



# Low-Code No-Code

A Developers Point of View

*Hello my name is Mark*

-  Mark Allibone
-  @mallibone
-  Rey Technology
-  <https://mallibone.com>
-  <https://nullpointers.io>



# What is Low Code No Code

```
types.Operator):
    X mirror to the selected object.mirror_mirror_x"
    or X"
```



**WE'RE  
HIRING**

**LOW CODE HERE & LOW CODE THERE**



imgflip.com

**LOW CODE EVERYWHERE**

@mallibone

A photograph of a woman with long brown hair, wearing a blue lace-trimmed top and a tan strap bag, looking over her shoulder with a neutral expression. Two men are standing behind her, slightly out of focus. The man on the left is wearing a green polo shirt. The man on the right is wearing a grey t-shirt. The background is a blurred indoor setting.

**LOW CODE  
& AI**

**DEVS**

**MANAGEMENT**

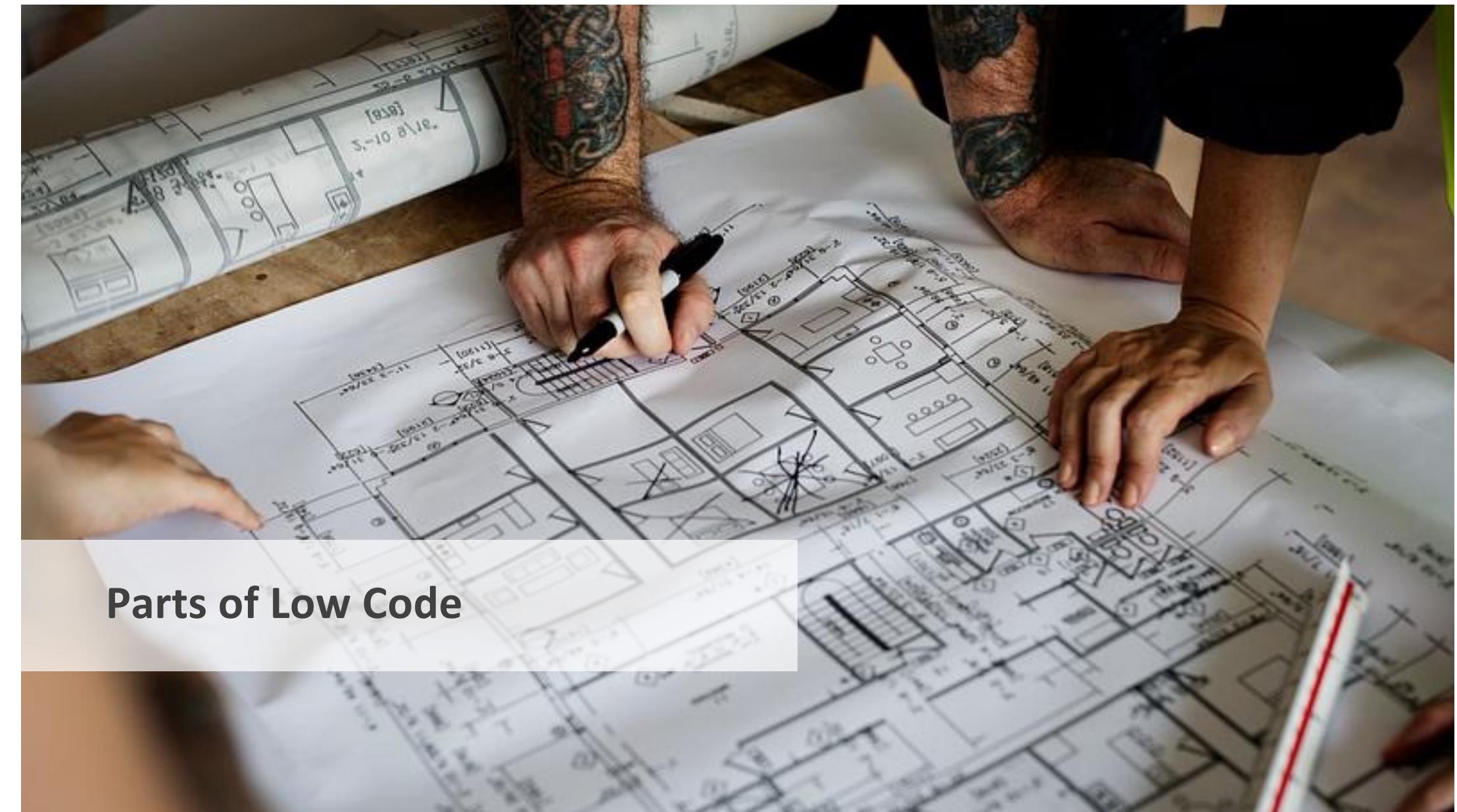


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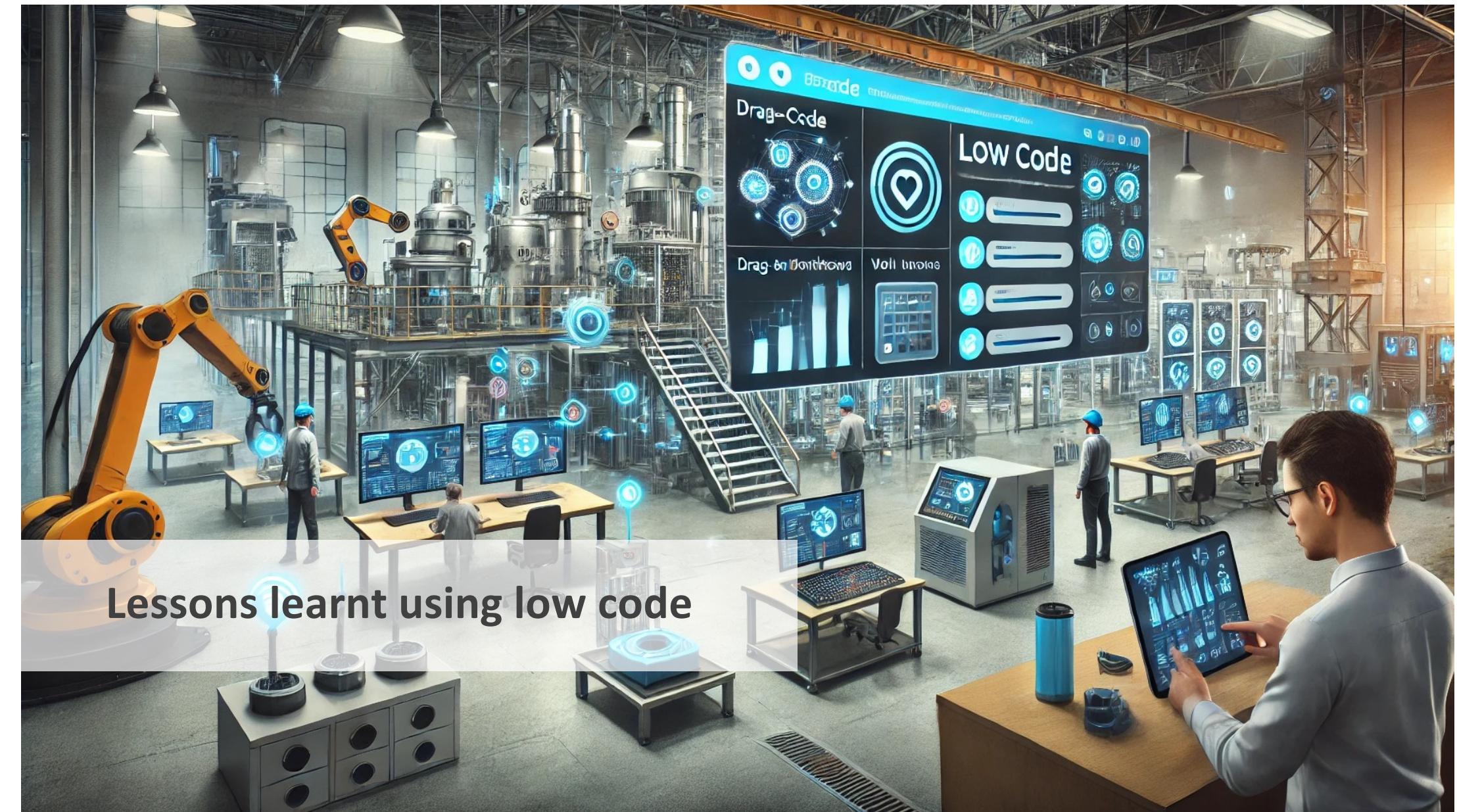
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# Why Low Code





## Parts of Low Code



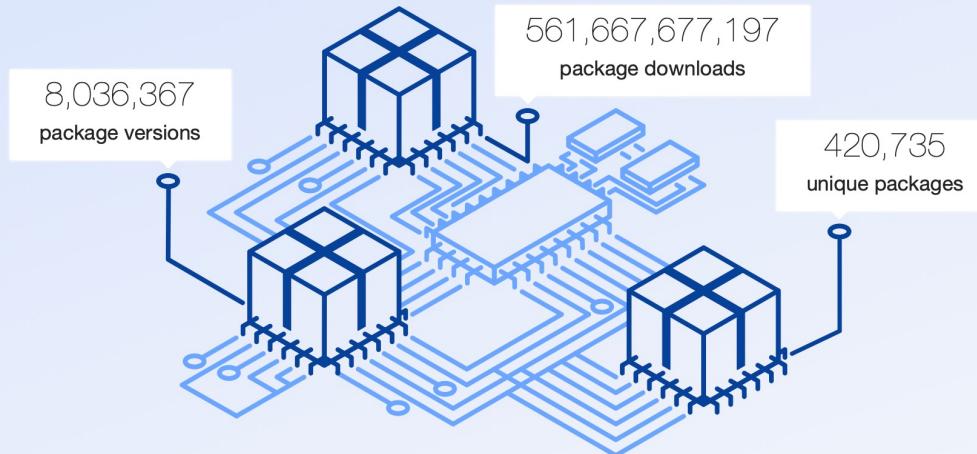
Lessons learnt using low code



**Industrial IoT**

**IIOT**  
INDUSTRIAL  
INTERNET  
OF THINGS

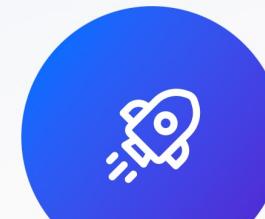
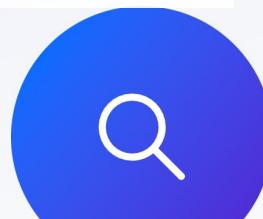
# Create .NET apps faster with NuGet

## What is NuGet?

## Write your own Libraries

NuGet is the package manager for .NET. The NuGet client tools provide the ability to produce and consume packages. The NuGet package repository used by all package authors and consumers.



Create your own  
framework





Creating a product

Annual Financial Report1

Search (Cmd + Ctrl + U)

Comments Share

Home Insert Draw Page Layout Formulas Data Review View Automate

Cut Copy Paste Format

Euphemia (Headin... 10 A A Wrap Text General Conditional Formatting Format as Table Cell Styles Insert Delete Format Auto-sum Fill Sort & Filter Find & Select Sensitivity Add-ins Analyse Data Add-In starter

A1 fx

ANNUAL FINANCIAL REPORT  
YOUR COMPANY NAME

2024

Select the Financial Report year to display.

Select the metrics for your report on the Key Metric Settings

REVENUE £180'584 0%  
OPERATING PROFIT £73'426 -5%  
INTEREST £3'789 14%  
DEPRECIATION £5'547 9%  
NET PROFIT £67'475 2%

ALL METRICS

METRIC	THIS YEAR (2024)	LAST YEAR (2023)	% CHANGE	5-YEAR TREND
REVENUE	£180'583.88	£180'026.64	0%	
OPERATING EXPENSES	£94'419.46	£80'883.33	17%	
OPERATING PROFIT	£73'426.00	£77'317.84	-5%	
DEPRECIATION	£5'546.89	£5'068.42	9%	
INTEREST	£3'789.47	£3'338.31	14%	
NET PROFIT	£67'474.86	£66'722.10	2%	
TAX	£31'408.26	£29'424.53	7%	
PROFIT AFTER TAX	£50'247.68	£42'438.20	18%	
METRIC 1	£19.96	£16.79	19%	
METRIC 2	£26.02	£21.84	19%	
METRIC 3	£31.09	£26.40	18%	
METRIC 4	£14.92	£14.59	2%	
METRIC 5	£1.04	£1.00	3%	
METRIC 6	£0.34	£0.31	12%	

Excel



Creating a product

# The Process



# The Process at Customer X



# The Process at every Customer



Azure DevOps

Contoso / AdventureWorks Mobile / Boards / FabrikamFiber

New Active 5/5 Staging 15/5 Deployed 3/3

## FabrikamFiber Board

+ New item

Home page (selected room) - Kat Larson (Design)

Home page (no room selected) - Carlos Slattery (Spike, Xamarin)

Mobile (Spike) - Celeste Burton (Design)

Hotels filter page - Carlos Slattery (Xamarin)

Top page controls - Celeste Burton (ML, Xamarin)

Entry + validations - Carole Poland

Footer - Cecil Folk (ML, Xamarin)

Guests page - Carole Poland (ML, Xamarin)

Search component complex features - Cecil Folk (General, Xamarin)

Navigation menu - Carlos Slattery (AL, Xamarin)

NFC open door - Cecil Folk (Spike, Xamarin)

Login page - Celeste Burton (Blocked, Xamarin)

Code of Conduct - Celeste Burton (General, Xamarin)

Room Tab - Celeste Burton (Rooms [Detail])

Ambient settings - Carlos Slattery (Xamarin)

Map filter - Carole Poland (General, Room [List])

Notifications list - Carole Poland (General)

Adapt some parts of UI to UWP for Desktop - Carole Poland (Blocked, Xamarin)

Hotel reviews page - Celeste Burton (Rooms [Detail])

Project settings



**Process flexibility**

Deploy - Chrome [DC01.SHEBANGTHEC]

Computer Configuration

- Policies
  - Software Settings
  - Windows Settings
  - Administrative Templates: Policies
    - Control Panel
    - Network
    - Printers
    - Server
    - Start Menu and Taskbar
  - System
    - Access-Denied Assistant
    - App-V
    - Audit Process Creation
    - Device Guard
    - Device Installation
    - Device Redirection
    - Disk NV Cache
    - Disk Quotas
    - Distributed COM
    - Driver Installation
    - Early Launch Antimalware
    - Enhanced Storage Access
    - File Classification Infrastructure
    - File Share Shadow Copy
    - Filesystem
    - Folder Redirection
  - Group Policy
    - Logging and tracing
    - Internet Communications
    - iSCSI
    - KDC
    - Kerberos
    - Locale Services
    - Logon
    - Mitigation Options
    - Power Management
    - Recovery
    - Remote Assistance
    - Remote Procedure Call
    - Removable Storage Access
    - Scripts
    - Session Management

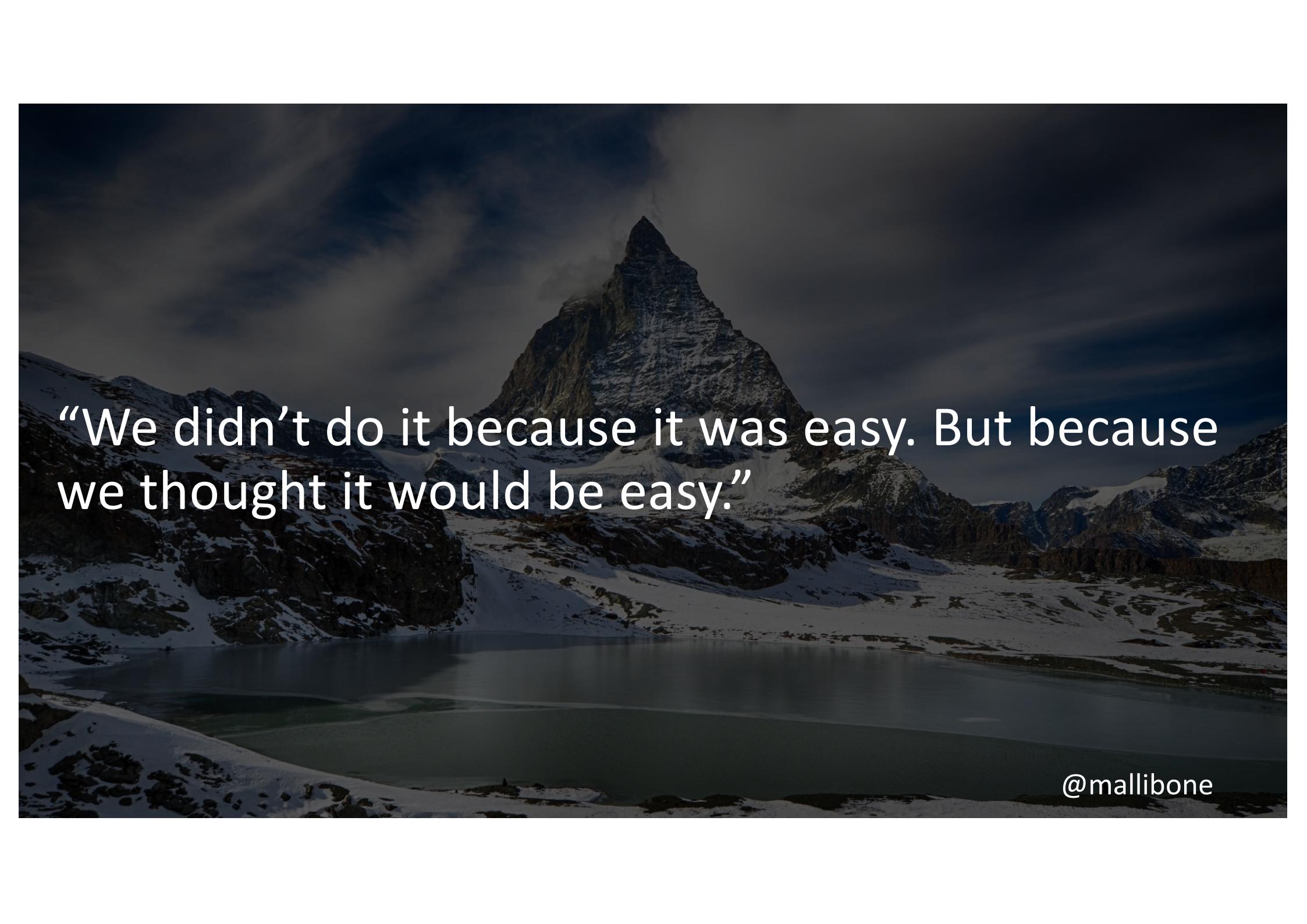
Group Policy

Specify startup policy processing wait time

Edit policy setting

Setting	State	Comment
Configure Environment preference extension policy processing	Not configured	No
Configure Files preference extension policy processing	Not configured	No
Configure Folder Options preference extension policy processing	Not configured	No
Enable Group Policy Caching for Servers	Not configured	No
Remove users' ability to invoke machine policy refresh	Not configured	No
Set Group Policy refresh interval for computers	Not configured	No
Set Group Policy refresh interval for domain controllers	Not configured	No
<b>Specify startup policy processing wait time</b>	Not configured	No
Specify workplace connectivity wait time for policy processing	Not configured	No

peacock



“We didn’t do it because it was easy. But because we thought it would be easy.”

@mallibone



**WELL HELLO**

**WE NEED TO TALK**

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**The challenge**



Enabling Domain Experts



# Requirements

# Researching



## CODE RANT

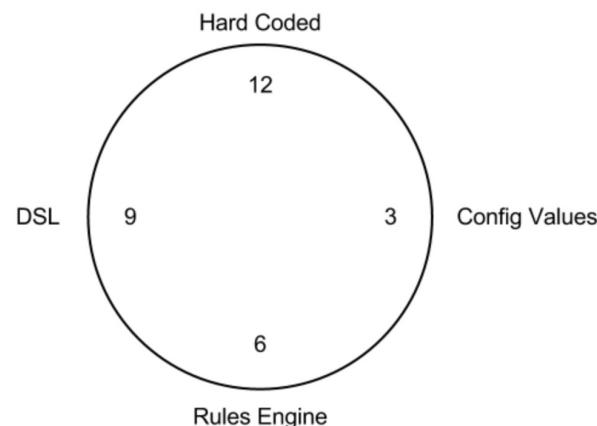
<https://mikehadlow.blogspot.com/2012/05/configuration-complexity-clock.html>

MONDAY, MAY 07, 2012

### The Configuration Complexity Clock

When I was a young coder, just starting out in the big scary world of enterprise software, an older, far more experienced chap gave me a stern warning about hard coding values in my software. "They *will* have to change at some point, and you don't want to recompile and redeploy your application just to change the VAT tax rate." I took this advice to heart and soon every value that my application needed was loaded from a huge .ini file. I still think it's good advice, but be warned, like most things in software, it's good advice *up to a point*. Beyond that point lies pain.

Let me introduce you to my 'Configuration Complexity Clock'.



This clock tells a story. We start at midnight, 12 o'clock, with a simple new requirement which we quickly code up as a little application. It's not expected to last very long, just a stop-gap in some larger strategic scheme, so we've hard-coded all the application's values. Months pass, the application becomes widely used, but there's a problem, some of the business values change, so we find ourselves rebuilding and re-deploying it just to change a few numbers. This is obviously wrong. The solution is simple, we'll move those values out into a configuration file, maybe some appsettings in our App.config. Now we're at 2 on the clock.

Time passes and our application is now somewhat entrenched in our organisation. The business continues to evolve and as it does, more values are moved to our configuration file. Now appsettings are no longer sufficient, we have groups of values and hierarchies of values. If we're good, by now we will have moved our configuration into a dedicated XML schema that gets de-serialized into a configuration model. If we're not so good we might have shoe-horned repeated and multi-dimensional values into some strange tilda and pipe separated strings. Now we're at 4 or 5 on the clock.

More time passes, the irritating 'chief software architect' has been sacked and our little application is now core to our organisation. The business rules become more complex and so does our configuration. In fact there's now a considerable learning curve before a new hire can successfully carry out a deployment. One of our new hires is a very clever chap, he's seen this situation before. "What we need is a business rules engine" he declares. Now this looks promising. The configuration moves from its XML file into a database and has its own specialised GUI. Initially there was hope that non-technical business users would be able to use the GUI to configure the application, but that turned out to be a false hope; the mapping of business rules into the engine requires a level of expertise that only some members of the development team possess. We're now at 6 on the clock.

CODE RANT

## Hire Me!

Notebook, thoughts out loud, learning in public, misunderstandings, mistakes, undiluted opinions. I'm Mike Hadlow, an itinerant developer. I live near Brighton on the south coast of England.

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BLOG ARCHIVE

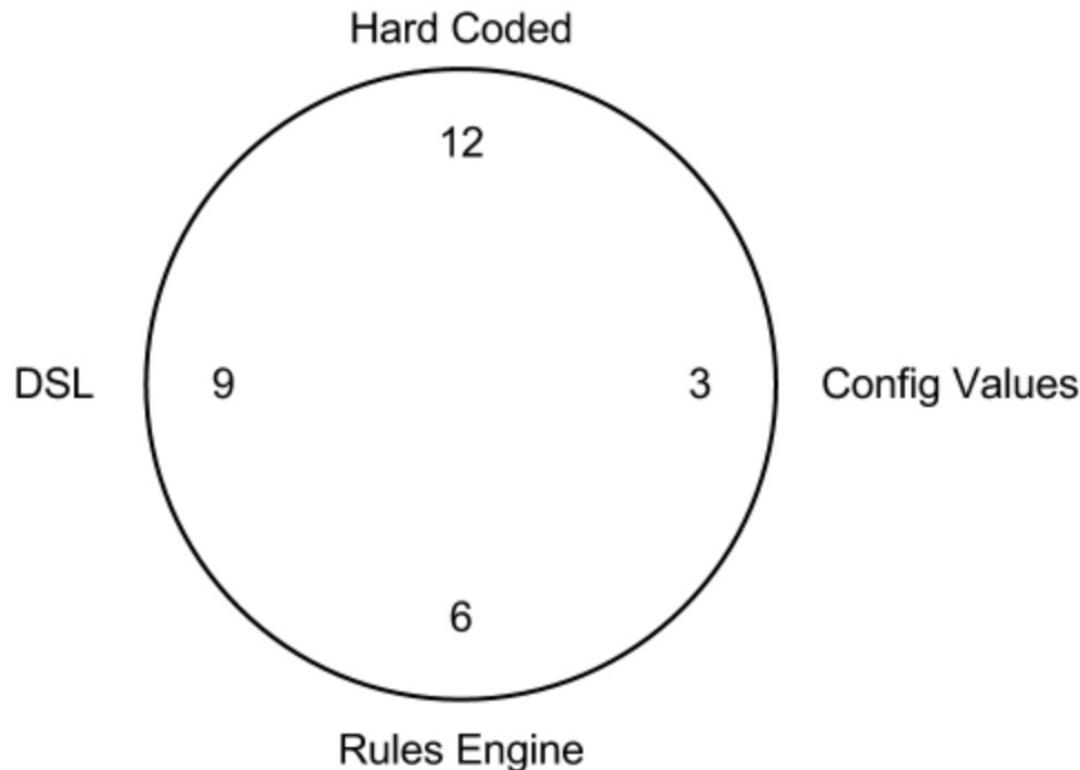
- 2021 (1)
- 2020 (3)
- 2019 (1)
- 2018 (5)
- 2016 (1)
- 2015 (7)
- 2014 (15)
- 2013 (38)
- ▼ 2012 (34)
  - December (5)
  - November (5)
  - October (2)
  - September (4)

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rant developer. I live near

You are free to take it and use it  
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[follow me on Twitter](#)

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## Scripting and DSL

```
178     'tax' =>
179     'total' =>
180     $old_taxes = $taxes;
181     $lpa_tax = array();
182     $sort_order = array();
183
184     $results = $this->model_extension_extension->getExtensions('total');
185
186     foreach ($results as $key => $value) {
187         if (isset($value['code'])) {
188             $code = $value['code'];
189         } else {
190             $code = $value['key'];
191         }
192
193         $sort_order[$key] = $this->config->get($code . '_sort_order');
194
195     }
196
197     array_multisort($sort_order, SORT_ASC, $results);
198
199     foreach ($results as $result) {
200         if (isset($result['code'])) {
201             $code = $result['code'];
202         } else {
203             $code = $result['key'];
204         }
205
206         if ($this->config->get($code . '_status')) {
207             $this->load->model('extension/total/' . $code);
208
209             if ($this->config->get($code . '_load')) {
210                 $this->load->model('extension/total/' . $code)->getTotal($code);
211
212                 $total_data = [
213                     'label' => $this->load->model('extension/total/' . $code)->getLabel($code),
214                     'value' => $this->load->model('extension/total/' . $code)->getValue($code),
215                     'code' => $code
216                 ];
217
218                 if (!empty($totals[count($totals) - 1])) {
219                     $totals[count($totals) - 1]['code'] = $code;
220
221                 }
222
223                 $tax_difference = 0;
224
225                 foreach ($taxes as $tax_id => $value) {
```

```
355     Carousel.prototype.getItemForDirection = function (direction, active) {
356         this.$items = item.$
357         return this.$items.index(item || 0);
358     }
359
360     Carousel.prototype.getItemIndex = function (direction) {
361         var delta = direction == 'prev' ? -1 : 1;
362         var activeIndex = this.getItemIndex(active);
363         var newIndex = (activeIndex + delta) % this.$items.length;
364         return this.$items.eq(newIndex);
365     }
366
367     Carousel.prototype.to = function (pos) {
368         var that = this;
369         var activeIndex = this.getItemIndex(this.$active = this.$element.find('.item.active'));
370
371         if (pos > (this.$items.length - 1) || pos < 0) return;
372
373         if (this.sliding) return this.$element.one('slid.bs.carousel', function () { that.to(pos); });
374         if (activeIndex == pos) return this.pause().cycle();
375
376         return this.slide(pos > activeIndex ? 'next' : 'prev', this.$items.eq(pos));
377     }
378
379     Carousel.prototype.pause = function (e) {
380         e || (this.paused = true);
381
382         if (this.$element.find('.next, .prev').length && $.support.transition) {
383             if (this.$element.find('.next, .prev').length && $.support.transition.end) {
384                 this.$element.trigger($.support.transition.end);
385                 this.cycle(true);
386             }
387
388             this.interval = clearInterval(this.interval);
389         }
390     }
391
392     Carousel.prototype.cycle = function (e) {
393         e || (this.paused = false);
394
395         if (this.$element.find('.next, .prev').length && $.support.transition) {
396             if (this.$element.find('.next, .prev').length && $.support.transition.end) {
397                 this.$element.trigger($.support.transition.end);
398                 this.cycle(true);
399             }
400
401             this.interval = setInterval(function () { that.to(that.$active.next().index()); }, this.interval);
402         }
403     }
404
405     Carousel.prototype.next = function () {
406         this.cycle();
407     }
408
409     Carousel.prototype.prev = function () {
410         this.cycle();
411     }
412
413     Carousel.prototype.destroy = function () {
414         this.$element.removeClass('carousel');
415         this.$element.removeData('bs.carousel');
416         this.$element.off('.bs.carousel');
417         this.$items = null;
418     }
419
420     Carousel.carousel = function (el, config) {
421         var $el = $(el);
422
423         if (!$el.length) return;
424
425         var carousel = new Carousel($el, config);
426
427         $el.data('bs.carousel', carousel);
428
429         if (config.interval) {
430             carousel.cycle();
431         }
432
433         return carousel;
434     }
435
436     $(document).on('click.bs.carousel', '[data-target]', function (e) {
437         var $target = $(e.target);
438
439         if ($target.is('[data-target]')) {
440             var $parent = $target.parent();
441
442             if ($parent.hasClass('carousel')) {
443                 var $carousel = $parent;
444
445                 if ($target.is('[data-slide="prev"]')) {
446                     $carousel.carousel('prev');
447                 } else if ($target.is('[data-slide="next"]')) {
448                     $carousel.carousel('next');
449                 }
450
451                 e.preventDefault();
452             }
453         }
454     });
455
456     $(window).on('load', function () {
457         var $body = $(document.body);
458
459         if ($body.hasClass('loading')) {
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1458            
```

App Direktzugriff...

< Zurück

## Workflow Auftrag starten (Montageanleitung)

USER INTERFACE

Navigation

Screens

APP EINSTELLUNGEN

Einstellungen

DATENMODELL

Datenmodell bearbeiten

WORKFLOWS

Workflowübersicht

Scheduler



Steuerung: Bedingung

Bedingung:  
"%Workflow Parameter.auftragId%" == ""

Wenn Ja (true)



X<sub>1</sub>

status

Wort:  
"keine Auftragsnummer eingegeben"

Wenn Nein (false)



Daten: Auftrag laden



Daten: Laden



iDIP: Asset Parameter  
schreiben

AssetKey:  
%Workflow Parameter.arbeitsstationId%

AssetType:  
Montagegestation

Parameter:  
fabrikatID

Value:  
%Daten: Auftrag laden.Datensätze[0].fabrikat.id%

iDIP: Asset Parameter  
schreiben 1

AssetKey:  
%Workflow Parameter.arbeitsstationId%

AssetType:  
Montagegestation

### Vorhandene Variablen

Suche...

- Workflow Parameter
- Daten: Auftrag laden
- Daten: Laden
- Benutzerdefiniert

### Daten: Auftrag laden

Name:	Auftrag laden
Anmerkung:	
Komponente:	Daten: Laden
Beschreibung:	Lädt einen oder mehrere Datensätze
Farbe:	#c4e2ff
<input checked="" type="checkbox"/> Kontextpersistierung	

### Komponenten Parameter:

Name:	App
Name:	Tabelle
Name:	Zusatzdaten
Name:	Select
Name:	Filter
Name:	Sortieren nach
Name:	Skip

# Building Blocks

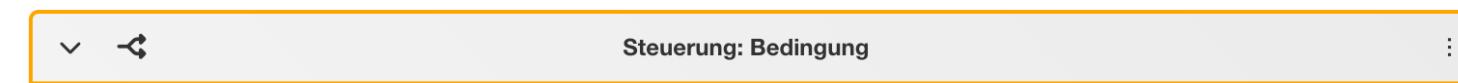
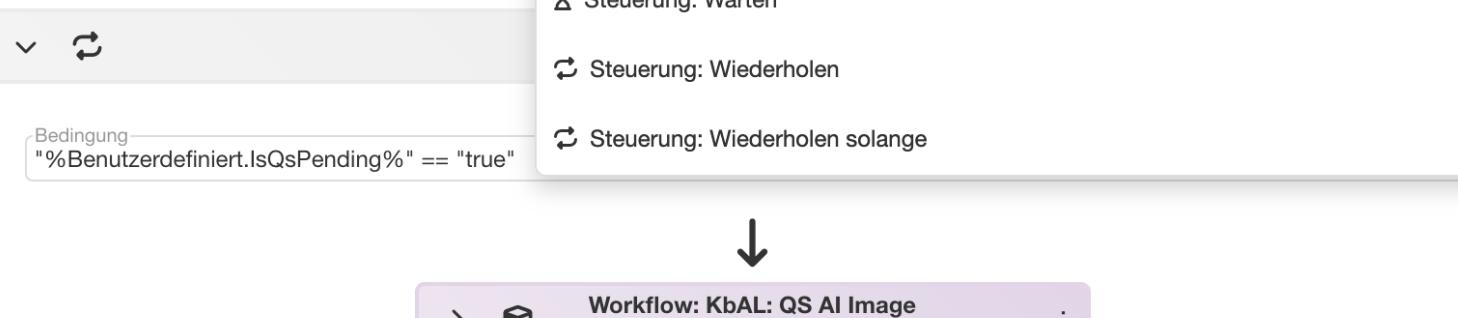
# Control Blocks

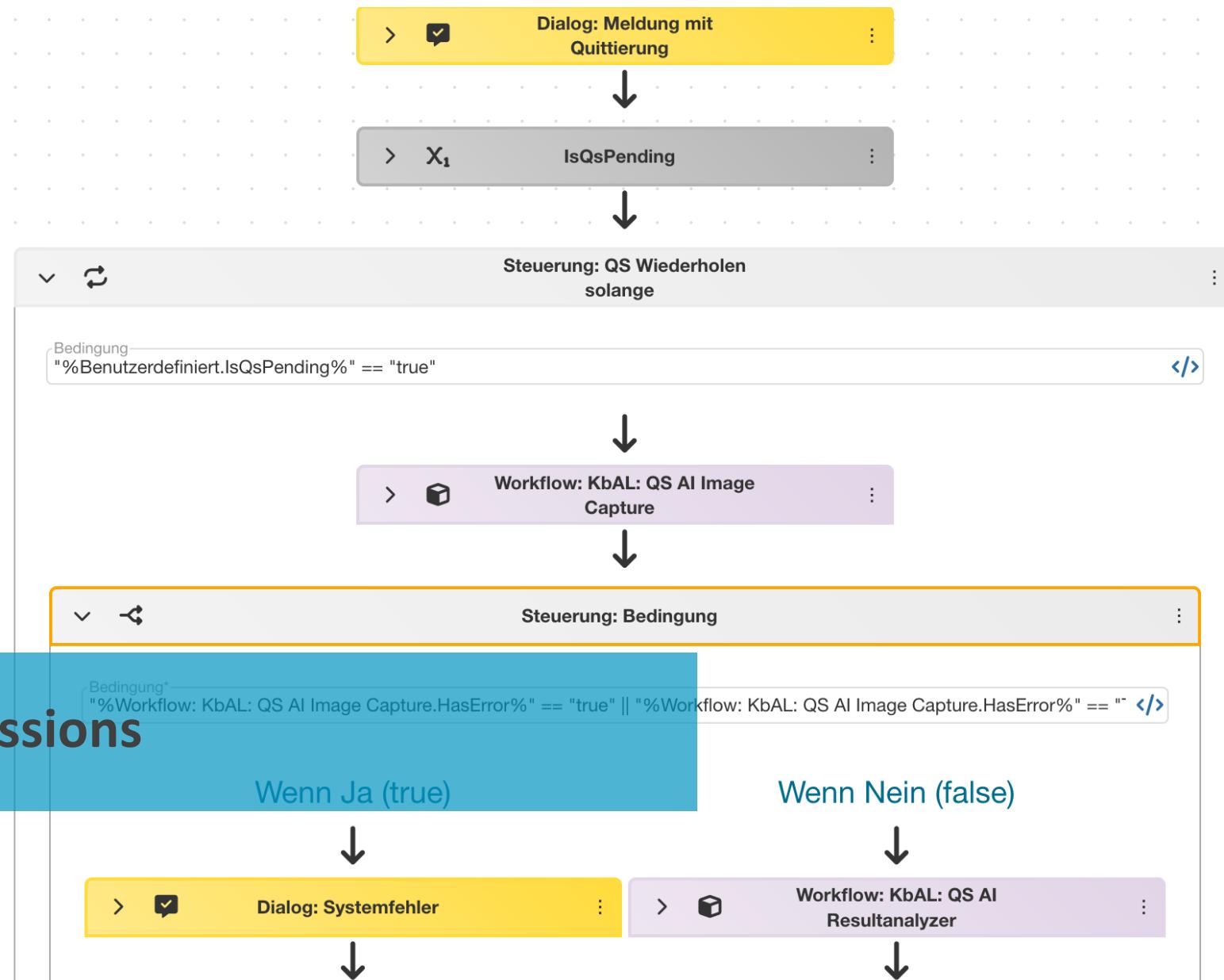
Wenn Ja (true)

Wenn Nein (false)

> Dialog: Systemfehler

> Workflow: KbAL: QS AI Resultanalyser

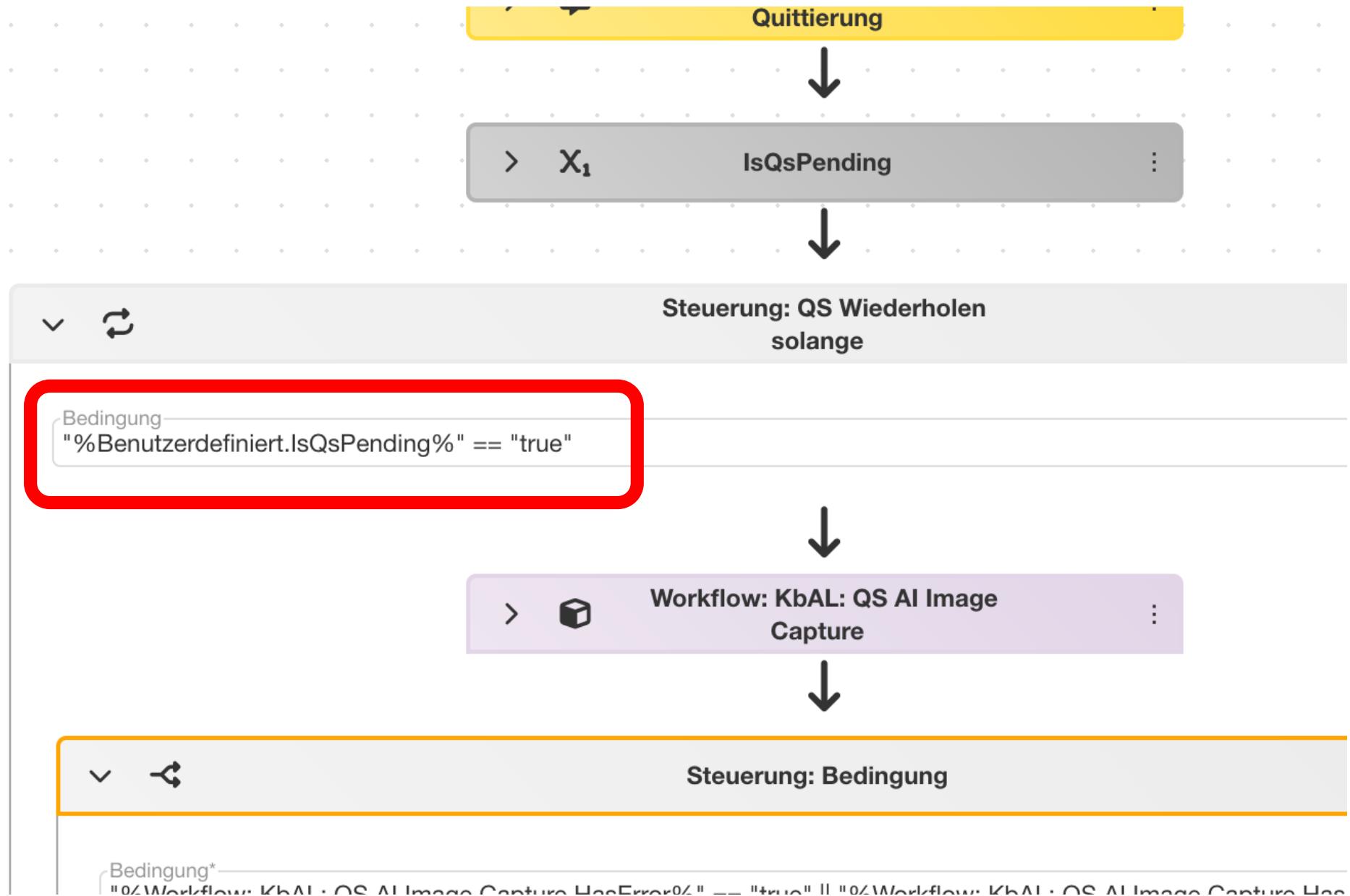




## Expressions

Wenn Ja (true)

Wenn Nein (false)

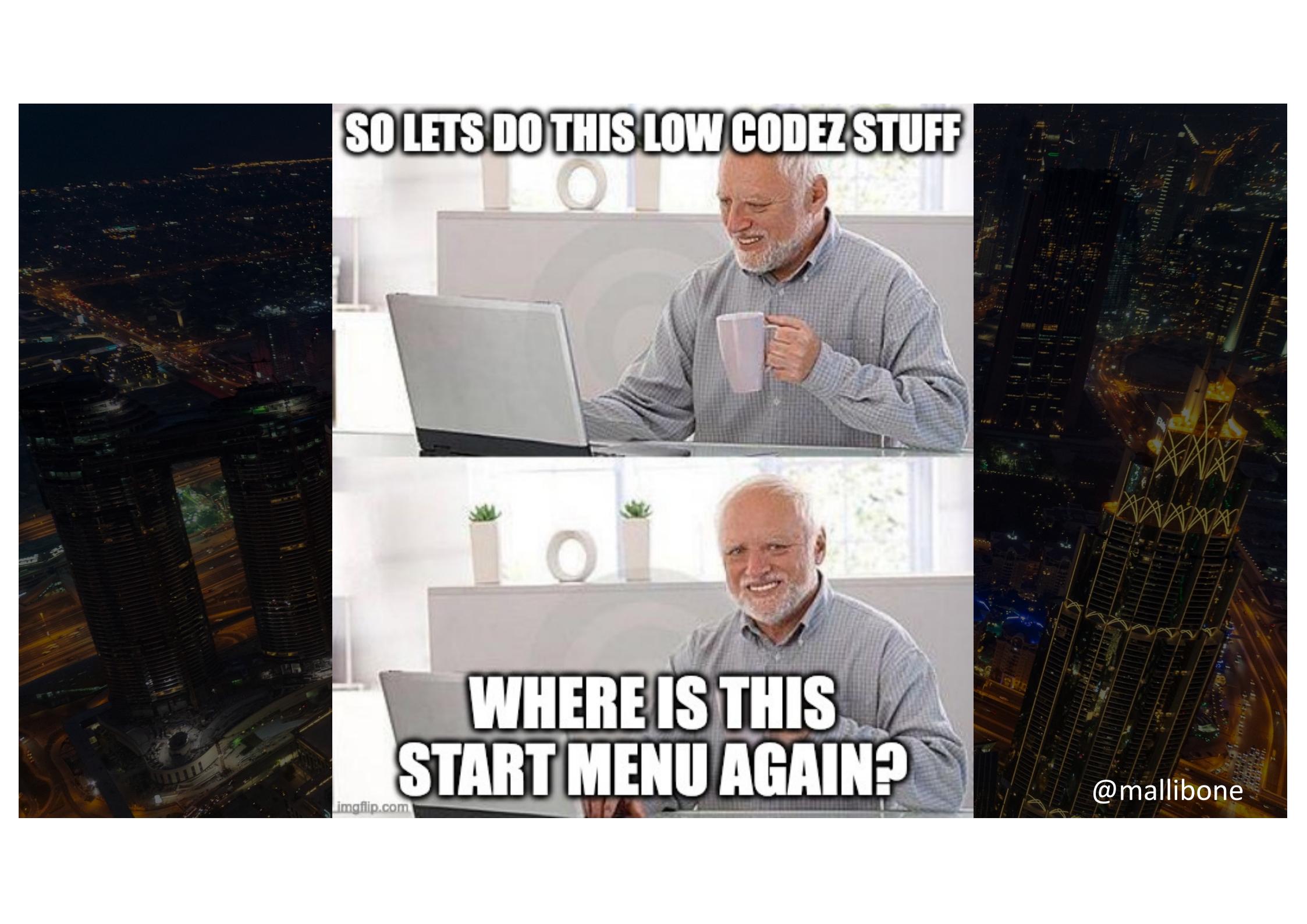




Low Code enables Domain Experts to digitalize processes



@mallibone



**SO LETS DO THIS LOW CODEZ STUFF**

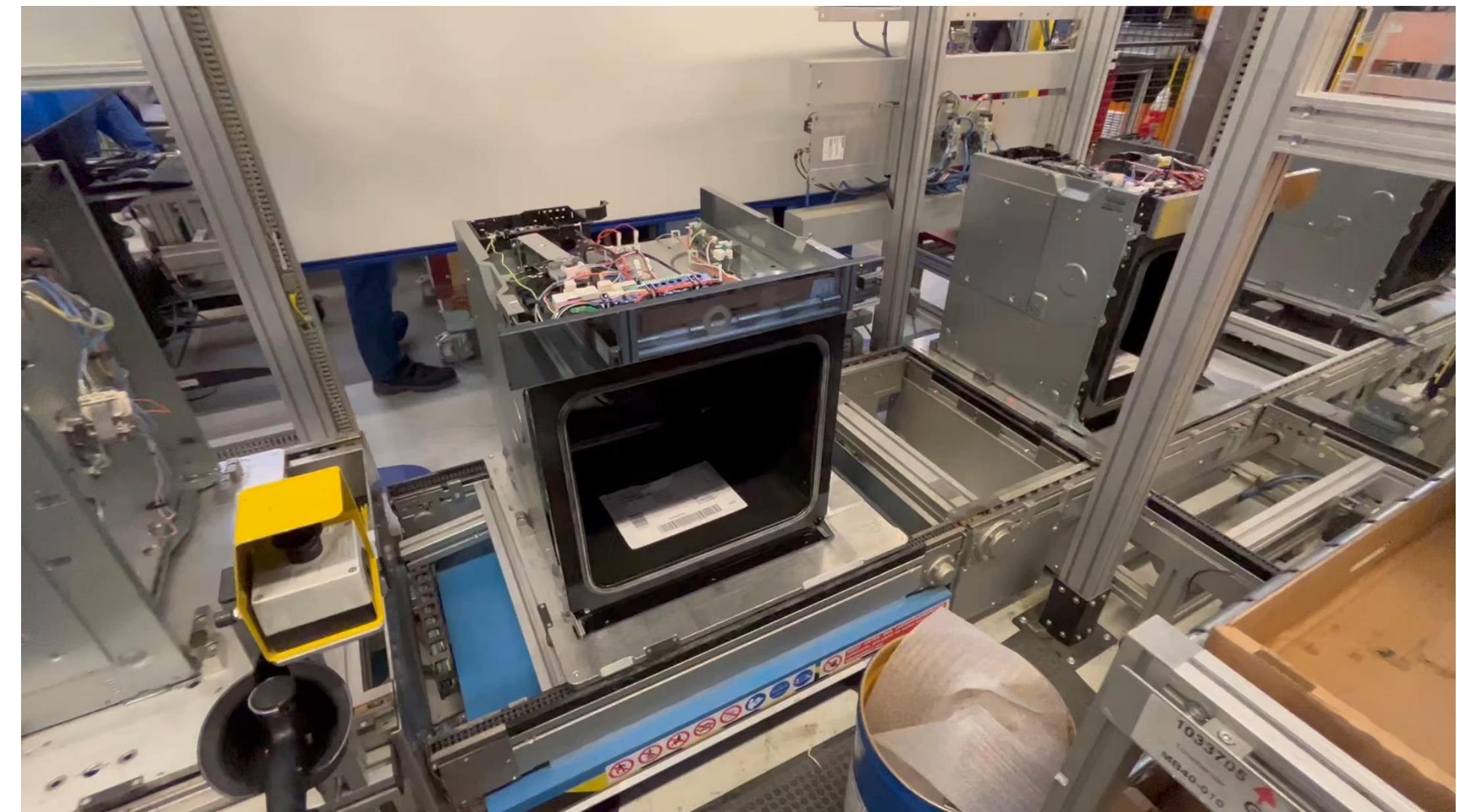
**WHERE IS THIS  
START MENU AGAIN?**

imgflip.com

@mallibone



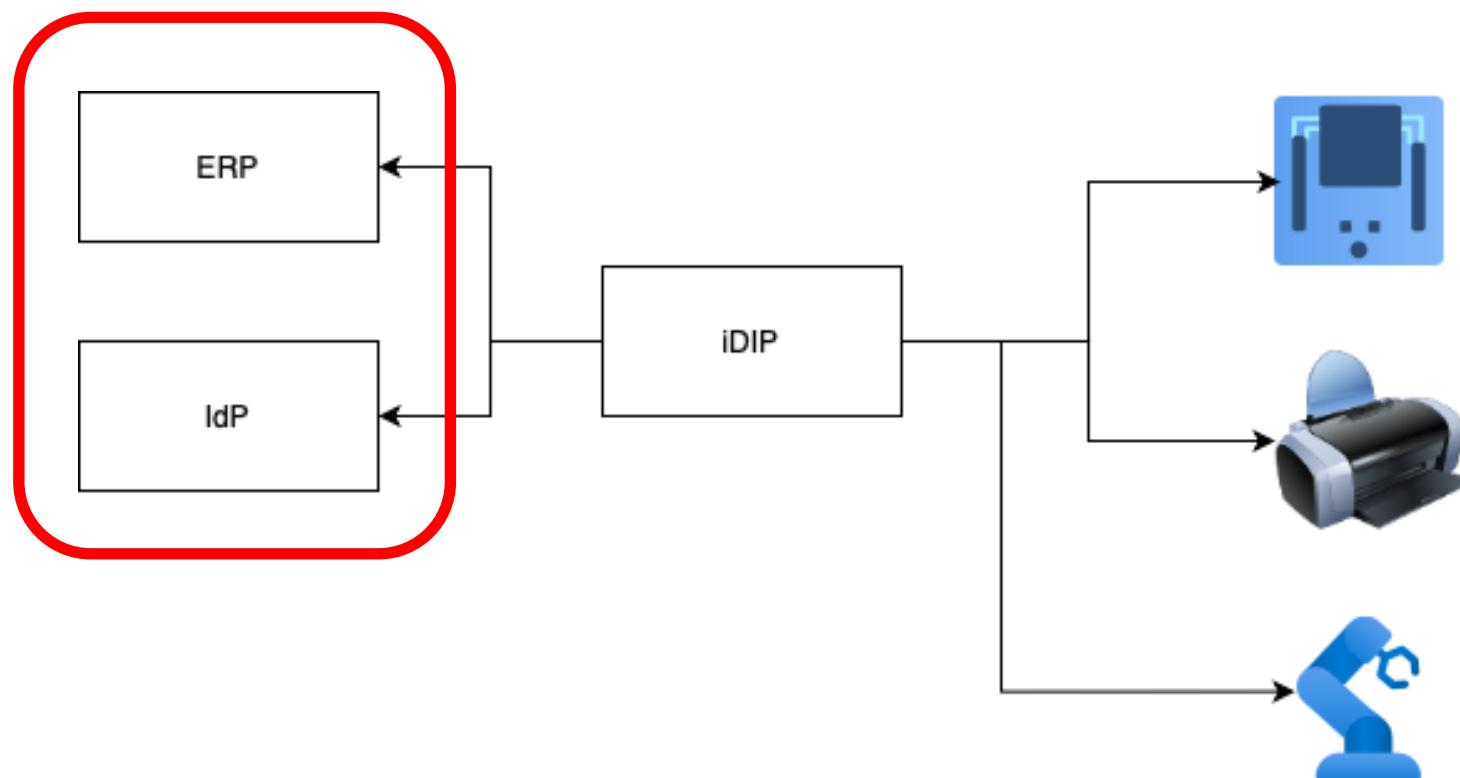
<https://1.bp.blogspot.com/-s6tKkq8VSuA/X8aQ8x6tMmI/AAAAAAAQ5M/2UwQuMf1GPsX8u2Ro-fdha1lzlv0gZgowCLcBGAsYHQ/s700/introduccion-a-los-sistemas-de-control-automatico-consolas-de-control-para-industria-4.0.jpg>



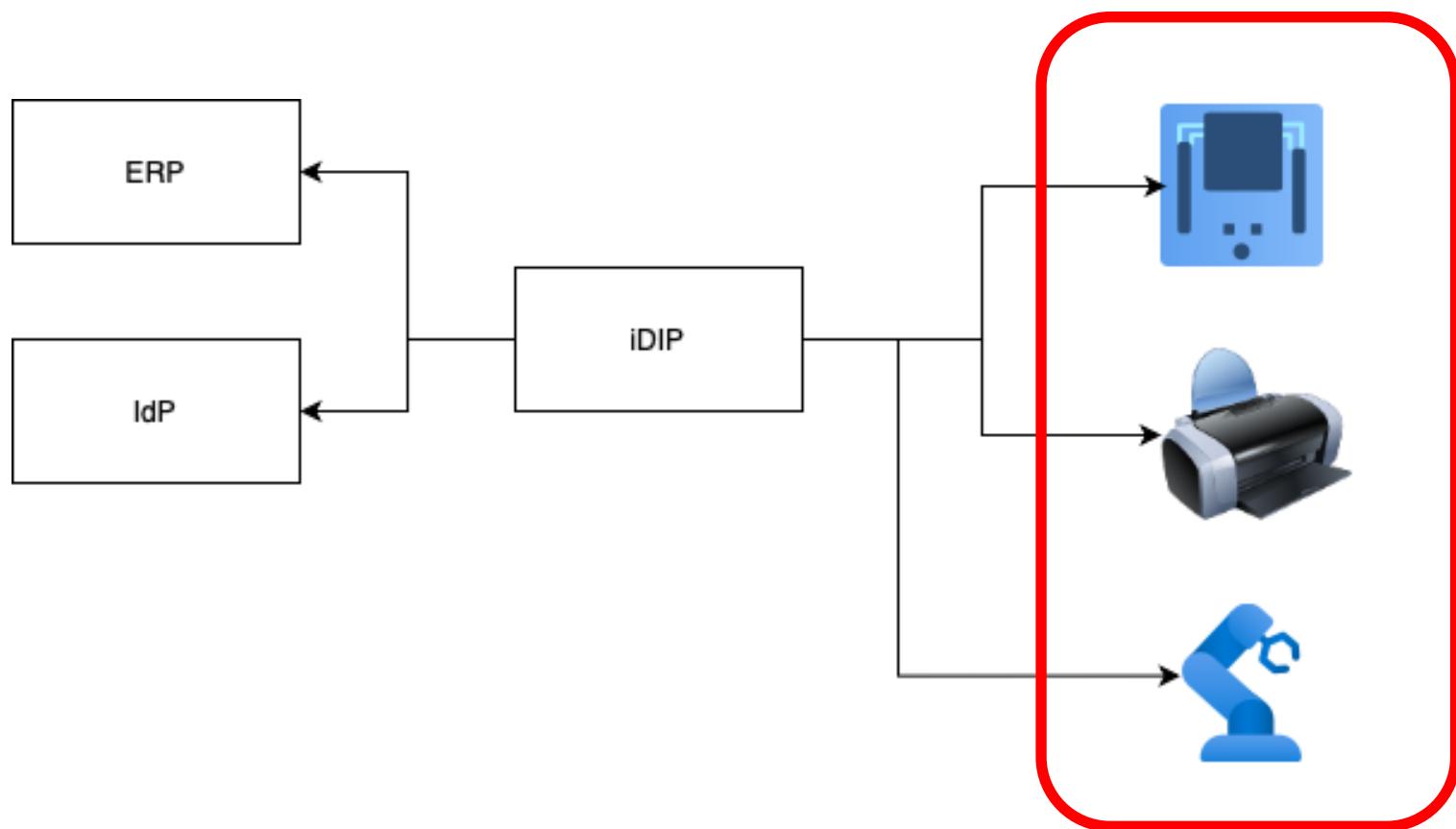


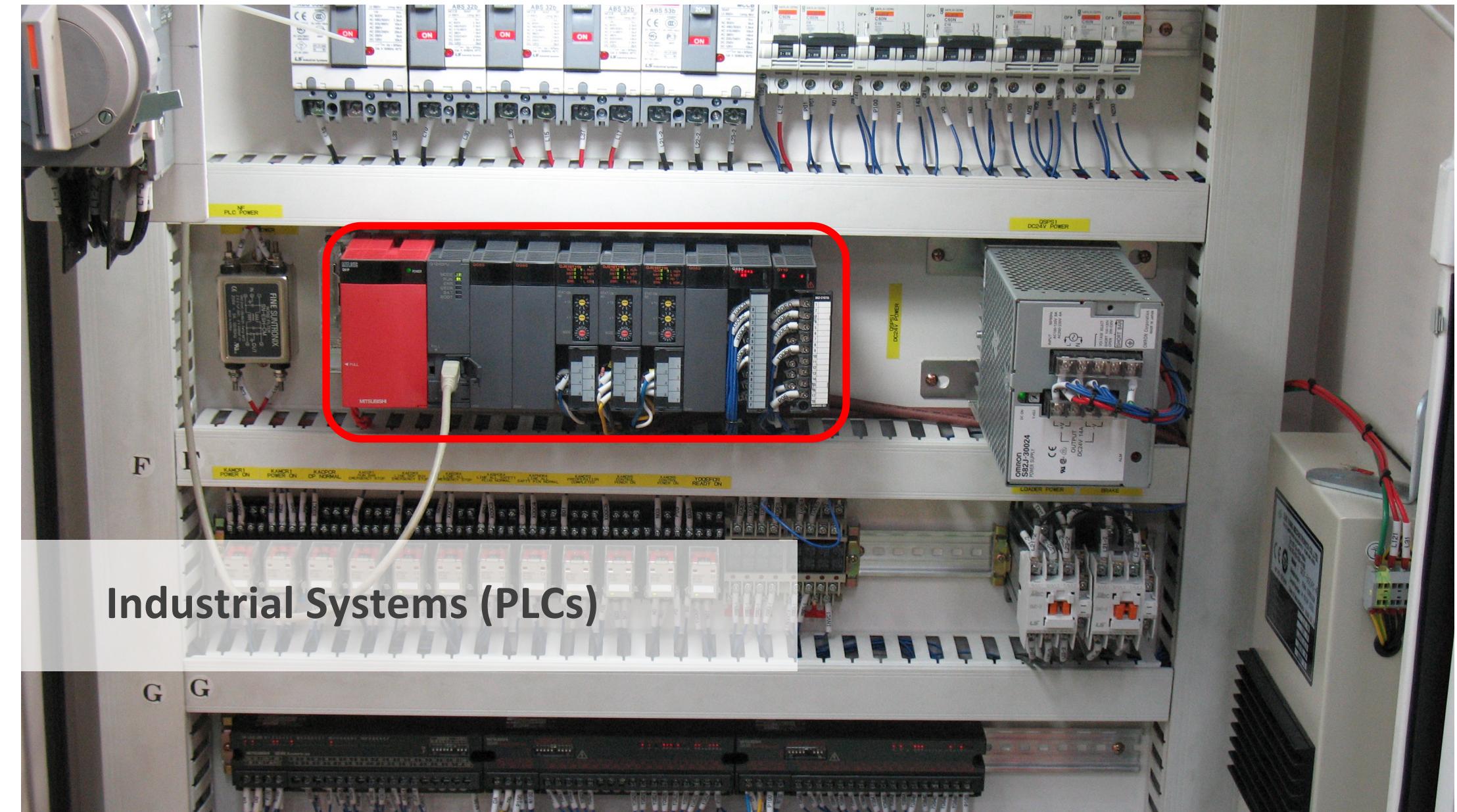
**Integrating with other systems**

# Systemoverview



# Systemoverview

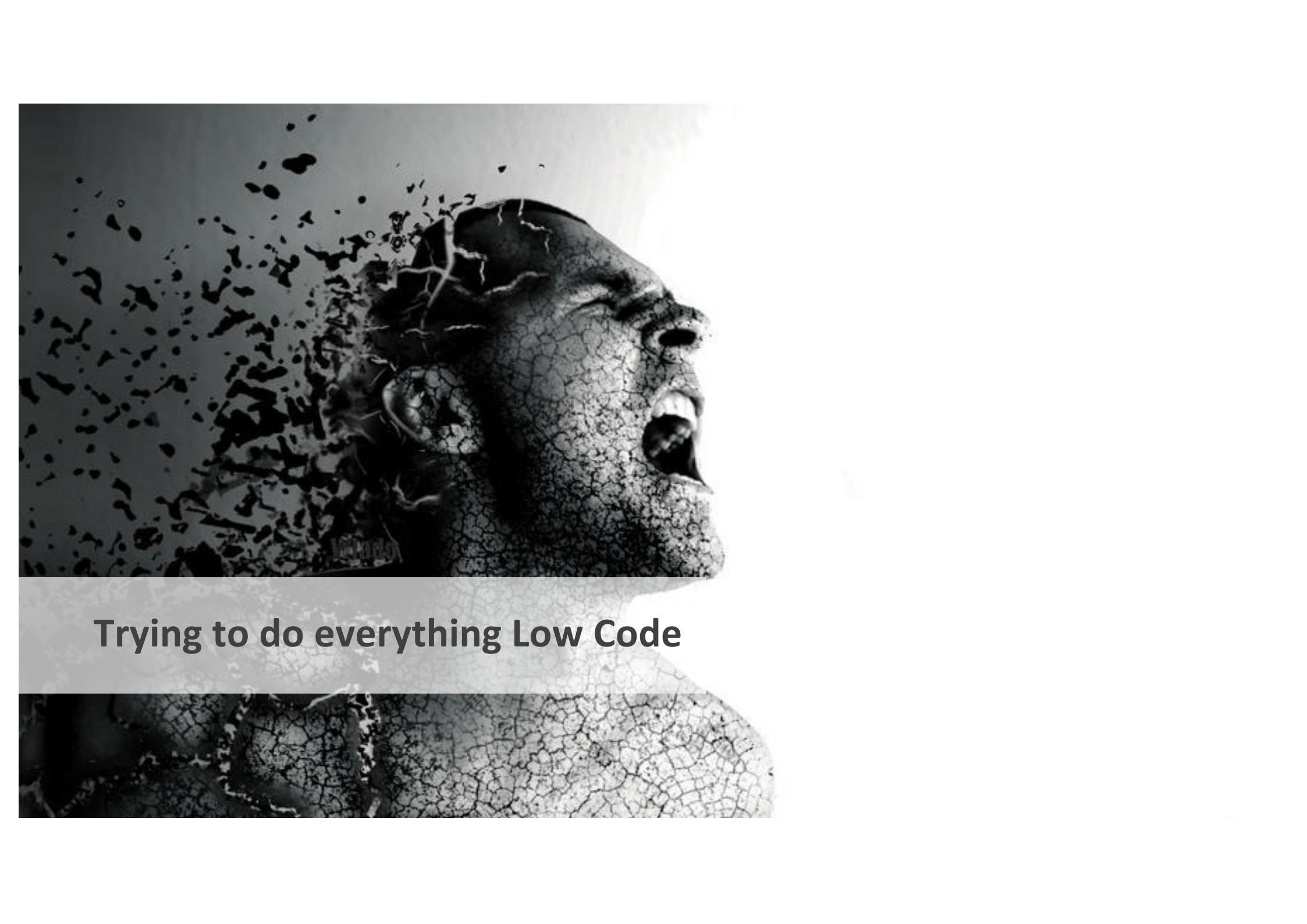




# Hide Complex Systems

## Complex Processes?





**Trying to do everything Low Code**

Developer Tools

```
<Project Sdk="Microsoft.NET.Sdk">
  <PropertyGroup>
    <TargetFrameworks>net6.0-android;net6.0-ios;net6.0-maccatalyst</TargetFrameworks>
    <TargetFrameworks Condition="\"$([MSBuild]::IsOSPlatform('windows'))\">$([TargetFrameworks]);net6.0-windows10.0.19041.0</TargetFrameworks>
    <!-- Uncomment to also build the tizen app. You will need to install tizen by following this: https://github.com/Samsung/Tizen.NET -->
    <!-- <TargetFrameworks>$([TargetFrameworks]);net6.0-tizen</TargetFrameworks> -->
    <OutputType>Exe</OutputType>
    <RootNamespace>MauiApp1</RootNamespace>
    <UseMaui>true</UseMaui>
    <SingleProject>true</SingleProject>
    <ImplicitUsings>enable</ImplicitUsings>

    <!-- Display name -->
    <ApplicationTitle>MauiApp1</ApplicationTitle>

    <!-- App Identifier -->
    <ApplicationId>com.companyname.mauiapp1</ApplicationId>
    <ApplicationIdGuid>2128AE37-4BEC-46F8-B35E-B17F617BB30D</ApplicationIdGuid>

    <!-- Versions -->
    <ApplicationDisplayVersion>1.0</ApplicationDisplayVersion>
    <ApplicationVersion>1</ApplicationVersion>

    <SupportedOSPlatformVersion Condition="\"$([MSBuild]::GetTargetPlatformIdentifier('$(TargetFramework)')\" == 'ios')\">14.2</SupportedOSPlatformVersion>
    <SupportedOSPlatformVersion Condition="\"$([MSBuild]::GetTargetPlatformIdentifier('$(TargetFramework)')\" == 'maccatalyst')\">14.0</SupportedOSPlatformVersion>
    <SupportedOSPlatformVersion Condition="\"$([MSBuild]::GetTargetPlatformIdentifier('$(TargetFramework)')\" == 'android')\">21.0</SupportedOSPlatformVersion>
    <SupportedOSPlatformVersion Condition="\"$([MSBuild]::GetTargetPlatformIdentifier('$(TargetFramework)')\" == 'windows')\">10.0.17763.0</SupportedOSPlatformVersion>
    <TargetPlatformMinVersion Condition="\"$([MSBuild]::GetTargetPlatformIdentifier('$(TargetFramework)')\" == 'windows')\">10.0.17763.0</TargetPlatformMinVersion>
    <SupportedOSPlatformVersion Condition="\"$([MSBuild]::GetTargetPlatformIdentifier('$(TargetFramework)')\" == 'tizen')\">6.5</SupportedOSPlatformVersion>
  </PropertyGroup>
  <ItemGroup>
    <!-- App Icon -->
    <MauiIcon Include="Resources\AppIcon\appicon.svg" ForegroundFile="Resources\AppIcon\appiconfig.svg" Color="#512BD4" />
    <!-- Splash Screen -->
    <MauiSplashScreen Include="Resources\Splash\splash.svg" Color="#512BD4" BaseSize="128,128" />
    <!-- Images -->
    <MauiImage Include="Resources\Images\*" />
    <MauiImage Update="Resources\Images\dotnet_bot.svg" BaseSize="168,208" />
    <!-- Custom Fonts -->
    <MauiFont Include="Resources\Fonts\*" />

    <!-- Raw Assets (also remove the "Resources\Raw" prefix) -->
    <MauiAsset Include="Resources\Raw\**" LogicalName="%(<RecursiveDir>%(<filename>)%(Extension))" />
  </ItemGroup>

```

100 % No issues found Ln: 1 Ch: 1 TABS CRLF

Error List Output

Solution Explorer

- Solution 'MauiApp1' (1 of 1 project)
  - MauiApp
    - Dependencies
    - Properties
    - Platforms
      - Android
      - iOS
      - MacCatalyst
      - Tizen
      - Windows
    - Resources
      - App.xaml
      - AppShell.xaml
      - MainPage.xaml
    - C# MauiProgram.cs

Properties XML Document

Misc Encoding Unicode (UTF-8)

Output Schemas Stylesheet C:\Program Files\Microsoft Visual S

Encoding Character encoding of the document.



Extending functionality

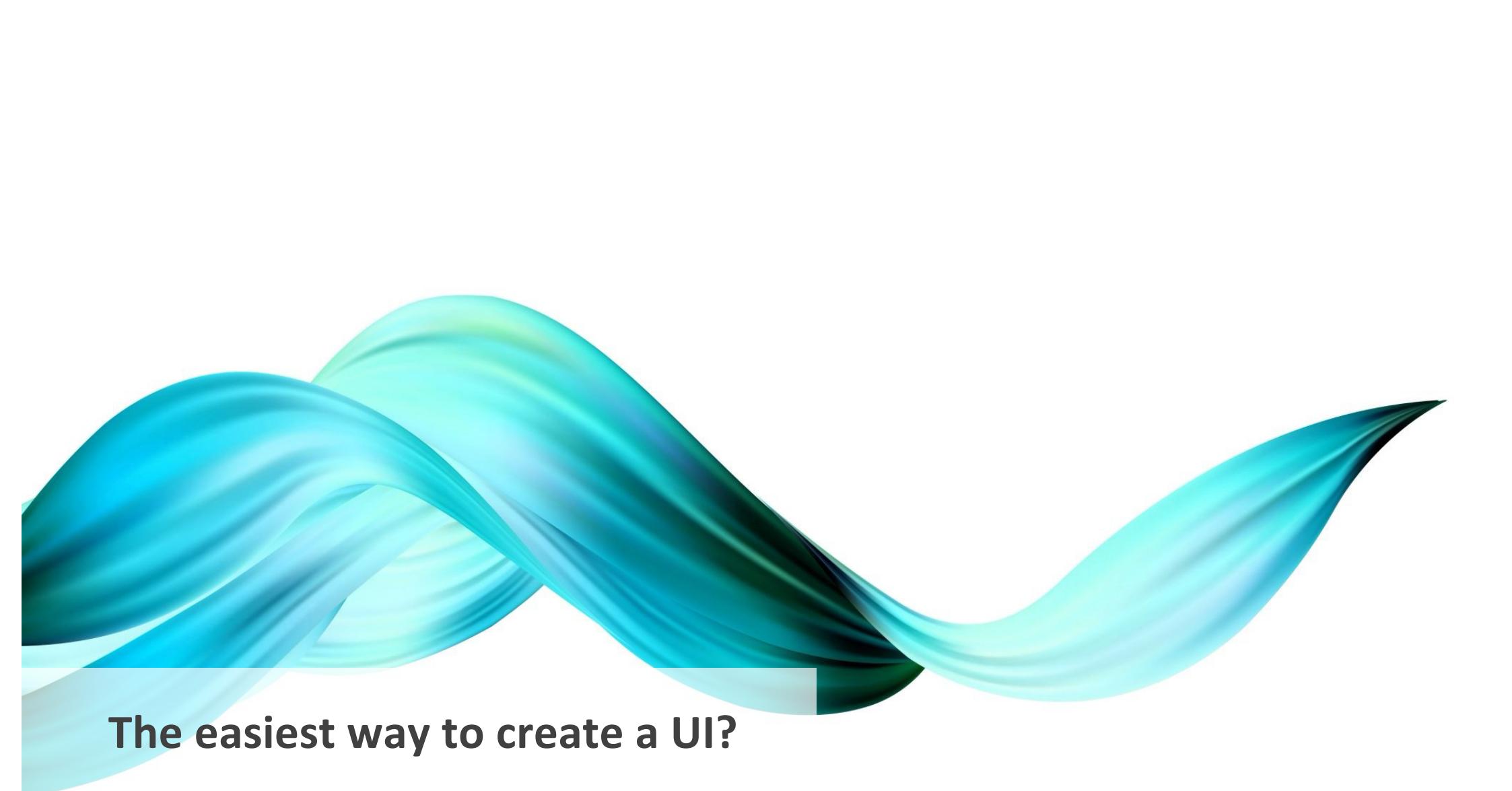


**AND HOW SHOULD A USER INTERACT**

**WITH NO UI?**

imgflip.com

@mallibone

A large, abstract graphic of two flowing, translucent waves in shades of blue and green. The waves are thick and overlap each other, creating a sense of motion against a plain white background.

**The easiest way to create a UI?**

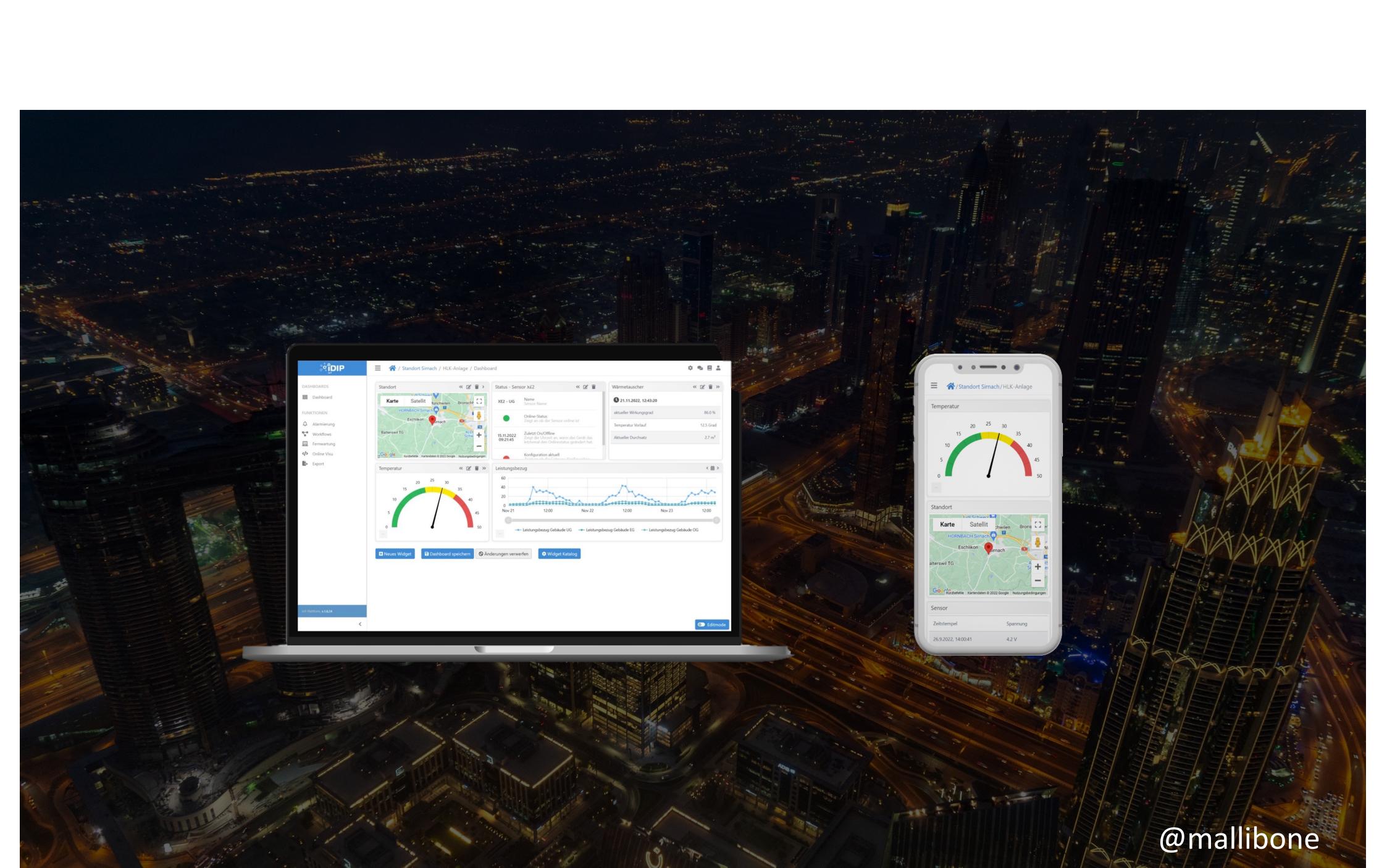


A worker in a yellow hard hat and high-visibility vest stands in a factory, looking at a large, illuminated digital screen. The screen displays a complex interface with various data visualizations, including a large image of a factory floor, several circular icons, and bar charts. The text "CONSTRUCTION" is visible on the screen. The background shows industrial equipment, conveyor belts, and shelving units.

Work comes to you



You go to the work



@mallibone

# Navigation

	NAME	NAVIGATIONSTYP	SICHTBARKEIT	BESCHREIBUNG
	▼ Home	🌐 Überschrift	Sichtbar	
📝	🏠 Welcome	🌐 Screen	Sichtbar	
	▼ Stationen	🌐 Überschrift	Sichtbar	
📝	→ Produktionsauftrag Selektion	🌐 Screen	Sichtbar	
📝	🔧 Station Montage	🌐 Screen	Sichtbar	
📝	⚙️ Station Qualitätsstation	🌐 Screen	Sichtbar	
📝	☁️ Station SmartQS	🌐 Screen	Sichtbar	
📝	↗ Report	🌐 Screen	Sichtbar	
	▼ Administration	🌐 Überschrift	Sichtbar	
📝	✉️ Bestellverwaltung	🌐 Screen	Sichtbar	
📝	✉️ Anklageverwaltung	🌐 Screen	Sichtbar	
📝	✉️ Instruktionsverwaltung	🌐 Screen	Sichtbar	
	▼ Versteckte Seiten	🌐 Screen	Versteckt	
📝	QR Code für Produktionsauftrag Erfassen	🌐 Screen	Versteckt	
📝	👤 Anmeldung	🌐 Screen	Versteckt	
📝	👤 Anmeldung Erfolgreich	🌐 Screen	Versteckt	

**Home**

**Icon**  
Ein Icon, das dem Benutzer dargestellt wird.  
 Select...

**Konfiguration**  
Zusätzliche Einstellungen für den Navigationspunkt  
 Initial-Status Zugeklappt

**Badge-Konfiguration**

**Badge-Art**  
Die Badge-Art definiert, woher der angezeigte Text stammt.  
 Kein Badge anzeigen

**Autorisierung**

**Name**

+ - iDIPUser

+ - iDIPAdmin

+ -

## Organizing Views and Access

# Navigation

	NAME	NAVIGATIONSTYP	SICHTBARKEIT	BESCHREIBUNG
	▼ Home	🌐 Überschrift	Sichtbar	
📝	🏠 Welcome	🌐 Screen	Sichtbar	
	▼ Stationen	🌐 Überschrift	Sichtbar	
📝	→ Produktionsauftrag Selektion	🌐 Screen	Sichtbar	
📝	🔧 Station Montage	🌐 Screen	Sichtbar	
📝	⚙️ Station Qualitätsstation	🌐 Screen	Sichtbar	
📝	☁️ Station SmartQS	🌐 Screen	Sichtbar	
📝	↗ Report	🌐 Screen	Sichtbar	
	▼ Administration	🌐 Überschrift	Sichtbar	
📝	✉️ Bestellverwaltung	🌐 Screen	Sichtbar	
📝	✉️ Anfrageverwaltung	🌐 Screen	Sichtbar	
📝	✉️ Instruktionsverwaltung	🌐 Screen	Sichtbar	
	▼ Versteckte Seiten	🌐 Screen	Versteckt	
📝	QR Code für Produktionsauftrag Erfassen	🌐 Screen	Versteckt	
📝	👤 Anmeldung	🌐 Screen	Versteckt	
📝	👤 Anmeldung Erfolgreich	🌐 Screen	Versteckt	

## Home

### Icon

Ein Icon, das dem Benutzer dargestellt wird.

Select...

### Konfiguration

Zusätzliche Einstellungen für den Navigationspunkt

Initial-Status Zugeklappt

### Badge-Konfiguration

#### Badge-Art

Die Badge-Art definiert, woher der angezeigte Text s

Kein Badge anzeigen

### Autorisierung

#### Name

+ - iDIPUser

+ - iDIPAdmin

+

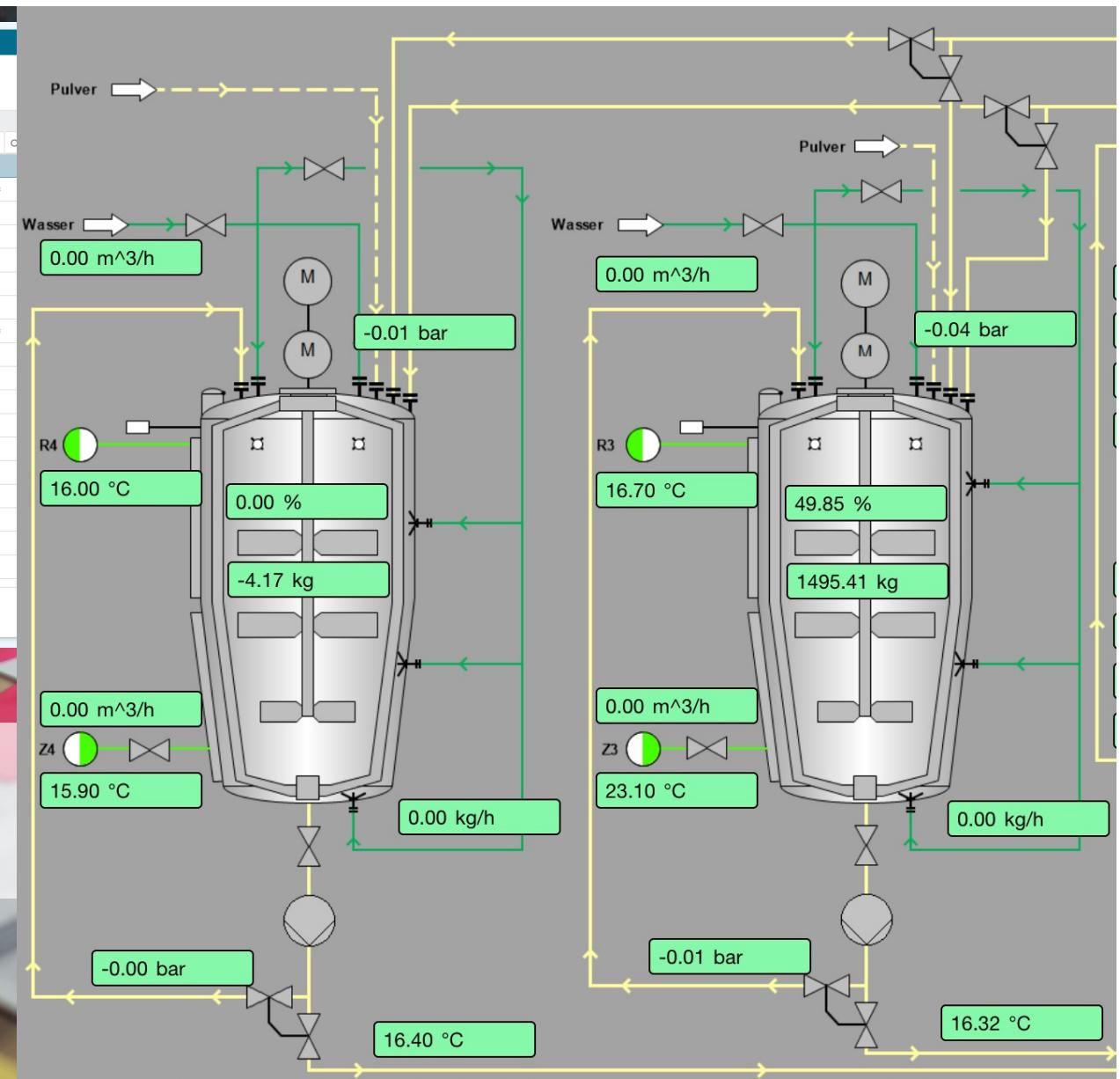


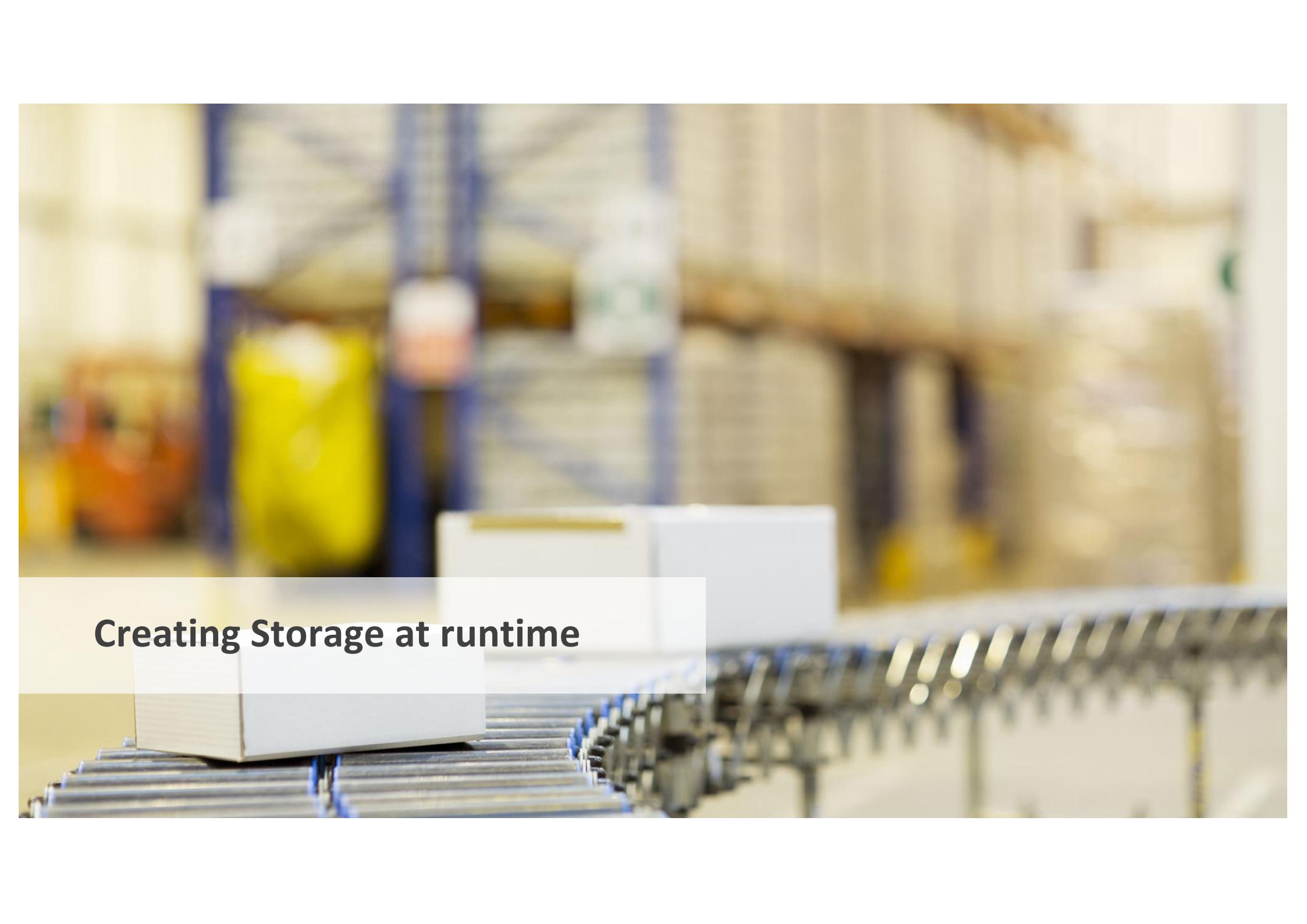
Security

## Artikelstamm

	DETAILS	ARTIKELNUMMER	ARTIKELBEZEICHNUNG	EAN	RAUM	LAGERPLATZ	HERSTELLER	C
→	2CDS251001R0278		Leitungsschutzschalter, Z 2, 6kA, 1-polig	4016779530354			ABB	
→	LV429393		ARBEITSSTROMAUSLÖSER MX 125 VDC				Schneider Electric	
→	276422		Hilfsschalterbaustein, 2S	4015082764227	Fertigung	Fertigung-B5-R3-E9	Eaton	
→	2901366		Universalmessgerät				Phoenix Contact	
→	Hochspannungsnetzen"		Socomec				None	
→	85693		Dreiphasige Stromversorgung 24V DC / 40 A				Murrelektronik	
→	NBN032		Leitungsschutzschalter 1x32A, B, 10kA				Hager	
→	LC1D32P7		Schütz LC1-D - 3P - AC-3 440V 32A	3389110351125	Fertigung	Fertigung-B5-R2-E6	Schneider Electric	
→	2810971		3-Wege-Trennverstärker				Phoenix Contact	
→	800H-AR2D2		Drucktaster, 30.5mm, Kunststoff				Allen-Bradley	
→	09 62 040 0541		Tüllengehäuse				Harting	
→	6E57138-6AA00-0BA0		TM COUNT 1X24V				Siemens	
→	632A.2		Betriebsstundenzähler 24V AC				Bauer	
→	6705600		TP TopPult-System, Pultunterteil, BHT: 80...	4028177959897			Rittal	
→	09 30 016 1290		Sockelgehäuse, 2 Abgänge				Harting	
→	8897150000		Leistungsrelais 24VDC, 2CO 8A/250VAC				Weidmüller	
→	AX5103-0000-0200		Digital Kompakt Servoverstärker, 1-Achsm...				Beckhoff	
→	1SBL137001R1301		Schütz, AC-3, 4kW/400V, 1OE, AC/DC 10...	3471523110137			ABB	

Populating a UI





**Creating Storage at runtime**



## Accessing Storage

App Direktzugriff...



&lt; Back

## Datenmodell Montagestation

USER INTERFACE

Navigation

Screens

APP EINSTELLUNGEN

Einstellungen

DATENMODELL

Datenmodell bearbeiten

WORKFLOWS

Workflowübersicht

Scheduler



## ProductionOrder

+ Felder

OrderId	Text
Username	Text
UserEmail	Text
Status	Ganzzahl
StartTimestamp	Datum
EndTimestamp	Datum
CreatedAt	Datum
ModifiedAt	Datum

Beziehungen



## Article

+ Felder

Name	Text
Description	Text
ArticleId	Text
ImageUrl	Text
AssemblyVideoUrl	Text
QsSetupImageUrl	Text
QsSetupInstructionText	Text
ObjectNb	Ganzzahl
CreatedAt	Datum
ModifiedAt	Datum
CreatedBy	Text
ModifiedBy	Text
CreatedByEmail	Text
ModifiedByEmail	Text

Beziehungen



## Component

+ Felder

Name	Text
ComponentId	Text
Anzahl	Ganzzahl
Fach	Text
CreatedAt	Datum
ModifiedAt	Datum
CreatedBy	Text
ModifiedBy	Text
CreatedByMail	Text
ModifiedByEmail	Text

Beziehungen



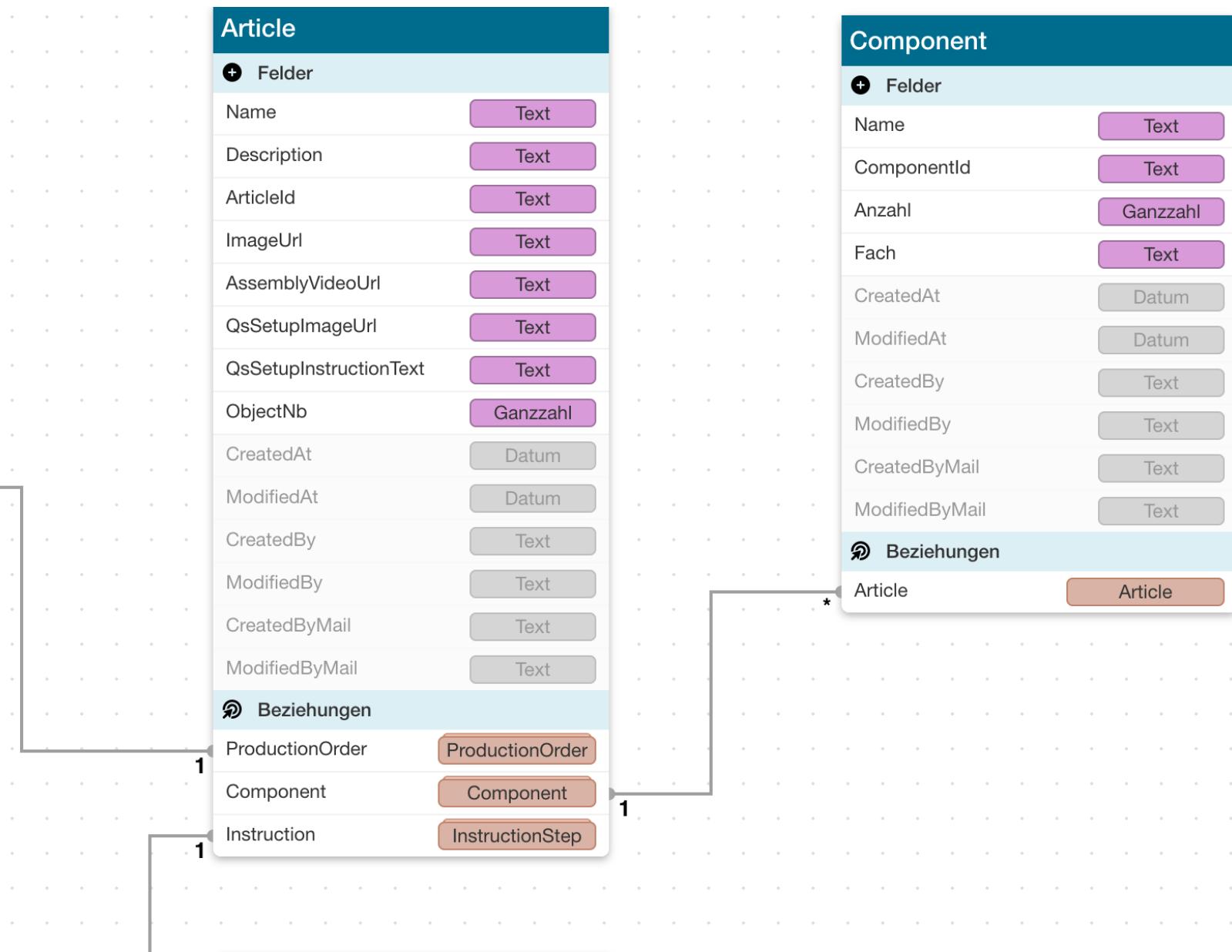
## InstructionStep

+ Felder

Components	Text
Step	Ganzzahl
InstructionText	Text
ImageUrl	Text

Beziehungen





# iDIP DataModel DynaMo\_e6674d87-c7da-811c-2922-d0ab4ed8b72b 1.0.0.16 OAS3

[https://appdesigner.dip.dev.reycloud.net/Plugins/DynaMo\\_e6674d87-c7da-811c-2922-d0ab4ed8b72b/swagger/v1/swagger.json](https://appdesigner.dip.dev.reycloud.net/Plugins/DynaMo_e6674d87-c7da-811c-2922-d0ab4ed8b72b/swagger/v1/swagger.json)

The DataModel API for an iDIP application

Servers

[/Plugins/DynaMo\\_e6674d87-c7da-811c-2922-d0ab4ed8b72b](#)
[Authorize](#) 

## Article

**GET** /odata/Article (Auth roles: iDIPService,iDIPAdmin,iDIPUser) 

**POST** /odata/Article (Auth roles: iDIPService,iDIPAdmin) 

**GET** /odata/Article({key}) (Auth roles: iDIPService,iDIPAdmin,iDIPUser) 

**PATCH** /odata/Article({key}) (Auth roles: iDIPService,iDIPAdmin) 

**PUT** /odata/Article({key}) (Auth roles: iDIPService,iDIPAdmin) 

**DELETE** /odata/Article({key}) (Auth roles: iDIPService,iDIPAdmin) 

## Providing Data Access

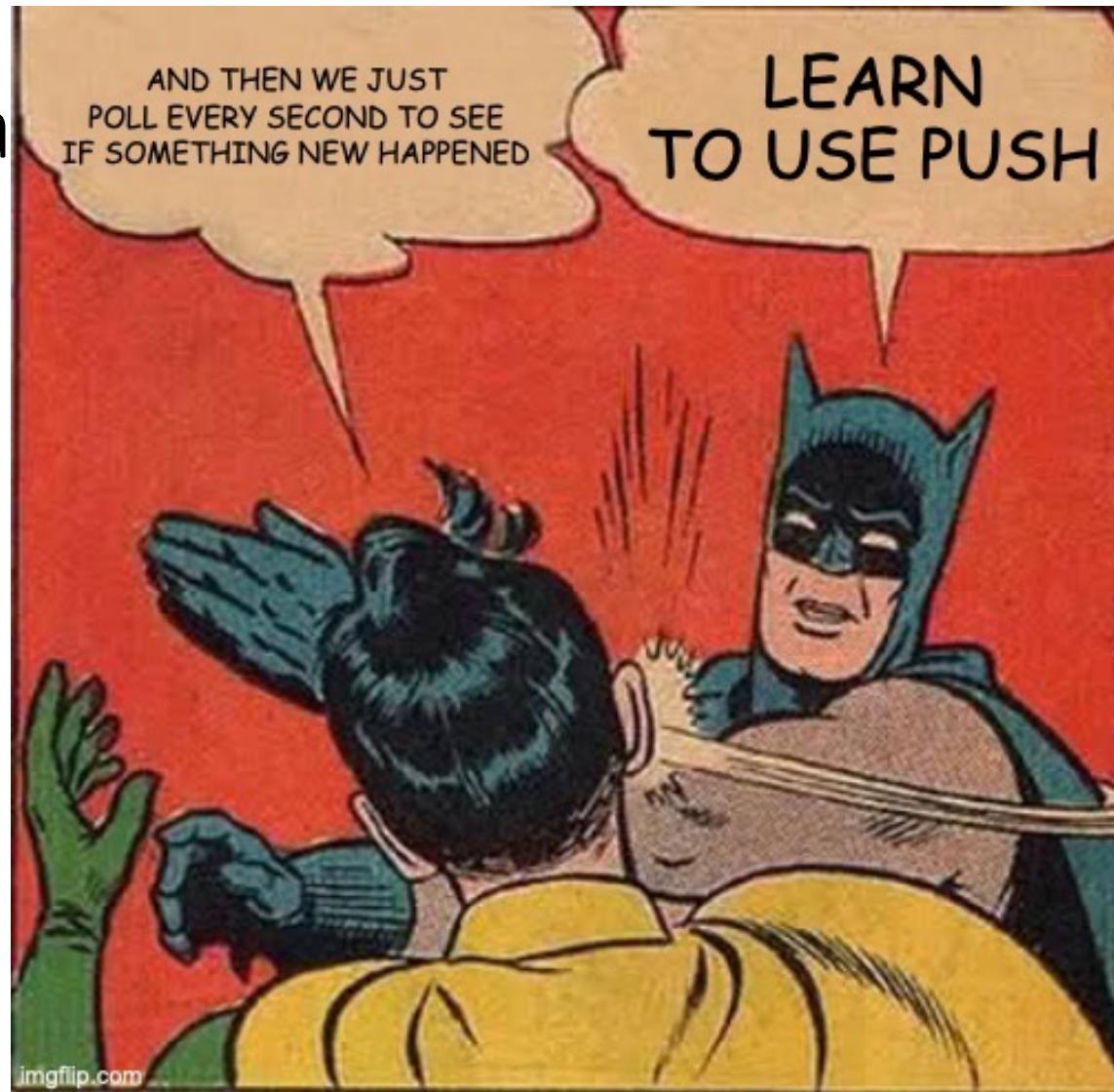
**DELETE** /odata/Article/BulkDelete (Auth roles: iDIPService,iDIPAdmin) 

## AuthenticationConfig

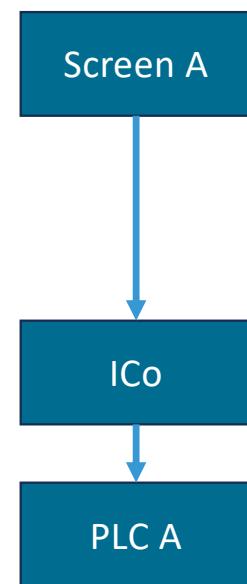
**GET** /api/AuthenticationConfig 

## BackendVersionInfo

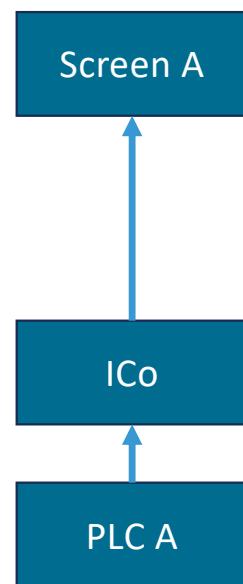
# Dashboard



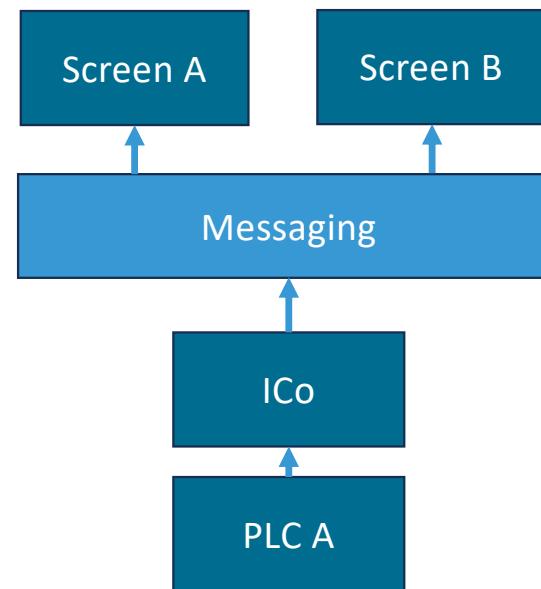
Pull



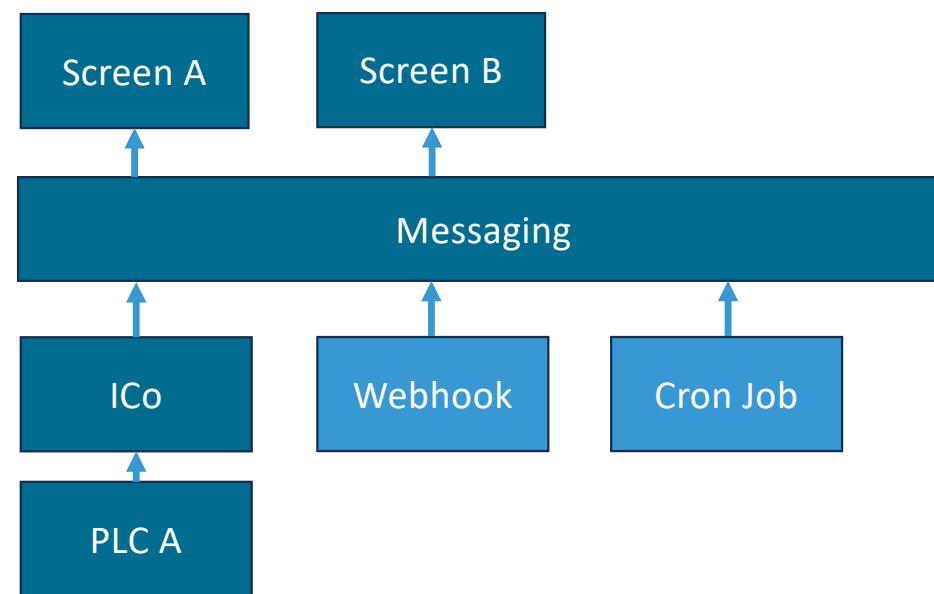
# Push



# Messaging

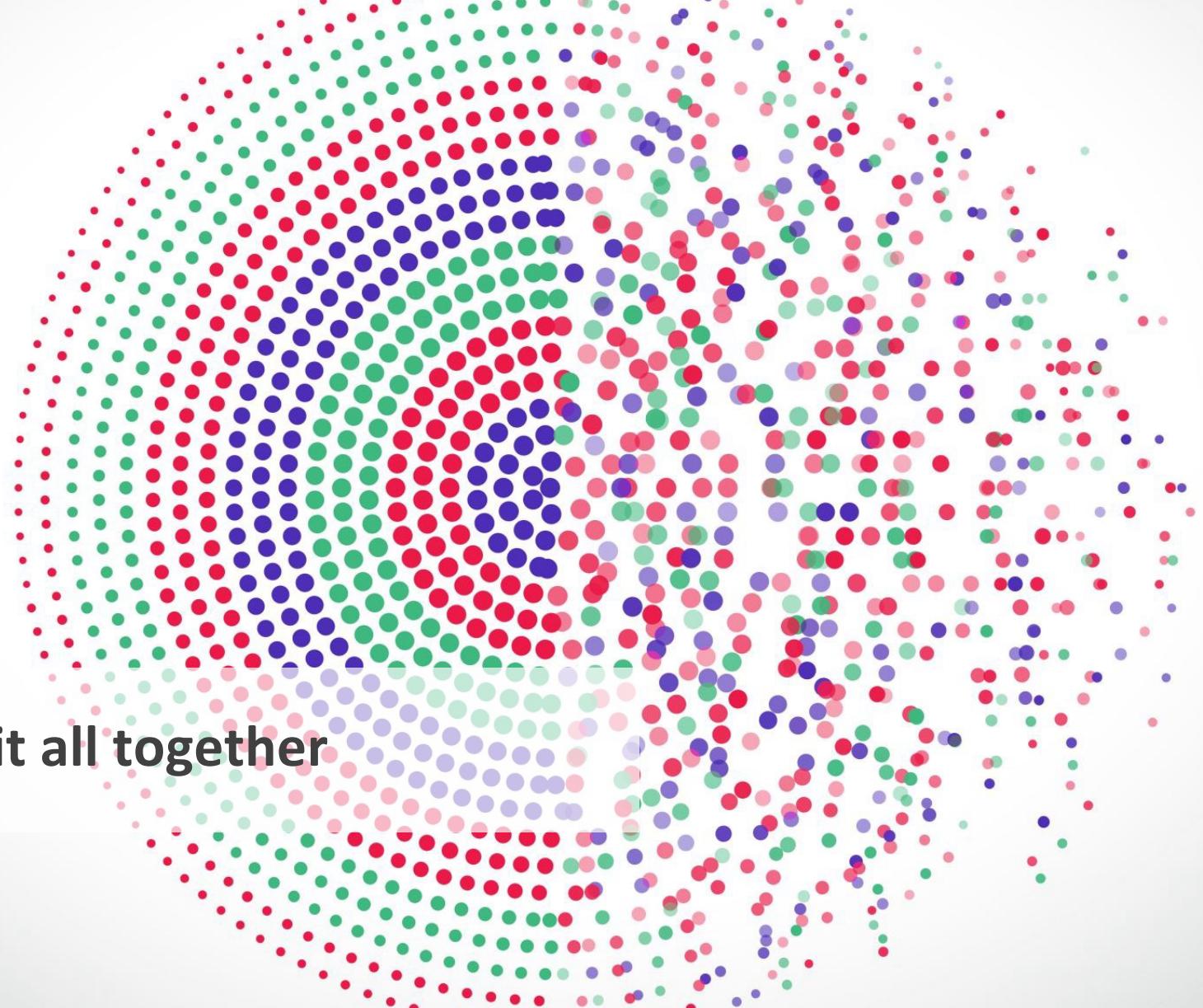


# Messaging





Balancing



**Bringing it all together**

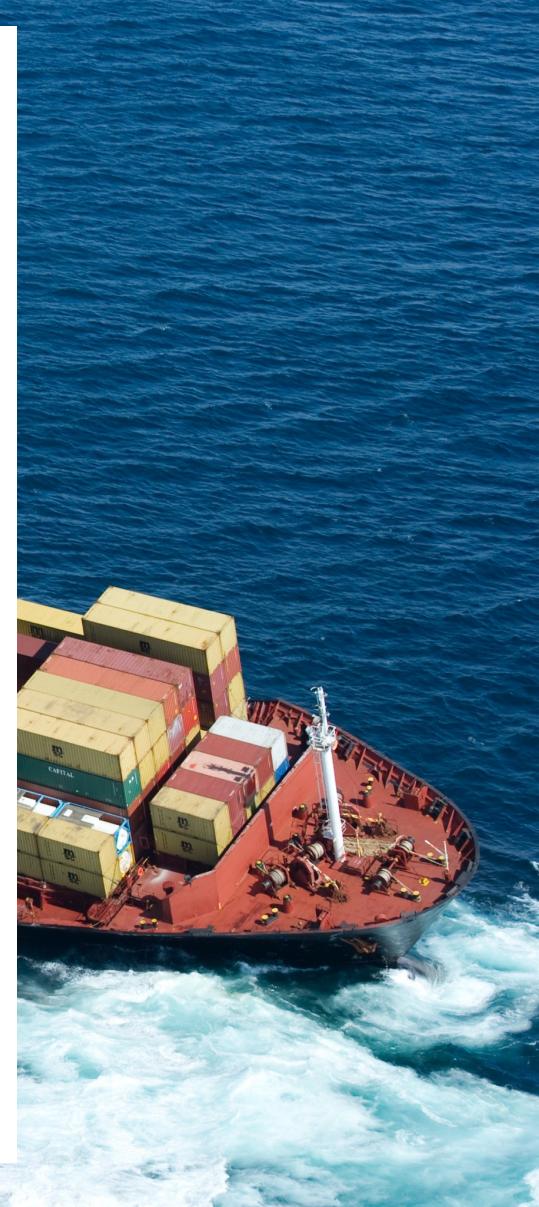


**Abstract details\* and allow reuse**

<https://stackoverflow.blog/2021/04/01/the-key-copy-paste/>



Ship it

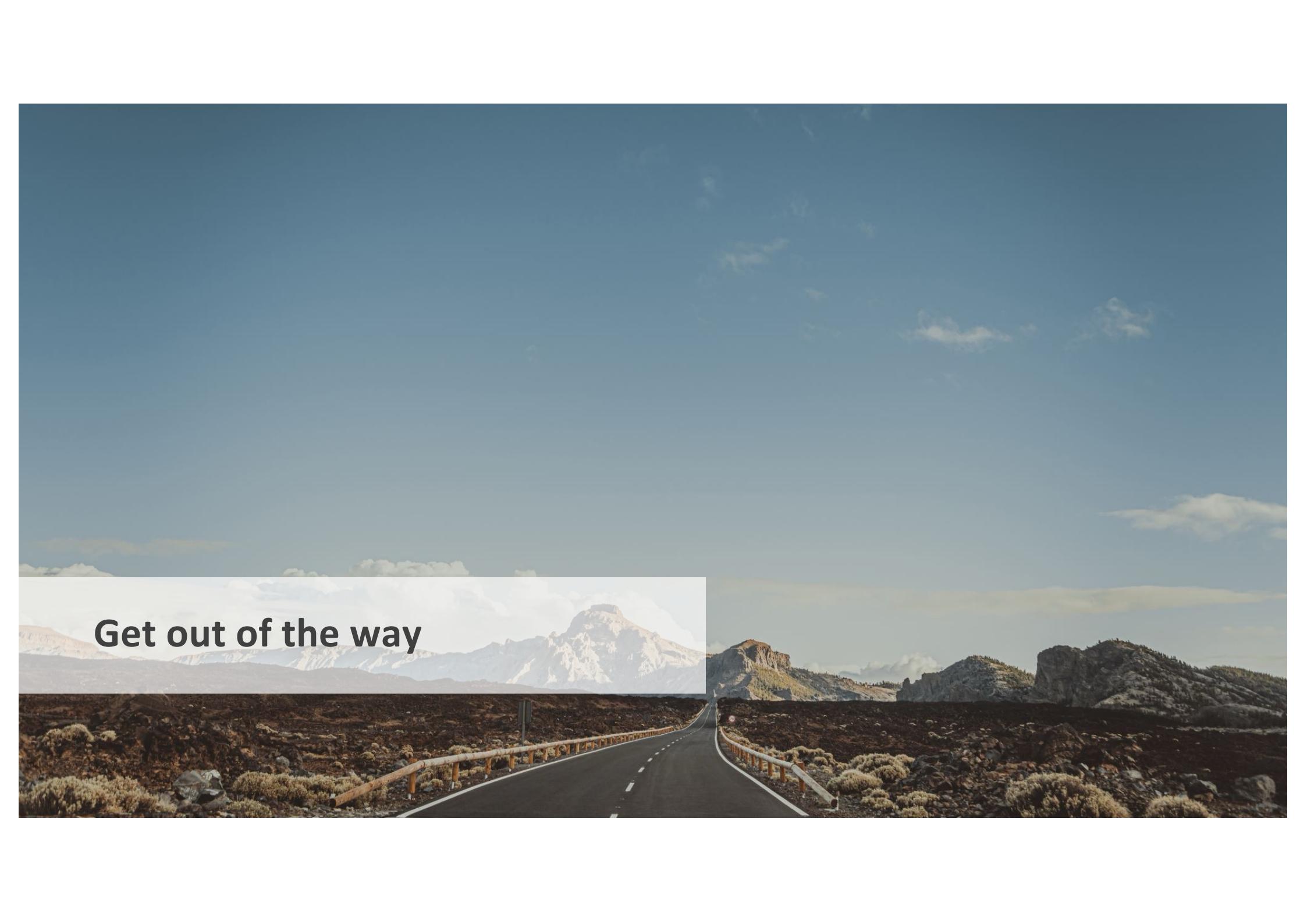


Playing  
around  
with code  
in production

Testing,  
Staging and  
then enable  
in production



Allow experimentation



**Get out of the way**

Power Apps

Search

Environment  
Frank Lan's Environment

?

Home

Create

Learn

Apps

Tables

Flows

Solutions

More

Power Platform

This is a developer environment and not meant for production use. [Learn more](#)

## Let's build an app. What should it do?

Collect RSVPs Track sales leads List inventory Manage inspections

Use everyday words to describe what your app should collect, track, list, or manage ...

This feature uses generative AI. [See terms](#)

In this environment

1

### Other ways to create an app

**Start with data**  
Create a table, pick an existing one, or even import from Excel to create an app.

**Start with a page design**  
Select from a list of different designs and layouts to get your app going.

**Start with an app template**  
Select from a list of fully-functional business app templates. Use as-is or customize to suit your needs.

### Your apps

Name	Modified	Owner	Type
Triathlon Signups	1 week ago	Frank Lan	Canvas
MPPC23	1 week ago	Frank Lan	Model-driven
Dataverse Accelerator App	3 weeks ago	SYSTEM	Model-driven
Vendor and Product Management	3 weeks ago	Frank Lan	Model-driven

<https://www.microsoft.com/en-us/power-platform/blog/power-apps/build-better-apps-faster-copilot-in-power-apps-is-now-generally-available/>

# Copilots



# Takeaways

- We no longer use Assembler
- Enable domain experts to digitalize, quantify and improve processes
- Software Background is beneficial
- Enable Low Code with Pro Code

Workflow Auftrag starten (Montageanleitung)

The screenshot shows a workflow titled "Workflow Auftrag starten (Montageanleitung)". It begins with a decision step "Steuerung: Bedingung" (Control: Condition) with the condition "%Workflow Parameter.auftragId% == """. The "Wenn Ja (true)" path leads to a step "status" with the value "keine Auftragsnummer eingegeben". The "Wenn Nein (false)" path leads to a "Daten: Auftrag laden" step, which then leads to a "Daten: Laden" step. Both of these steps are enclosed in a "iDIP: Asset Parameter schreiben" (iDIP: Write Asset Parameter) container. This container has fields for AssetKey (%Workflow Parameter.arbeitsstationId%), AssetType (Montagestation), Parameter (fabrikatID), and Value (%Daten: Auftrag laden.Datensätze[0].fabrikat.id%). Below this is another "iDIP: Asset Parameter schreiben 1" step with the same configuration.

Vorhandene Variablen

Daten: Auftrag laden

Komponenten Parameter:

*Thank you for your time!*



Mark Allibone



@mallibone



Rey Technology



<https://mallibone.com>



<https://nullpointers.io>



<https://idip-solutions.com>



*Thank you for your time!*

