LECTURE01B. INTRODUCTION TO UIPATH STUDIO

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Acknowledgements

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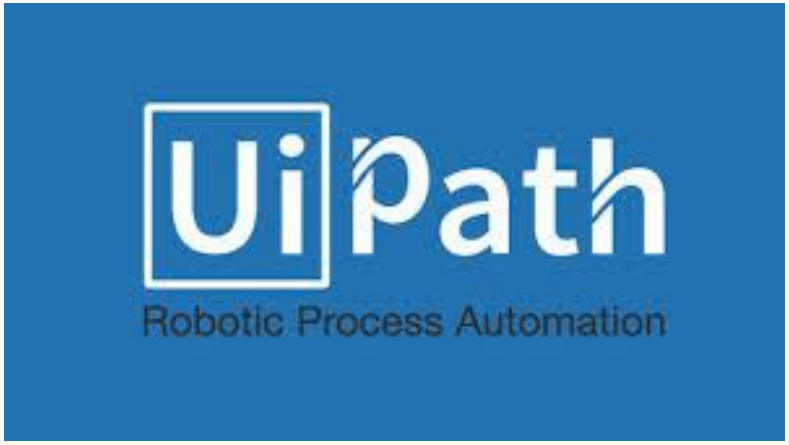

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Automation Project. Definition

- An **activity** is
  - the smallest action in UiPath;
  - a **step** in a process workflow;

- An **automation project** is
  - A **set of steps** that allows to perform a meaningful task;
  - a graphical representation of the business **process**;
- it allows to automate a rule-based process, formed by custom set of steps;

- E.g.:
  - Click on a button;
  - Read a file;
  - Write to a log file.

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Automation Project. Types

- Types of supported projects
  - **Sequences -** for linear processes;
    - it connects one activity to another without cluttering the project;
    - *when to use:* simple scenarios, activities follows one after another;
    - easy to assemble and understand;
  - **Flowcharts -** for more complex processes;
    - it integrates decisions and connects activities in a more diverse manner through multiple branching and logic operators;
    - it provides a two dimensional view of the workflow;
    - *when to use:* to show decision points in a process, no form constraints, visual appealing;
    - *cons:* prone to chaotic interweaving of activities;
  - **State machine -** for very large projects;
    - it applies to projects that use a finite number of states during execution which are triggered by a condition or an activity;
    - *when to use:* to represent standard high-level process diagram of transactional business process templates.

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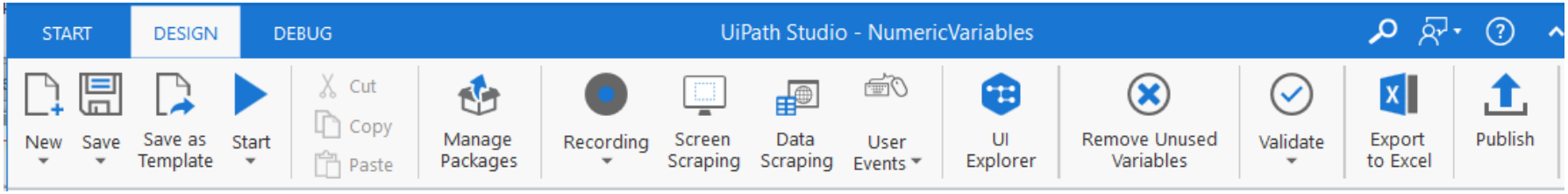
Automation Project. Structure

- by default:
  - **Main.xaml file –** it consists of the main flow;
    - a sequence or a flowchart can be initially added;
    - other .xaml files may be added;
    - at run time this file will be executed only ==> all other .xaml files are connected in **Main.xaml** through the **Invoke Workflow File** activity;
  - **.screenshots folder –** it is generated if the project uses UI automation;
    - to save the screenshot;
  - **project.json –** it contains details on the automation project;

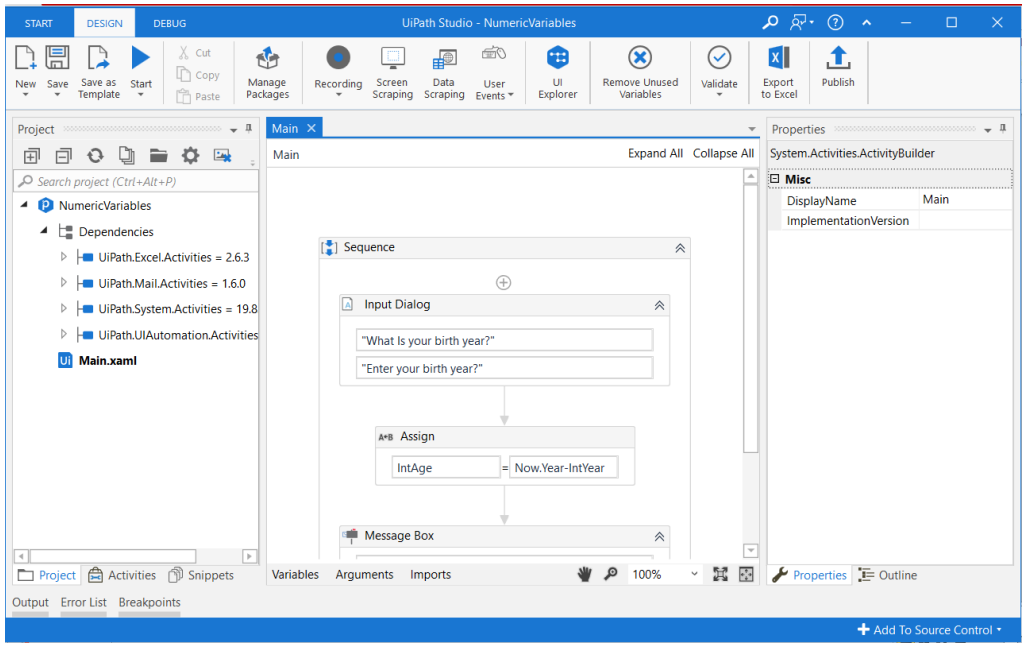
The User Interface. Ribbon

- There are 3 menus on the top ribbon:
  - **Start-** to create a new project, i.e., a new process;
    - It Connects one activity to another without cluttering the project;
  - **Design-** to design the process;
    - Actions allowed: add activities (sequences, flowcharts, state machine), UI interaction, export to Excel, publish to Orchestrator;
  - **Execute/Debug-** debug related actions;
    - Actions allowed: validate, run, debug, monitor the execution step by step;



The User Interface. Panels

- Main areas (panels) in UiPath Studio:
  - design time:
    - **Project, Activities, Snippets;**
    - **Designer;**
    - **Variables, Arguments, Imports;**
    - **Properties Panel, Outline Panel;**
  - run/debug time:
    - **Output Panel, Locals Panel;**
    - **Error List, Breakpoints.**



Variables. Data Types

- **Variables** are used to store different types of data: numeric, text, image, file, colour;
- main types of variables:
  - **Integer**;
  - **String** – with quotes, e.g., “abc”, “123”;
  - **Boolean** = {True, False};
  - **Generic** – almost any data type;
  - **Array of [T]** – all values have the same type;
- a variable defined within an activity is available in all activities included below;
- **Variable Panel** shows the properties of the defined variables:
  - Name;
  - Type;
  - Scope;
  - Default value;
- it presents the variables available in the selected activity.

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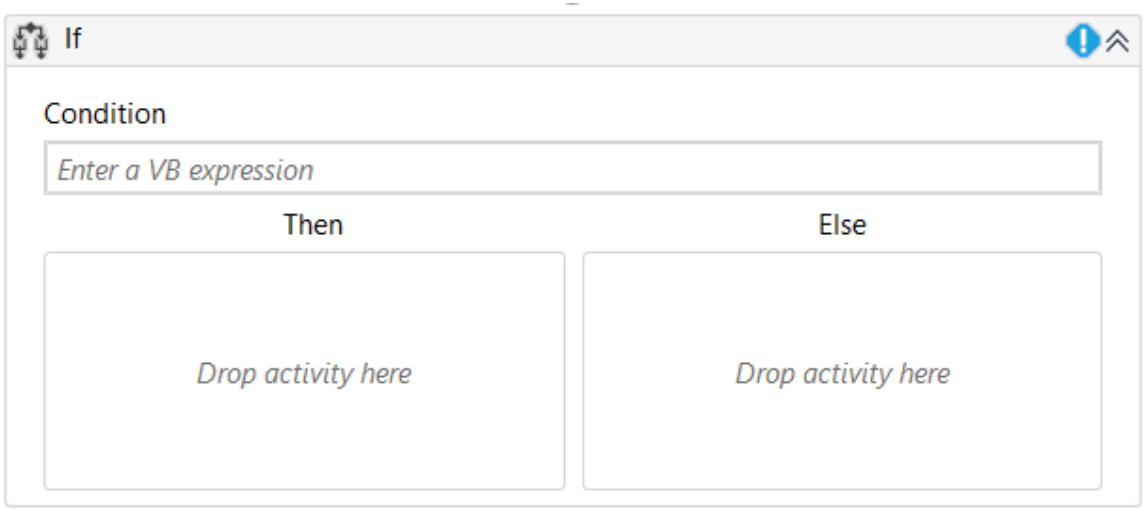
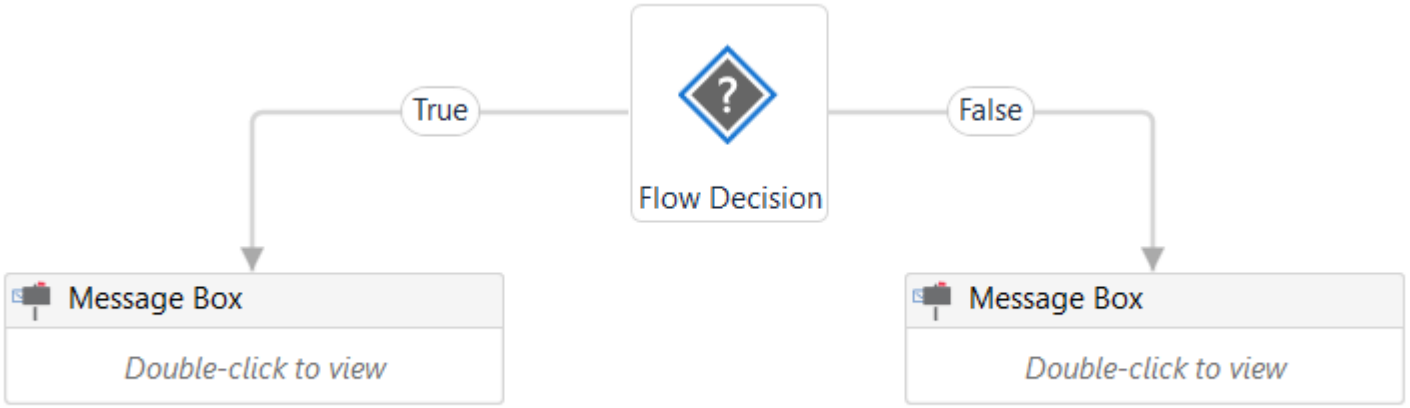
Choices. If Activity

- **If** activity:
  - It split the sequence vertically;
  - adequate for short linear branches;
- *cons:*
  - more than one if else if chained affects perception on the screen;



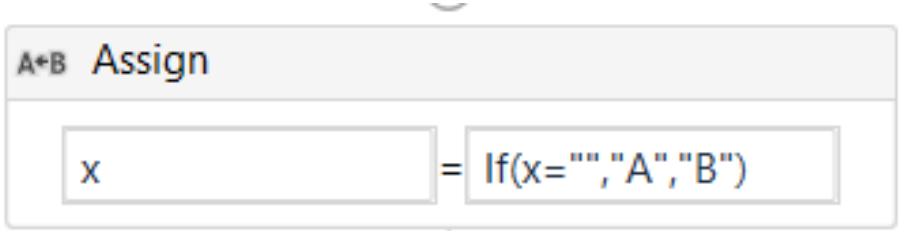
Choices. Flow Decision Activity

- **Flow Decision** activity:
  - It shows important decision logic and related conditions;
  - It can be placed inside a inside a **flowchart**.



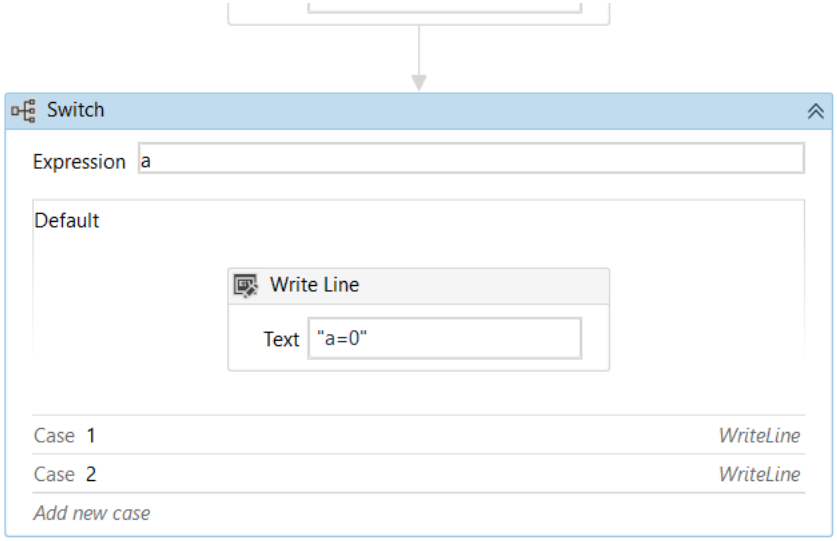
Choices. If Operator

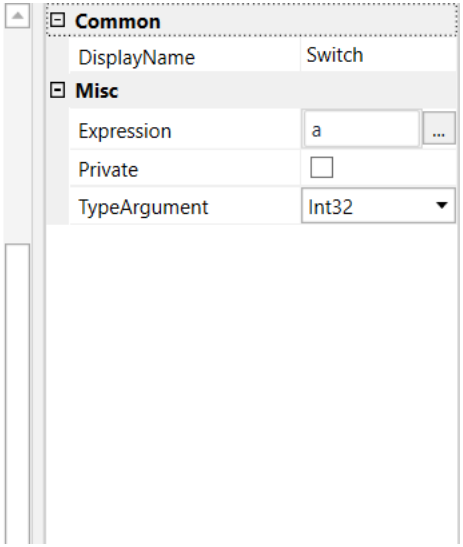
- **If** operator:
  - this is the VB operator;
  - useful for **small local conditions or data computations**;
  - it reduces the block to a single **Assign** activity;



Choices. Switch Activity

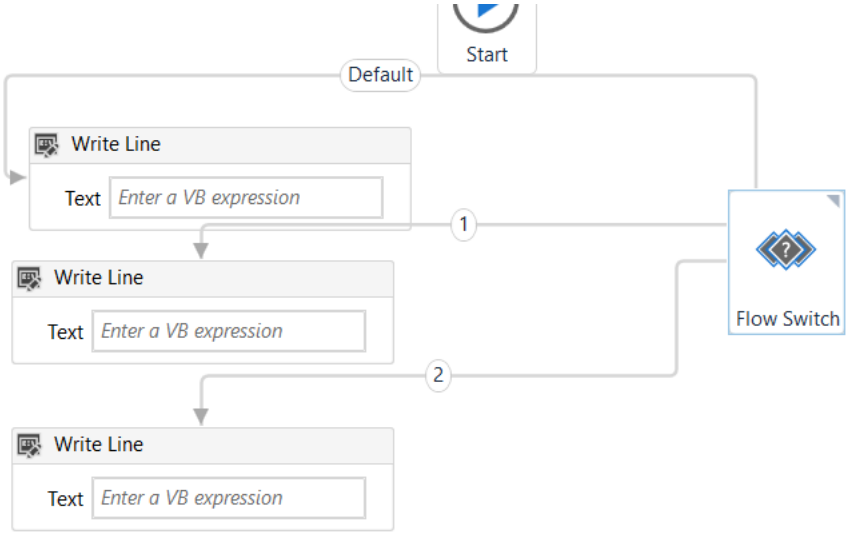
- **Switch** activity:
  - if can be used together with If operator; to streamline and compact if else id cascade, with distinct conditions and activities per branch;

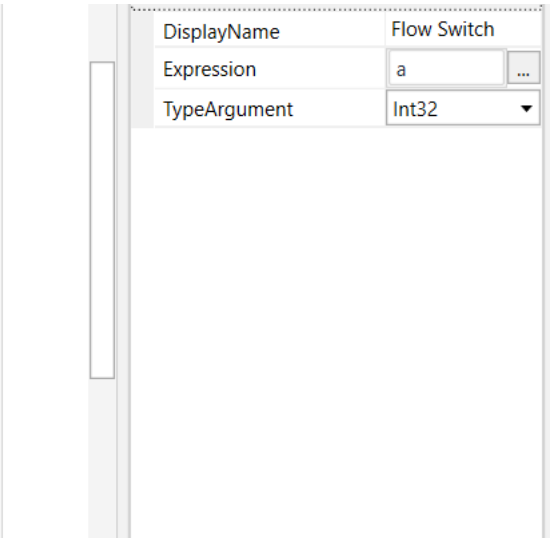




Choices. Flow Switch Activity

- **Flow Switch** activity:
  - if selects the next node depending on the value of expression;
  - **Flow Switch** activity in *flowcharts* = **Switch** activity in *sequences*;



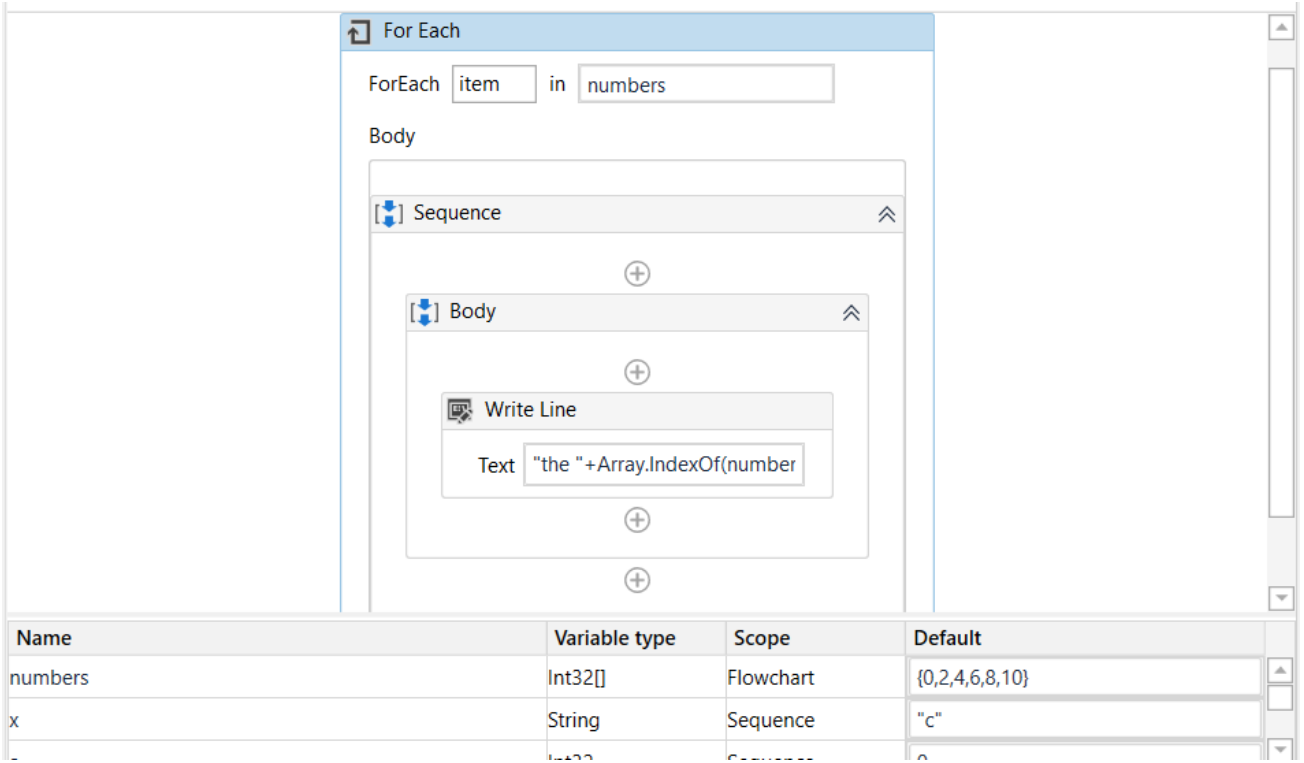


Demo 1

- **Create a process that performs the following actions:**
  - **1. *read* the name of the person;**
  - **2. *read* the birth year;**
  - **3. *computes* the age in years (considering the current date);**
  - **3. *print* "Congratulations, Z! You are x years old!"**

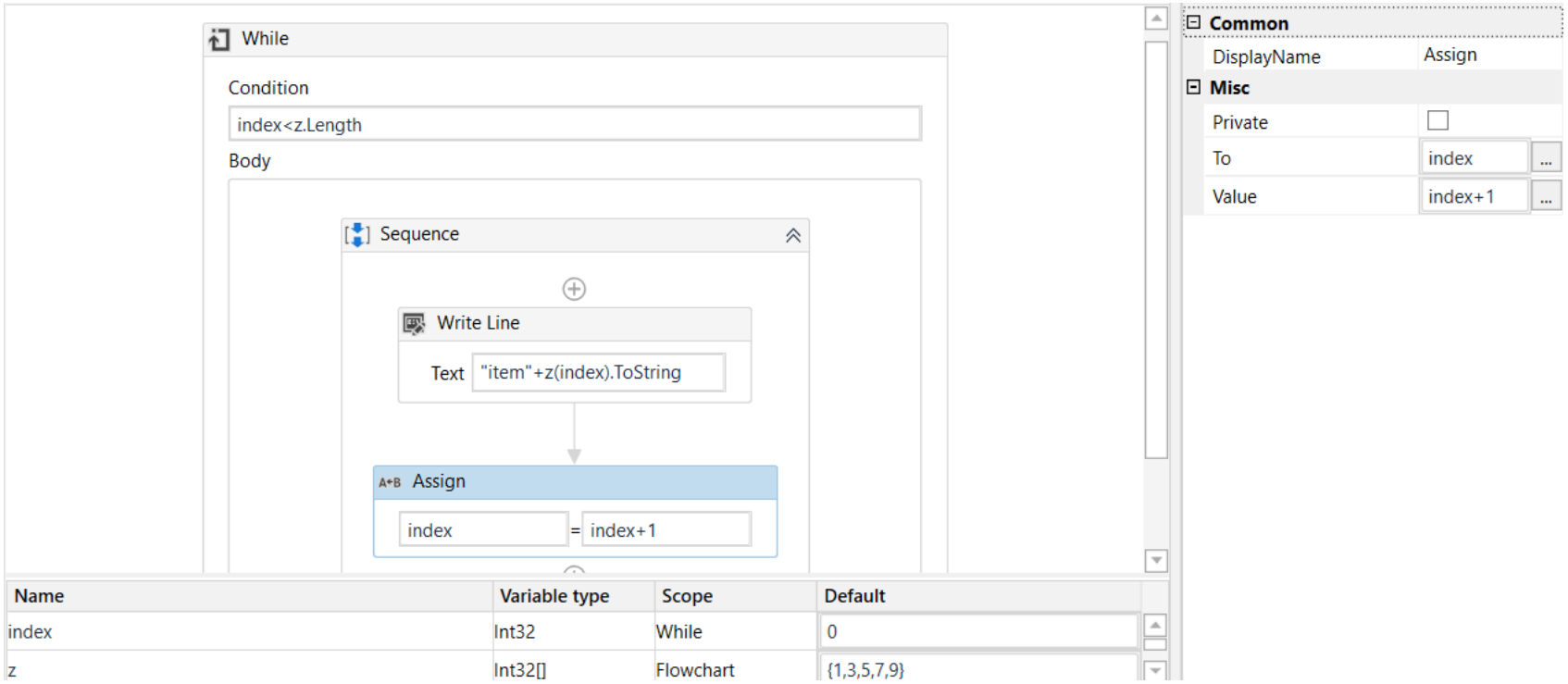
Control Flow. For Each Activity

- **For Each** activity:



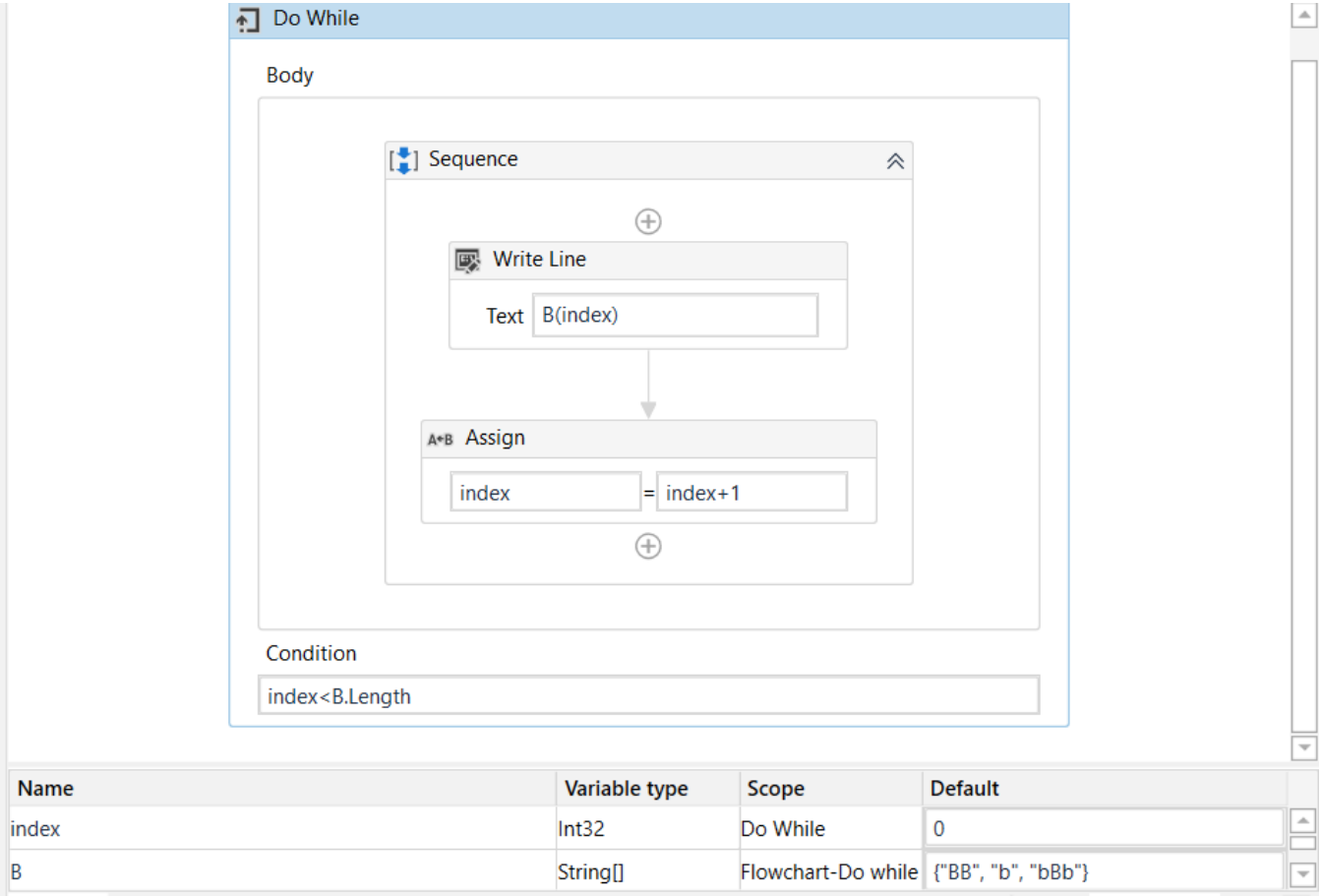
Control Flow. While Activity

- **While** activity:



Control Flow. Do While Activity

- **Do While** activity:



Demo 2

- **Create a process that performs the following actions:**
  - **1. *generates* an integer number from 1 to 7;**
  - **2. *try to guess* the generated number;**
  - **3. *compare* the generated value**
    - **3.1. print the message “Enter a smaller number!” or**
    - **3.2. print the message “enter a bigger number!”;**
  - **4. *repeat* steps 2 and 3 until you succeed to find the number;**
  - **5. *show* the message “Well done!!!”**

References

- UiPath Academy - https://academy.uipath.com
  - Awareness Training;
  - Level 1 – Foundation Training;
- UiPath Docs - https://docs.uipath.com/studio