

# **Bearskin Hats**

## Using Guard Clauses for More Robust Programming

**February 8, 3:00 pm–4:00pm**

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Codence

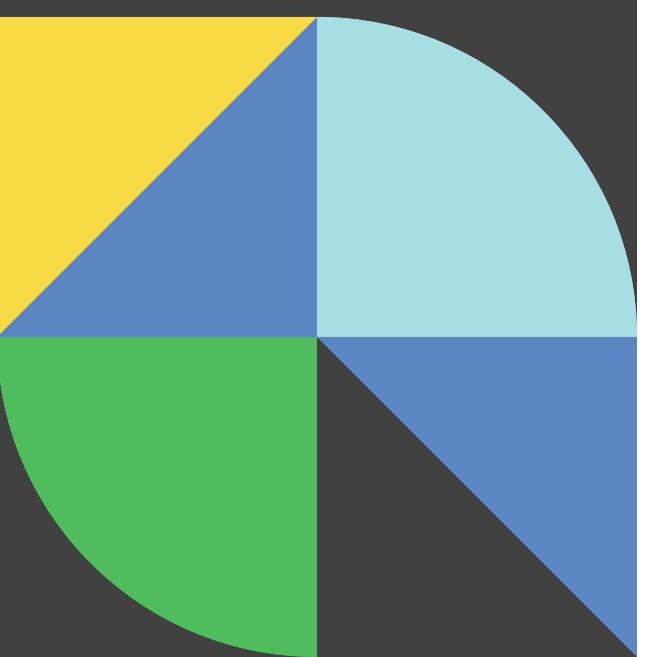


# Who Am I?

Platform Architect at Codence

Worked in FileMaker since 2012 (no `fp5` conversions)

Passionate about cooking, sailing, and ~~lazy~~ efficient coding practices



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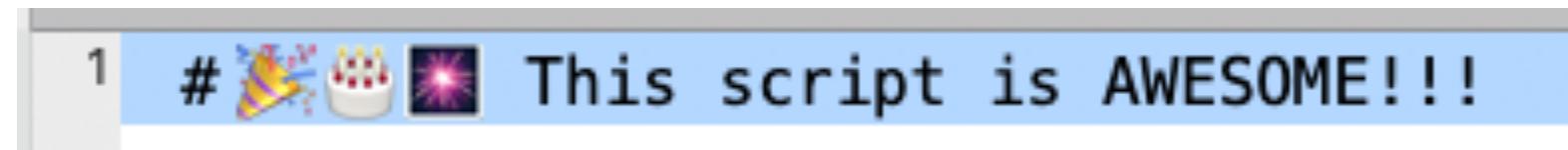
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# Take Aways

01

## Junior Developers

- You can use emojis in FileMaker script comments



02

## Intermediate Developers

- Build a foundational understanding of how to use **guard clauses**
- Learn how to implement the **Try-Catch** pattern in FileMaker.

03

## Tech Leads

- Learn to apply guard clauses more effectively, especially in complex scripting scenarios.
- Gain broader knowledge on coding best practices.



# What We'll Cover

## ✓ In Scope

Guard Clauses

Single-Pass Loops / Try-Catch

## ✗ NOT In Scope

Error Handling

- R. Naud | Error Handling Revisited (*DIGFM 2023-10*, <https://youtu.be/muhK5AGVb7o>)

Transactions

- A. Torres-Navarro & B. Cooney | Advanced modern Claris FileMaker transactions (*ENGAGE 2024*)





# Guard



```
# Do some stuff  
$var = Get ( ScriptParameter )
```

...

...

```
# Do some more stuff  
Perform Script [ "Profit!" ; $var ]  
Exit Script []
```

(Demo file)



# Guard



```
# Do some stuff  
$var = Get ( ScriptParameter )
```

...

```
❗ If [requirementsNotMet]:
```



...

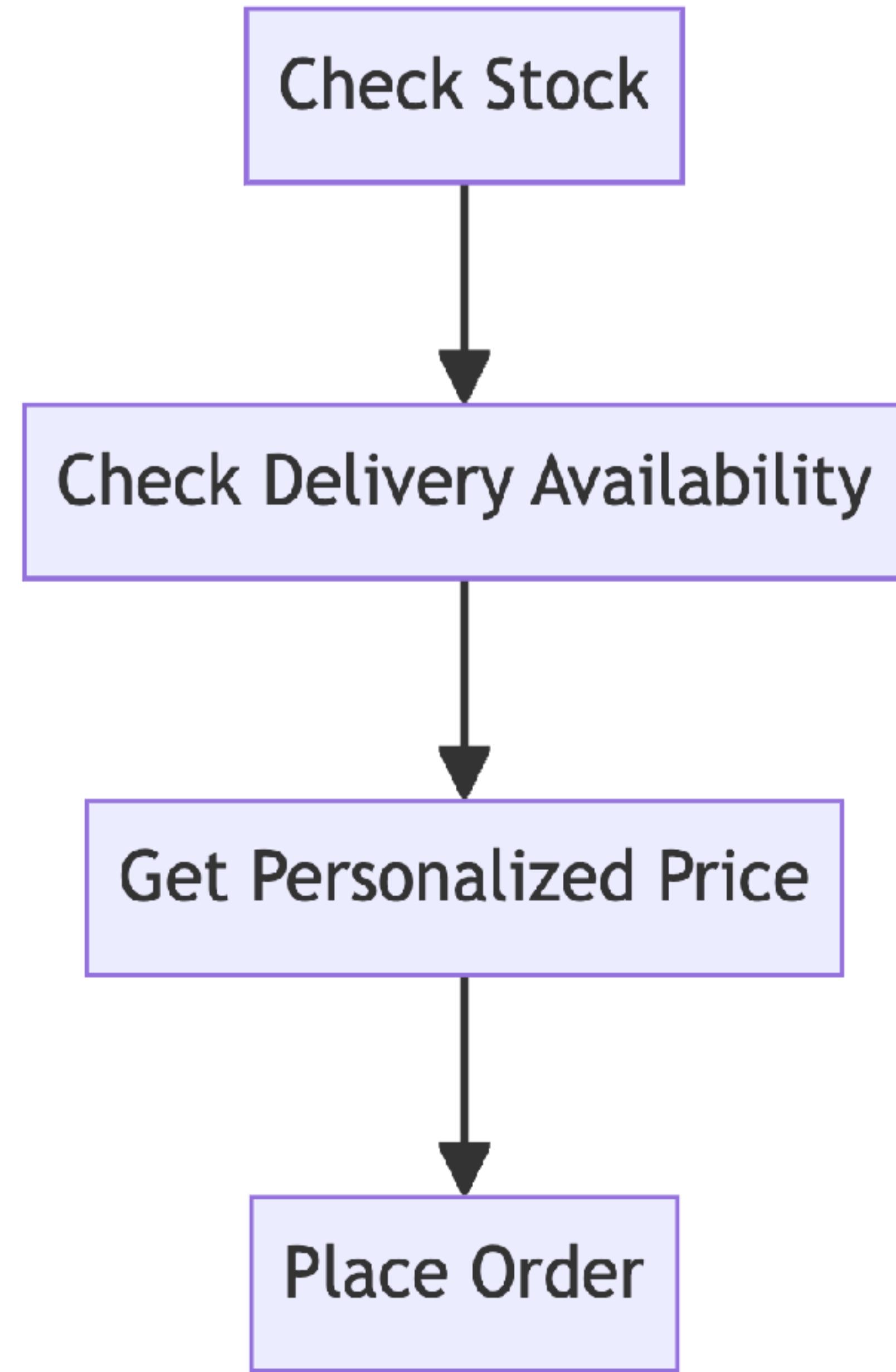
```
# Do some more stuff
```

```
Perform Script [ "Profit!" ; $var ]
```

```
Exit Script []
```

(Demo file)

# [DEMO] If vs Guard



(Demo file)

# Why Guard Clauses?

01

**More Readable Code**

Avoid the Arrow Pattern

02

**Fail Fast**

Skip to the end when  
something goes wrong

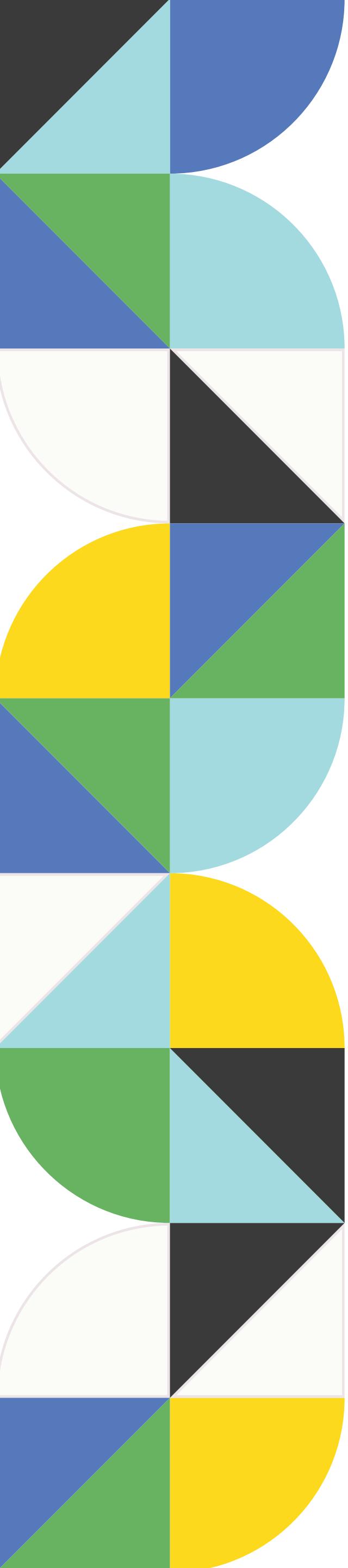
03

**Further Reading**

- <https://www.codementor.io/@clintwinter/use-guard-clauses-for-cleaner-code-1rrsczgwxp>
- [https://en.wikipedia.org/wiki/Guard\\_\(computer\\_science\)](https://en.wikipedia.org/wiki/Guard_(computer_science))

(Demo file)





"It is not enough for code to work. It must also be clean, readable, and understandable."

~ Robert C. Martin, *Clean Code*

**[DEMO]**  
**Exit Script**  
**v Exit Loop If**



(Demo file)

# Try-Catch

Especially Useful in Iterators

```
data = ["10", "20", "a", "30", "40b", "50"]

for item in data:
    try:
        number = int(item) # Attempt to convert string to integer
        print(f"Processed number: {number}")

    except ValueError:
        print(f"Invalid item encountered: '{item}' - Skipping")
```

```
Processed number: 10
Processed number: 20
Invalid item encountered: 'a' - Skipping
Processed number: 30
Invalid item encountered: '40b' - Skipping
Processed number: 50
```

(Demo file)

# Single-Pass Loops

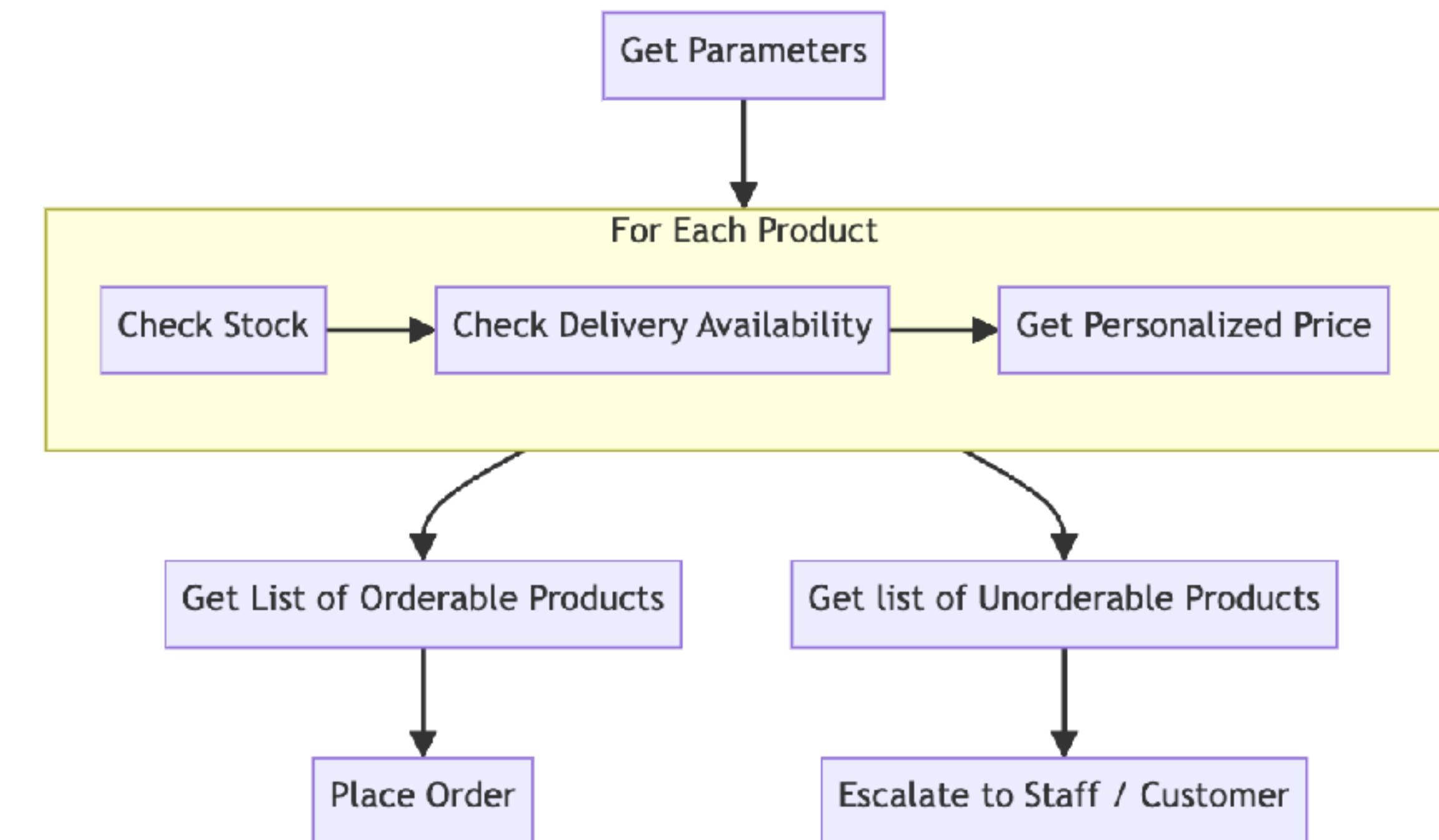
## Try-Catch in FileMaker

```
25 # TRY
26 Loop
27 # GUARD
28 Exit Loop If [ x.ifThenThrowException ( value.isNullOrError ( $listSystemTables ) ; "This script requires a l... ]
29
30 # FOREACH ( $tableName in $listSystemTables )
31 Loop
32 Exit Loop If [ Let ( [ $i1Max = ValueCount ( $listSystemTables ) ;$i1 = $i1 + 1 ;$i10 = $i1 - 1 ] ; If ( $... ]
33 Set Variable [ $tableName ; Value: GetValue ( $listSystemTables ; $i1 ) ]
34
35 # INNER TRY
36 Loop
37
38 Go to Layout [ $tableName ; Animation: None ]
39
40 # GUARD
41 Exit Loop If [ x.ifThenThrowException ( not ( Get ( LayoutTableName ) = $tableName ) ; "Expected to be o... ]
42 Exit Loop If [ Get ( TotalRecordCount ) > 0 // SAFE EXIT: Records exist on this table, no need to contin... ]
43
44 New Record/Request
45
46 Exit Loop If [ True //END INNER TRY ]
47 End Loop
48 # END INNER TRY
49
50 End Loop
51 # END FOREACH ( $tableName in $listSystemTables )
52
53 Exit Loop If [ True //END TRY ]
54 End Loop
55
56 # CATCH
57 If [ x.countExceptions ]
58 Set Variable [ $~void ; Value: script.response.addExceptions ]
59 End If
60
61 # FINALLY
62
63 Exit Script [ Text Result: script.response ]
64
```

(Demo file)

# [DEMO]

## Try-Catch in Other Structures



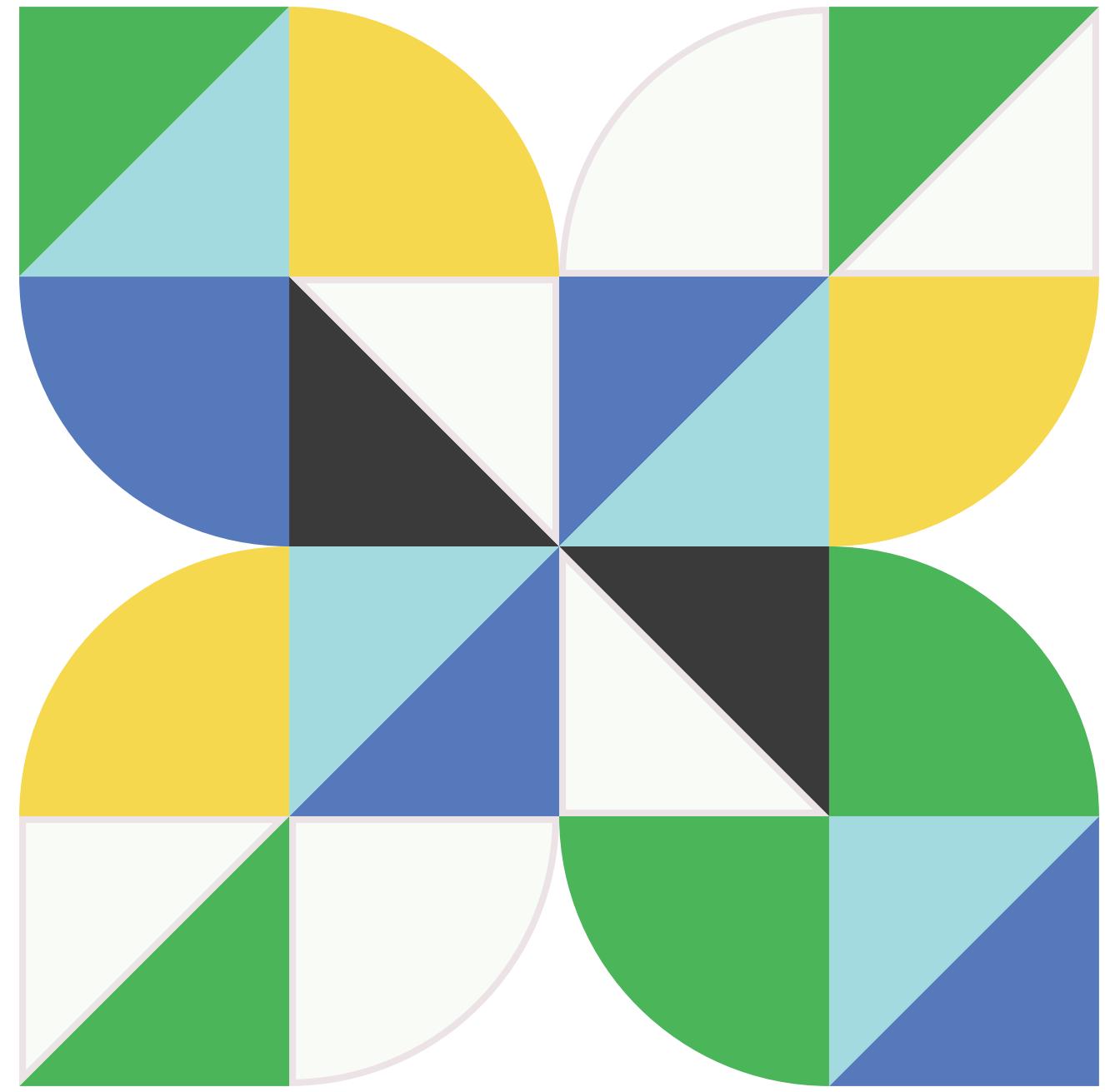
(Demo file)

# Scripts vs Calculations

## Can't Try-Catch in Calc Engine

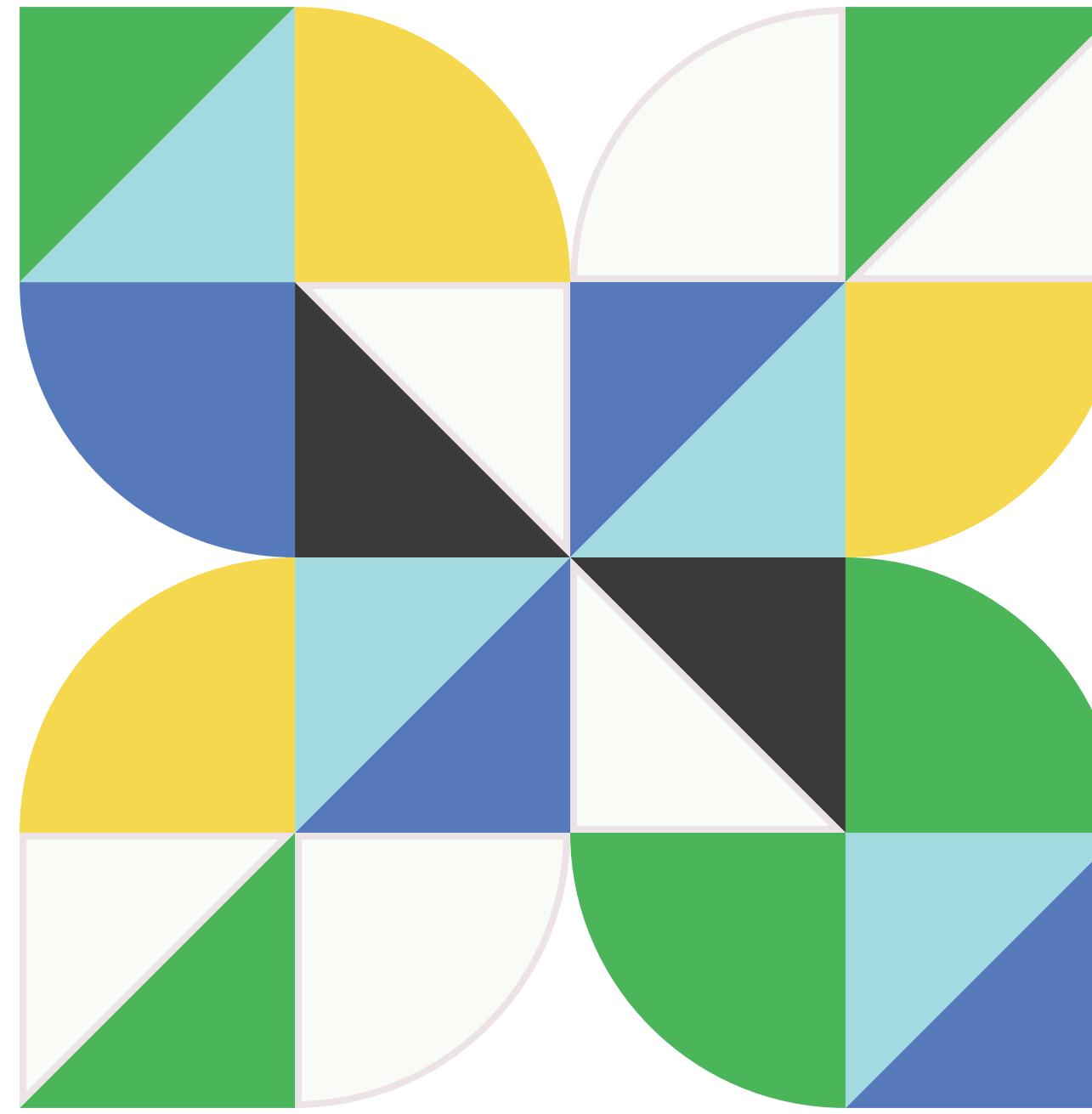
```
23
24 // Before we do something slow/expensive, let's set a guard clause with an error message.
25 isExit = Case ( isExit ; True
26 ; Length ($1) and Length ($2) ; True // If both $1 and $2 are empty, we don't need to do the expensive stuff
27 ) ;
28 ~errorMessage = Case ( Length ( ~errorMessage ) ; ~errorMessage
29 ; isExit ; "Error: " & $1 & " " & $2 & " cannot both be set."
30 ) ;
31
32 $3 = If ( not isExit ;
33 "Do some hard stuff" // Do something slow, like iterating over a list of 10^6 items
34 ) ;
35
```

(Demo file)



# Q&A

(Demo file)



# How to Type Emoji Comments

(Demo file)

# Thank you!

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Claris Engage 2024