

Why all APEX developers should learn more about HTML, CSS and web technologies in general

APEX World 2025 - Friday, 21 March



WHO AM I?



Contact me



Louis Moreaux

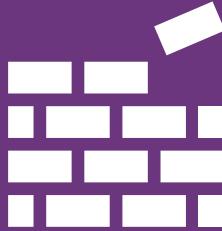
- Senior Oracle APEX Developer at Talan (formely Insum)
- Work with Oracle DB since 2013 and APEX since 2017
- Flows for APEX project Core Member
- Oracle ACE Pro ♠
- Writing blogs at <https://lmoreaux.hashnode.dev/>

The word "TALAN" is written in a large, bold, sans-serif font. The letters are composed of various colors: blue, green, pink, and purple. A thick red arrow points from the left towards the "T" of "TALAN".

Positive innovation

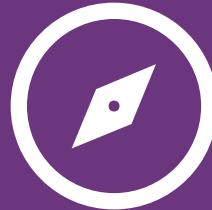
OUR SERVICES

We are leaders in Oracle solutions. Our team of experts specialize in Oracle APEX and OCI, helping businesses achieve innovation and transform their operations.



ORACLE APEX DEVELOPMENT

- Business Process Automation
- Enterprise Applications & Extensions
- Oracle Forms Modernization
- Client Portals
- Spreadsheet Replacement
- Data Analysis and Reporting
- E-Commerce Solutions
- AI Integrations



ORACLE CONSULTING

- Oracle APEX Audits
- Best Practices
- Security Audits and Enhancements
- Performance Tuning
- System Integration
- AI Solutions
- Training and Support



ORACLE TECHNOLOGY AND MANAGED SOLUTIONS

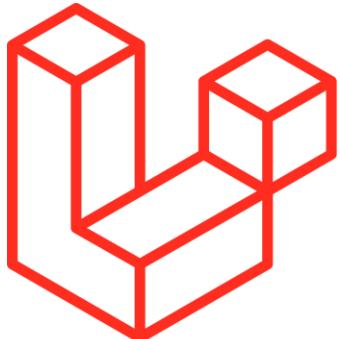
- Lift & Shift to Oracle Cloud Infrastructure
- Oracle Upgrades
- Infrastructure Managed Services
- Oracle Cloud Infrastructure
- OCVS – Oracle Cloud VMWare Solution Integration
- Oracle License Assistance

Introduction

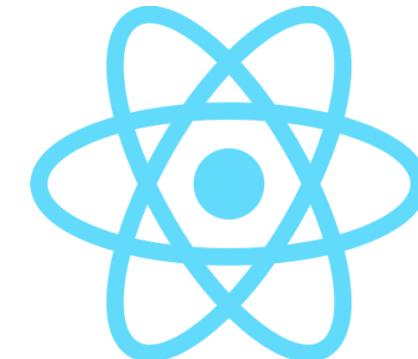
WHAT DO THESE HAVE IN COMMON?



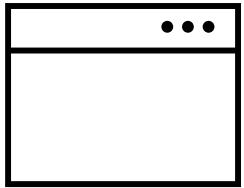
django



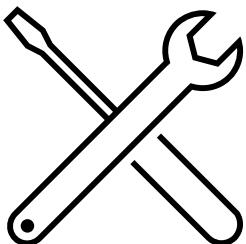
Flask



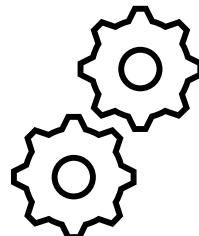
WHAT DO THESE HAVE IN COMMON?



Web frameworks



Applications & websites

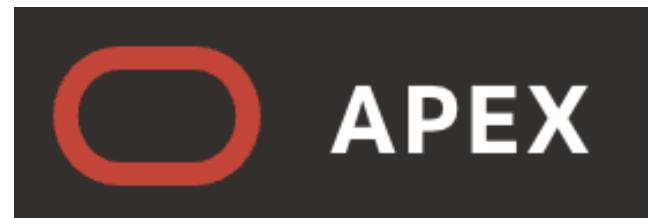
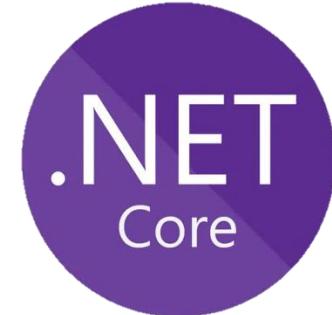
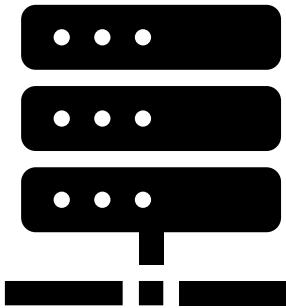
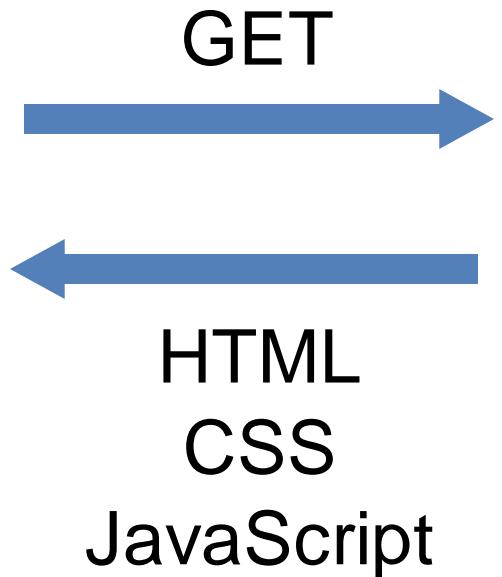


Based on HTML, CSS & JS

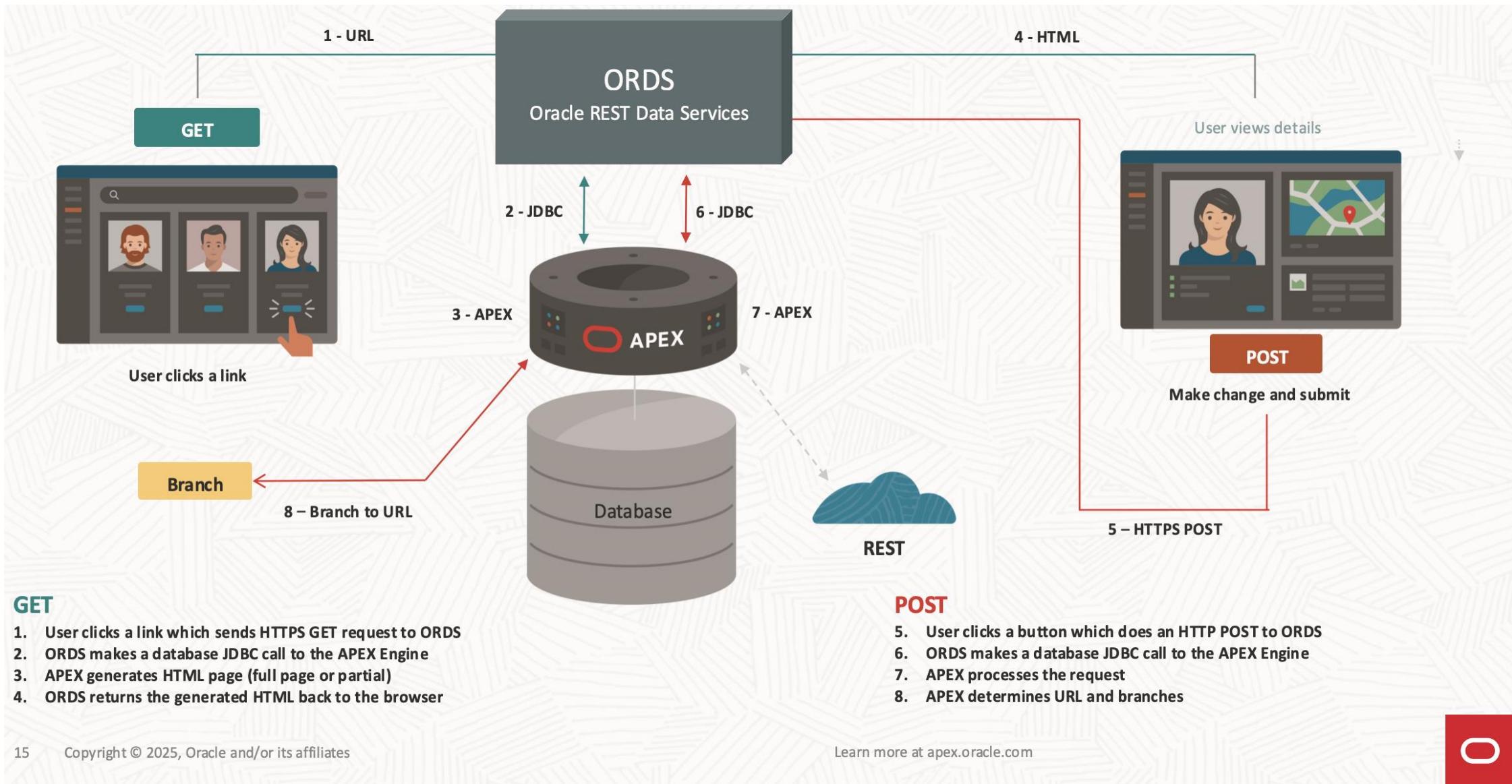


How Oracle APEX is no different from other web technologies?

SERVER-SIDE RENDERING



ORACLE APEX ARCHITECTURE



YOU ARE ALREADY USING IT



Hypertext Markup Language



Markup language



Layout & content



Page & component templates



HTML expression



Template directives



Cascading Style Sheets



Stylesheet language



Presentation and styling



Universal Theme



Theme Roller



Built-in classes & variables



JavaScript



Programming language



Client-side interaction



Dynamic actions



Interactive grid, tree, charts



Built-in APIs



**Proof that knowledge of
HTML, CSS and JS is
essential**

HTML



HTML EXPRESSION & TEMPLATE DIRECTIVES

Picture	Email	First Name	Last Name	Is Locked Yn	Last Login At
	Ruthanne.Burgoyne@internalmail	Ruthanne	Burgoyne	N	2/11/2025
	Ruthe.Nishioka@internalmail	Ruthe	Nishioka	N	1/14/2025
	Anneliese.Namdar@internalmail	Anneliese	Namdar	Y	2/9/2025
	Sort by this column				
	Therese.Zaeske@internalmail	Therese	Zaeske	Y	2/3/2025
	Bella.Osterfeld@internalmail	Bella	Osterfeld	Y	2/10/2025

1 - 5 Next ►



Picture	Email	Name	Last Login At	
	Ruthanne.Burgoyne@internalmail	Ruthanne Burgoyne	2/11/2025	
	Ruthe.Nishioka@internalmail	Ruthe Nishioka	1/14/2025	
	Anneliese.Namdar@internalmail	Locked	Anneliese Namdar	2/9/2025
	Therese.Zaeske@internalmail	Locked	Therese Zaeske	2/3/2025
	Bella.Osterfeld@internalmail	Locked	Bella Osterfeld	2/10/2025

1 - 5 Next ►

HTML EXPRESSION & TEMPLATE DIRECTIVES

Picture	Email	Name
	Ruthanne.Burgoyne@internalmail	Ruthanne Burgoyne
	Ruthe.Nishioka@internalmail	Ruthe Nishioka
	Anneliese.Namdar@internalmail	Anneliese Namdar
	Therese.Zaeske@internalmail	Therese Zaeske
	Bella.Osterfeld@internalmail	Bella Osterfeld

```
select  
  id,  
  first_name,  
  last_name,  
  email,  
  is_locked_yn,  
  last_login_at,  
  sys.dbms_lob.getlength(picture_blob) as picture_blob  
from demo_person
```

```
#EMAIL#  
{if IS_LOCKED_YN/}<span class="u-padding-sm u-margin-left-sm u-danger">  
  <span class="fa fa-lock u-margin-right-sm">  
  </span>  
  Locked  
</span>{endif/}
```

```
#FIRST_NAME# #LAST_NAME#
```

HTML EXPRESSION & TEMPLATE DIRECTIVES

Picture	Email	Name
	Ruthanne.Burgoyne@internalmail	Ruthanne Burgoyne
	Ruthe.Nishioka@internalmail	Ruthe Nishioka
	Anneliese.Namdar@internalmail	Anneliese Namdar Locked
	Therese.Zaeske@internalmail	Therese Zaeske Locked
	Bella.Osterfeld@internalmail	Bella Osterfeld Locked

```
select
  id,
  first_name,
  last_name,
  email,
  is_locked_yn,
  last_login_at,
  sys.dbms_lob.getlength(picture_blob) as picture_blob
from demo_person
```

```
#EMAIL#
{if IS_LOCKED_YN/}<span class="u-padding-sm u-margin-left-sm u-danger">
<span class="fa fa-lock u-margin-right-sm">
</span>
Locked
</span>{endif/}
```

```
#FIRST_NAME# #LAST_NAME#
```



Keep your SQL clean (no HTML)

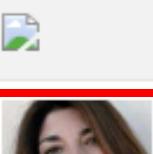


Secure your application



Reusability: Template component

HANDLING MISSING IMAGES

Picture Url	Email	First Name	Last Name
	Therese.Zaeske@internalmail	Therese	Zaeske
	Bella.Osterfeld@internalmail	Bella	Osterfeld
	Tomasa.Orouke@internalmail	Tomasa	Orouke
	Ruthanne.Burgoyne@internalmail	Ruthanne	Burgoyne
	Ruthe.Nishioka@internalmail	Ruthe	Nishioka

A large blue arrow points from the bottom-left of the first table towards the second table, indicating a transformation or mapping process.

Picture	Email	First Name	Last Name
	Therese.Zaeske@internalmail	Therese	Zaeske
	Bella.Osterfeld@internalmail	Bella	Osterfeld
	Tomasa.Orouke@internalmail	Tomasa	Orouke
	Ruthanne.Burgoyne@internalmail	Ruthanne	Burgoyne
	Ruthe.Nishioka@internalmail	Ruthe	Nishioka

HANDLING MISSING IMAGES

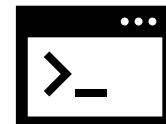
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	Tomasa.Orouke@internalmail	Tomasa	Orouke
	Ruthanne.Burgoyne@internalmail	Ruthanne	Burgoyne
	Ruthe.Nishioka@internalmail	Ruthe	Nishioka

```

```



Web standard, no custom logic



Clean SQL query

LAZY LOADING ATTRIBUTE

```

```



Defer loading for off-screen images & iframes



Speed up the page load



Decrease cost (OCI bucket calls)

INPUT TYPES

<input type="time">

Hour
12:57 

12	57
13	58
14	59
15	00
16	01
17	02
18	03

<input type="week">

Week
Week 10, 2025 

March 2025 ▾  

Week	M	T	W	T	F	S	S
9	24	25	26	27	28	1	2
10	3	4	5	6	7	8	9
11	10	11	12	13	14	15	16
12	17	18	19	20	21	22	23
13	24	25	26	27	28	29	30
14	31	1	2	3	4	5	6

[Clear](#) [This week](#)

<input type="month">

Month
March 2025 

2025

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

[Clear](#) [This month](#)

INPUT TYPES

```
apex.jQuery("#P6_HOUR").attr("type", "time");
apex.jQuery("#P6_WEEK").attr("type", "week");
apex.jQuery("#P6_MONTH").attr("type", "month");
```

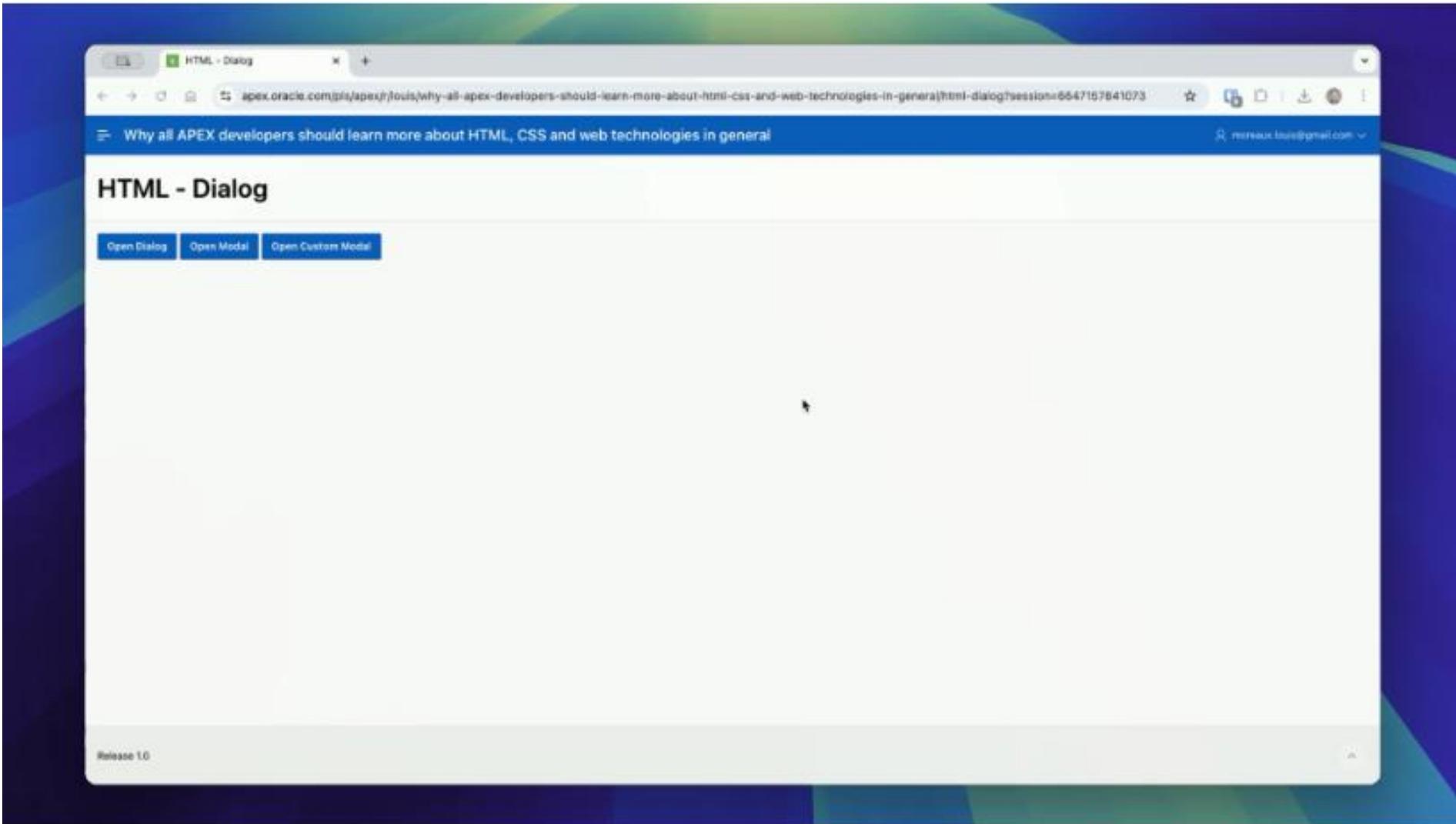


Provide new way to enter data



Enhance UX especially on mobile

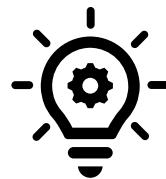
HTML – DIALOG ELEMENT



<https://github.com/LouisMoreaux/talks/raw/c48b714fce6d2049f3c28e1eb4374d01b5d5825e/APEX%20World%202025/videos/WEB%20TECH%20-%20dialog.mp4>

HTML – DIALOG ELEMENT

```
<dialog id="my-dialog">  
  <p>This is a native dialog element!</p>  
  <button autofocus>Close</button>  
</dialog>
```



Native HTML element



Easy to style with CSS



Vanilla JS – no 3rd party library

```
#my-custom-modal::backdrop {  
  background-image: linear-gradient(45deg, magenta, rebeccapurple, dodgerblue, green);  
  opacity: 0.75;  
}  
  
#my-custom-modal {  
  border-color: greenyellow;  
  border-style: none;  
  border-radius: 1rem;  
}
```

```
let dialog = document.getElementById("my-dialog");  
  
// Open the dialog  
dialog.show();  
  
// Open the dialog as a modal  
dialog.showModal();  
  
// Close the dialog  
dialog.close();
```

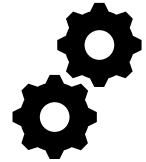
css



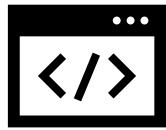
CSS VARIABLES (CUSTOM PROPERTIES)



Reusable values in CSS



Defined using “--” or @property



Accessible using var() function

```
button {  
  background-color: var(--primary-color);  
}
```

```
:root {  
  --primary-color: blue;  
}  
  
@property --primary-color {  
  syntax: "<color>";  
  inherits: false;  
  initial-value: blue;  
}
```

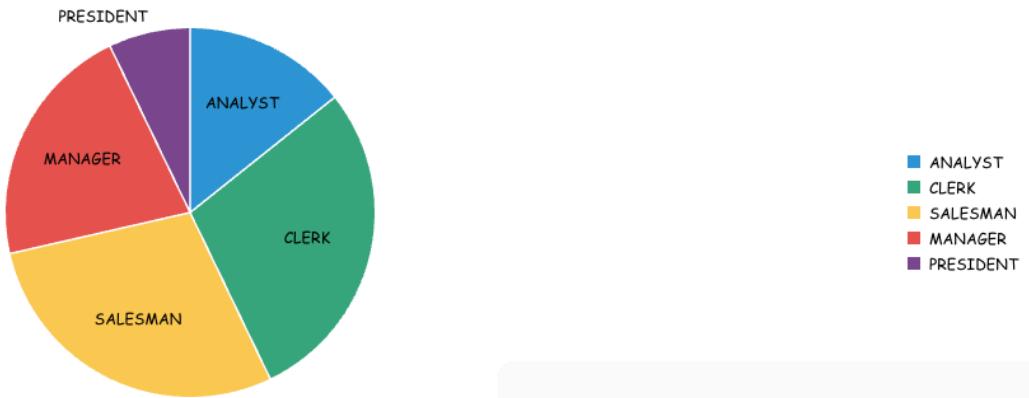
UPDATING APPLICATION FONT

Update Fonts

Empno	Ename	Job	Mgr	Hiredate	Sal	Comm	Deptno
7654	MARTIN	SALESMAN	7698	9/28/1981	1250	1400	30
7844	TURNER	SALESMAN	7698	9/8/1981	1500	0	30
7876	ADAMS	CLERK	7788	1/12/1983	1100		20
7900	JAMES	CLERK	7698	12/3/1981	950		30
7934	MILLER	CLERK	7782	1/23/1982	1300		10

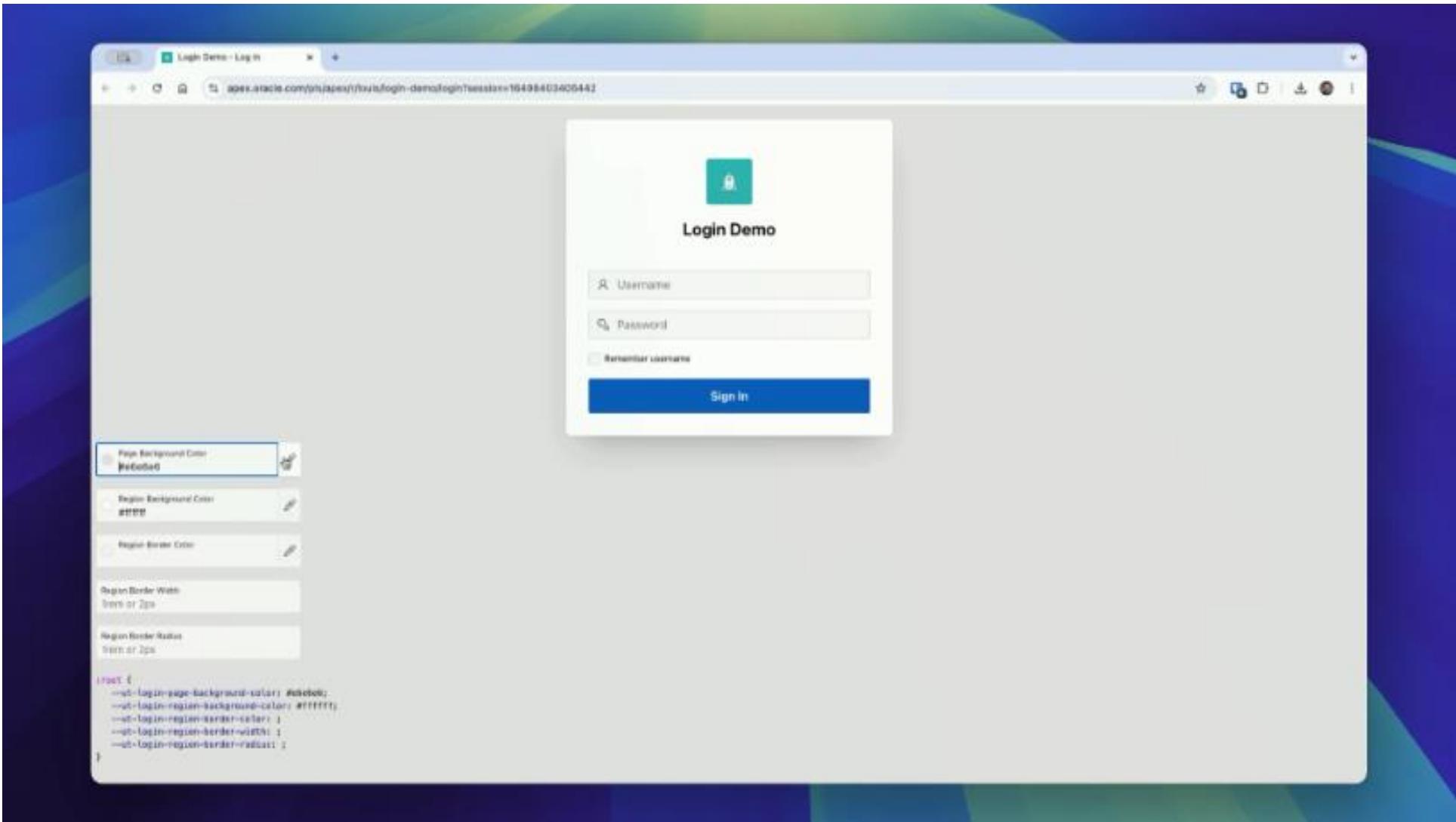
1 - 14

Job Repartition



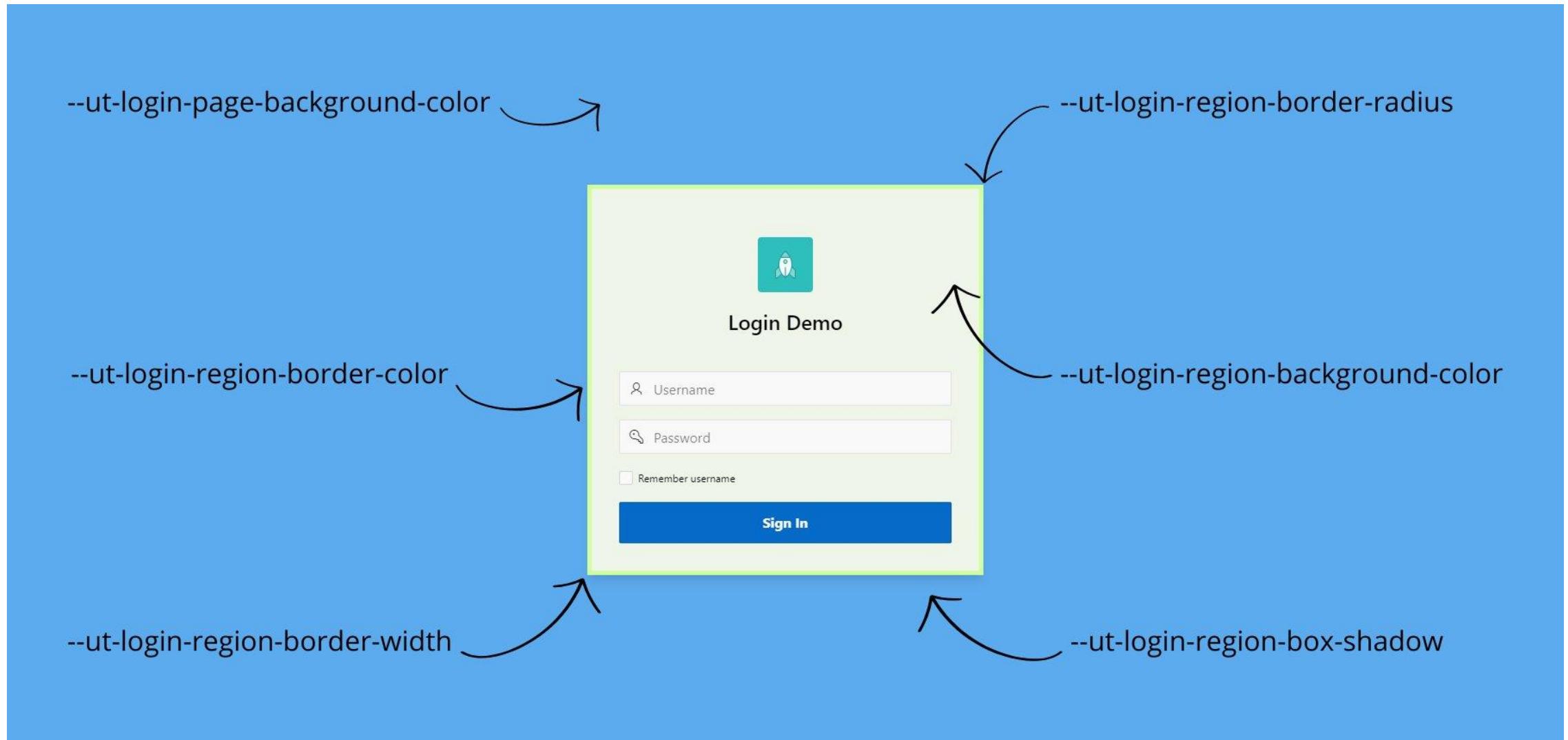
```
:root {  
    --a-base-font-family: "Comic Sans MS", arial;  
}
```

MAKE FANCY LOGIN PAGES

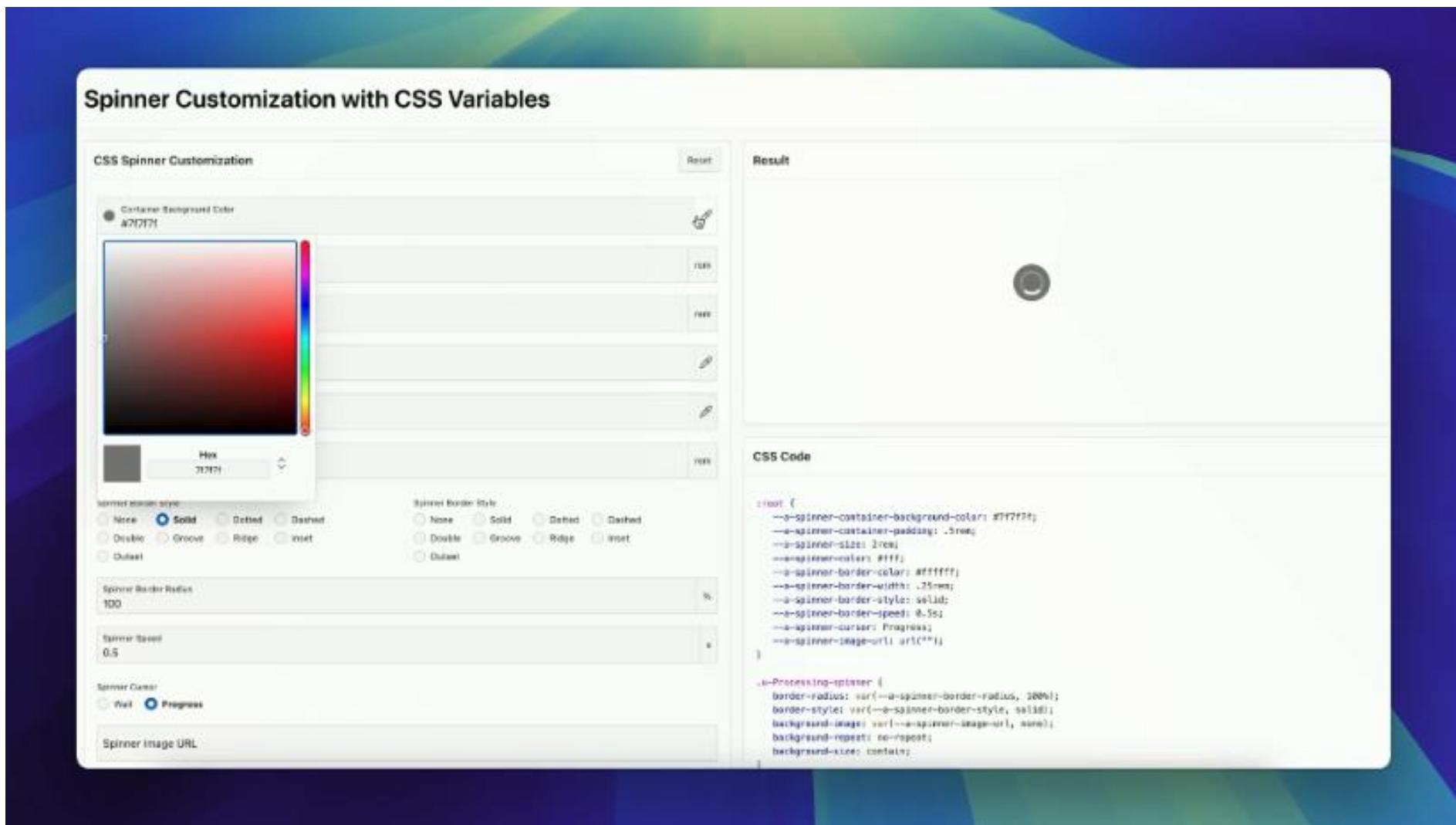


<https://github.com/LouisMoreaux/talks/raw/c48b714fce6d2049f3c28e1eb4374d01b5d5825e/APEX%20World%202025/videos/WEB%20TECH%20-%20login-page.mp4>

MAKE FANCY LOGIN PAGES

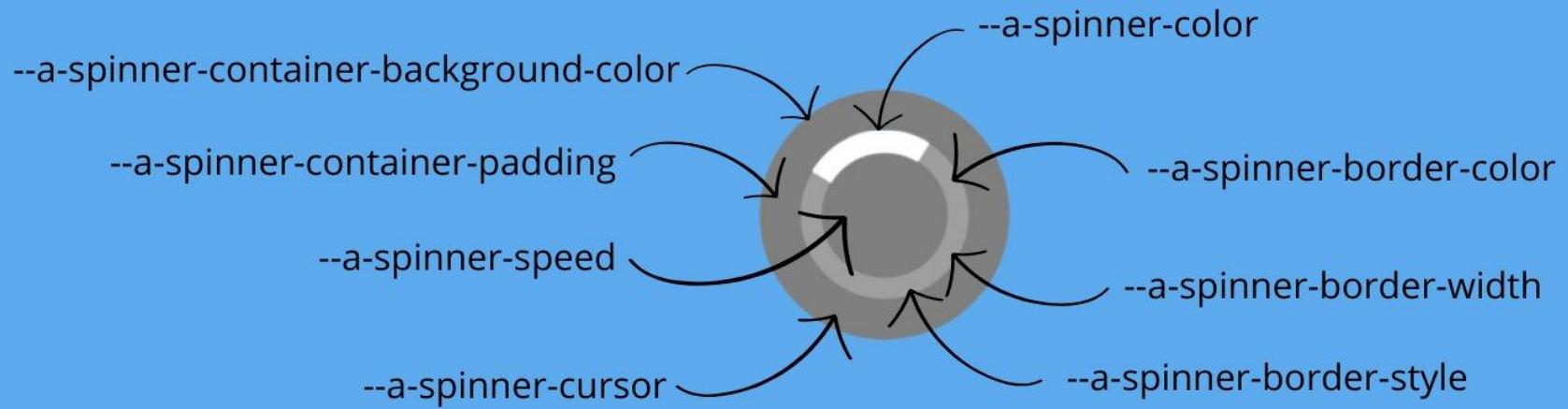


CUSTOMIZE LOADING INDICATOR



<https://github.com/LouisMoreaux/talks/raw/c48b714fce6d2049f3c28e1eb4374d01b5d5825e/APEX%20World%202025/videos/WEB%20TECH%20-%20spinner.mp4>

CUSTOMIZE LOADING INDICATOR



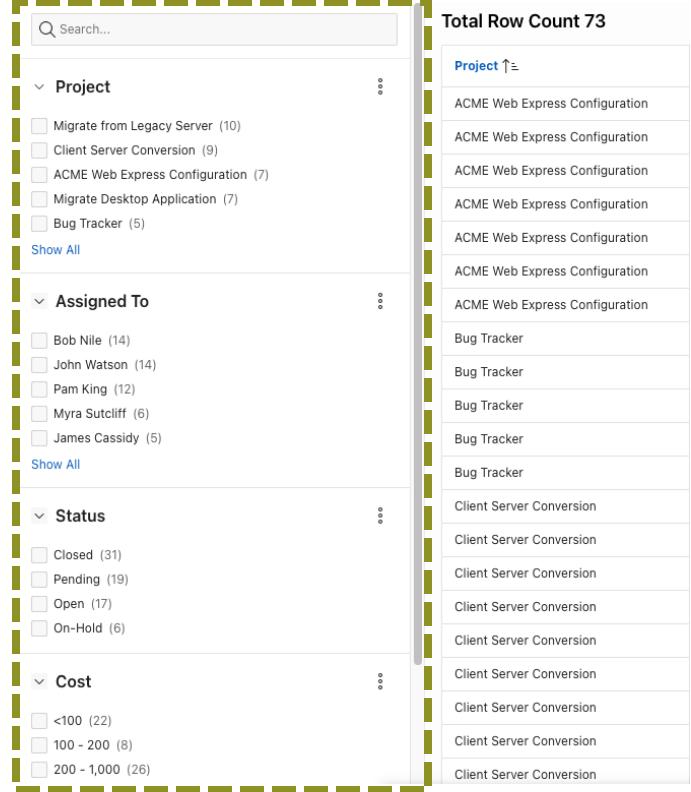
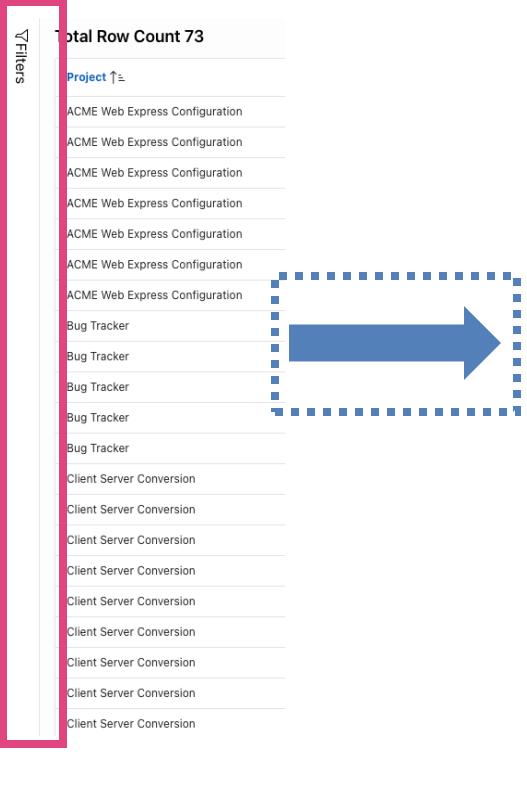
TOGGLE FACETED SEARCH FILTERS ON HOVER

The screenshot shows a search results page with a header "Left Column Toggle". Below the header is a table with 73 rows of data. The table has columns for Project ID, Task Name, Start Date, End Date, Status, Assigned To, On-Hold, and Budget. A "Reset" button is located in the top right corner of the table area. The background features a blue and green abstract design.

Total Row Count 73							
Project ID	Task Name	Start Date	End Date	Status	Assigned To	On-Hold	Budget
ACME Web Express Configuration	Identify server requirements	7/17/2021	7/18/2021	Closed	John Watson	\$200.00	\$500.00
ACME Web Express Configuration	Determine Web Listener configuration(s)	7/19/2021	7/19/2021	Closed	James Cassidy	\$400.00	\$500.00
ACME Web Express Configuration	Run installation	7/22/2021	7/22/2021	Closed	James Cassidy	\$100.00	\$200.00
ACME Web Express Configuration	Create initial workspace	7/24/2021	7/24/2021	Closed	John Watson	\$100.00	\$100.00
ACME Web Express Configuration	Specify security authentication scheme(s)	7/26/2021	7/26/2021	Open	John Watson	\$200.00	\$300.00
ACME Web Express Configuration	Configure Workstation provisioning	7/31/2021	7/31/2021	Open	John Watson	\$200.00	\$100.00
ACME Web Express Configuration	Select servers for Development, Test, Production	8/3/2021	8/3/2021	Open	James Cassidy	\$200.00	\$100.00
Bug Tracker	Document quality assurance procedures	8/2/2021	8/5/2021	Closed	Myra Soltani	\$1,000.00	\$2,000.00
Bug Tracker	Review automated testing tools	8/6/2021	8/8/2021	Closed	Myra Soltani	\$750.00	\$1,500.00
Bug Tracker	Implement bug tracking software	8/11/2021	8/11/2021	Closed	Myra Soltani	\$100.00	\$700.00
Bug Tracker	Train developers on tracking tool	8/28/2021	7/30/2021	On Hold	Myra Soltani	\$1,000.00	\$2,000.00
Bug Tracker	Measure effectiveness of improved QA	7/10/2021	7/10/2021	Pending	Myra Soltani	\$0.00	\$500.00
Client Server Conversion	End-user Training	8/11/2021	8/12/2021	Pending	Myra Soltani	\$0.00	\$2,500.00
Client Server Conversion	Rollout migrated Client Server to ACME Web Express	8/13/2021	8/13/2021	Pending	Pam King	\$0.00	\$1,000.00
Client Server Conversion	User acceptance testing	8/16/2021	8/8/2021	Pending	Ross Saunders	\$0.00	\$2,500.00
Client Server Conversion	Test migrated applications	8/2/2021	8/3/2021	Pending	Ross Saunders	\$0.00	\$6,000.00
Client Server Conversion	Migrate Client Server applications	8/28/2021	8/28/2021	Open	Pam King	\$300.00	\$12,000.00
Client Server Conversion	Plan migration schedule	7/23/2021	7/23/2021	Closed	Pam King	\$1,000.00	\$1,000.00
Client Server Conversion	Post-migration review	7/23/2021	7/20/2021	Closed	Pam King	\$500.00	\$300.00
Client Server Conversion	Migrate initial Client Server to ACME Web Express	7/16/2021	7/19/2021	Closed	Scott Spencer	\$4,500.00	\$1,000.00
Client Server Conversion	Identify client Client Server applications	7/14/2021	7/16/2021	Closed	Scott Spencer	\$200.00	\$100.00
Convert Spreadsheets	Create ACME Web Express applications from spreadsheets	7/27/2021	7/31/2021	Open	Pam King	\$6,000.00	\$10,000.00

<https://github.com/LouisMoreaux/talks/raw/c48b714fce6d2049f3c28e1eb4374d01b5d5825e/APEX%20World%202025/videos/WEB%20TECH%20-%20toggle-faceted-search.mp4>

TOGGLE FACETED SEARCH FILTERS ON HOVER



```
/*Define CSS variables initial values*/
```

```
:root {  
    --ut-body-sidebar-width: 2.5rem;  
    --filter-region-display: none;  
    --title-region-display: block;  
}
```

```
/*Update Faceted Search region visibility based on a CSS variable*/
```

```
#search-reg {  
    display: var(--filter-region-display);  
}
```

```
/*Update filter icon & title region visibility based on a CSS variable*/
```

```
#title-reg {  
    display: var(--title-region-display);  
}
```

```
/*
```

```
Update CSS variables values on left column hover  
2024/02/22: Added div#t_Body_side:focus-within to follow Tim's suggestion
```

```
*/  
div#t_Body_side:hover,  
div#t_Body_side:focus-within {  
    --ut-body-sidebar-width: 25rem;  
    --filter-region-display: block;  
    --title-region-display: none;  
}
```

CSS VARIABLES



Improve UI consistency



Easier to maintain and update



Universal Theme since APEX 21.1

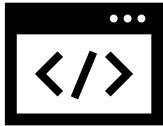


Supported way to customize UT

CSS NESTING



Nest CSS rules: child rules relative to parent selector



& nesting selector

```
parentRule {  
    /* parent rule style properties */  
    & childRule {  
        /* child rule style properties */  
    }  
}
```

CSS NESTING - BEFORE

Without CSS nesting

Look at how this title, image and like are styled using CSS!



Photo from [Pascal Debrunner](#)

```
div.without-container a {  
    background-color:red;  
    color: white;  
}  
  
div.without-container a:hover {  
    background-color:white;  
    color: red;  
}  
  
div.without-container img {  
    max-width: 600px;  
}  
  
div.without-container h3 {  
    background: linear-gradient(  
        to right in oklab,  
        oklch(70% 0.5 340) 0%, oklch(90% 0.5 200) 100%  
    );  
    background-clip: text;  
    -webkit-text-fill-color: transparent;  
    max-width: max-content;  
    font-size: xx-large;  
    font-weight: bolder;  
}
```

CSS NESTING - NOW

With CSS nesting

Look at how this title, image and like are styled using CSS!



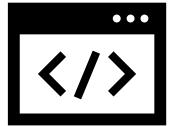
Photo from [Pascal Debrunner](#)

```
div.with-container {  
    & a {  
        background-color: red;  
        color: white;  
        &:hover {  
            background-color: white;  
            color: red;  
        }  
    }  
  
& img {  
    max-width: 600px;  
}  
  
& h3 {  
    background: linear-gradient(  
        to right in oklab,  
        oklch(70% 0.5 340) 0%, oklch(90% 0.5 200) 100%  
    );  
    background-clip: text;  
    -webkit-text-fill-color: transparent;  
    max-width: max-content;  
    font-size: xx-large;  
    font-weight: bolder;  
}
```

CSS NESTING – WHY USING IT?



Avoid repetition of selectors



Improve readability



Easier to maintain



Reduce CSS file size

:HAS()



CSS Pseudo-class



Select parent based on a rule



Apply style to parent

```
/* Selects an h1 heading with a
paragraph element that immediately follows
the h1 and applies the style to h1 */
h1:has(+ p) {
    margin-bottom: 0;
}
```

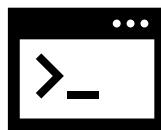
IR CELL BACKGROUND COLOR

		Row Key	Name	Status	Project	Created	Created By	Updated	Updated By
AAAB	Identify server requirements	Closed	ACME Web Express Configuration	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAC	Determine Web listener configuration(s)	Closed	ACME Web Express Configuration	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAD	Run installation	Closed	ACME Web Express Configuration	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAE	Create pilot workspace	Closed	ACME Web Express Configuration	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAF	Specify security authentication scheme(s)	Open	ACME Web Express Configuration	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAG	Configure Workspace provisioning	Open	ACME Web Express Configuration	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAH	Select servers for Development, Test, Production	Open	ACME Web Express Configuration	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAI	Document quality assurance procedures	Closed	Bug Tracker	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAJ	Review automated testing tools	Closed	Bug Tracker	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAK	Implement bug tracking software	Closed	Bug Tracker	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAL	Train developers on tracking bugs	On-Hold	Bug Tracker	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAM	Measure effectiveness of improved QA	Pending	Bug Tracker	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAN	Collect mission-critical spreadsheets	Closed	Convert Spreadsheets	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAO	Lock spreadsheets	Closed	Convert Spreadsheets	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		
AAAP	Create ACME Web Express applications from spreadsheets	Open	Convert Spreadsheets	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM	2.6 years ago	MOREAUX.LOUIS@GMAIL.COM		

IR CELL BACKGROUND COLOR

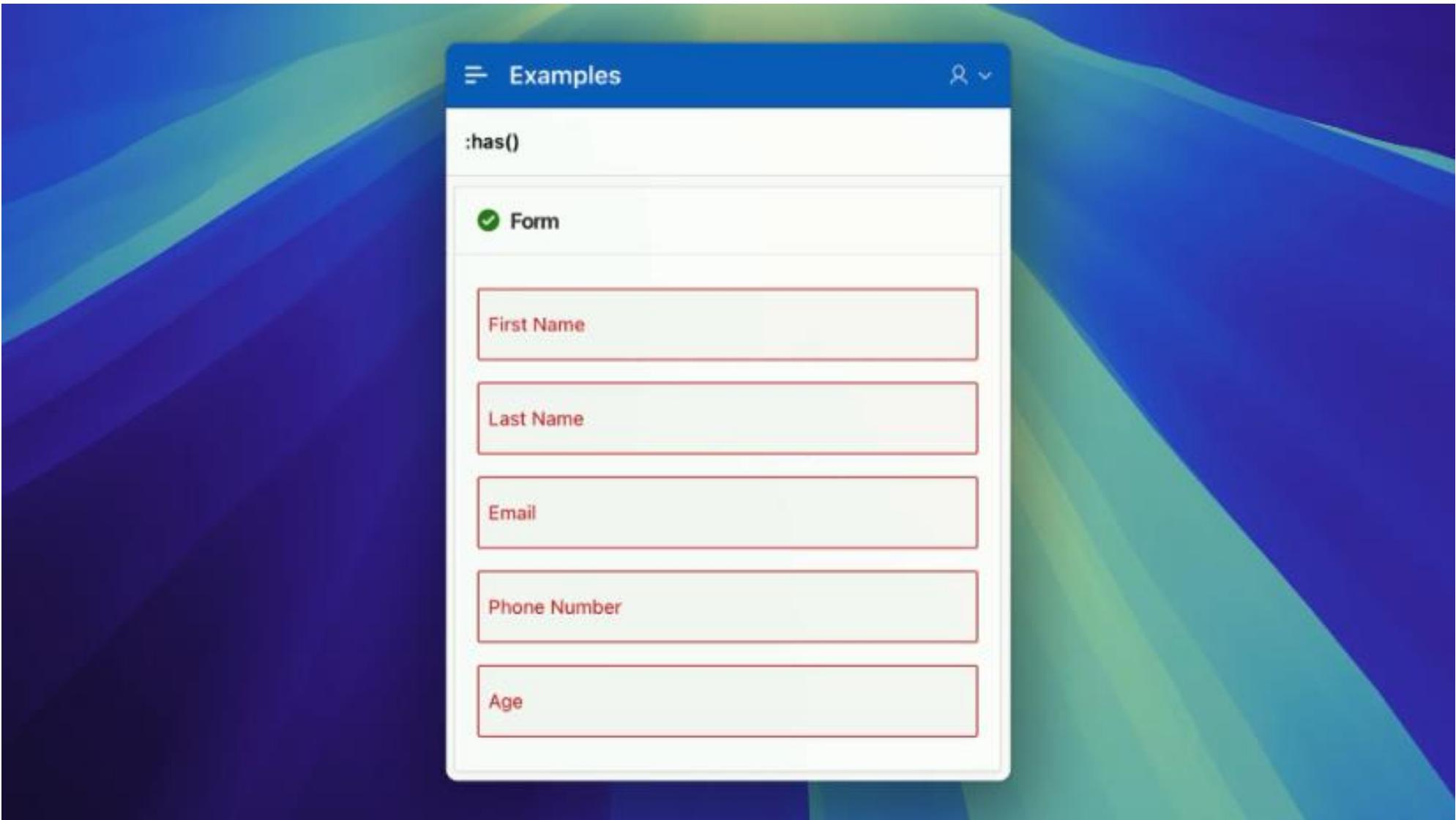
```
<span class="status-  
{case STATUS/  
  {when Closed/  
    closed  
  {when Open/  
    open  
  {when Pending/  
    pending  
{otherwise/  
  other  
{endcase/}"#STATUS#</span>
```

```
td:has( .status-closed) {  
  --a-gv-row-hover-background-color: var(--a-palette-danger);  
  background-color: var(--a-palette-danger);  
  color: var(--a-palette-danger-contrast);  
}  
  
td:has( .status-open) {  
  --a-gv-row-hover-background-color: var(--a-palette-success);  
  background-color: var(--a-palette-success);  
  color: var(--a-palette-success-contrast);  
}  
  
td:has( .status-pending) {  
  --a-gv-row-hover-background-color: var(--a-palette-warning);  
  background-color: var(--a-palette-warning);  
  color: var(--a-palette-warning-contrast);  
}  
  
td:has( .status-other) {  
  --a-gv-row-hover-background-color: var(--a-palette-color-14);  
  background-color: var(--a-palette-color-14);  
  color: var(--a-palette-color-14-contrast);  
}
```



No JS anymore

PAGE ITEM VALIDATION STYLING



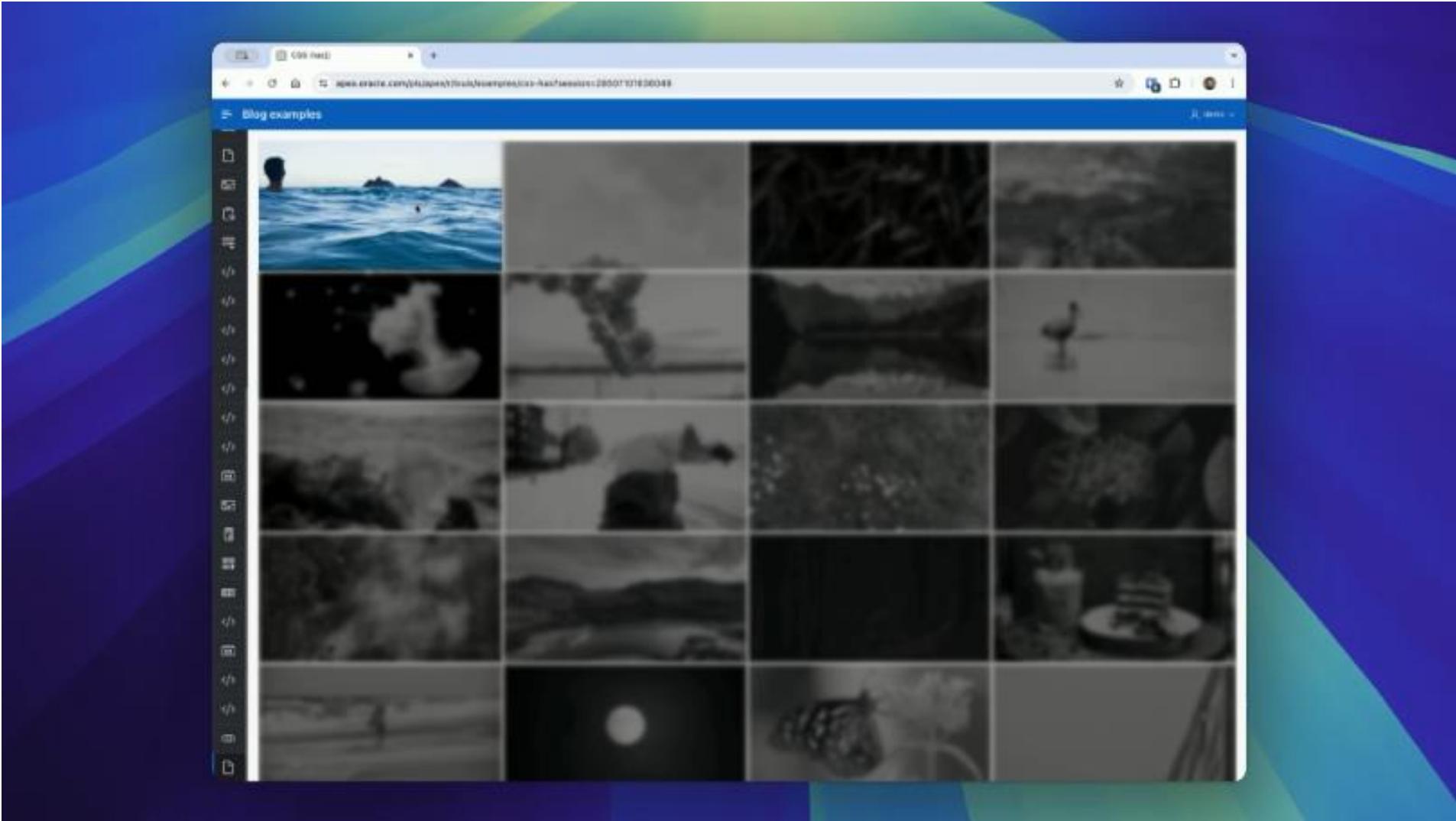
<https://github.com/LouisMoreaux/talks/raw/c48b714fce6d2049f3c28e1eb4374d01b5d5825e/PEX%20World%202025/videos/WEB%20TECH%20-%20form-validation-css.mp4>

PAGE ITEM VALIDATION STYLING

```
/* Target Item Container with invalid page item */
.t-Form-fieldContainer:has(input:invalid) {
    /* item label color to red */
    --ut-field-label-text-color: var(--a-palette-danger);
    /* item border color to red */
    --a-field-input-state-border-color: var(--a-palette-danger);
    /* item value text color to red */
    --a-field-input-state-text-color: var(--a-palette-danger);
    /* shake animation */
    animation: shake-horizontal 0.8s cubic-bezier(0.455, 0.030, 0.515, 0.955) both;
}
```

```
/* Target Item Container with invalid page item */
.t-Form-fieldContainer:has(input:valid) {
    /* item label color to green */
    --ut-field-label-text-color: var(--a-palette-success);
    /* item border color to green */
    --a-field-input-state-border-color: var(--a-palette-success);
    /* item value text color to green */
    --a-field-input-state-text-color: var(--a-palette-success);
}
```

FANCY CARDS GALLERY



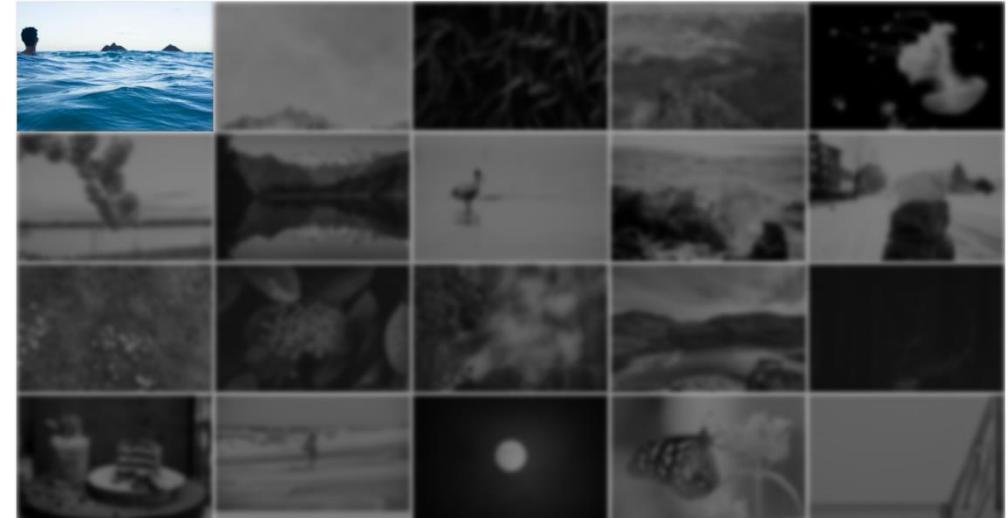
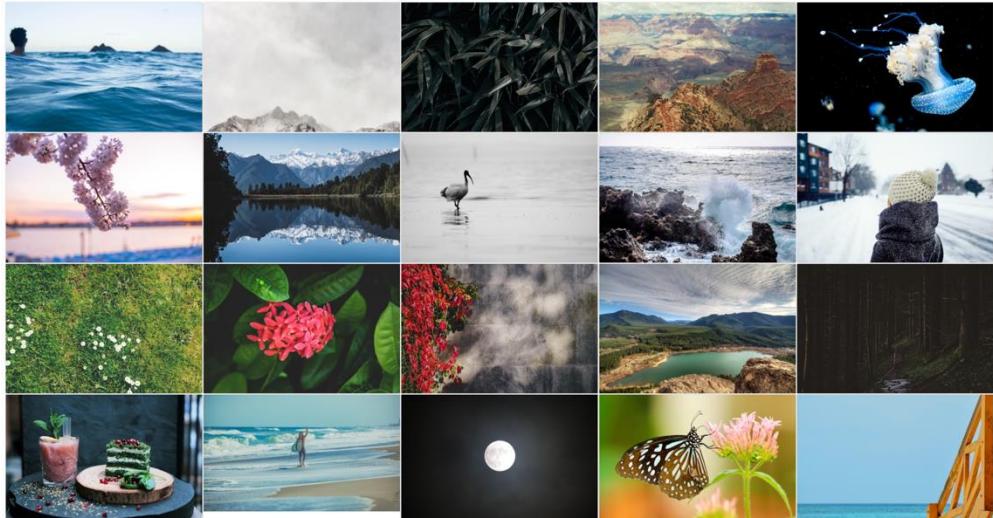
[https://github.com/LouisMoreaux/talks/raw/c48b714fce6d2049f3c28e1eb4374d01b5d5825e/
APEX World 2025/videos/WEB TECH - has-cards.mp4](https://github.com/LouisMoreaux/talks/raw/c48b714fce6d2049f3c28e1eb4374d01b5d5825e/APEX%20World%202025/videos/WEB%20TECH%20-%20has-cards.mp4)

FANCY CARDS GALLERY

Card's list with 1+ card hovered

Card not hovered

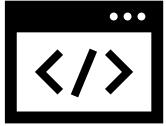
```
.a-CardView-items:has(.a-CardView-item:hover) .a-CardView-item:not(:hover){  
    filter: brightness(0.5) grayscale(1) blur(4px);  
}
```



:HAS() – WHY USING IT?



Style parent based on children



Reduce usage of JavaScript



:is(), :not() and :where()

CSS SCROLL SNAP



CSS feature for smooth scrolling



Aligns content to specific positions

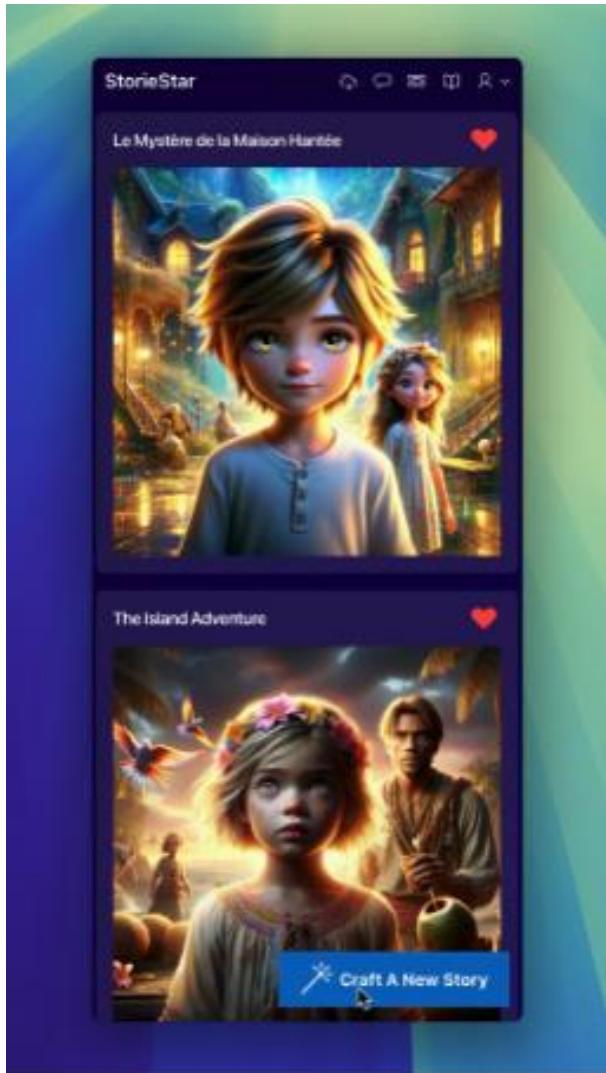


scroll-snap-type & scroll-snap-align



Image sliders, carousels, galleries

CSS SCROLL SNAP

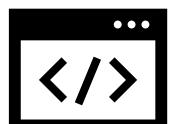


```
/*Define the scroll-snap-type on the scroll container*/
.prompt-choices .a-TMV-w-scroll {
    scroll-snap-type: x mandatory;
}

/*
Define the snap behavior, in that case we always
want the card to be in the middle at the end
*/
.prompt-choices .a-CardView-item {
    scroll-snap-align: center;
}
```



Rich mobile experience



No JavaScript required

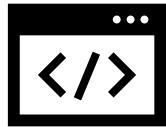
CONTAINER QUERIES



CSS for responsive layouts



Adjust styles based on container size

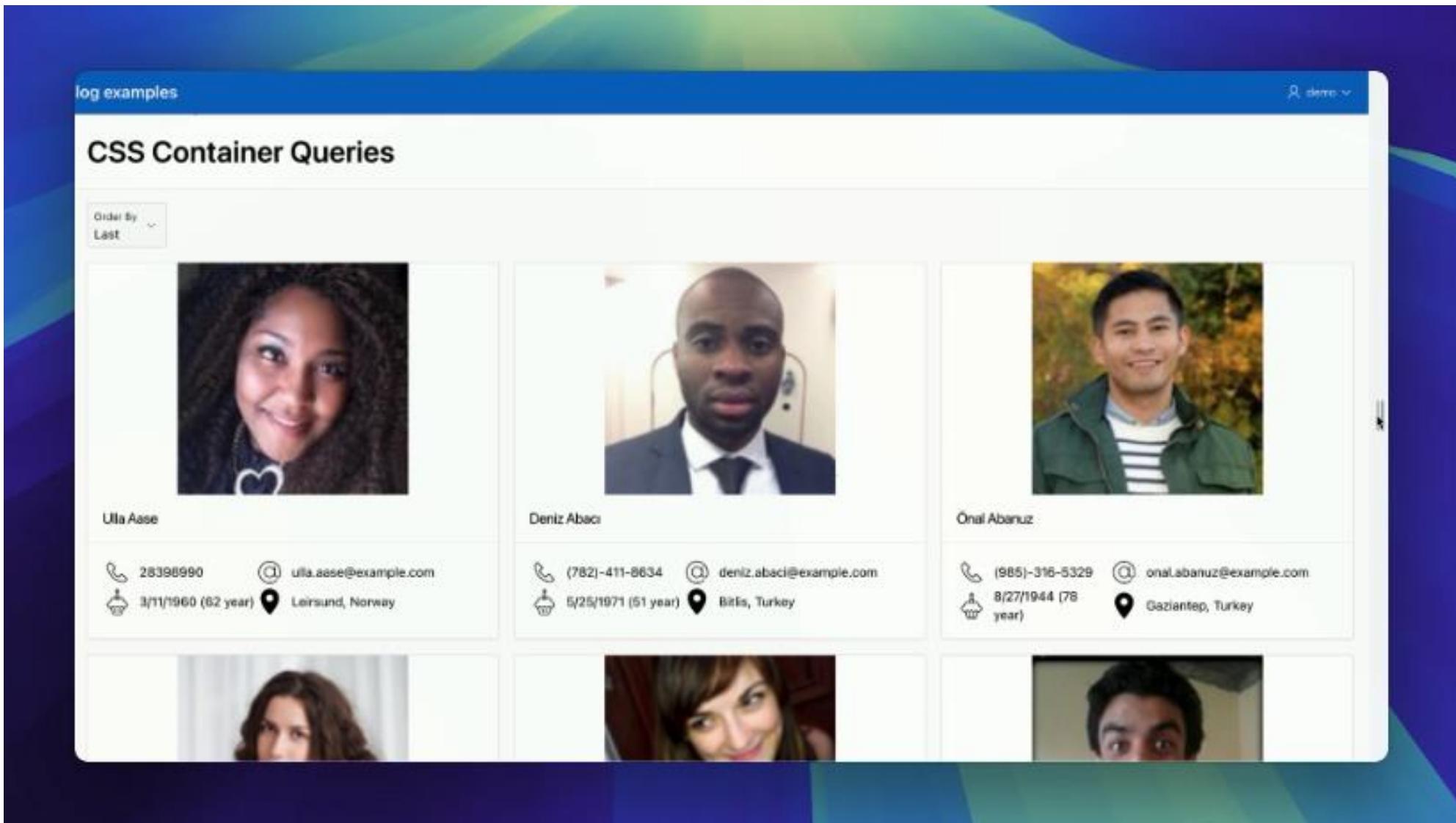


Uses @container rule



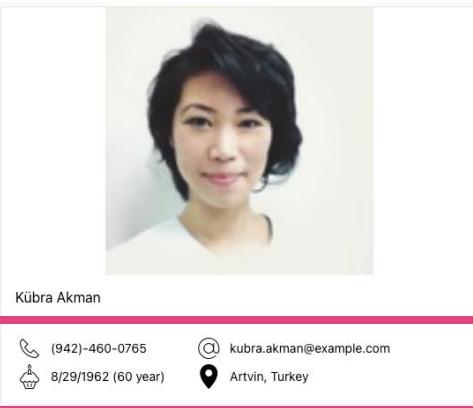
Flexible components, adaptive design

CONTAINER QUERIES



<https://github.com/LouisMoreaux/talks/raw/c48b714fce6d2049f3c28e1eb4374d01b5d5825e/APEX%20World%202025/videos/WEB%20TECH%20-%20container-queries.mp4>

CONTAINER QUERIES



```
<div class="main-container">
  <div class="info-container">
    <div class="info">
      <span class="fa fa-phone fa-lg" aria-hidden="true"></span>
      <span class="info-value">&PHONE.</span>
    </div>
    <div class="info">
      <span class="fa fa-at fa-lg" aria-hidden="true"></span>
      <span class="info-value">&EMAIL.</span>
    </div>
    <div class="info">
      <span class="fa fa-birthday-cake fa-lg" aria-hidden="true"></span>
      <span class="info-value">&DATE_. (&AGE. year)</span>
    </div>
    <div class="info">
      <span class="fa fa-map-marker fa-lg" aria-hidden="true"></span>
      <span class="info-value">&CITY., &COUNTRY.</span>
    </div>
  </div>
</div>
```

```
.main-container {
  container-type: inline-size;
}
```

```
.info-container {
  display: grid;
  grid-template-columns: 1fr;
}
```

```
@container (min-width: 400px) {
  .info-container {
    grid-template-columns: 2fr 3fr;
}}
```



Container size driven



Better responsive layouts

JavaScript



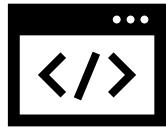
APEX JAVASCRIPT APIs



Supported APEX APIs

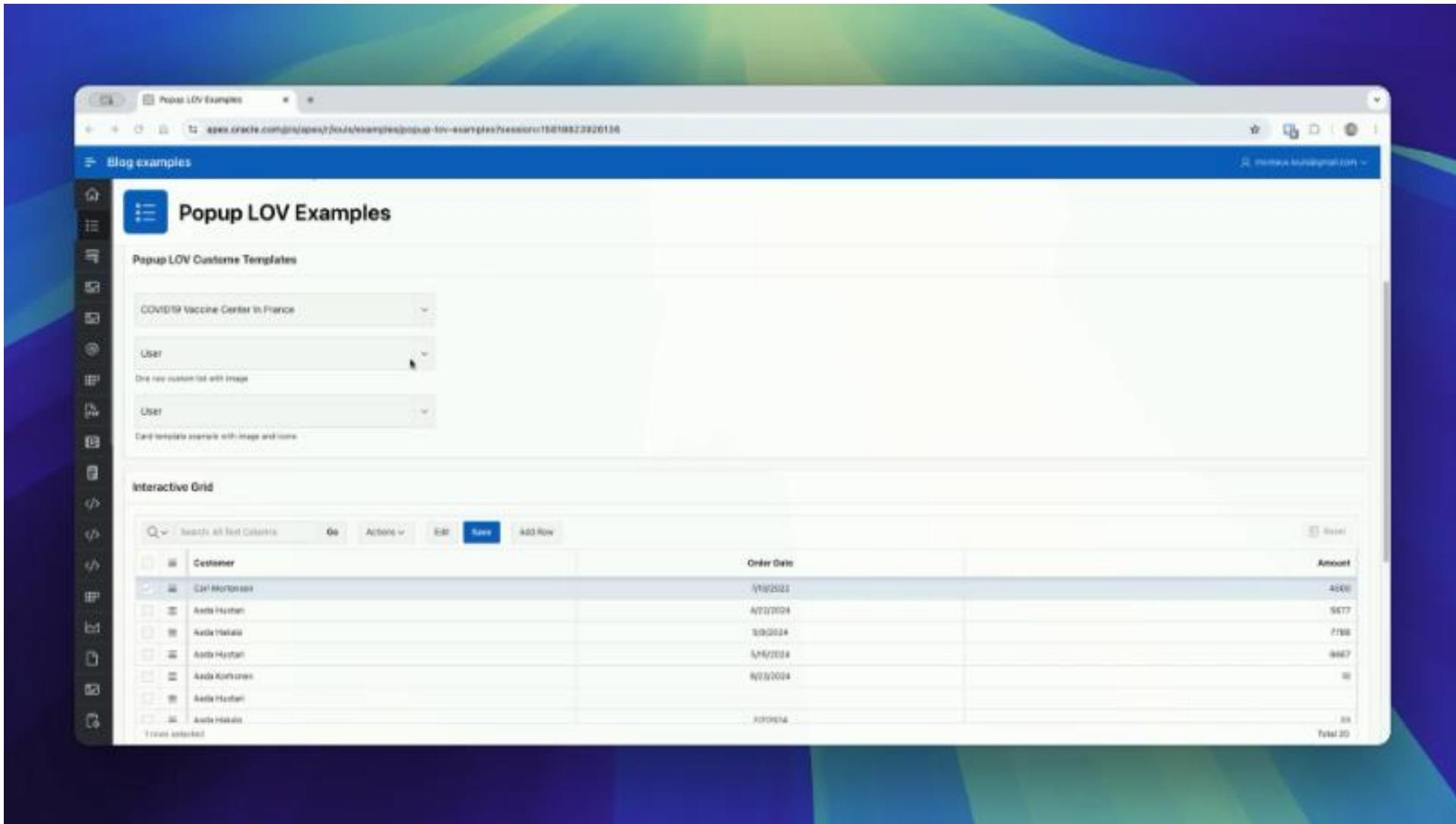


Client-side interaction



apex.item, apex.region, apex.server, ...

POPUP LOV CUSTOM TEMPLATE



<https://github.com/LouisMoreaux/talks/raw/c48b714fce6d2049f3c28e1eb4374d01b5d5825e/APEX%20World%202025/videos/WEB%20TECH%20-%20popupLOV.mp4>

POPUP LOV CUSTOM TEMPLATE

The screenshot shows a custom Light-Weight Oracle View (LOV) component. At the top left is a dropdown menu labeled "User" with "Louis Chen" selected. Below it is a search bar with a magnifying glass icon. The main area displays a list of users with their names and small profile pictures:

- Aada Hakala
- Aada Huotari
- Aada Korhonen
- Aada Kuiala

Initialization JavaScript Function

```
function(options) {
    options.display = "list";

    options.recordTemplate =
    '<li data-id="~ID.">' +
        '<div class="content-list">' +
            '' +
            '<div class="user-infos-list">' +
                '<span class="user-name"><b>~FIRST. ~LAST.</b></span>' +
            '</div>' +
        '</div>' +
    '</li>').replace(/\~/g, "&");

    return options;
}
```



Documented and supported JS API



No 3rd party library required

INTERACTIVE GRID – HIDE/SHOW COLUMNS

The screenshot shows a web browser window displaying an Oracle APEX application titled "IG - Show/Hide Columns". The URL is apex.oracle.com/pls/apex/f?p=100:10:19818823926138. The page contains a sidebar with various icons for column operations. The main area features an "Interactive Grid" with the following data:

Photo	Username	First Name	Last Name	Photo Description
	lukasluhnen	Klaus	Gärtner	Went for a swim at my local beach, Lanikai beach park. Managed to get an amazing view of the Twin Islands or Mokulua Islands in Hawaii. The water was so refreshing and felt amazing.
	stefanrgross	stefan	grossgasteiger	Late autumn in the Italian alps!
	oliverste	Oliver	Hae	In cities full of concrete, little jungles can be found.

The "Photo" column displays small thumbnail images. The "Photo Description" column contains descriptive text. The "First Name" and "Last Name" columns are visible, while the "Username" column is partially hidden. The "Photo" column is also partially hidden. The "Photo Description" column has a tooltip indicating it is partially hidden.

<https://github.com/LouisMoreaux/talks/raw/c48b714fce6d2049f3c28e1eb4374d01b5d5825e/APEX%20World%202025/videos/WEB%20TECH%20-%20IG%20-show-hide-columns.mp4>

INTERACTIVE GRID – HIDE/SHOW COLUMNS

```
let exifColumns = [
    "EXIF_CAMERA_MAKE", "EXIF_CAMERA_MODEL",
    "EXIF_ISO", "EXIF_APERTURE_VALUE",
    "EXIF_FOCAL_LENGTH", "EXIF_EXPOSURE_TIME"
],
view = apex.region("ig-reg").widget().interactiveGrid("getCurrentView").view$;

exifColumns.forEach(function(columnName){
    view.grid(
        (apex.items.P37_SHOW_EXIF_INFOS.value === "Y" ? "showColumn" : "hideColumn"),
        columnName
    );
});
```



Name	Last Name	Photo Description	Camera Make	Camera Model	ISO	Aperture Value	Focal Length	Exposure Time
	AhSam	Went for a swim at my local beach, Lanikai beach park. Managed to get an amazing view of the Twin Islands or Mokulua islands in Hawaiian. The water was so refreshing and felt amazing!	SONY	ILCE-6000	200	4.0	21	1/800
	grossgasteiger	Late autumn in the italian alps!	Canon	Canon EOS 70D	800	6.3	50	1/3200

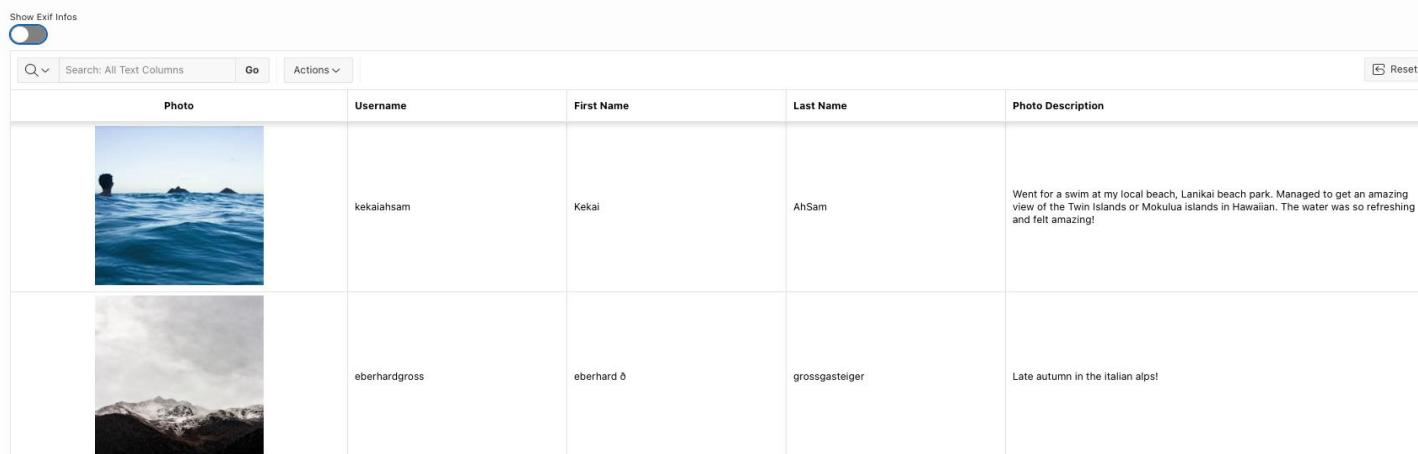


Photo	Username	First Name	Last Name	Photo Description
	kekaiahsam	Kekai	AhSam	Went for a swim at my local beach, Lanikai beach park. Managed to get an amazing view of the Twin Islands or Mokulua islands in Hawaiian. The water was so refreshing and felt amazing!
	eberhardgross	eberhard	grossgasteiger	Late autumn in the italian alps!



Focus on important things



Supported API



Clean UI & better UX

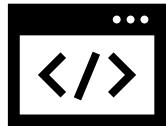
THIRD PARTY LIBRARIES



APEX comes with integrated 3rd party libraries



FullCalendar, JavaScript Extension Toolkit (JET),
Oracle Rich Text Library (ORTL), MapLibre GL

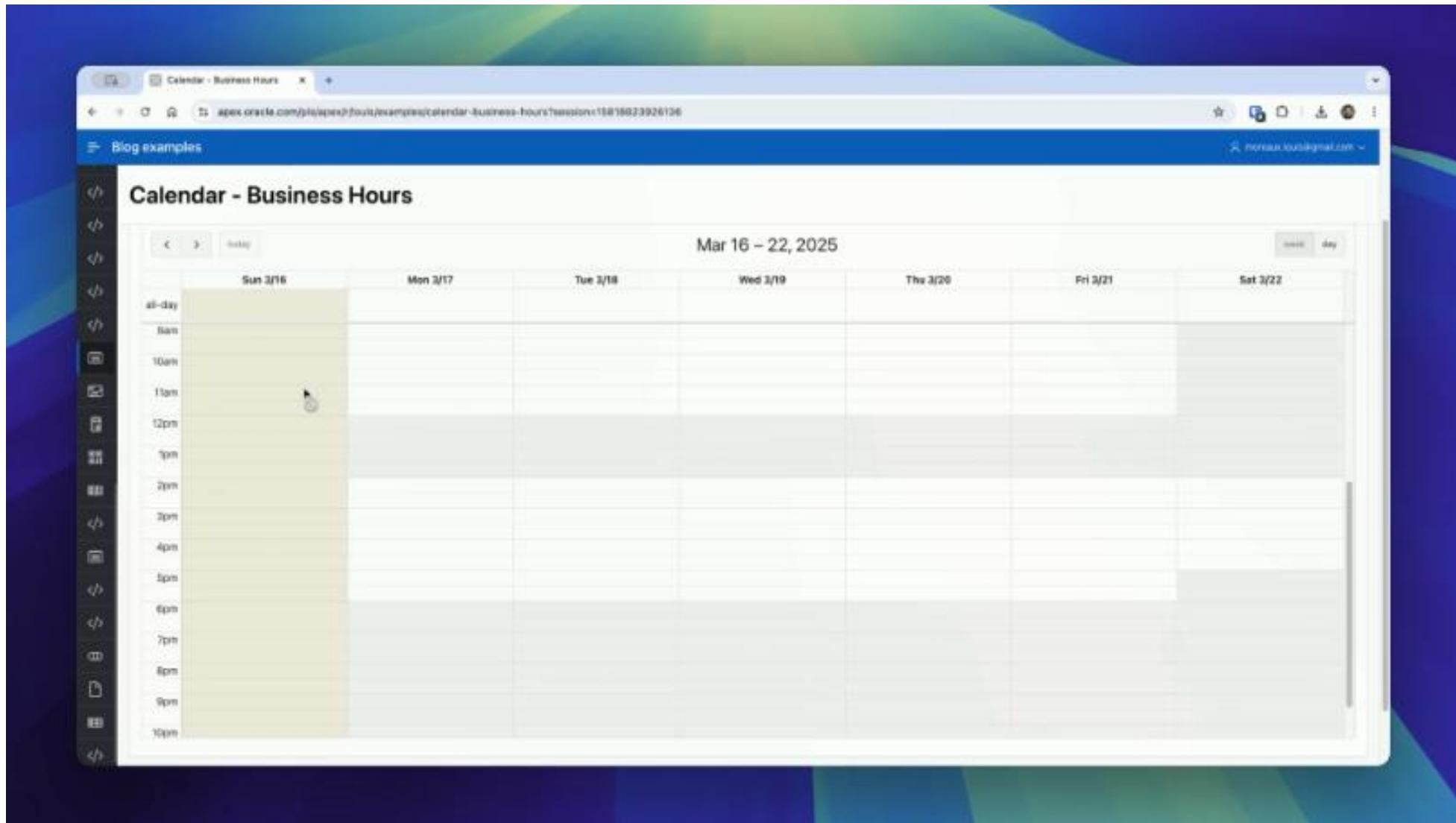


Extend included features



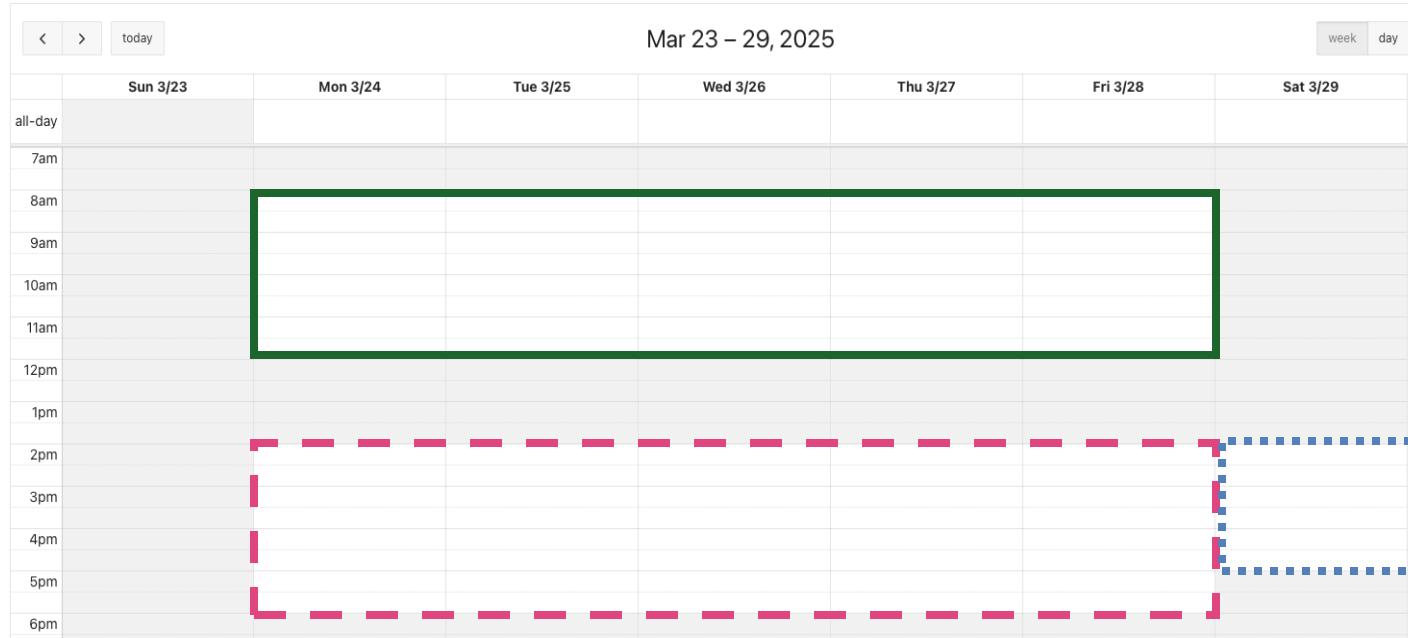
Some awesome hidden gems

CALENDAR – BUSINESS HOURS



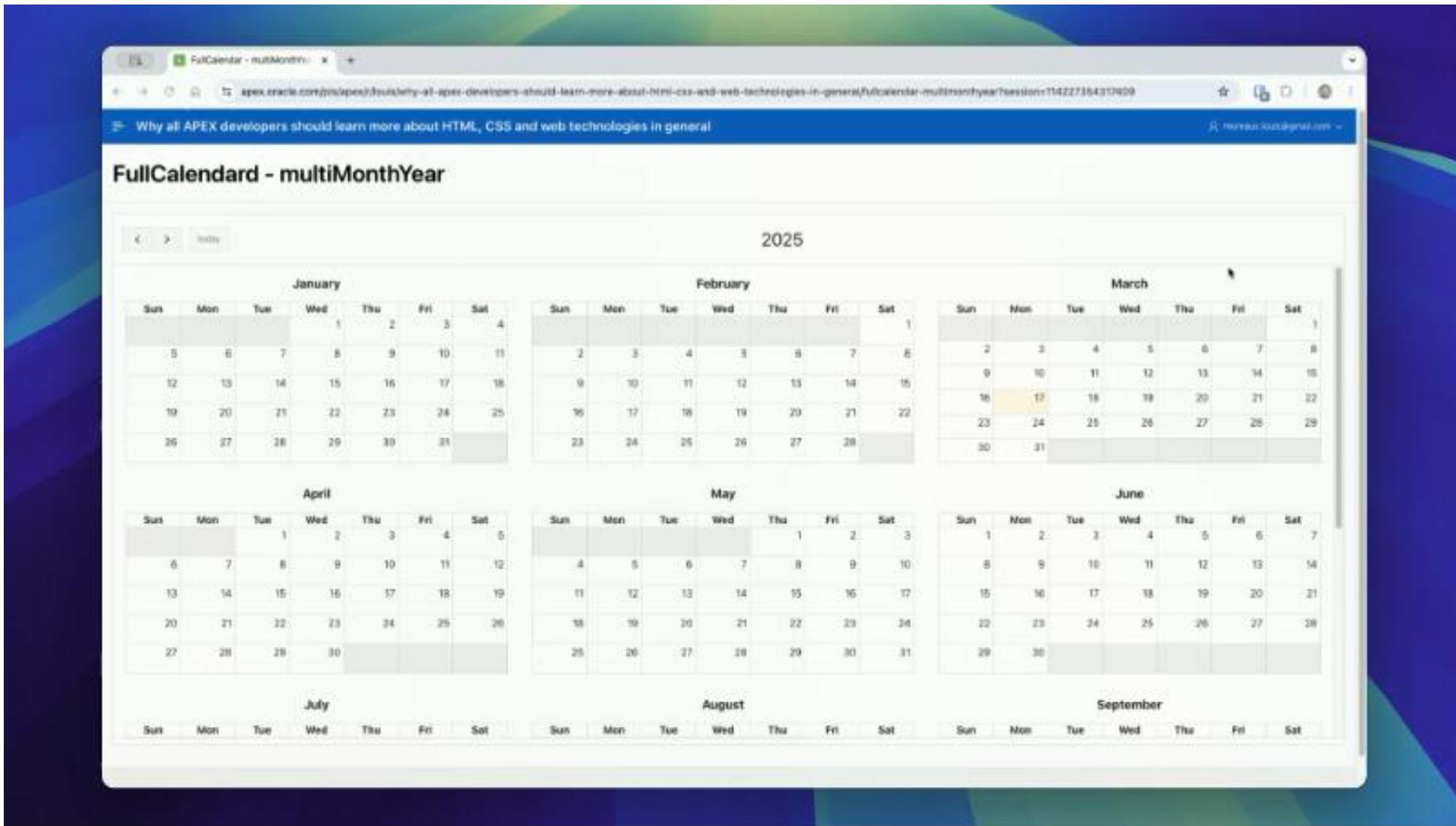
<https://github.com/LouisMoreaux/talks/raw/c48b714fce6d2049f3c28e1eb4374d01b5d5825e/APEX%20World%202025/videos/WEB%20TECH%20-%20calendar-region.mp4>

CALENDAR – BUSINESS HOURS



```
function( pOptions ) {  
  
    // Define the Business Hours array  
    pOptions.businessHours = [  
        {  
            daysOfWeek: [ 1, 2, 3, 4, 5 ], // Monday - Friday  
            startTime: '08:00',  
            endTime: '12:00',  
        },  
        {  
            daysOfWeek: [ 1, 2, 3, 4, 5 ], // Monday - Friday  
            startTime: '14:00',  
            endTime: '18:00',  
        },  
        {  
            daysOfWeek: [ 6 ], // Saturday  
            startTime: '14:00',  
            endTime: '17:00',  
        }  
    ];  
  
    // Apply the selectConstraint to the Business Hours  
    pOptions.selectConstraint = "businessHours";  
  
    return pOptions;  
}
```

CALENDAR – MULTI MONTH VIEW



<https://github.com/LouisMoreaux/talks/raw/c48b714fce6d2049f3c28e1eb4374d01b5d5825e/APEX%20World%202025/videos/WEB%20TECH%20-%20calendar-multimonth.mp4>

CALENDAR – MULTI MONTH VIEW

```
function (config) {  
    config.endDateExclusive = false;  
    config.headerToolbar.end = "";  
    config.initialView = 'multiMonthYear';  
}
```



Improve user experience

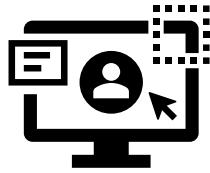


Leverage 3rd party library API

Conclusion



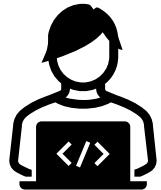
Better understand APEX



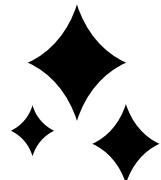
Improve UI & UX



Secure your applications



Good practices & dev tips



Staying one step ahead



Thanks

TALAN

Contact me





Please fill in your
evaluations