outsystems

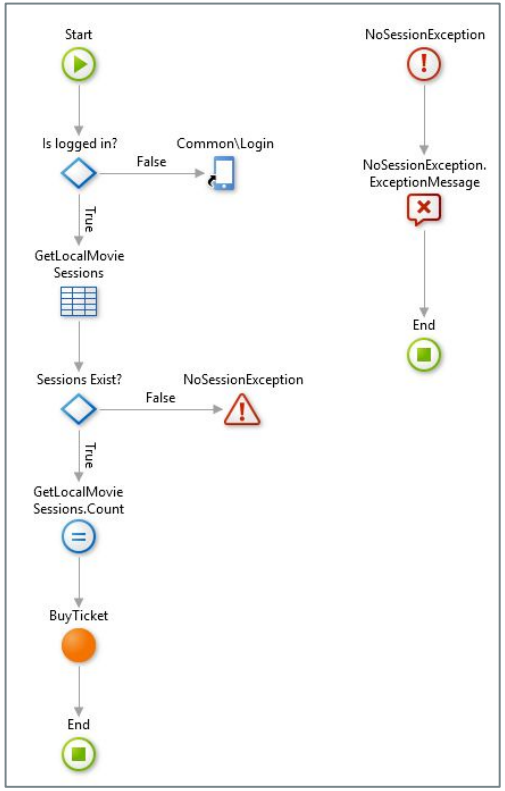
Logic and Exception Handling

Topics

- Action Flows
- Code Reusability
- Flow Nodes
  - Assign
  - If
  - Switch
  - For Each
  - Ad-hoc loops
  - JavaScript
- Exception Handling
  - Handler Flows
  - Raising Exceptions
  - Global Exception Handler

Action Flows

- An Action flow is where a piece of **logic** is defined
- It can only have **one Start node**
- Every Action flow can end with multiple:
  - End nodes
  - Raise Exception
  - Destination nodes
- A flow can have multiple Exception Handlers
  - Action and Exception flows cannot intersect



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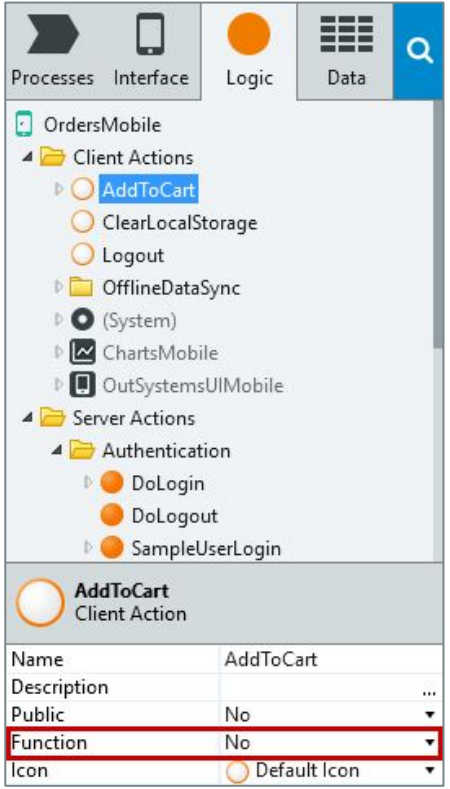
Code Reusability

- Provided through Actions
  - **Screen Actions** can only be bound to Widgets / Events on a Screen
    - Executed client-side
  - **Server / Client Actions** can be called in multiple flows
    - Client Actions can call Server and Client Actions
    - Server Actions can only call Server Actions
- Server / Client Actions can have multiple Input and Output Parameters and Local Variables
- Server / Client Actions can be set as a **Function**
  - Restricted to one Output Parameter
  - Available in Expressions



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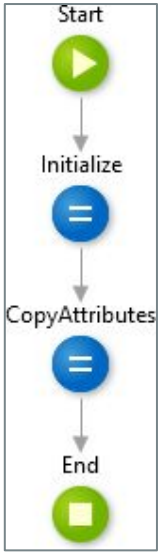
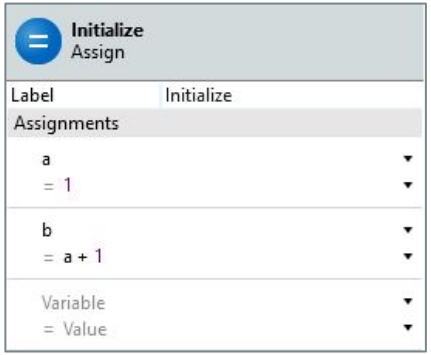
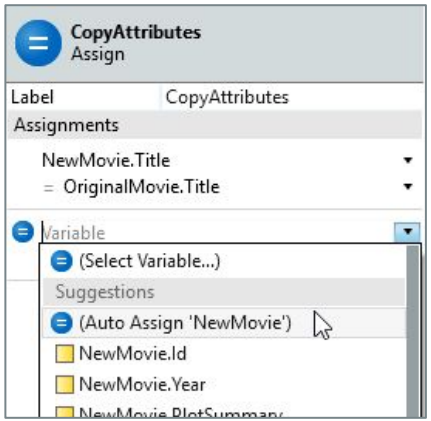
Assign

- Allows setting values to variables (or parameters)
- A single **Assign** can define more than one assignment
  - Values are assigned top to bottom
  - Changes occur immediately
- Service Studio provides some accelerators
  - Auto-assign of remaining Attributes
  - Standard type-matching values suggestion







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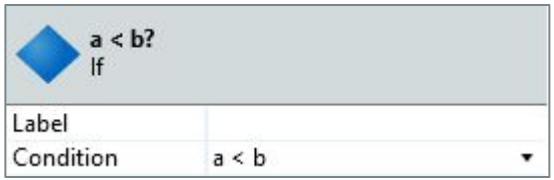
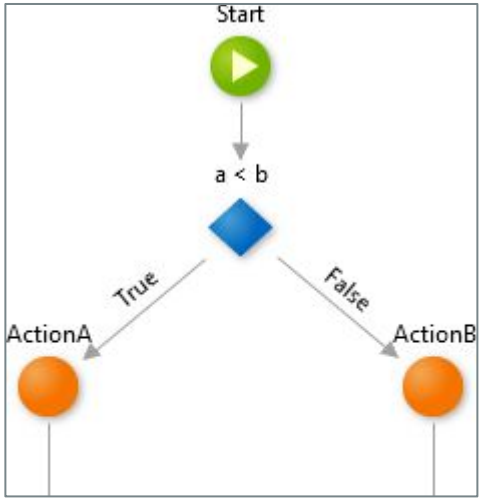
If

- Creates a conditional branching on an Action flow
  - The If condition is evaluated
  - Only the corresponding branch is followed depending on the outcome

- Same as:

```
if a < b
    ActionA
else
    ActionB
```





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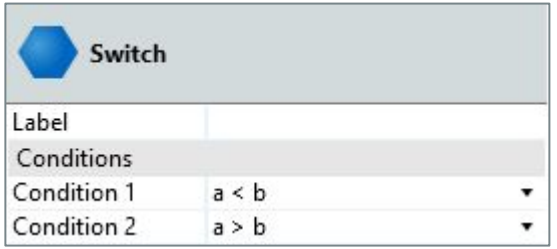
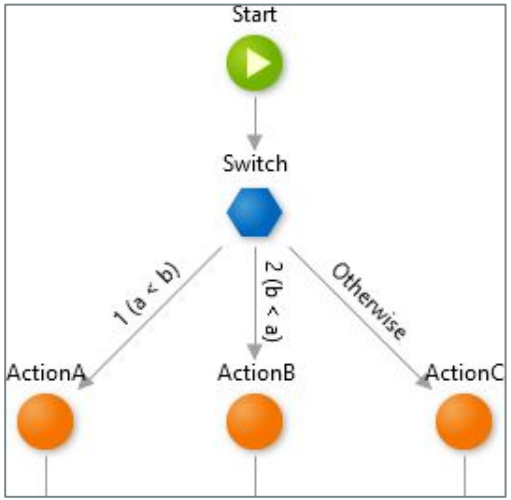
Switch

- Creates conditional branching with multiple branches
  - Conditions are evaluated from first to last
  - **Only** the first branch that evaluates to True is executed, or the Otherwise branch
  - Otherwise branch is mandatory
- Same as

```
if a < b
    ActionA
else if a > b
    ActionB
else
    ActionC
```





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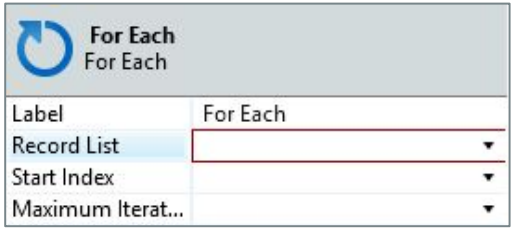
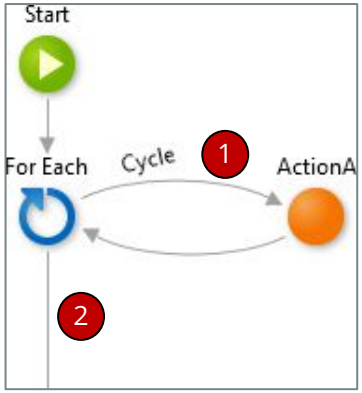
For Each

- Allows iterating through a **Record List**
- In the Action flow
  1. *Cycle* branch is followed for each record in the List
     - The branch must return to the For Each to continue the loop
     - The branch can create other conditional / alternative branches
  2. Branch followed after cycle completes
- *RecordList.Current* gets the record being iterated within the loop





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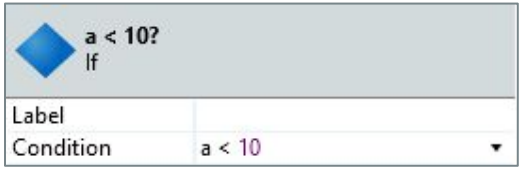
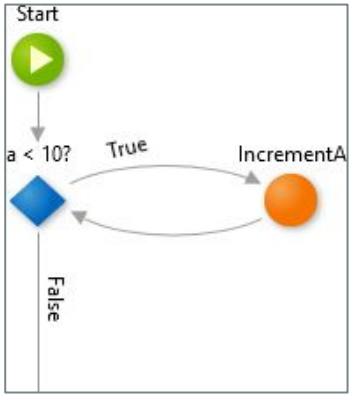
Implementing an ad-hoc Loop

- Use the **If** to evaluate a loop condition
  - Follow a cyclic branch when condition is true
  - Exit loop when condition is false



- In the cyclic branch
  - The branch must return to the If to continue the loop
  - The branch can create other conditional / alternative branches
  - Be careful with infinite loops!



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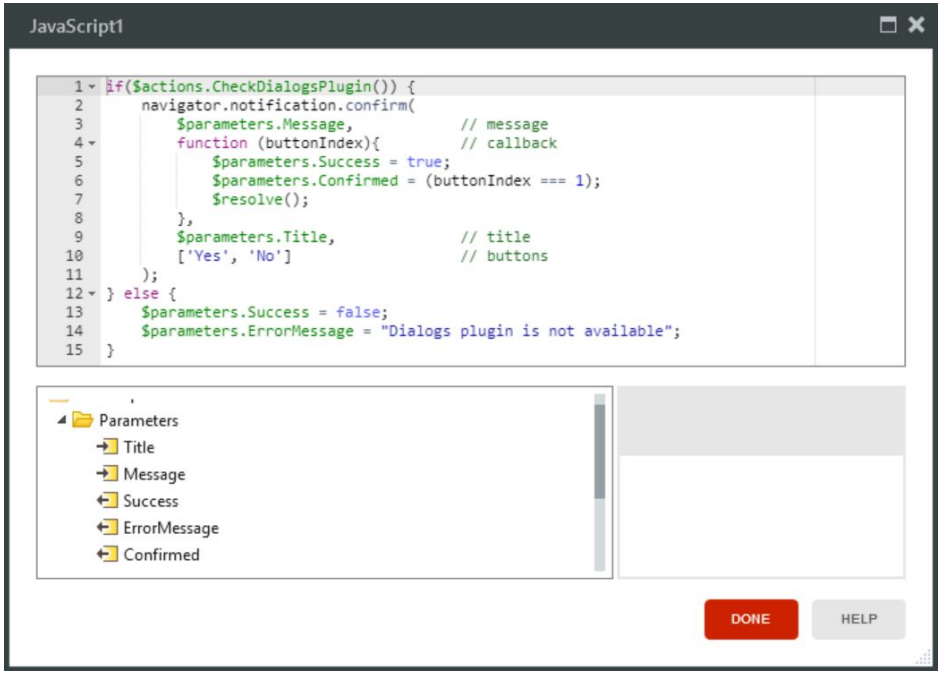
JavaScript

- Enables using JavaScript code in Client Actions
  - Declare variables and assign values
  - Invoke user defined and built-in functions
  - Call Client Actions
- Has a code editor
  - Syntax highlighting
  - Auto-complete
  - JavaScript code error checking
- Has its own scope
  - Input and Output Parameters



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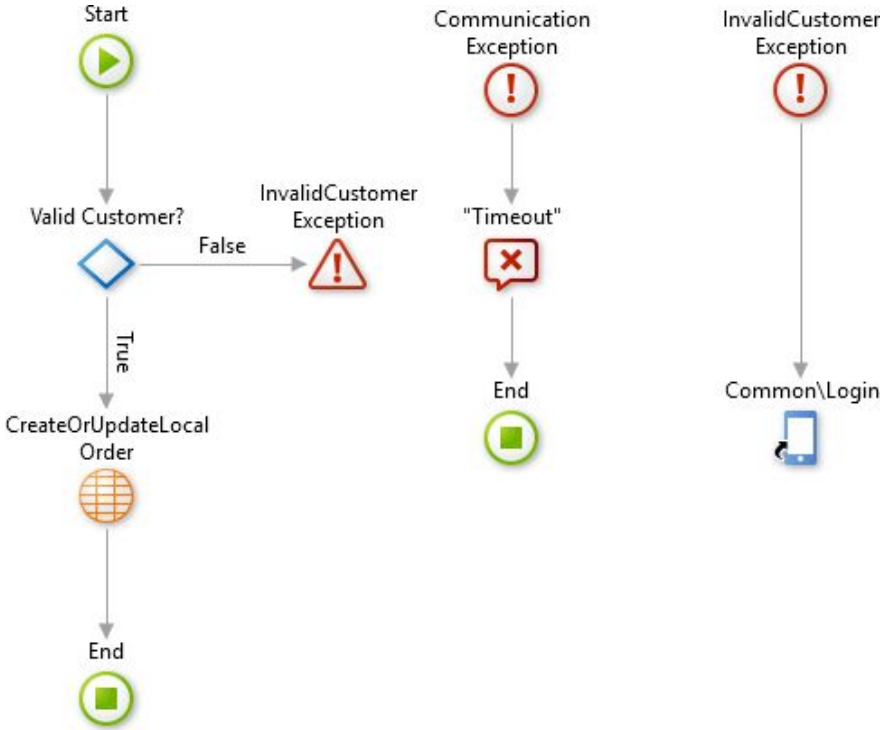
Exception Handler Flows

- An **Exception** is thrown when an operation fails unexpectedly at runtime
  - Execution is moved to an Exception Handler flow
- An Action can have several exception handler flows
  - Database Exceptions
  - Security Exceptions
  - Custom User Exceptions



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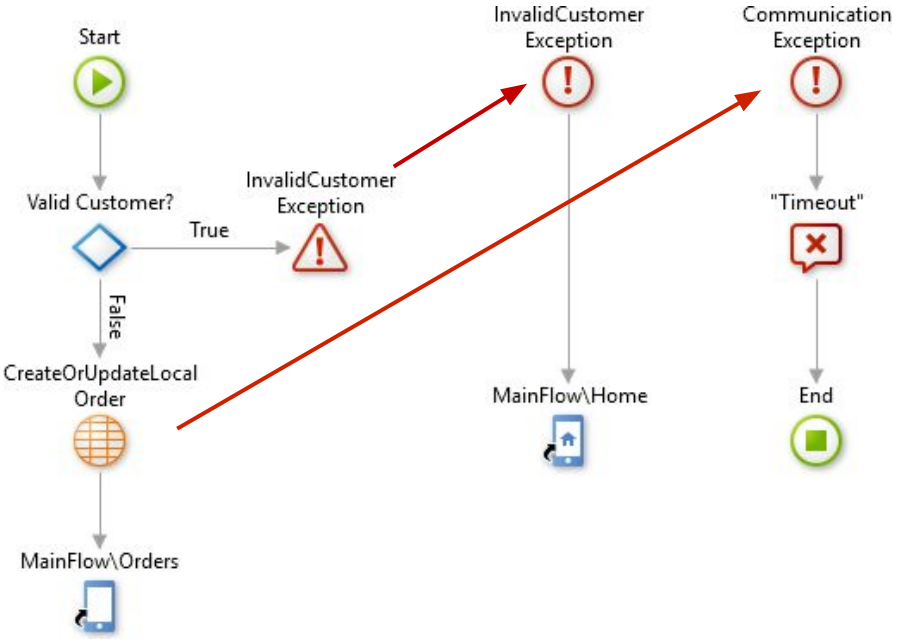
Raising Exceptions

- An Exception can be raised:
  - Automatically (e.g. Database Exception)
  - Raise Exception
- When an Exception is raised:
  - Execution is moved to the handler **most specific to the Exception** thrown
  - Execution continues through that handler flow



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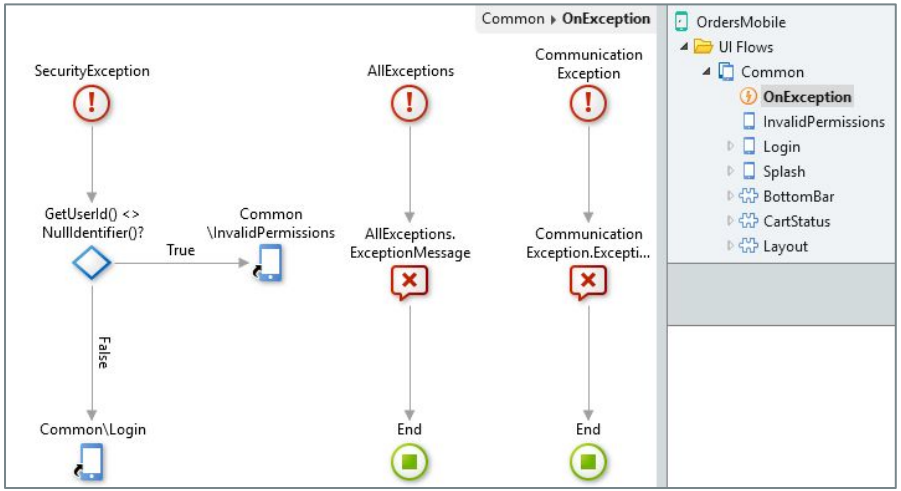
Global Exception Handler

- If a handler doesn't exist in the current execution context:
  - Server *bubbles-up* to check any outer contexts until a matching handler is found
- Module Global Exception Handler
  - Located in the Common Flow (default)
  - At most one per module
  - Highest possible level to bubble-up
  - **Should handle all exceptions**



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Summary

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Exception Handling
Thank You!