

**DYNAMICS CON PRESENTATION**

# **DYNAMICS CON LIVE**

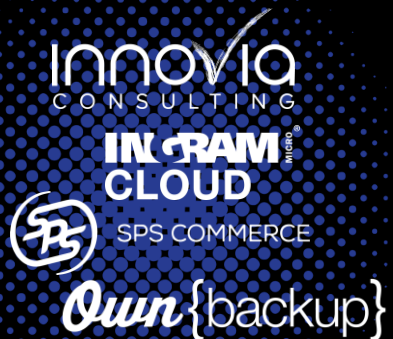


**SEPTEMBER 14-16,  
2022**

# Power Apps UX: Building Sticky Apps

April Dunnam

Principal Power Platform Advocate, Microsoft



# April Dunnam



Innovia  
CONSULTING  
IN CLOUD  
CLOUD  
SPS COMMERCE  
Own {backup}

CON  
DUG

# Power Apps & the Power Platform



**Power BI**  
Business analytics



**Power Apps**  
Application development



**Power Automate**  
Workflow automation



**Power Virtual Agents**  
Intelligent virtual agents



**Data connectors**



**Portals**



**AI Builder**

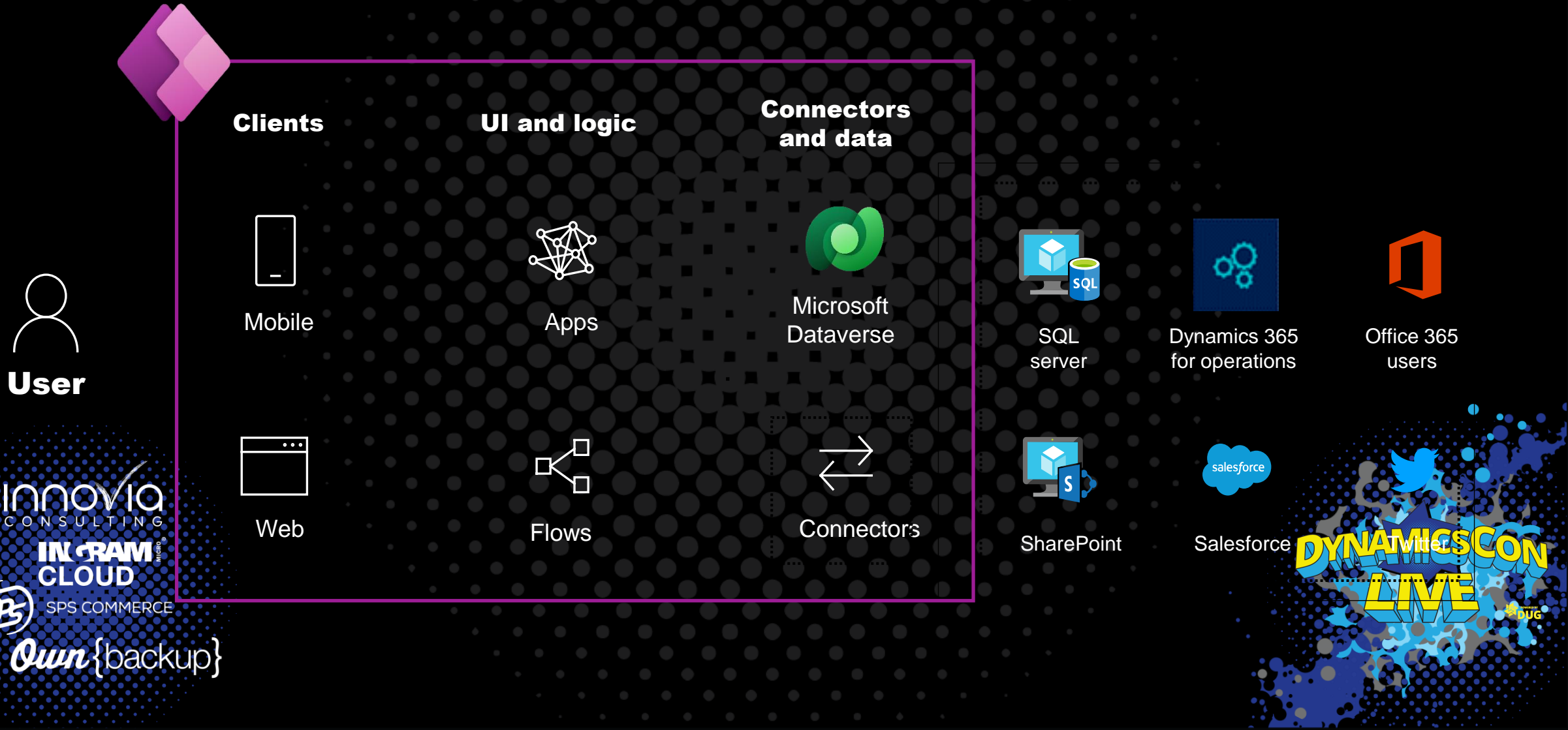


**Microsoft  
Dataverse**





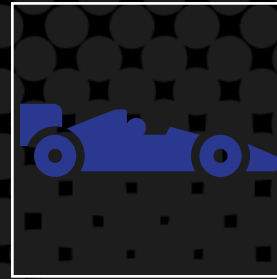
# Power Apps Enables Low-code Development



# What makes an app “Sticky”?



Accessible



Performant



Appealing

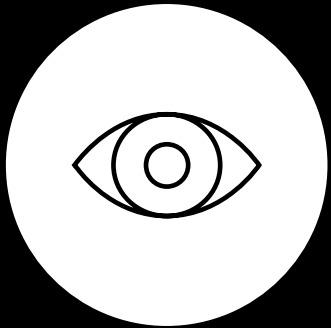
A man with a beard and glasses, wearing large black headphones, is seated in a wheelchair at a wooden desk. He is focused on a laptop, with his hands on the keyboard. He wears a white shirt with a brown geometric pattern. In the background, a woman with long dark hair, wearing an orange sweater, sits on a grey sofa looking at her phone. The room is bright with large windows and modern decor, including a floor lamp and a small table with a plant.

**Sticky Apps are  
Accessible**



# Universal experience = accessibility = inclusive design

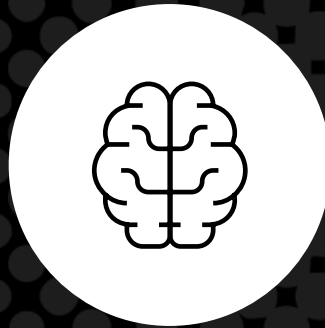
Building an accessible app means making it usable by as many people as possible



**Visual**



**Hearing**



**Cognitive**



**Speech**



**Mobility**



**Neural**



**Permanent**



(one arm)

**Temporary**



(arm injury)

**Situational**



(new parent)



# Accessible Apps Respect Cognitive Load

- Cognitive Load = amount of effort exerted when reasoning or thinking
- Goal: Simplify the journey so end users don't feel overwhelmed or confused



Be mindful of font size



Avoid Popups



Have a consistent logical layout



Ensure proper contrast



Data Validation

✓ Do: Keep it simple

✗ Don't: Have too many steps, controls, or buttons



Welcome Back, Yusuf!

Estimate Billing Contract

September Summary



Sales

\$940,000



Profitability

19%



Projects

36



Hours

1,200

Pending Client Approvals (8)

View All

VRZ-29374

Verizon Black Friday Email Campaign

Sent: 9/22/19

VRZ-29375

Verizon Welcome Email Campaign

Sent: 9/24/19

TGF-29300

Friday's Rewards Program

Sent: 9/24/19

PNA-29320

Fall 2019 Landing Page

Sent: 9/24/19

PNA-29322

October Website Maintenance

Sent: 9/24/19

September Active Billing Requests (20)

View All

TGF-29280  
\$8,000

In Finance

TGF-29281  
\$12,000

In Finance

TGF-29282  
\$5,000

Rejected

VRZ-29190  
\$5,500

In Finance

TGF-29283  
\$5,000



## PROJECTS

All In Progress On Hold Completed

+ New Project

Search Projects

Office Party

NY 2019 Halloween Party



10/31

5/10 tasks complete

Lunch & Learn

Strategy Lunch & Learn with Ian



9/17

5/10 tasks complete

Office Party

OC 2019 Halloween Party



10/31

5/10 tasks complete

Fitness

NY Team Group Soul Cycle Class



11/5

5/10 tasks complete

Office Lunch

Going Away Lunch For Liz



10/31

5/10 tasks complete

Office Party

NY 2019 Christmas Party



12/15

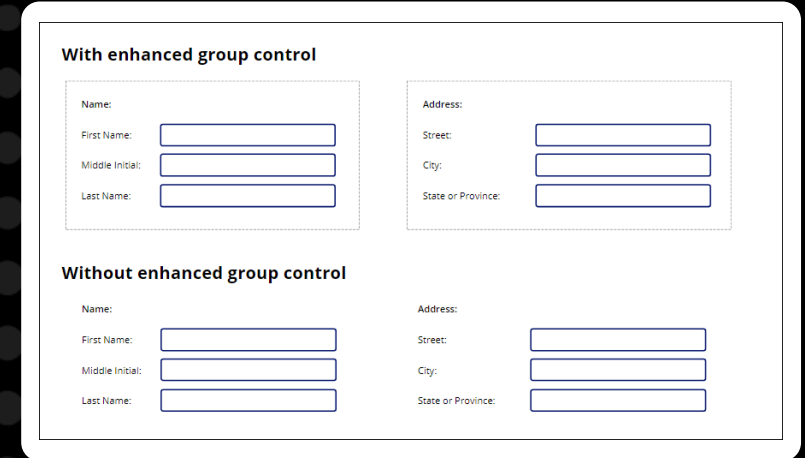
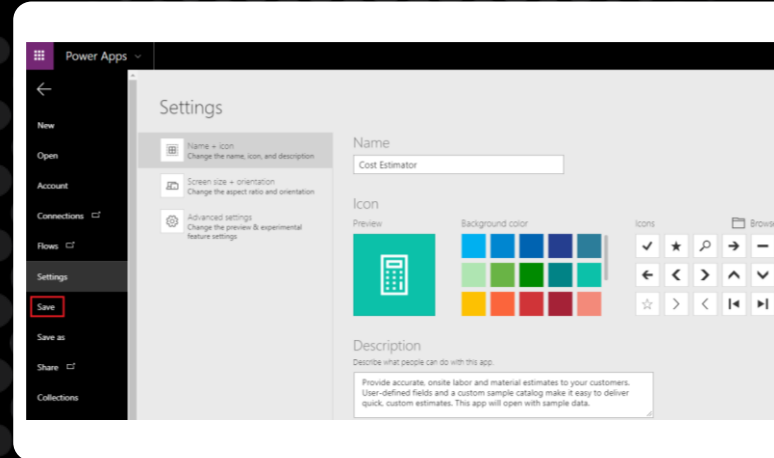
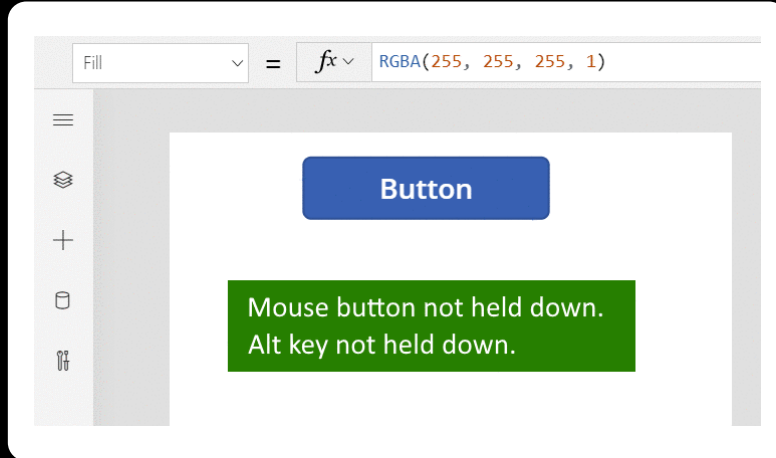
5/10 tasks complete

Own {backup}

<https://docs.microsoft.com/powerapps/maker/canvas-apps/accessibility-checker>



# Accessible navigation for app builders and users with keyboard shortcuts



## Design using keyboard shortcuts

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CONSULTING on the Power Apps platform

using keyboard shortcuts for an accessible

IN STAM  
CLOUD

SPS COMMERCE

Own {backup}

## Create apps that support keyboard shortcuts

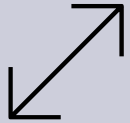
Ensure that your creations are accessible by easily enabling keyboard shortcut functions as you develop.

## Enhanced groups ensure proper keyboard navigation

Use enhanced groups to ensure that users can easily navigate through your apps using keyboard shortcuts.

DYNAMICSCON  
LIVE

# Keyboard support



Set Accessibility Labels for all controls



**Interactive** elements (i.e. buttons) set **TabIndex** to 0



**Decorative** elements or text (i.e. images), set **TabIndex** to -1.



Avoid setting tab index higher than zero.

# Theme Designer

Microsoft | UI Fabric Theme Designer

Color

Primary color

#d40004

Text color

#1a1a1a

Background color

+ New

↑ Upload

↗ Share

↓ Download

⋮ More

STORIES

impression

ssion with this clean, modern, and  
e. Use it to communicate  
ople inside or outside your team.  
results, and more in this visually  
t.

Select one

Content

Enter text here

Placeholder

☐ Option 1

☒ Option 2

☒ Option 3

h Evans

searcher at Contoso

Accessibility checker

⊗ Your color palette has 1 accessibility errors. Each pair of colors below should produce legible te

Contrast ratio: AA

Color pair

Non accessible pairs (1)

2.88

Secondary text color on Background color

Export theme

This code block creates the theme you have configured above using the createTheme utility function. Calling Customizations.applySettings with this theme will automatically apply the configured theming to any Fabric controls used within the same app. You can also export this example to CodePen with a few component examples below.

Code

JSON

PowerShell

```
{
  "themePrimary": "#d40004",
  "themeLighterAlt": "#fdf3f3",
  "themeLighter": "#f8d0d1",
  "themeLight": "#f2a9ab",
  "themeTertiary": "#e55c5e",
  "themeSecondary": "#d91a1d",
  "themeDarkAlt": "#be0003",
  "themeDark": "#a10003",
  "themeDarker": "#770002",
  "neutralLighterAlt": "#faf9f8",
  "neutralLighter": "#f3f2f1",
  "neutralLight": "#edebe9",
  "neutralQuaternaryAlt": "#e1dfdd",
  "neutralQuaternary": "#d0d0d0",
  "neutralTertiaryAlt": "#c8c6c4",
  "neutralTertiary": "#595959",
  "neutralSecondary": "#373737"
```



# Use the Accessibility Checker

fx 11.01

"" = Data type: **text**

## so Electronics

Go to "Theme Designer" web site

Apply default theme

Apply mono theme

Import

txtB&WTheme

Properties **Advanced**

**false**

Align

**Align.Left**

PaddingTop

**5**

PaddingRight

**5**

PaddingBottom

**5**

PaddingLeft

**12**

X

**789**

Y

**405**

Width

**444**

Height

**138**

Visible

**false**

DisplayMode

**DisplayMode.Edit**

TabIndex

**0**

← Accessibility

🔄 Recheck

Results by type

▼ Errors (3)

▼ Missing accessible label (3)

**txtB&WTheme**

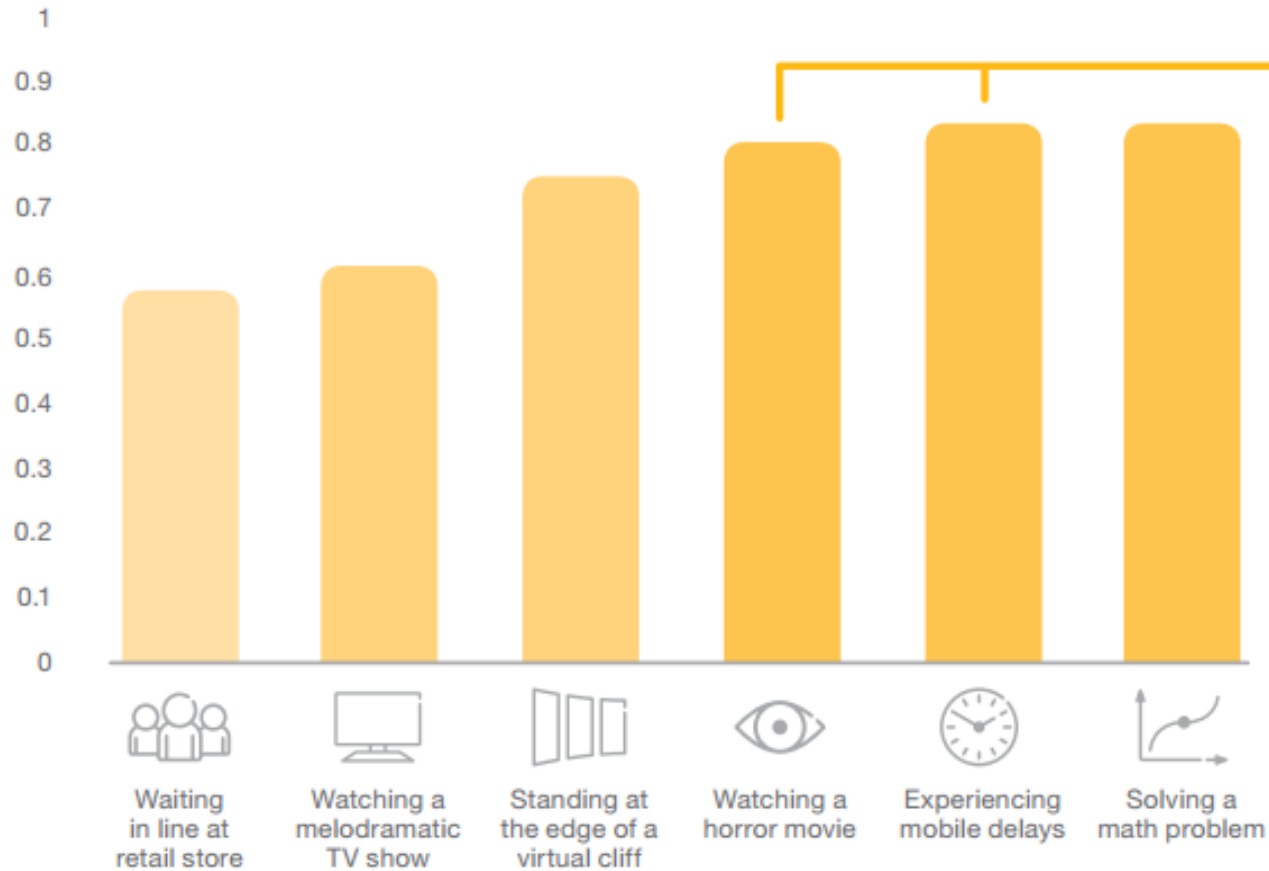
txtDefaultTheme

MicrosoftStream1



**Sticky Apps are  
Fast! (Performant)**

## Cognitive load associated with stressful situations



The level of stress caused by mobile delays was comparable to watching a horror movie

Source: Ericsson ConsumerLab, Neurons Inc., 2015

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**The Importance of Performance LIVE**

DYNAMICS  
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# Pillars of Performance



OPTIMIZE  
DATASETS



UNDERSTAND  
DELEGATION



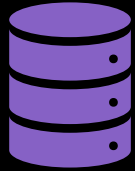
REDUCE  
CONTROLS



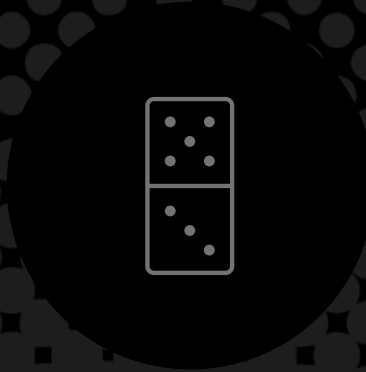
REUSE  
CODE



# Optimize Data



KEEP TOTAL DATA  
CONNECTORS PER APP  
UNDER 30



LIMIT SEQUENTIAL DATA  
OPERATIONS WITH  
CONCURRENT()

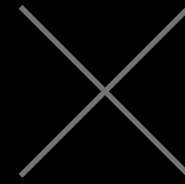


AVOID MULTIPLE CALLS  
TO YOUR DATA SOURCE  
WITH CACHING

# Understand Delegation



**DELEGABLE**  
GOOD! REQUEST PROCESSED  
AT THE DATA SOURCE THEN  
RETURNED TO APP.  
ALL DATA ACCOUNTED FOR



**NON-DELEGABLE**  
BAD - REQUEST CAN'T BE  
PROCESSED AT THE DATA  
SOURCE. MUST BE DONE IN  
THE APP.  
LIMIT TO 2K ROWS OF DATA



# Avoiding Delegation Issues

**number:** A numeric value for this min operation

Delegation warning. The "Filter" part of this formula might not work correctly on large data sets.

`Filter(Accounts, 'Credit Limit' <= Min('Annual Revenue', 2000))`

## Dataverse

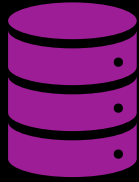
Item	Number [1]	Text [2]	Option Set	DateTime [3]	Guid
Filter	Yes	Yes	Yes	Yes	Yes
Sort	Yes	Yes	No	Yes	-
SortByColumns	Yes	Yes	No	Yes	-
Lookup	Yes	Yes	Yes	Yes	Yes
=, <>	Yes	Yes	Yes	Yes	Yes
<, <=, >, >=	Yes	Yes	No	Yes	-
And/Or/Not	Yes	Yes	Yes	Yes	Yes
StartsWith	-	Yes	-	-	-
IsBlank	Yes [4]	Yes [4]	No [4]	Yes [4]	Yes
Sum, Min, Max, Avg	Yes [5]	-	-	No	-

## SharePoint

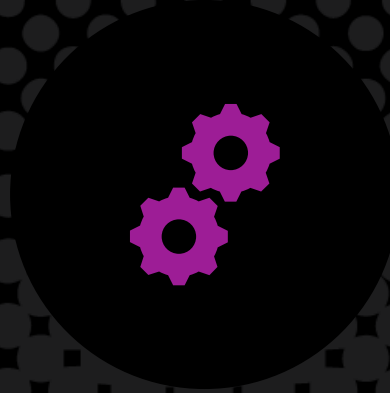
Item	Number	Text	Boolean	DateTime	Complex [1]
Filter	Yes	Yes	Yes	No [4]	Yes
Sort	Yes	Yes	Yes	Yes	No
SortByColumns	Yes	Yes	Yes	Yes	No
Lookup	Yes	Yes	Yes	No	Yes
=	Yes	Yes	Yes	No [4]	Yes
<, <=, <>, >, >=	Yes [2]	No	No	No	Yes
StartsWith	-	Yes	-	-	Yes
IsBlank	-	No [3]	-	-	No



# Reduce Controls



LIMIT # OF CONTROLS PER  
SCREEN <300

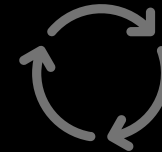
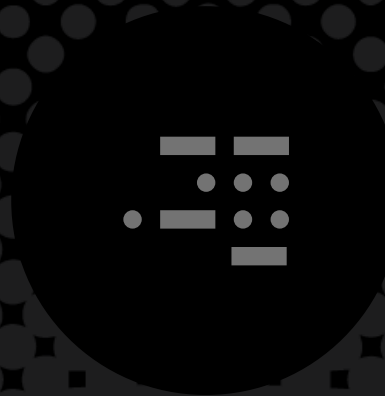


LIMIT # OF CONTROLS PER  
APP  
< 500



LIMIT COMPLEX CONTROL  
USE (PICTURES, CAMERA,  
PDF VIEWER, VIDEO, ETC)

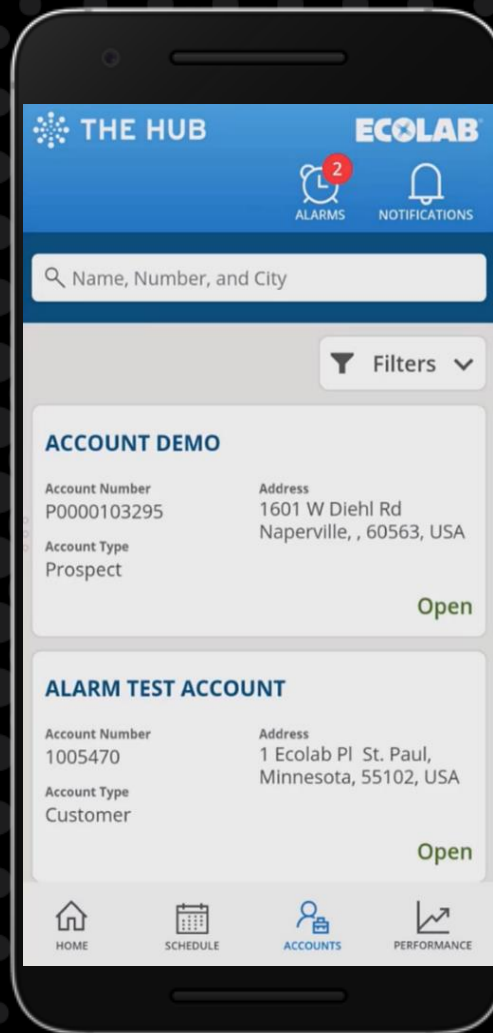
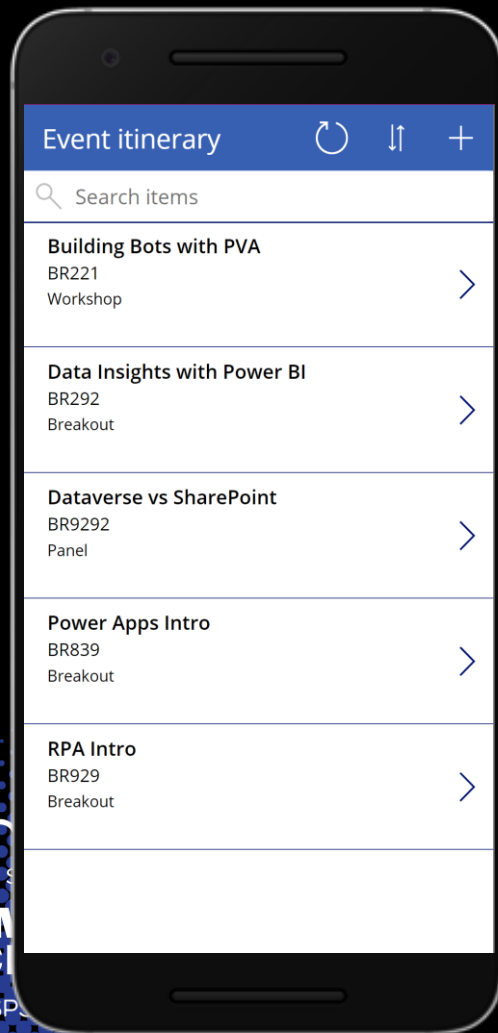
# Reuse Code



SCREENS - ONE SCREEN  
FOR NEW, EDIT AND VIEW  
FORM

CODE - REFERENCE  
OTHER CONTROLS  
INSTEAD OF COPYING THE  
SAME FORMULA

AVOID MULTIPLE LOOKS IN  
YOUR CODE WITH THE  
WITH() FUNCTION



# Sticky Apps are Appealing

inn  
CONS  
IN  
CI  
SP  
Own {backup}

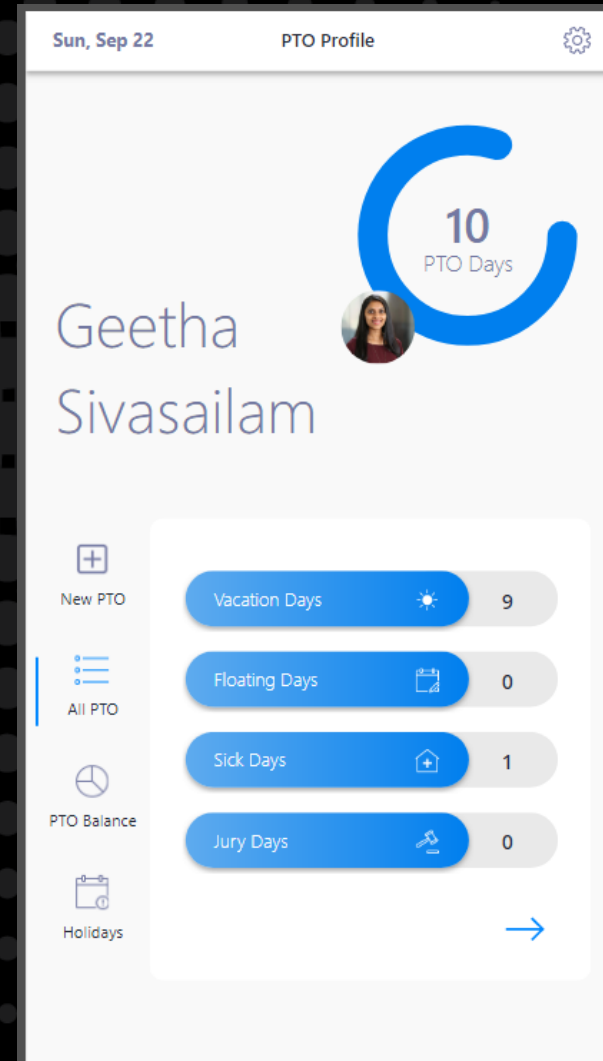
DYNAMICSCON  
LIVE



# Use the HTML Control

- Gives you more design flexibility

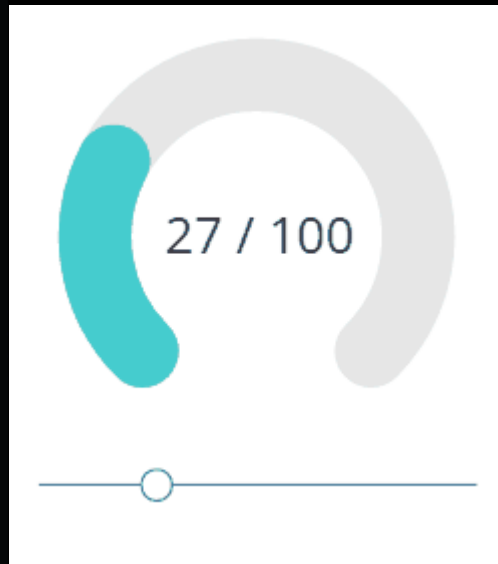
- Add additional CSS
- Box Shadows
- Gradients
- Text Shadows



# Experiment with SVG's

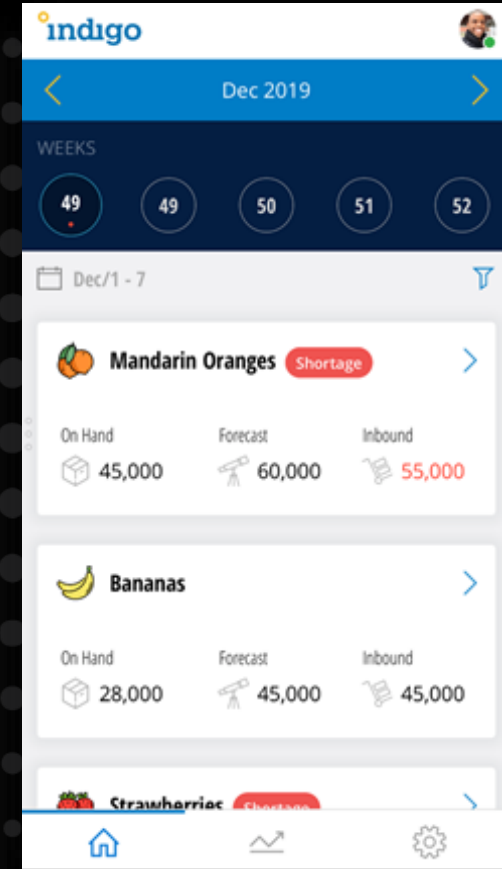
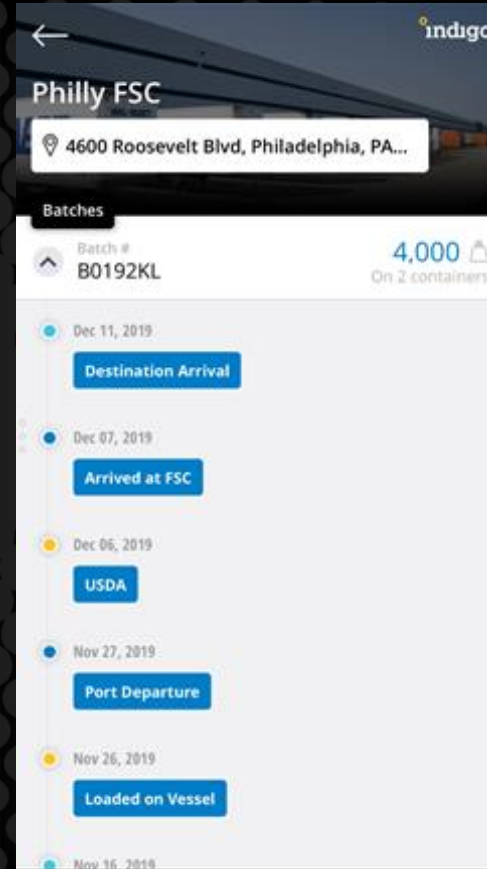
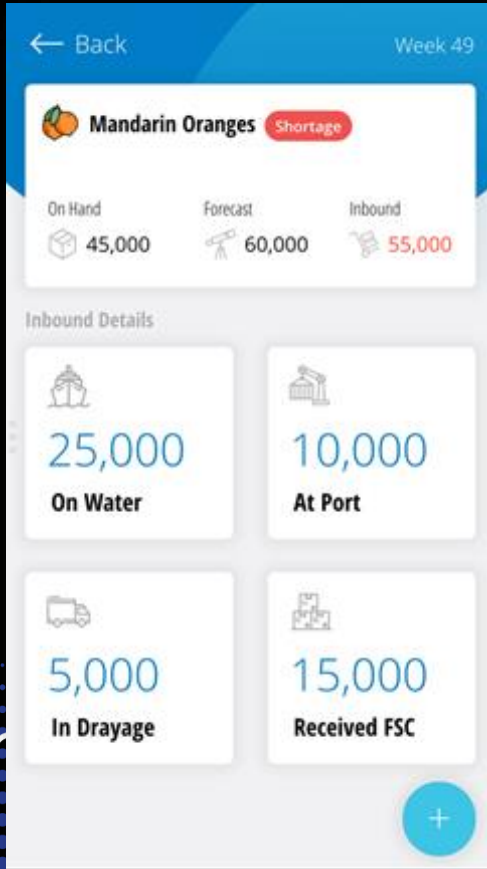
- Give you more image options

- More icons
- Interactive images



Visit <https://mapsvg.com/maps/>

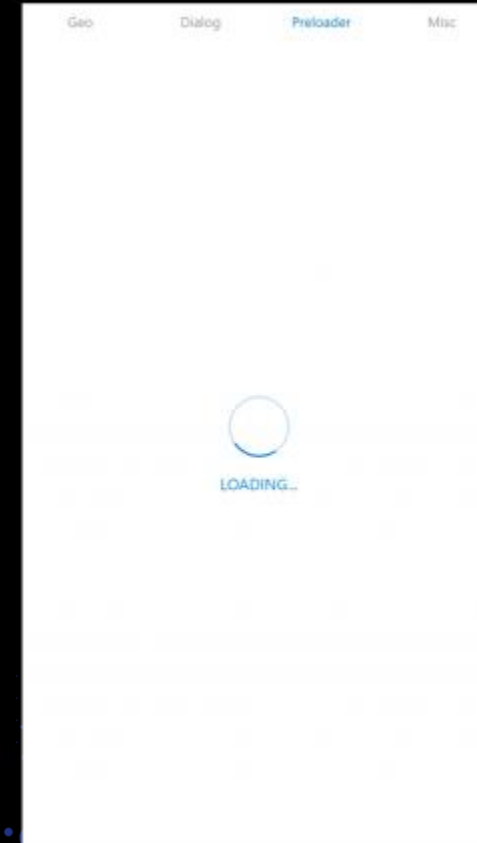
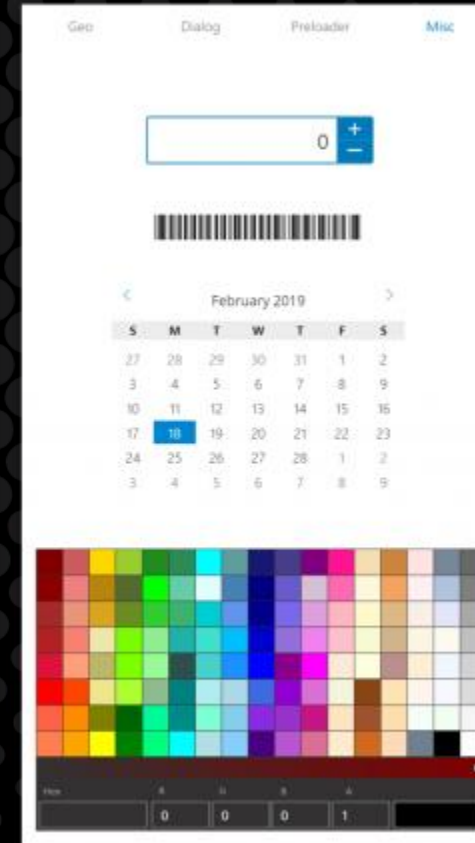
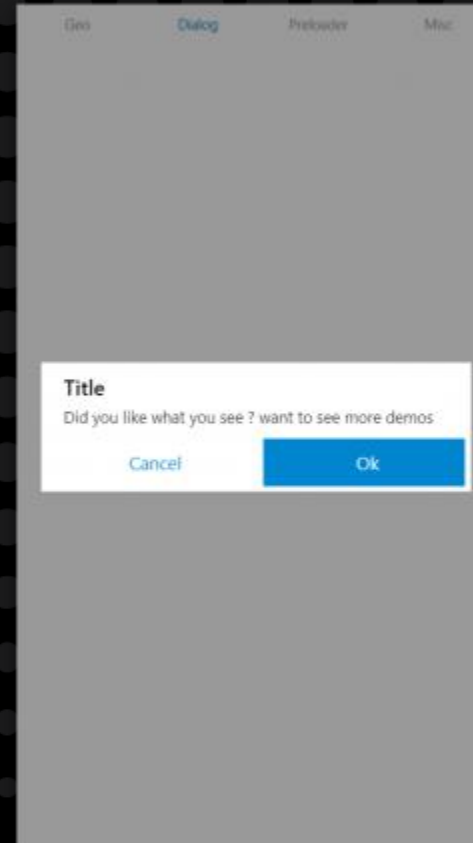
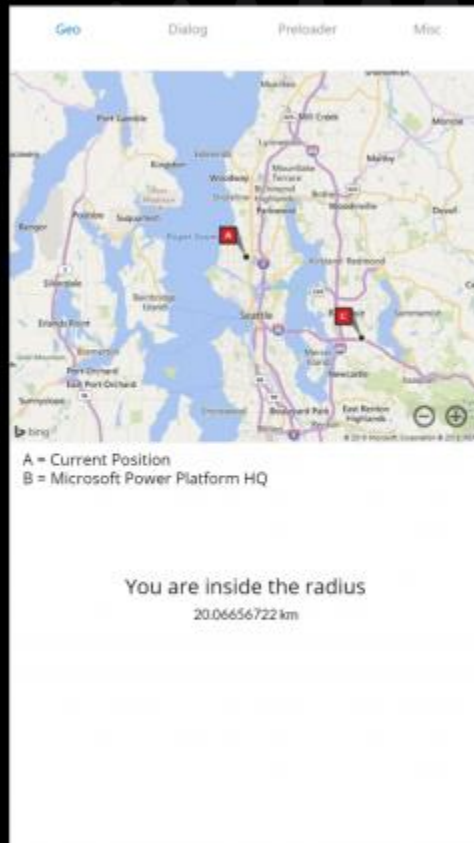
Baden-Württemberg	>	Bavaria	>
Brandenburg	>	Berlin	>
Bremen	>	Hamburg	>
Hesse	>	Mecklenburg-	>
Lower Saxony	>	North Rhine-Westphalia	>
Rhineland-Palatinate	>	Saarland	>
Saxony	>	Saxony-Anhalt	>
Schleswig-Holstein	>	Thuringia	>



# Standardize with Components

- Standardize and reuse common elements

- Headers
- Footers
- Menus
- Dialogs
- Loading

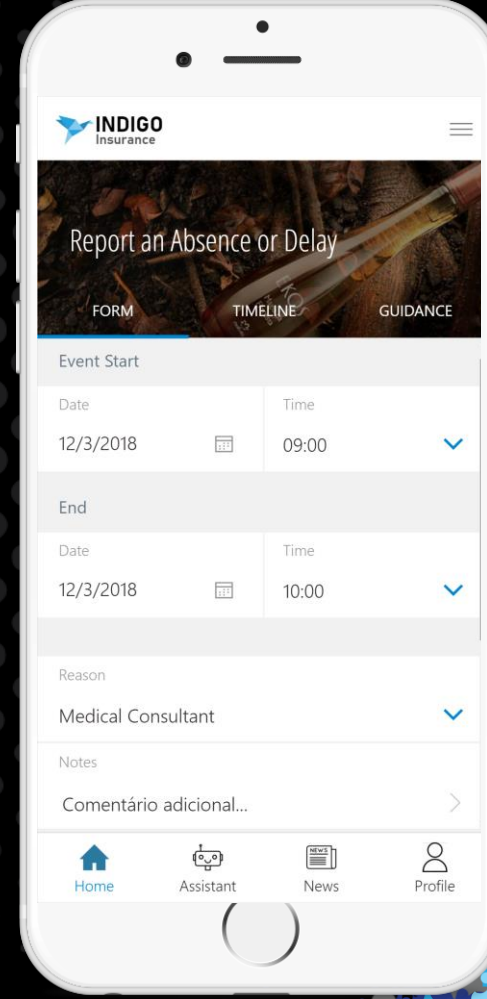
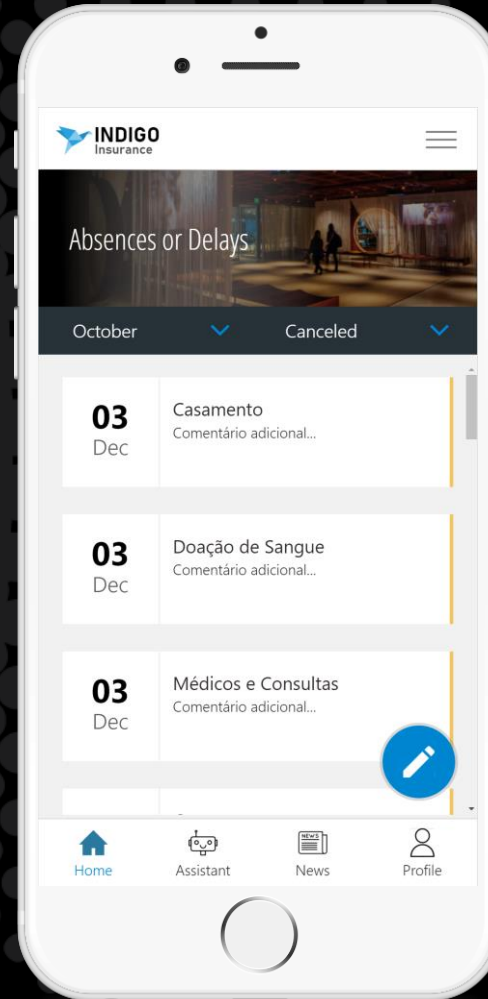
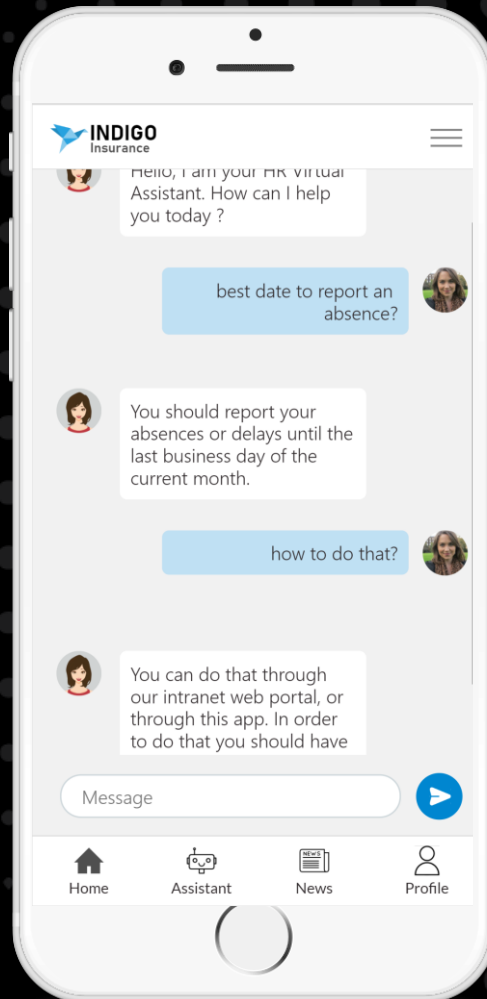
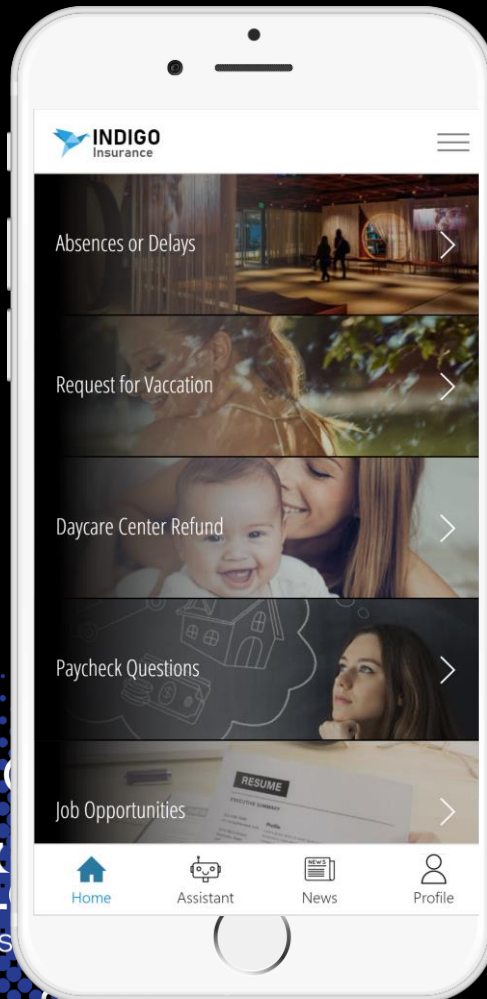




## Tab Navigator

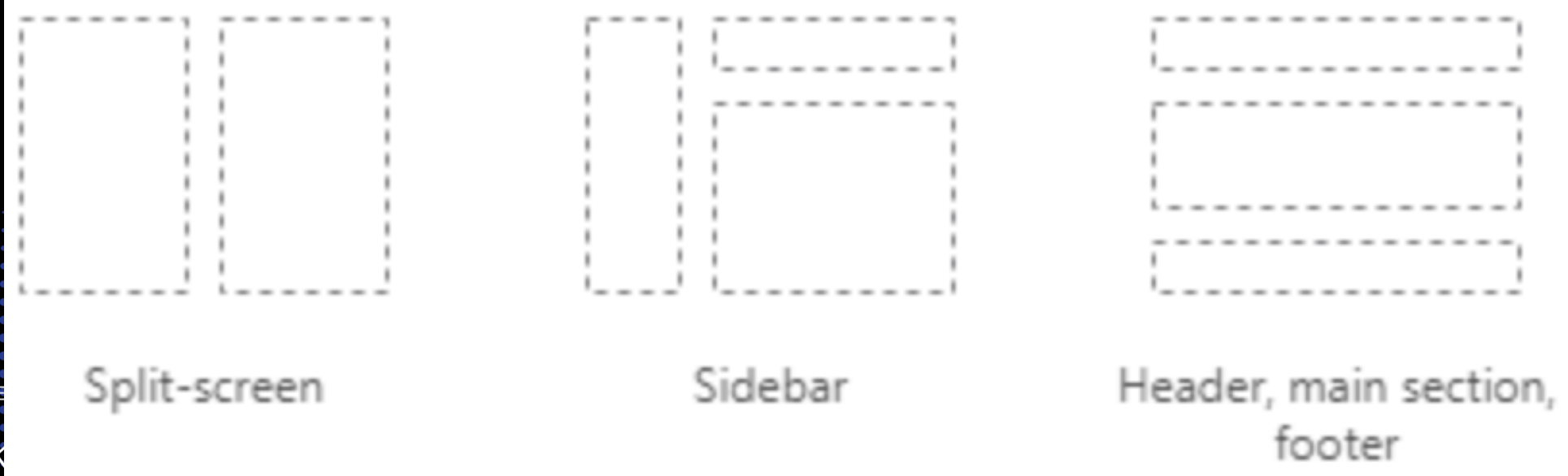


Color	<input type="text" value="A"/>
Selected Color	<input type="color" value="#0070C0"/>
Size	<input type="text" value="14"/>
IsVertical	<input type="checkbox" value="Off"/>
Styles	<input type="text" value="Table"/>
Items	<input type="text" value="Table"/>



# Make Your Apps Responsive

- Responsive = Design pattern where text, images, videos, controls, etc adapt to and are optimized for the device you're on (mobile, desktop, tablet)



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CLOUD

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Own {back

CSCON  
AE  
BUG

# Stay in the native app experience

Map

fx ▾ `Launch("https://www.google.com/maps/search/?api=1&query=33.5607113,-112.4102973")`

Email

fx ▾ `Launch("mailto:powerappsgo@crmsrv.net")`

SMS

fx ▾ `Launch("sms:+17195551212")`

Call

fx ▾ `Launch("tel:+17195551212")`

Web

fx ▾ `Launch("https://365.training")`

In  
co



SPS COMMERCE

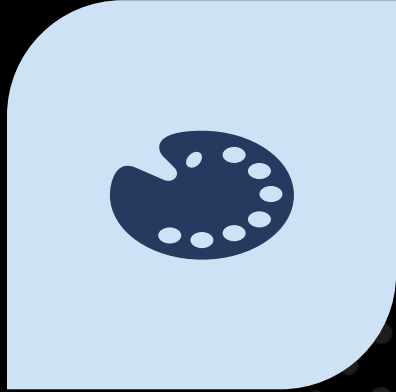
Own{backup}

DYNAMICS  
CON  
LIVE

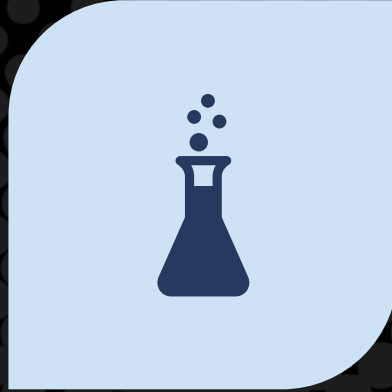
Aug



# Have consistent branding



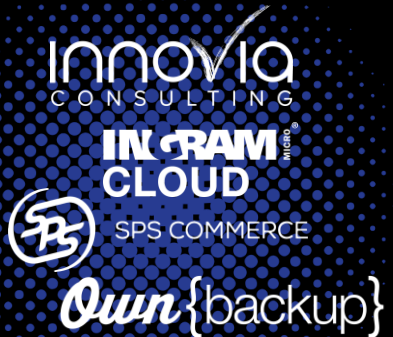
COLOR SCHEME



TYPOGRAPHY



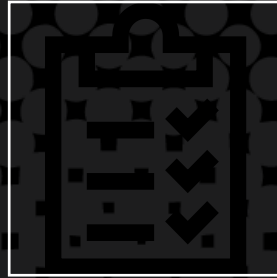
IMAGES



# Add Personalization





Welcome message



Filtered views




Configurable options  
(light mode/dark mode)



Hello, Yusuf!


04  
Open Expenses

02  
Active Reports


02  
Items To Approve




Notifications



Reports








Expenses



Settings

### OPEN EXPENSES

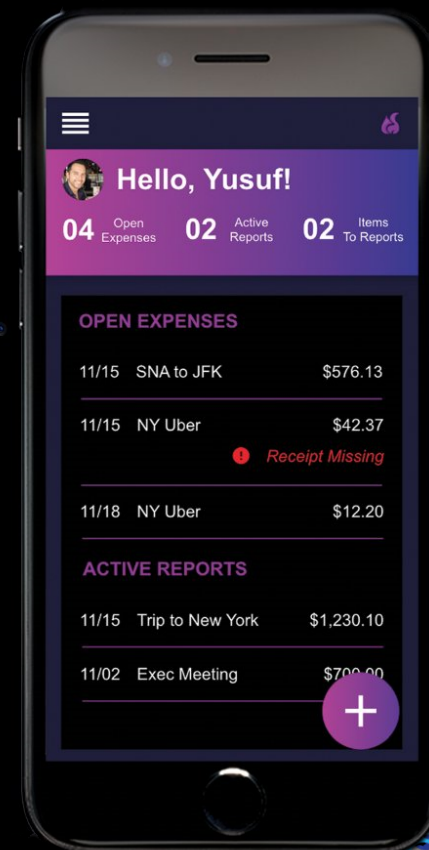
	11/15	SNA to JFK	\$576.13
	11/15	NY Uber	\$42.37
		 <i>Receipt Missing</i>	
	11/18	NY Uber	\$12.20
	11/18	Hilton Dinner	\$57.12

### ACTIVE REPORTS

11/15	Trip to New York	\$1,230.10
11/02	Exec Meeting	\$700.00

### ITEMS TO APPROVE

11/04	Gustavo M	\$800.00
11/10	Taylor K	\$235.25




**MICSCON**  
**ME**

# Bonus: Plan for Discoverability

Discoverability in the context of UX design means planning and executing best practices in app branding and categorization which will **enable users to Discover application value** amongst the larger cloud of apps available to them.

**General**


Name

Inclusion Movement 



Description

Moving us past JUST diversity... to inclusion. To provide feedback or get support please email supportInclusion@microsoft.com


App icon



Icon

 Edit 

Background fill

 #fb653c

## Icon Usage Idea



Green Triangle =  
Help Desk Supported



Blue Rectangle =  
Departmental Support



None =  
Maker Supported

**DYNAMICS CON  
LIVE**



# Resources

[April's YouTube: https://youtube.com/c/aprildunnam](https://youtube.com/c/aprildunnam)

[Create accessible canvas apps - Power Apps | Microsoft Docs](#)

[HOW TO: Create Featured and Hero PowerApps to prom... - Power Platform Community \(microsoft.com\)](#)  
[PowerApps Discoverability in the Enterprise | Microsoft Power Apps](#)

[What is Cognitive Load? | Interaction Design Foundation \(IxDF\) \(interaction-design.org\)](#)

[Design Principles: Visual Weight And Direction — Smashing Magazine](#)  
[UX Patterns: Control Positioning | Microsoft Power Apps](#)

[Building responsive canvas apps - Power Apps | Microsoft Docs](#)

[Overview of performance insights in Power Apps - Power Apps | Microsoft Docs](#)

[Power Apps Code Review Tool | Microsoft Power Apps](#)

[Diagnosing performance issues in a Power Automate project - Power Automate | Microsoft Docs](#)

[Power Apps for Teams](#)

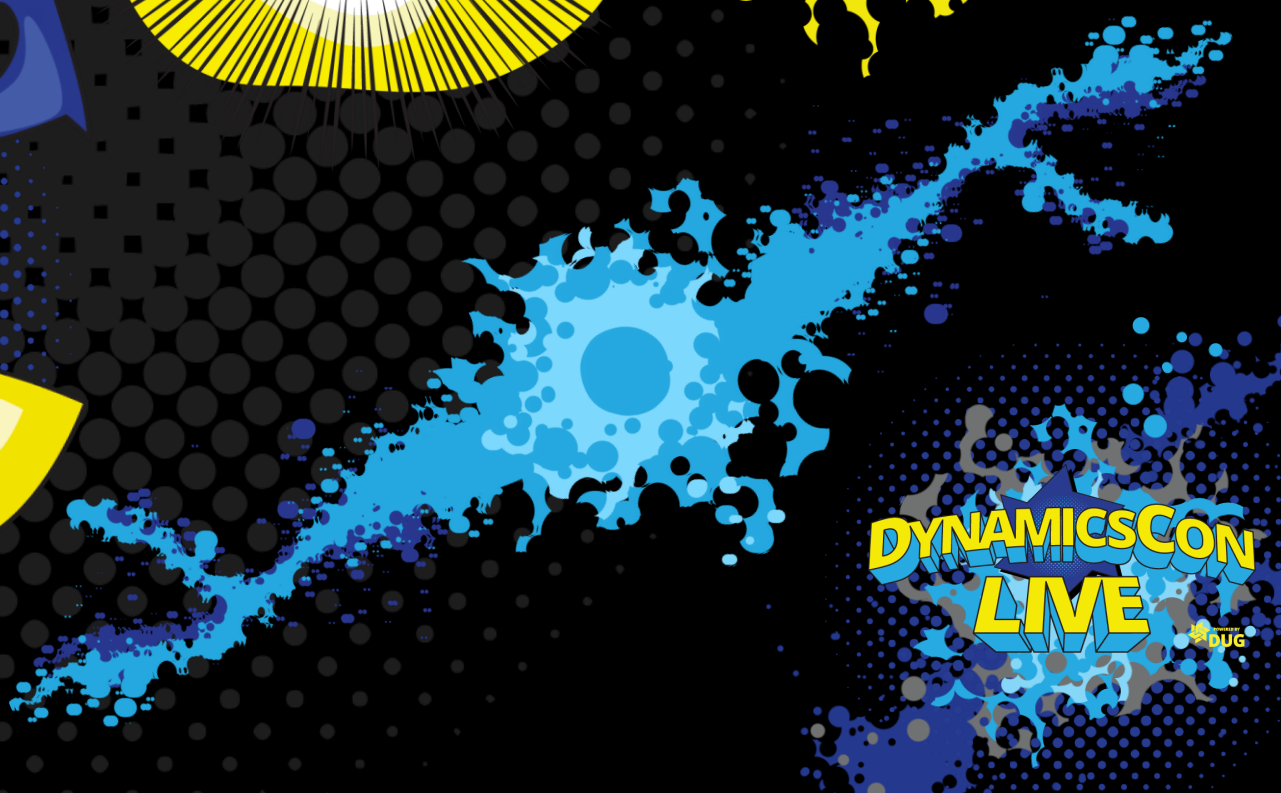
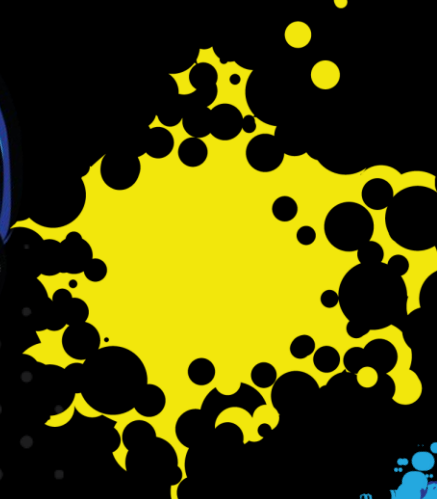
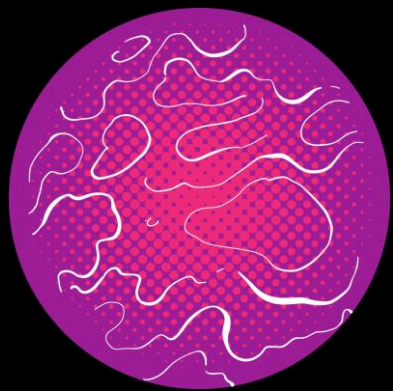
[Design your app with advanced UI components - Teams | Microsoft Docs](#)

<https://aka.ms/COEStarterKitComponents>



A graphic design for a transition slide. The background is black with a dense pattern of small, light gray dots. A large, white, jagged shape, resembling a lightning bolt or a stylized 'Z', is outlined in a bright blue color. The text 'TRANSITION SLIDE' is written in a bold, yellow, sans-serif font with a blue outline, positioned on the right side of the white shape. In the bottom left corner, there is a cluster of blue and white dots of varying sizes, creating a splatter or bubble effect.

**TRANSITION SLIDE**



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