

# Power Apps logic made easy: Smarter development with Named Formulas & User Defined Functions

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Power Platform Architect @ KPMG



CollabDays Finland 2025

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# Katerina Chernevskaya

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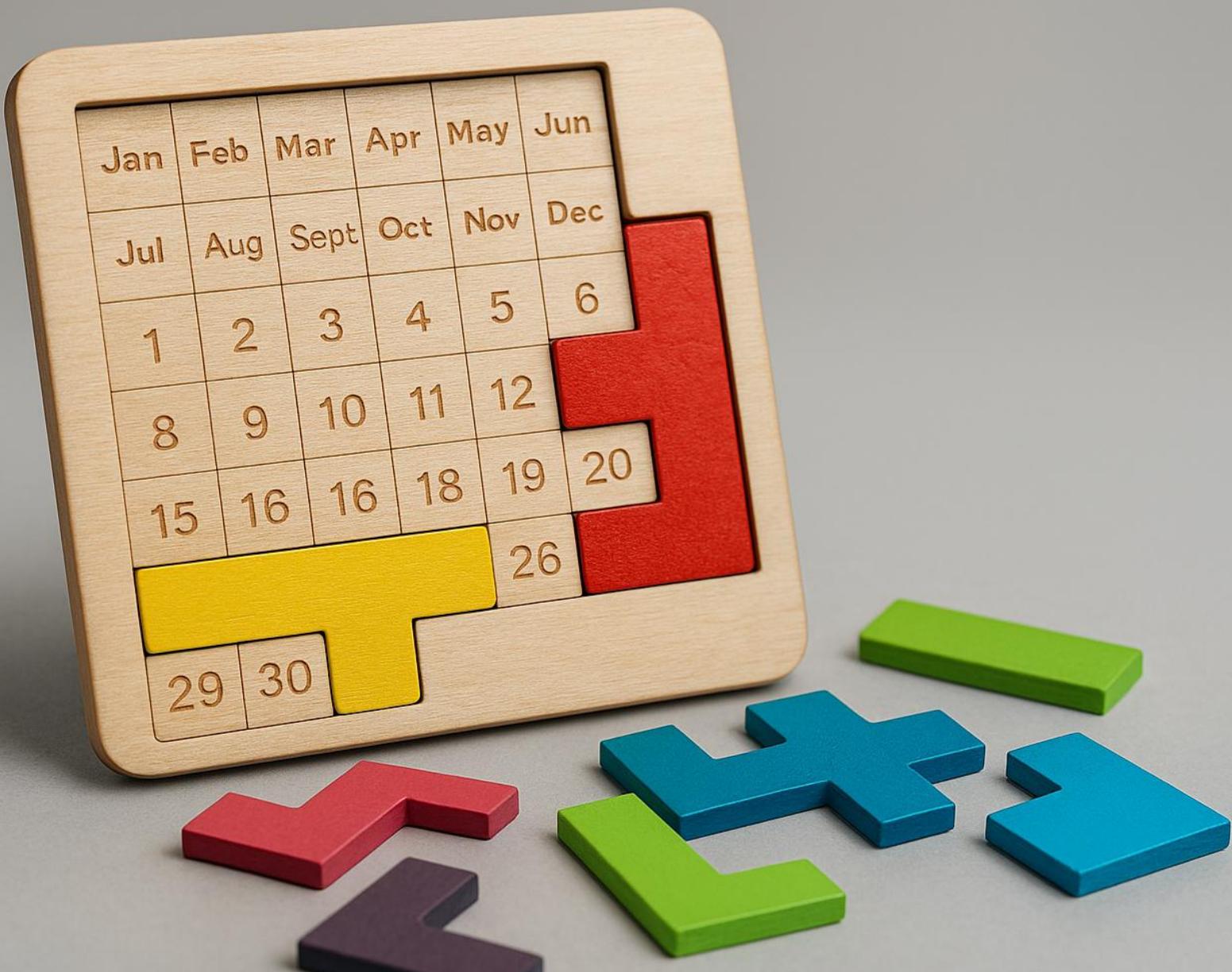
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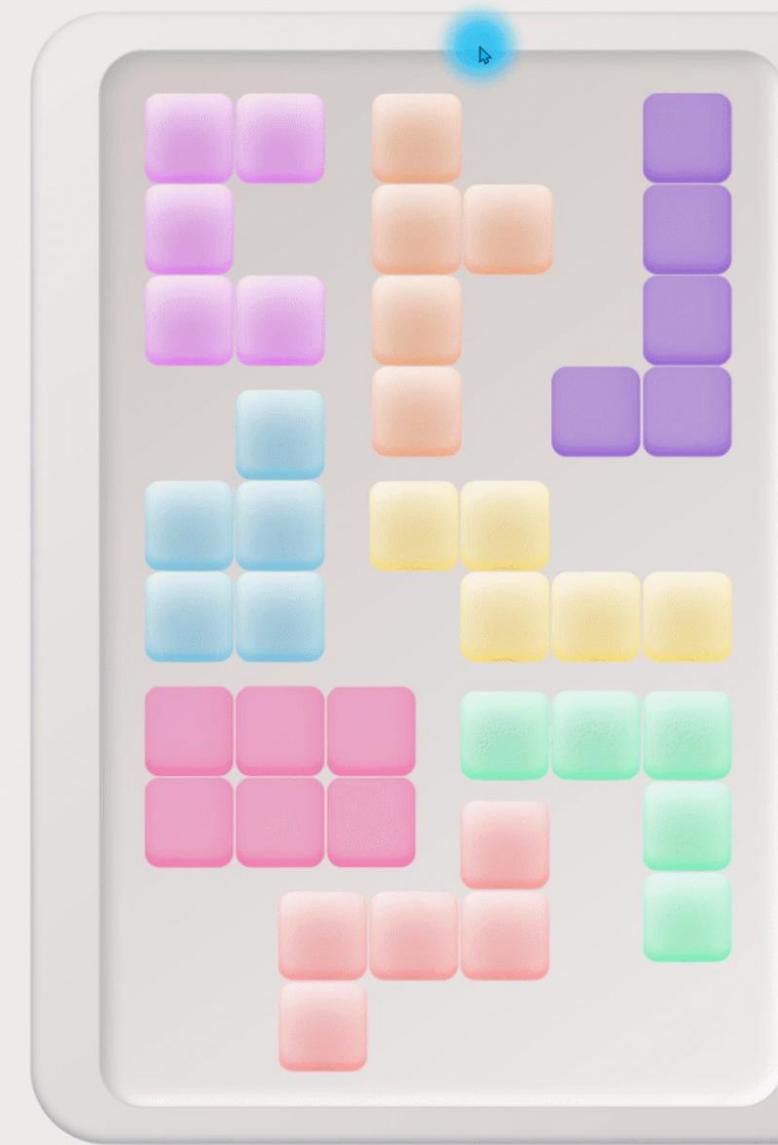
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# Roadmap to Sanity



- The Pain is real
- Meet the Heroes: UDF & NF
- Showtime:
  - Validation
  - Parameters Custom types
  - Color Schema
  - Visibility
  - Navigation
- Wrap-up





# A Puzzle A Day

Slice the Day with a Tangram Play!

Jan	Feb	Mar	Apr	May	Jun	
Jul	Aug	Sep	Oct	Nov	Dec	
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

v. 2.1 | created by Katerina Chernevskaya



**COPY-PASTING  
THE SAME LOGIC ACROSS  
MULTIPLE CONTROLS  
(SCREENS)...**

**REALIZE ONE TINY  
CHANGE NEEDS  
UPDATING IN A DOZEN  
PLACES**

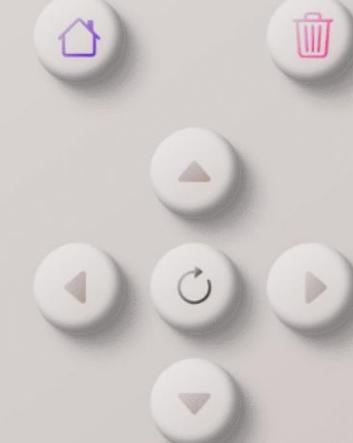


# A Puzzle A Day

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

00:00:00



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6 551  
lines of code

2 386  
lines of code

# A Puzzle A Day

Slice the Day with a Tangram Play!

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1	2	3	4	5	6	7
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00:00:00



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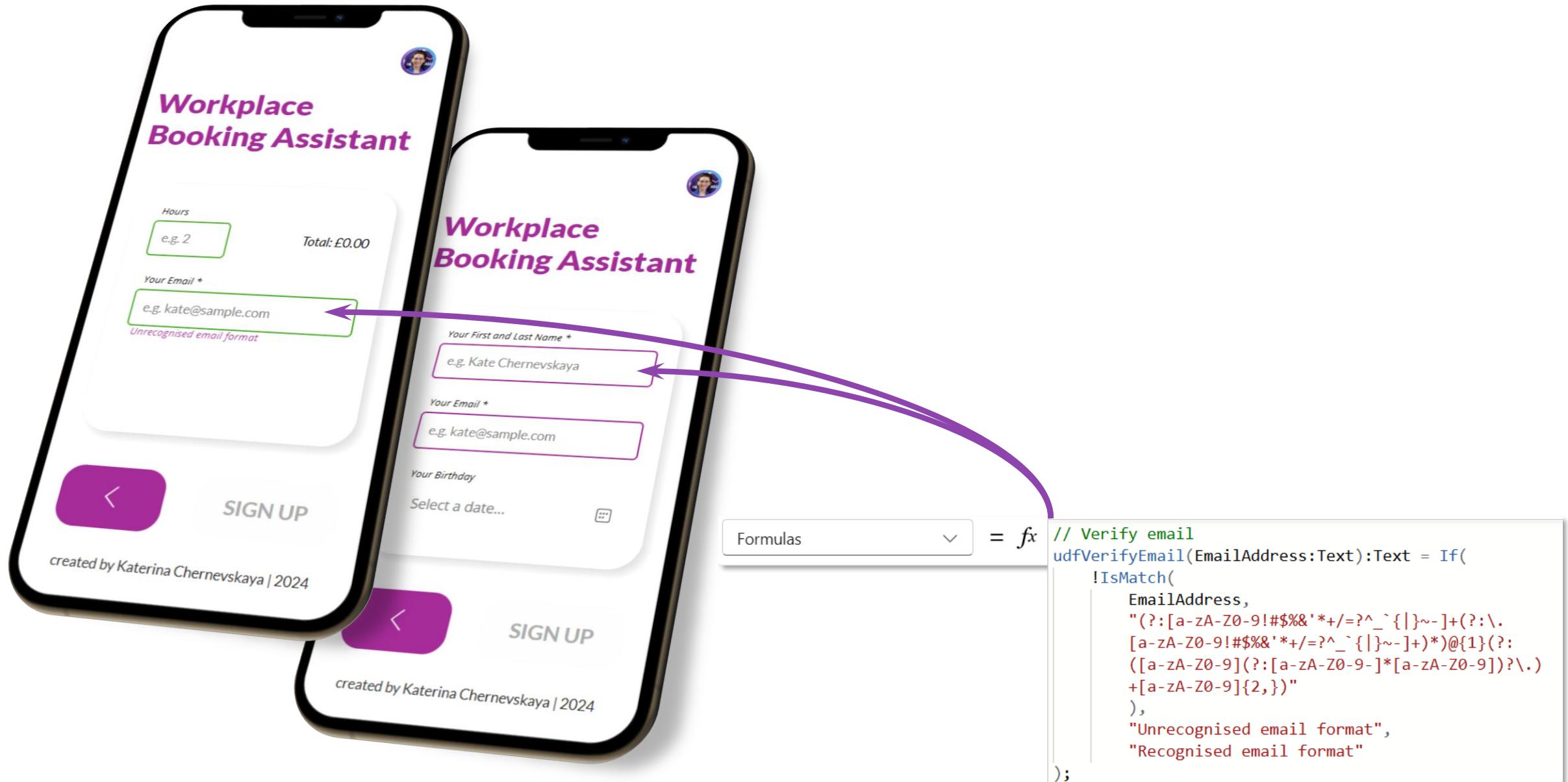
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# Ingredients for awesome apps

- ✓ Clear Naming Convention
- ✓ Modularity
- ✓ Performance optimization
- ✓ App theming
- ✓ Navigation map
- ✓ Error Handling and debugging
- ✓ Documentation and comments





# the long list of **OnStart** values





# LOADING ...



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Power Apps | Monitor - Named Formula Sample

Published app session (See versions)

Id	Time	Category	Result	Operation	Duration (ms)	Property
1	23:30:17.473	ScreenLoad	Success	LoadScreen (Screen1)	6	
2	23:30:17.480	ScreenLoad	Success	Navigate (Screen1)	5	
3	23:30:17.816	Network	Success	getRows	203	OnStart
4	23:30:17.822	Function	Success	ClearCollect		OnStart
5	23:30:17.825	Performance	Success	App.OnStart	351	
6	23:30:28.675	UserAction	Success	Select		OnSelect
7	23:30:28.696	ScreenLoad	Success	LoadScreen (Screen2)	13	
8	23:30:28.809	ScreenLoad	Success	Navigate (Screen1->Screen2)	112	OnSelect
9	23:30:28.923	Network	Success	getRows	108	nfTelemetry

Once user navigates to the screen – the NF triggers

## USER DEFINED FUNCTIONS NAMED FORMULAS

Reusable Logic

Improved maintainability

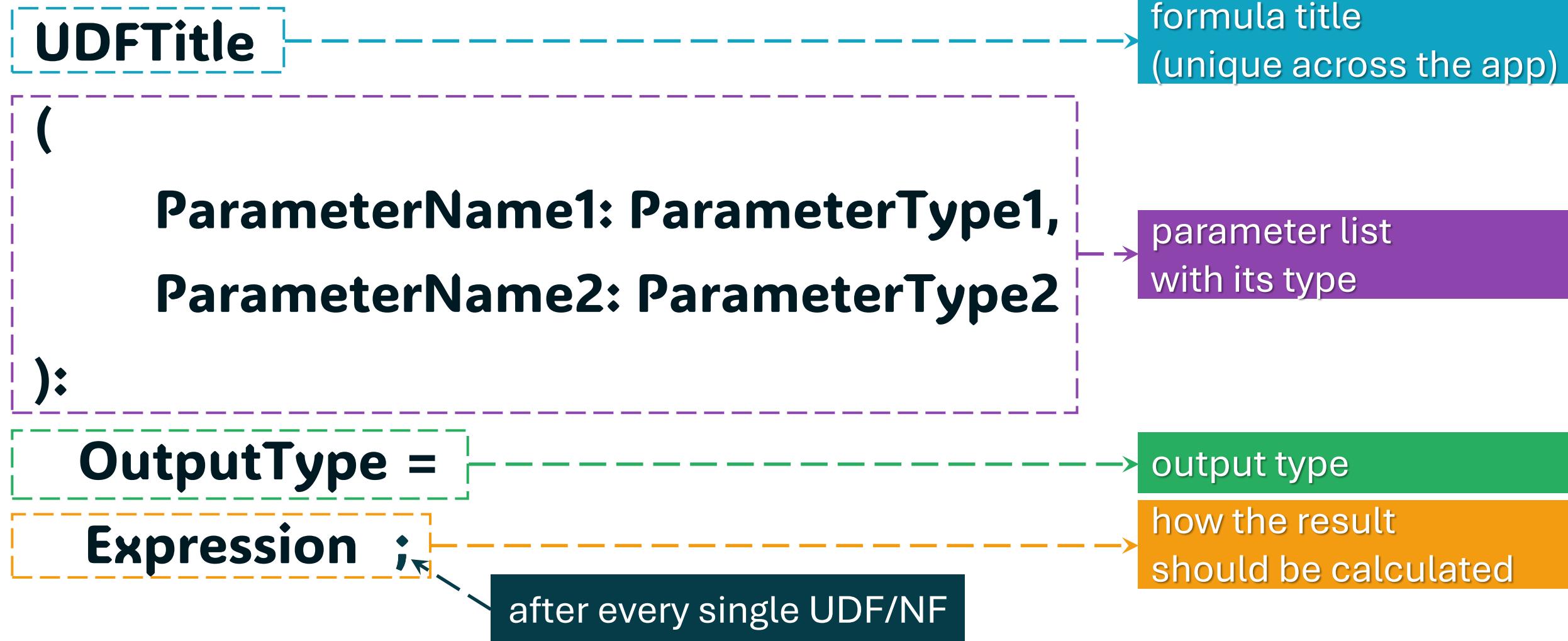
Enhanced readability

Performance optimization

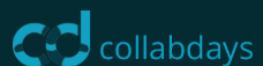
Scalability



# User Defined Function



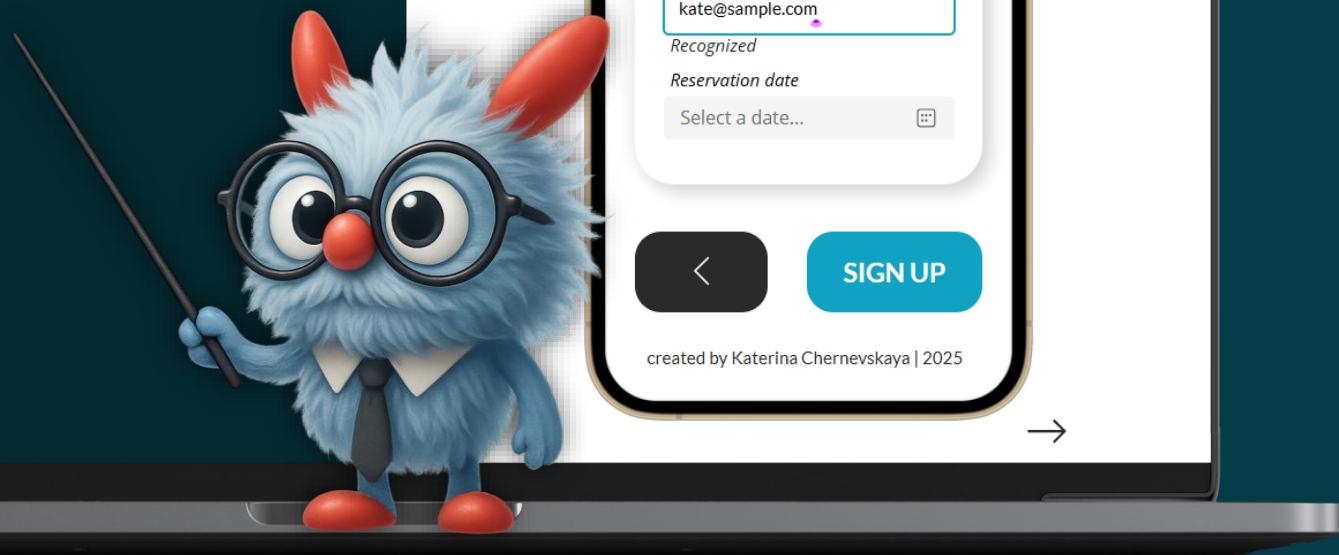
## Simple UDF



- Simple UDF
- Verify Email

UDF:

```
udfTotalPrice(  
    parHours: Number  
) : Text =  
    $"Total: {  
        Text(parHours*50, "#,##0.00")  
    }";
```



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# User Defined Function

**UDFTitle**

(

**ParameterName1: ParameterType1,**

**ParameterName2: ParameterType2**

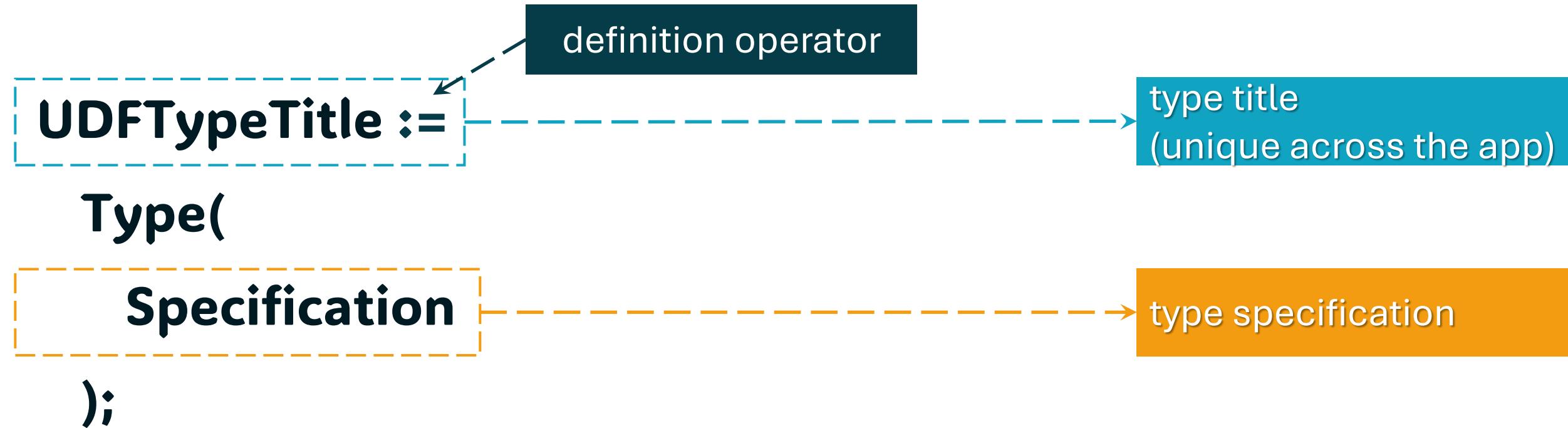
):

**OutputType =**

**{ Expression };**

expression with  
behavior functions

# Custom type



# Workplace booking preferences

3/28/2025

Booking duration: 6 h

## Select Parameters

Ergonomic chair

Locker

Monitor

Next to the air conditioner

Next to the heater

Next to the window

USB Socket

Socket

## Select workspace type

- Standard workspace
- Private booth
- Quiet zone

## Select department or zone

Shared Space

## Parking space reservation

 Reserve a parking space along with the workspace

## Workspace comfort rating (post-use feedback)



## Select meal preorder

Snacks, Beverage, Lunch, Coffee

 I have read and agree to the workspace usage policy**Send telemetry**

# Azure Application Insights

traces		Time range : Last 30 minutes	Show : 1000 results
		Results	Chart
timestamp [UTC]	↑↓	message	
3/28/2025, 9:31:50.020 ...		udf_trace_demo	
timestamp [UTC]		2025-03-28T09:31:50.02Z	
message		udf_trace_demo	
severityLevel		1	
itemType		trace	
customDimensions		{"checkbox":"true","checkbox_record":	
checkbox		true	
combobox_record		{"0":"Snacks","1":"Beverage","2":"Lunch","3":	
0		Snacks	
1		Beverage	
2		Lunch	
3		Coffee	
combobox_string		Snacks, Beverage, Lunch, Coffee	
datePicker		3/28/2025	
dropdown		Shared Space	
gallery_items_record		{"0":"Ergonomic chair","1":"Monitor","2":	
0		Ergonomic chair	
1		Monitor	
2		Next to the air conditioner	
3		Socket	
4		USB Socket	
gallery_items_string		Ergonomic chair, Monitor, Next to the	
radio		Quiet zone	
rating		5	
slider		6	
toggle		Reserve a parking space along with th	

ver.1.28



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# Named Formula

**NFTitle =**

**Expression;**

NF title  
(unique across the app)

how the result  
should be calculated

## Theming



● Theming ● Visibility ● Navigation

Default colors

Primary #10A2C2

#10A2C2



Regular #2A2A2A

#2A2A2A



Light #FFFFFF

#FFFFFF



Accent #FF4D00

#FF4D00

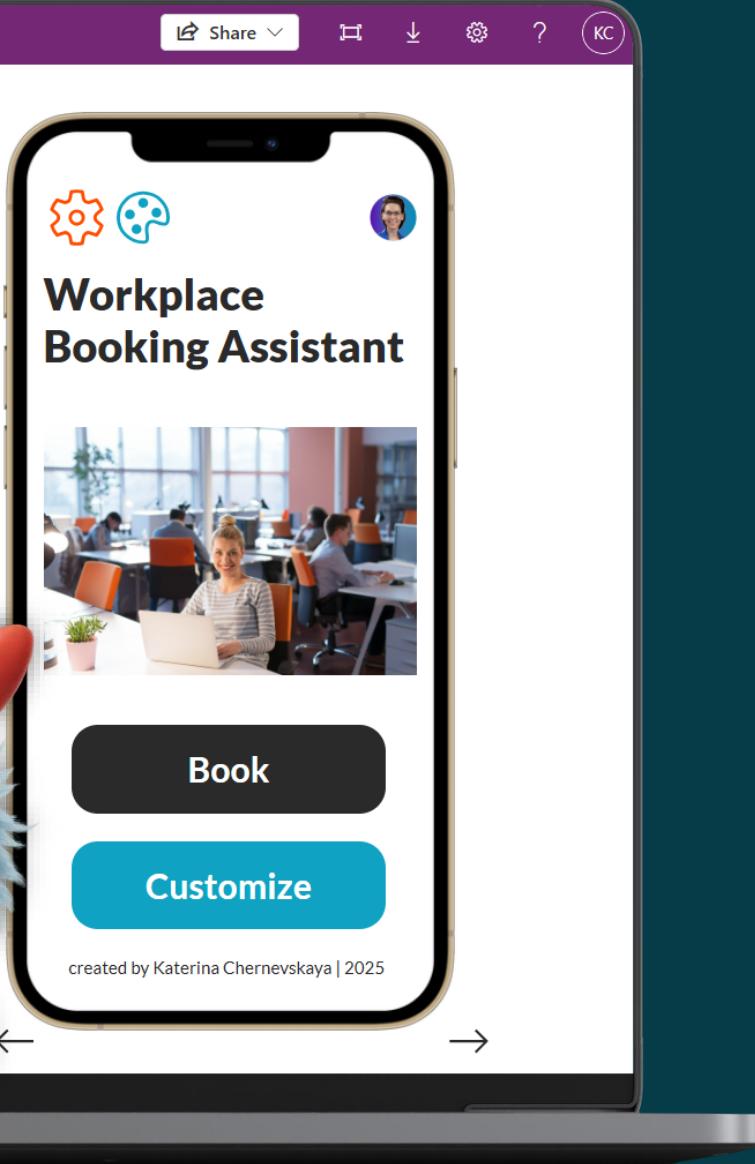


Restore

Update colors

#76BC21

#FFCD00



# DEMO



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# Navigation Map

ROLES	BUTTON TEXT	TARGET SCREEN	GEAR ICON	PALETTE ICON	...
ADMIN	SELECT PARAMETERS	SELECT PARAMETERS	✓ TRUE	✗ FALSE	
DESIGNER	CUSTOMIZE	SELECT PARAMETERS	✓ TRUE	✓ TRUE	
MANAGER	SELECT DATES	SELECT DATES	✗ FALSE	✗ FALSE	
...					

# Navigation



● Theming ● Visibility ● Navigation

Current user role:

Designer

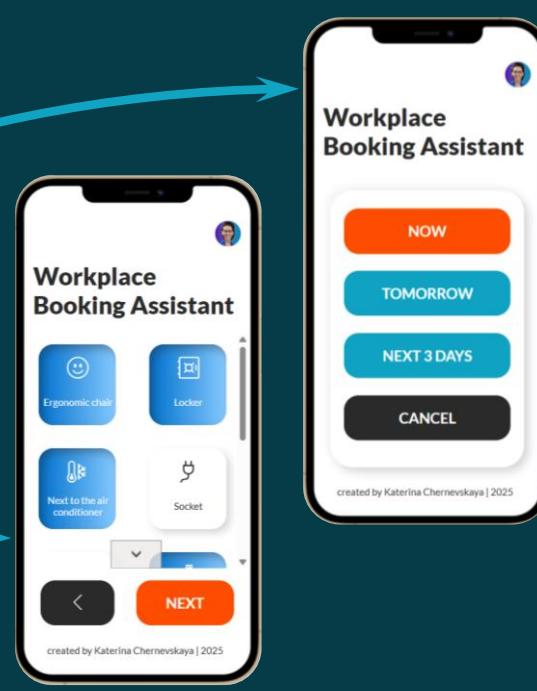
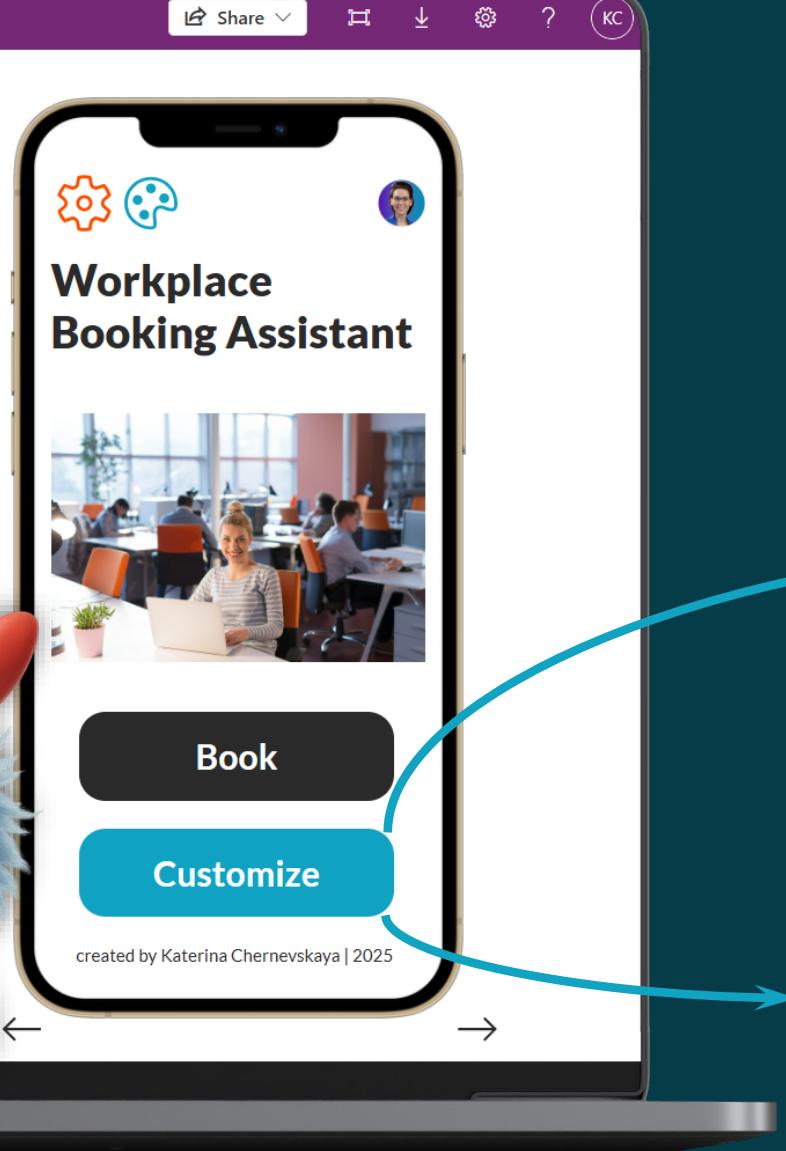
Update

Named Formula:

```
nfNavigationControl = Table(
    {
        UserRole: "Administrator",
        GearIcon: true,
        ...
        NavigateTo: 'Select Parameters'
    },
    ...
);
```

Navigation button:

```
Navigate(
    LookUp(
        nfNavigationControl,
        UserRole = nfCurrentUserRole
    ).NavigateTo
)
```



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# The New Way in Development

## NAMED FORMULAS

- Read-only and transparent
- Centralized logic
- Always-up-to-date value

```
nfCount = CountIf(  
    Parameters,  
    true  
)
```

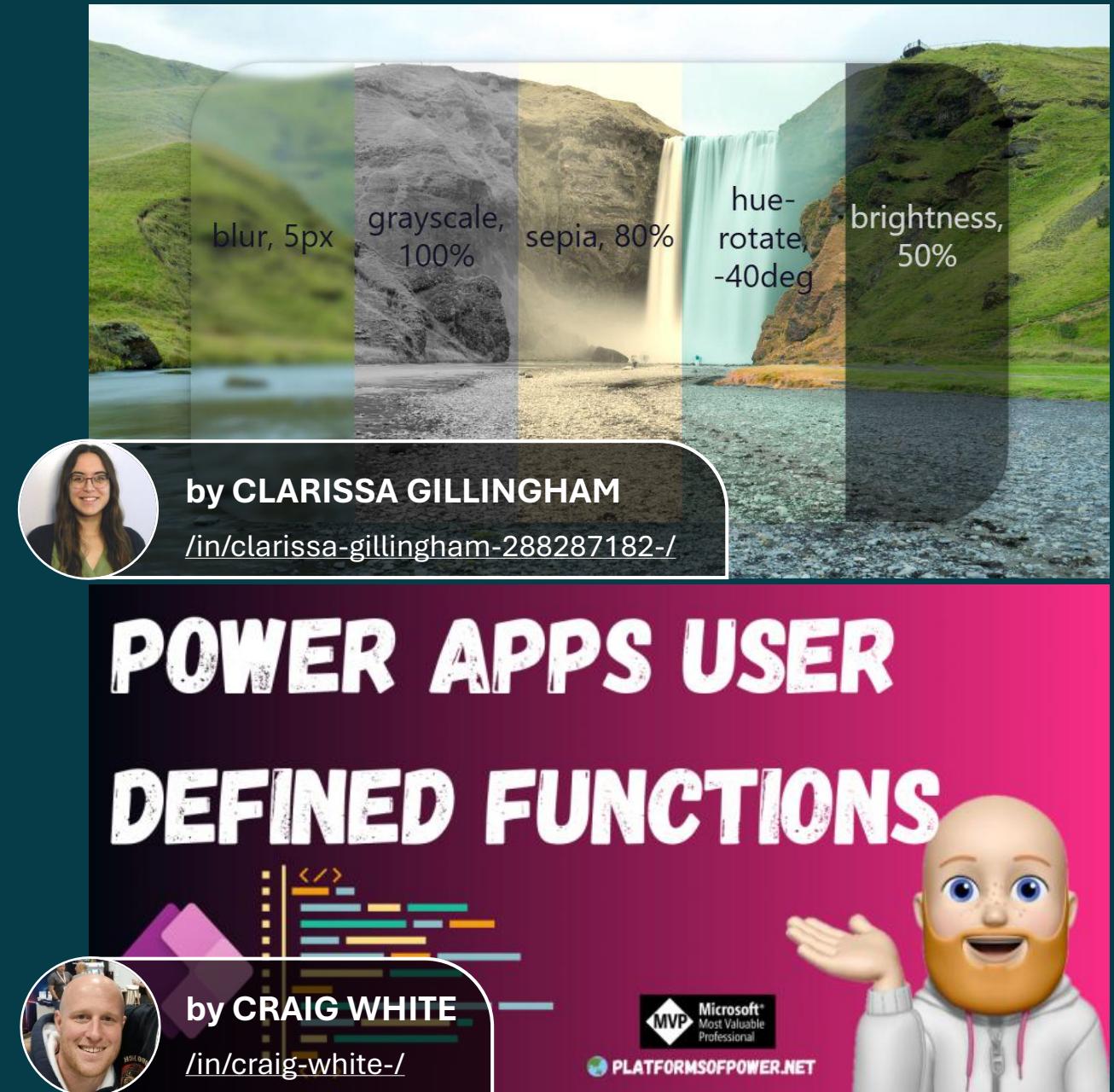
## USER DEFINED FUNCTIONS

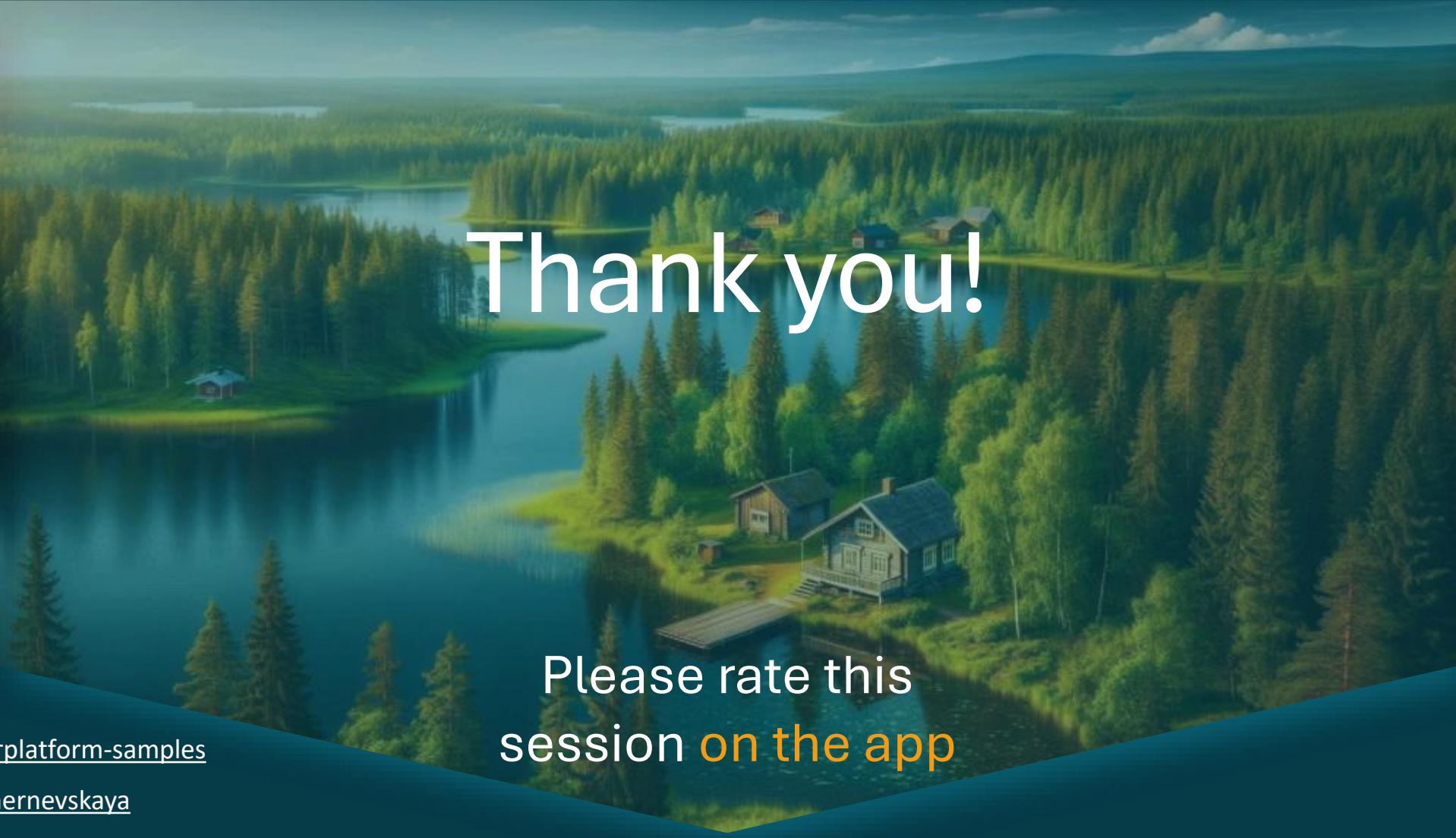
- Reusable Logic Blocks
- Parameter-Driven
- Maintainable & Modular

```
udfTotalPrice(  
    hours: Number  
) : Text =  
    $"Total: {  
        Text(hours*50, "£#,##0.00")  
    }";
```

# More Examples

- Evaluating booleans
  - Sum of user inputs
  - Calculating percentages
  - Calculating total costs
  - Text and Conditional formatting
  - Pattern matching
  - Converting Hex values to text
  - Calculating working days
  - Constructing an email body
  - UI effects
- and many more*





# Thank you!

Please rate this  
session **on the app**



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