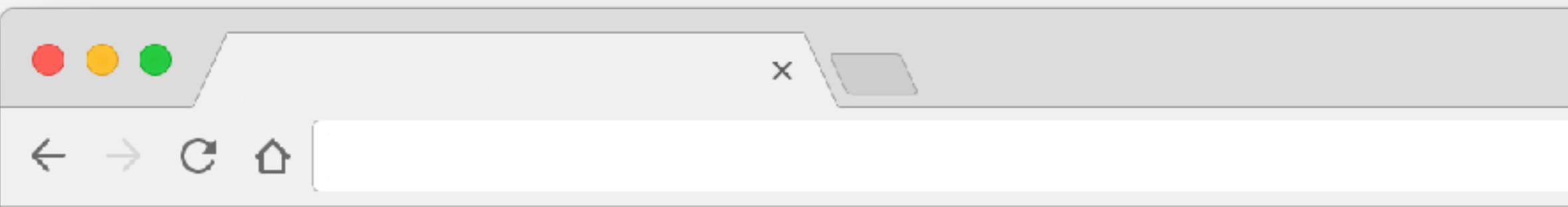
```
navBar = new HorizontalLayout();
navBar.addComponent(
    new Button("view1",
        click -> nav.navigateTo(""))));
navBar.addComponent(
    new Button("view2",
        click -> nav.navigateTo("view2")));
```

```
CssLayout navOutlet = new CssLayout();
addComponents(navBar, navOutlet);
```

```
nav = new Navigator(this, navOutlet);
nav.addView("", 
    new DemoView("Hello, I'm view 1")));
nav.addView("view2",
    new DemoView("Hello, I'm view 2"));
```



```
$v-background-color:  
  hsl(210, 0%, 100%);
```

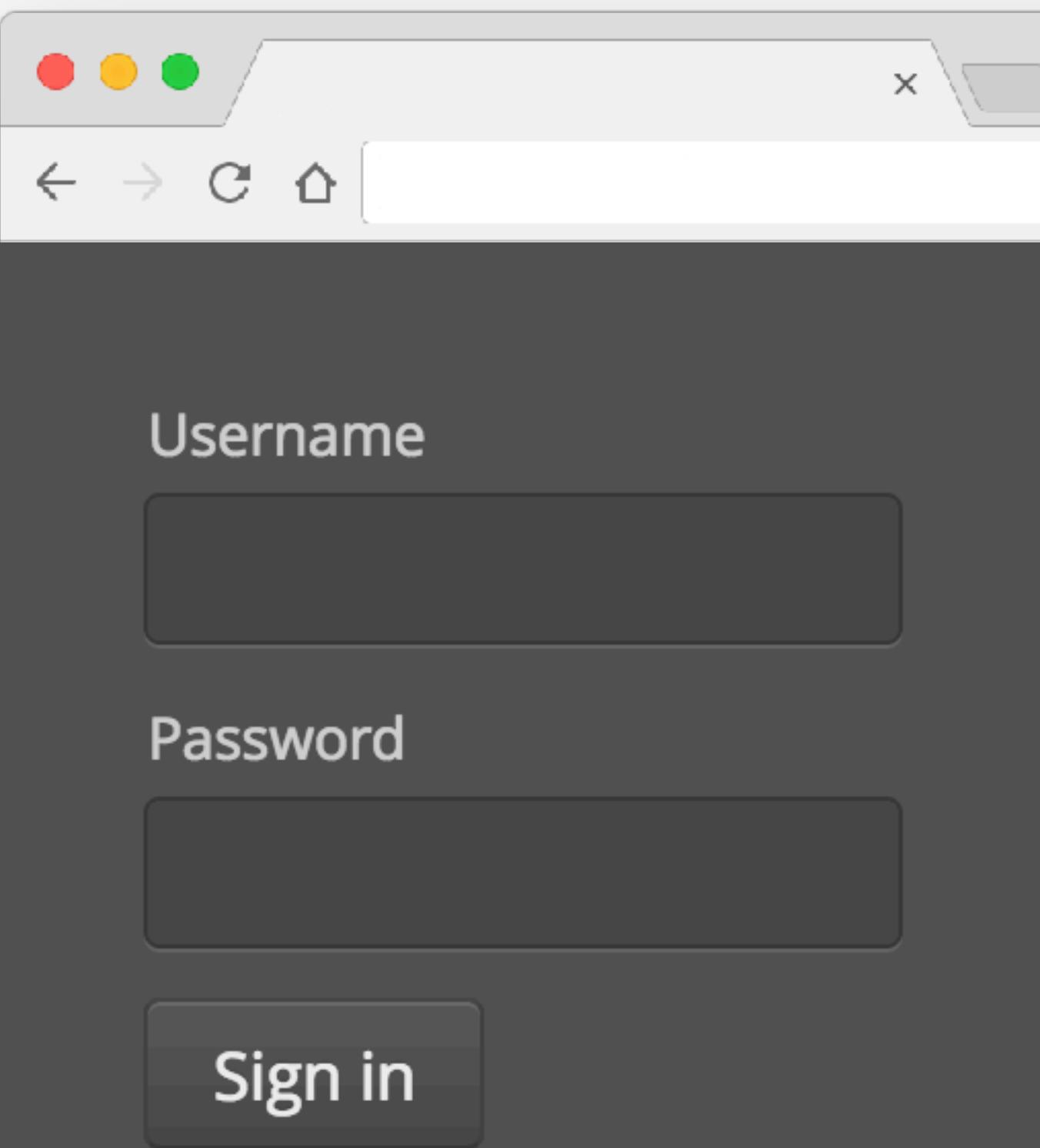


Username

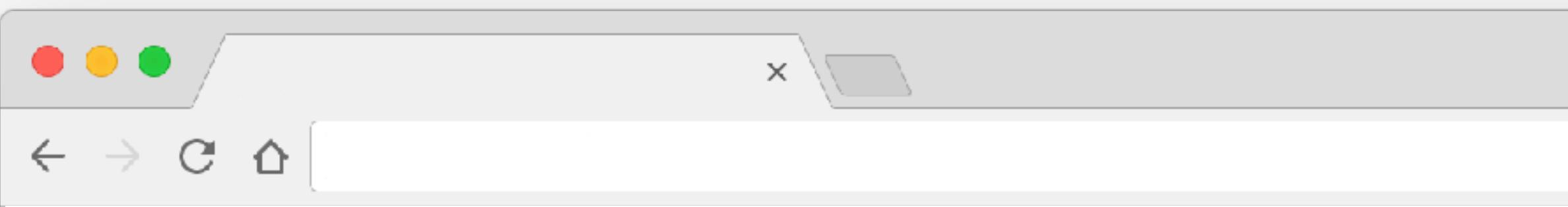
Password

Sign in

```
$v-background-color:  
  hsl(210, 0%, 33%);
```



```
$v-background-color:  
  hsl(210, 0%, 100%);  
$v-border: 2px solid v-shade;  
$v-border-radius: 0;  
$v-bevel: false;  
$v-gradient: false;  
$v-shadow: false;
```



Username

Password

Sign in

TODO

 +

- Prepare presentation for Meetup
- Go to meetup
- Have presentation at Meetup

Delete selected

SPRING INITIALIZR

bootstrap your application now

Generate a Maven Project with Spring Boot 1.4.2

Project Metadata

Artifact coordinates

Group

com.example

Artifact

demo

Dependencies

Add Spring Boot Starters and dependencies to your application

Search for dependencies

Web, Security, JPA, Actuator, Devtools...

Selected Dependencies

Vaadin X

JPA X

H2 X

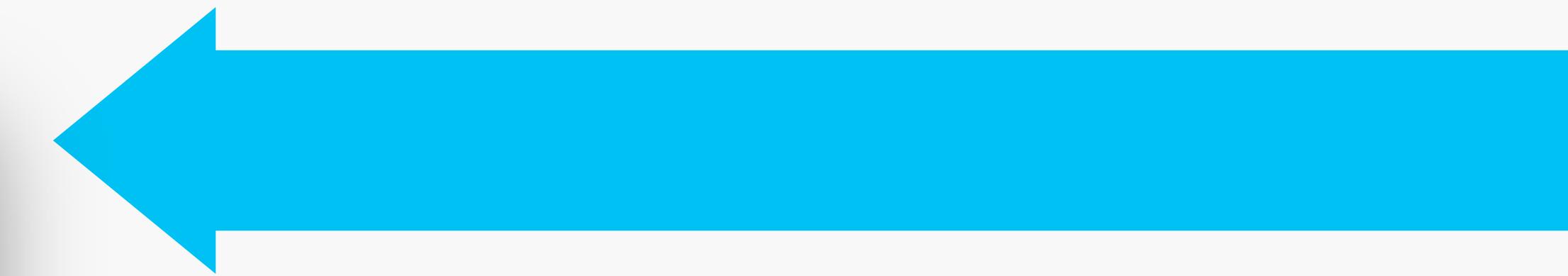
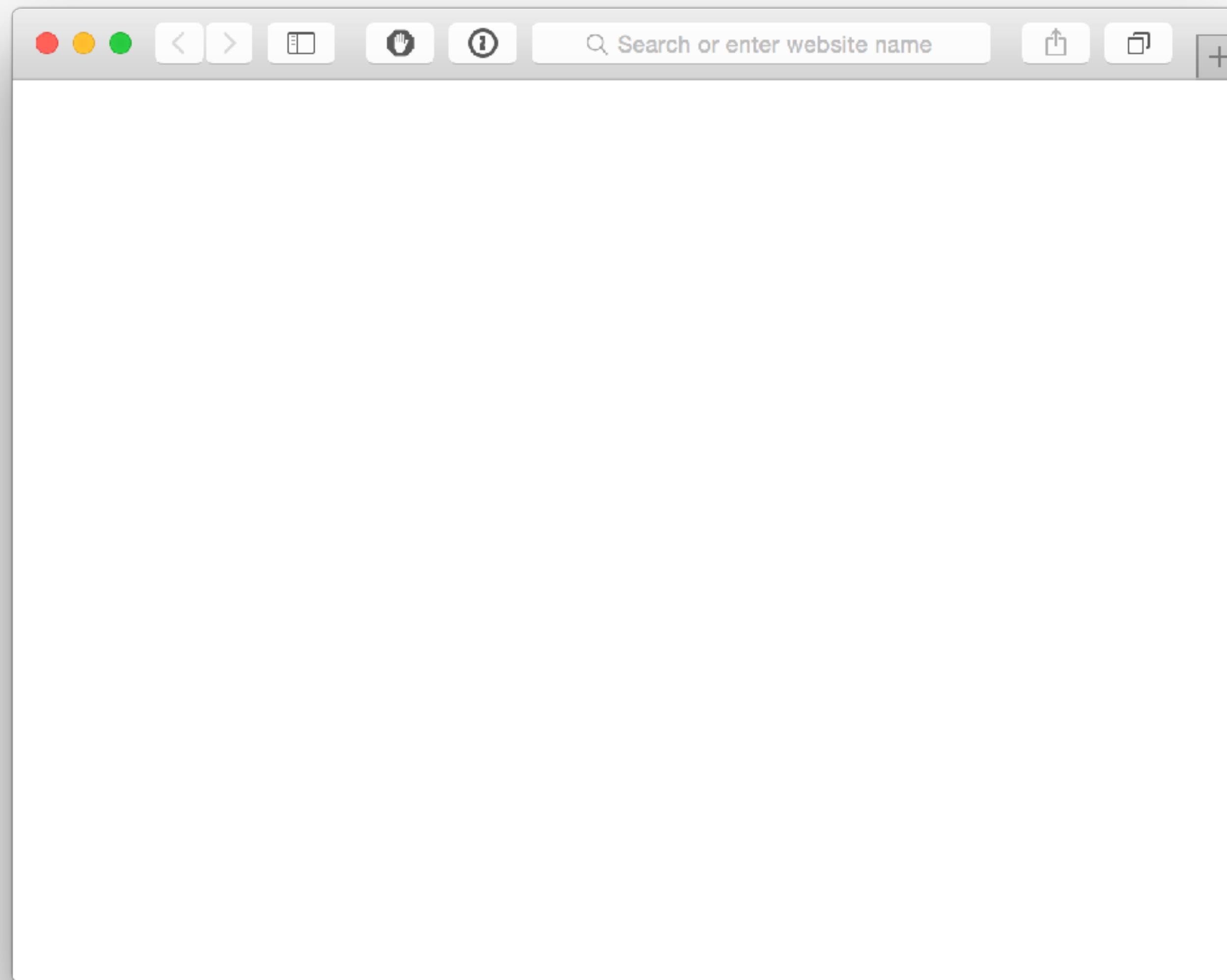
Generate Project ⌘ + ↵

Don't know what to look for? Want more options? [Switch to the full version.](#)

 github.com/vaadin-marcus/spring-boot-todo

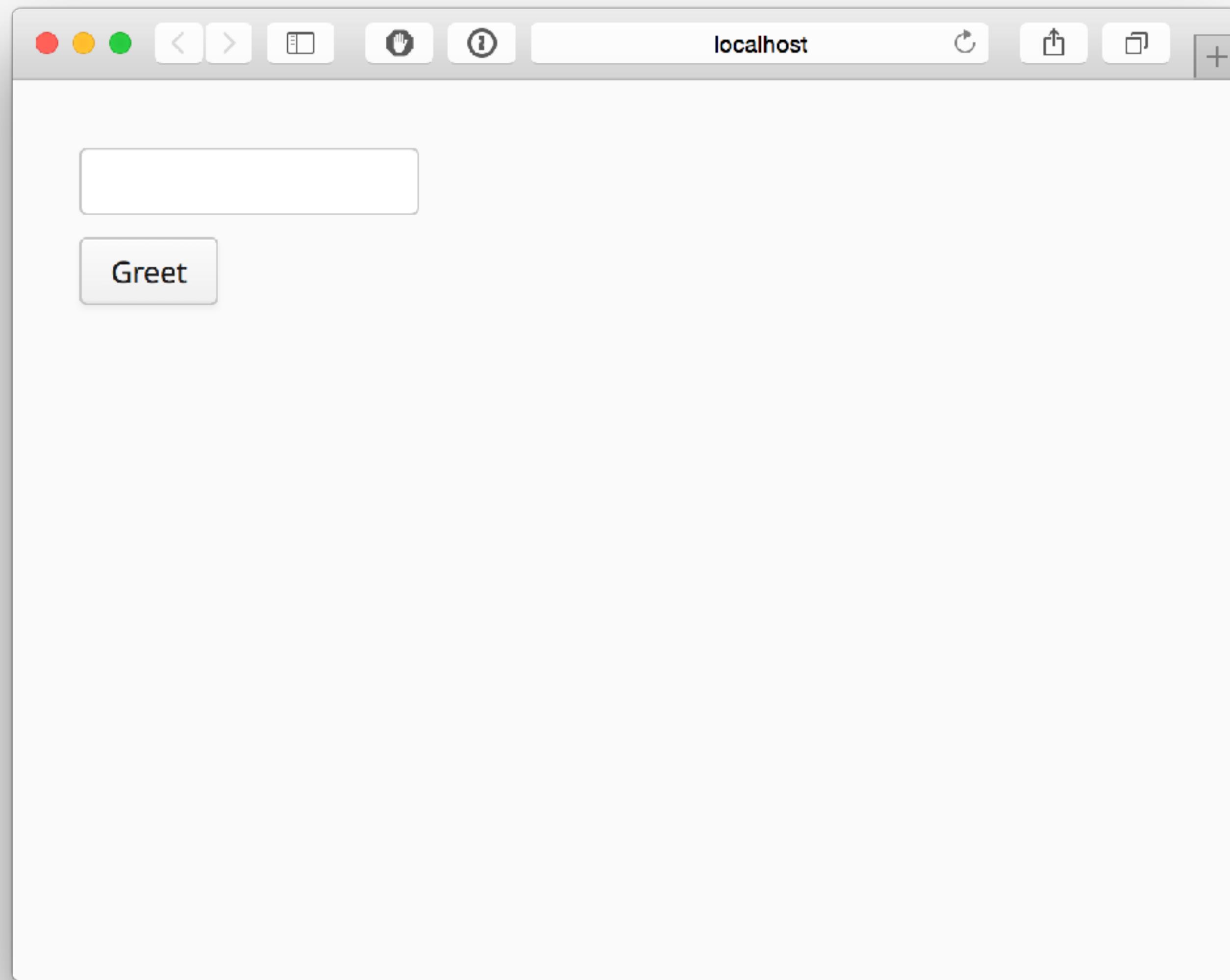
```
TextField name = new TextField();
Button button = new Button("Greet");
layout.addComponents(name, button);

button.addClickListener(click -> {
    Notification.show("Hi, " + name.getValue());
});
```

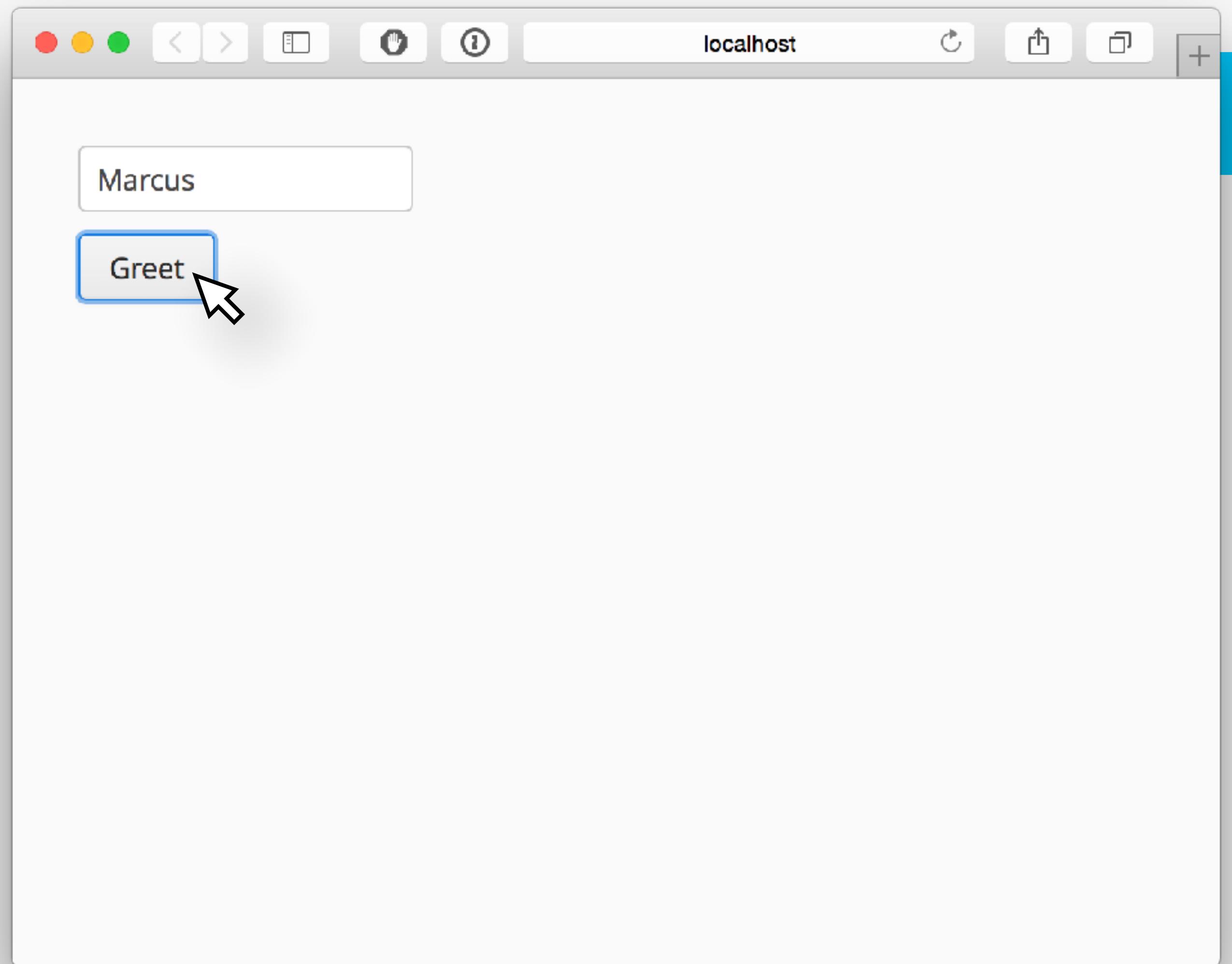


Initial HTML
CSS
JavaScript

~300k



vaadin}>

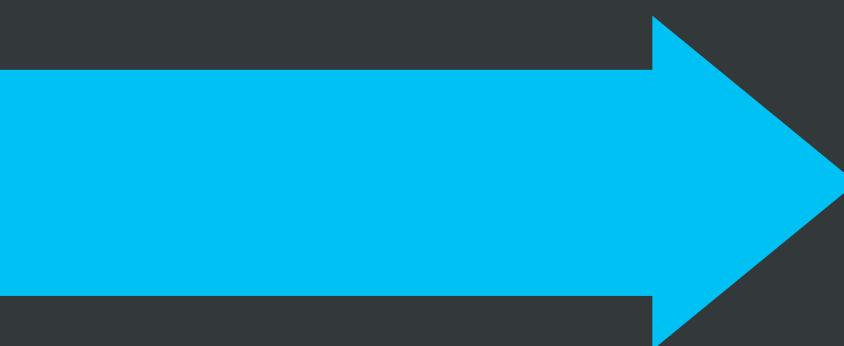


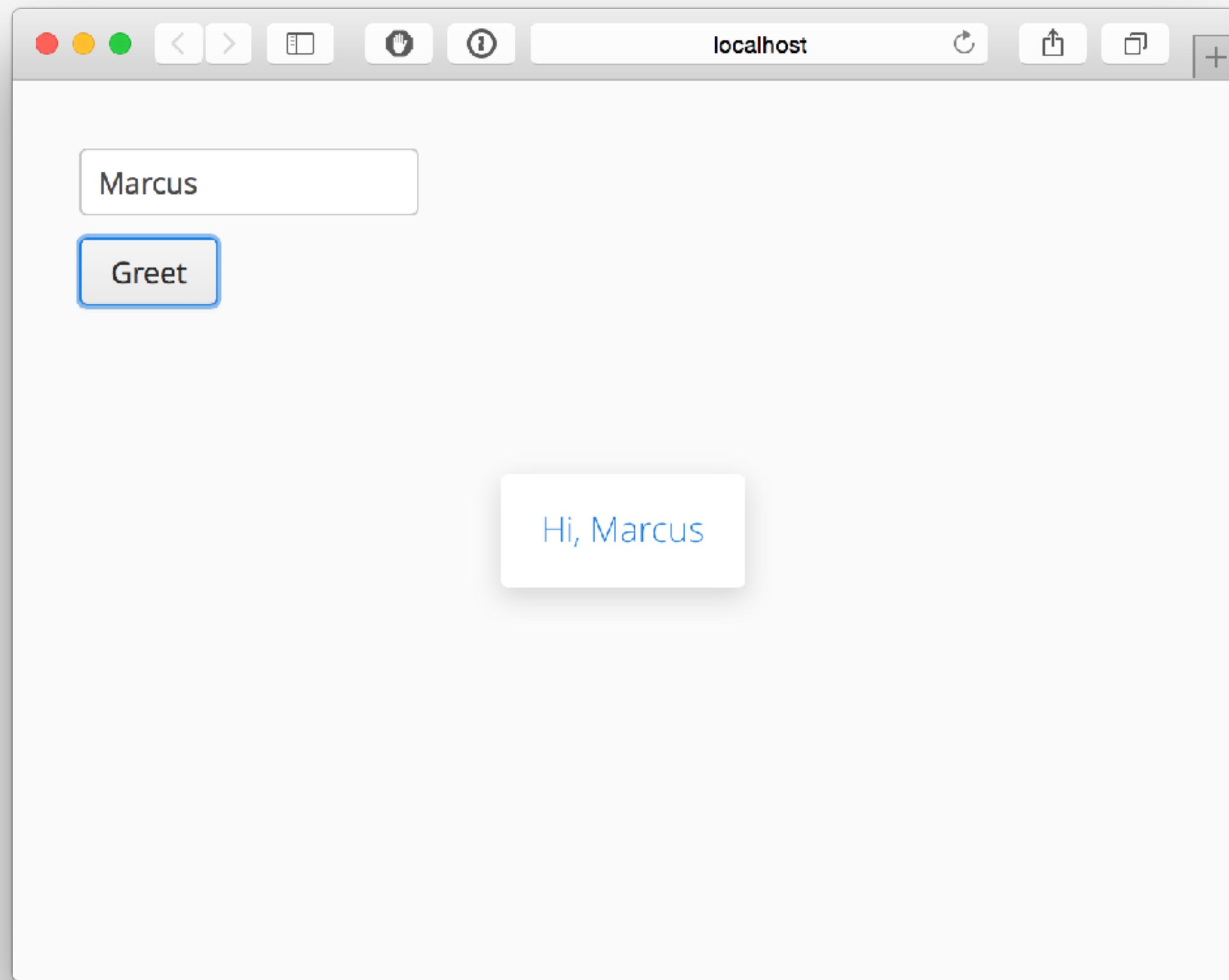
{name: {value: 'Marcus'},
button: {event: 'clicked'}}

261 bytes

```
TextField name = new TextField();  
Button button = new Button("Greet");  
layout.addComponent(name, button);
```

```
button.addClickListener(click -> {  
    Notification.show("Hi, " + name.getValue());  
});
```





```
{name: {value: 'Marcus'},  
button: {event: 'clicked'}}
```

261 bytes

```
{new: [  
  {notification: 'Hi, Marcus'}  
]}  
267 bytes
```

The image displays three views of a Vaadin-based dashboard application for "QuickTickets Dashboard".

Left View: Shows the main dashboard with the following components:

- User Profile:** Michael Johnson
- Dashboard:** Active tab
- Sales:**
- Transactions:**
- Reports:**
- Schedule:**

Middle View: Shows the dashboard with the following components:

- Quick Tickets Dashboard:** Active tab
- Michael Johnson:**
- Dashboard:** Active tab
- Sales:**
- Transactions:**
- Reports:**
- Schedule:**

Key Metrics:

- Traffic:** 61K (High 72, Low 24)
- Revenue / Day:** \$93M (High 123, Low 91)
- Checkout Time:** 115s (High 118, Low 31)

Top Grossing Movies:

Rank	Title	Revenue
1	The Book of Life	~45
2	Fury	~65
3	Alexander and the Terrible, Horrible, No Good, Very Bad Day	~75
4	Gone Girl	~80
5	The Best Of Me	~10
6	The Judge	~15

Top 10 Titles by Revenue:

Rank	Title
1	The Maze Runner
2	Men, Women & Children
3	No Good Deed
4	The Hundred-Foot Journey
5	Guardians of the Galaxy
6	Annabelle
7	Dracula Untold
8	The Maze Runner
9	Men, Women & Children
10	No Good Deed

Right View: Shows the dashboard with the following components:

- Quick Tickets Dashboard:** Active tab
- Michael Johnson:**
- Dashboard:** Active tab
- Sales:**
- Transactions:**
- Reports:**
- Schedule:**

Key Metrics:

- Traffic:** 61K (High 72, Low 24)
- Revenue / Day:** \$93M (High 123, Low 91)
- Theater Fill Rate:** 60% (High 99, Low 34)

Top Grossing Movies:

Rank	Title	Revenue
1	The Book of Life	~45
2	Fury	~65
3	Alexander and the Terrible, Horrible, No Good, Very Bad Day	~75
4	Gone Girl	~80
5	The Best Of Me	~10
6	The Judge	~15

Notes:

Remember to:

- Zoom in and out in the Sales view
- Filter the transactions and drag a set of them to the Reports tab
- Create a new report
- Change the schedule of the movie theater

```
.v-ui[width-range~="0-800px"]{  
    /* Styles for small devices */  
}  
.v-ui[width-range~="801px-"]{  
    /* Styles for large devices */  
}
```

```
getPage().addBrowserWindowResizeListener( newSize -> {  
    if (newSize.getWidth() > LARGE_DEVICE_WIDTH){  
        setupLargeLayout();  
    } else {  
        setupSmallLayout();  
    }  
});
```

WEB SOCKETS

```
@Push  
public class VaadinUI extends UI {  
    ...  
}  
  
ui.access(() -> Notification.show("Alert!"));
```





STRONG SECURITY



THE JVM



EXTENDABLE

Directory - vaadin.com

Marcus

https://vaadin.com/directory#!browse

vaadin > Framework Elements Community Services Pro Tools Company Marcus Hellberg 7

Demo Get started Tutorial Docs Add-ons Comparison

Add-ons

Expand your possibilities with add-on components

Search Top lists My Add-ons Twitter Feedback

Vaadin Spreadsheet
Let users create, edit, link and share Excel documents online.

UI Components Data Components Themes Tools Miscellaneous All Vaadin versions

A-Z Top Downloads Highest Rated Most Recent

Search results (643 add-ons found)

UI Components

cdi-helpers by Matti Tahvonen Various helpers for apps using Vaadin CDI ★★★★☆

UI Components

Crud UI Add-on by Alejandro Duarte Generate CRUD UIs for your entities/beans/POJOs at runtime ★★★★☆

UI Components

g-leaflet-rotatedmarker by Octavian Marcu g-leaflet-rotatedmarker ★★★★☆ 30 0

vaadin >



Vaadin Spreadsheet

[Home page](#) · [JavaDoc](#) · [Manual](#)

Basic functionality

Edit imported Excel file with formatting, basic formulas, and a chart. Updates dynamically when values are edited.

Collaborative features

Freeze panes, protected cells and add comments

Formatting

Style your spreadsheet

Grouping

Use the Excel feature for grouping rows and columns

Report mode

Use the read only mode of spreadsheet

Simple invoice

Use the spreadsheet for invoices

Upload Excel files

Upload a .xlsx or .xls file

G5		A	B	C	D	E	F	G	H	I	J	K																																			
1		<h1>SIMPLE MONTHLY BUDGET</h1>																																													
2																																															
3		<h2>MONTHLY INCOME</h2>						<h2>PERCENTAGE OF INCOME SPENT</h2>																																							
4		<table border="1"><thead><tr><th>Item</th><th>Amount</th></tr></thead><tbody><tr><td>Ash</td><td>\$1,000.00</td></tr><tr><td>Jamie</td><td>\$1,000.00</td></tr><tr><td>Dividends</td><td>\$250.00</td></tr></tbody></table>						Item	Amount	Ash	\$1,000.00	Jamie	\$1,000.00	Dividends	\$250.00	<p>104%</p> <div style="width: 104%; height: 20px; background-color: #00AEEF;"></div>																															
Item	Amount																																														
Ash	\$1,000.00																																														
Jamie	\$1,000.00																																														
Dividends	\$250.00																																														
5																																															
6																																															
7																																															
8																																															
9		<h2>MONTHLY EXPENSES</h2>						<h2>SUMMARY</h2>																																							
10		<table border="1"><thead><tr><th>Item</th><th>Amount</th></tr></thead><tbody><tr><td>Rent/mortgage</td><td>\$800.00</td></tr><tr><td>Electric</td><td>\$120.00</td></tr><tr><td>Gas</td><td>\$50.00</td></tr><tr><td>Cell phone</td><td>\$45.00</td></tr><tr><td>Groceries</td><td>\$500.00</td></tr><tr><td>Car payment</td><td>\$273.00</td></tr><tr><td>Auto expenses</td><td>\$120.00</td></tr><tr><td>Student loans</td><td>\$50.00</td></tr><tr><td>Credit cards</td><td>\$100.00</td></tr><tr><td>Auto Insurance</td><td>\$78.00</td></tr><tr><td>Personal care</td><td>\$50.00</td></tr><tr><td>Entertainment</td><td>\$100.00</td></tr><tr><td>Miscellaneous</td><td>\$50.00</td></tr></tbody></table>						Item	Amount	Rent/mortgage	\$800.00	Electric	\$120.00	Gas	\$50.00	Cell phone	\$45.00	Groceries	\$500.00	Car payment	\$273.00	Auto expenses	\$120.00	Student loans	\$50.00	Credit cards	\$100.00	Auto Insurance	\$78.00	Personal care	\$50.00	Entertainment	\$100.00	Miscellaneous	\$50.00	<table border="1"><thead><tr><th>Total Monthly Income</th><th>Total Monthly Expenses</th><th>Balance</th></tr></thead><tbody><tr><td>\$2,250</td><td>\$2,336</td><td>-\$86</td></tr></tbody></table>						Total Monthly Income	Total Monthly Expenses	Balance	\$2,250	\$2,336	-\$86
Item	Amount																																														
Rent/mortgage	\$800.00																																														
Electric	\$120.00																																														
Gas	\$50.00																																														
Cell phone	\$45.00																																														
Groceries	\$500.00																																														
Car payment	\$273.00																																														
Auto expenses	\$120.00																																														
Student loans	\$50.00																																														
Credit cards	\$100.00																																														
Auto Insurance	\$78.00																																														
Personal care	\$50.00																																														
Entertainment	\$100.00																																														
Miscellaneous	\$50.00																																														
Total Monthly Income	Total Monthly Expenses	Balance																																													
\$2,250	\$2,336	-\$86																																													
11																																															
12																																															
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24																																															

The chart shows two vertical bars. The left bar represents 'Total Monthly Income' at \$2,250. The right bar represents 'Total Monthly Expenses' at \$2,336. The y-axis ranges from 0 to 2,500 with increments of 500. The bars are blue.

Total Monthly Income	Total Monthly Expenses
\$2,250	\$2,336

MyUI.java VaadinDesignDemo.html

Viewport (429 x 302)

mytheme

Layouts:

- Grid
- Horizontal Layout
- Vertical Layout
- Flex Layout
- Table
- Form Layout
- Card Layout
- Split Layout
- Card
- Image
- Text
- Label
- Link
- Form
- Table
- Form Table
- Image Table
- Text Table
- Label Table
- Link Table
- Form Table
- Table Form
- Image Form
- Text Form
- Label Form
- Link Form
- Form Table
- Table Form
- Image Form
- Text Form
- Label Form
- Link Form
- Form Table
- Table Form
- Image Form
- Text Form
- Label Form
- Link Form

Components:

- Speaker
- Globe
- Image
- Text
- Label
- Link
- Form
- Table
- Form Table
- Image Table
- Text Table
- Label Table
- Link Table
- Form Table
- Table Form
- Image Form
- Text Form
- Label Form
- Link Form
- Form Table
- Table Form
- Image Form
- Text Form
- Label Form
- Link Form

Outline

Name	Type
VaadinDesignDemo	Design
VerticalLayout	VerticalLayout

mytheme.scss

```
13 // Affects the color of some component elements, e.g Button, Panel title, etc
14 $v-background-color: hsl(210, 0%, 100%);
15 // Affects the color of content areas, e.g Panel and Window content, TextField input etc
16 // $v-app-background-color: $v-background-color;
17
18 // $v-border: 2px solid v-shade;
19
```

Java Enterprise JRebel Executor 0: Messages

Event Log JRebel Console

Vaadin Palette

We'd be happy to help you.

