Introduction to Robotic Process Automation (RPA)

Adv. Advisory | ACCTG 528

MPAcc Class of 2025

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Agenda

- **Review**
- RPA Background Material
- Lab: Our First Bot

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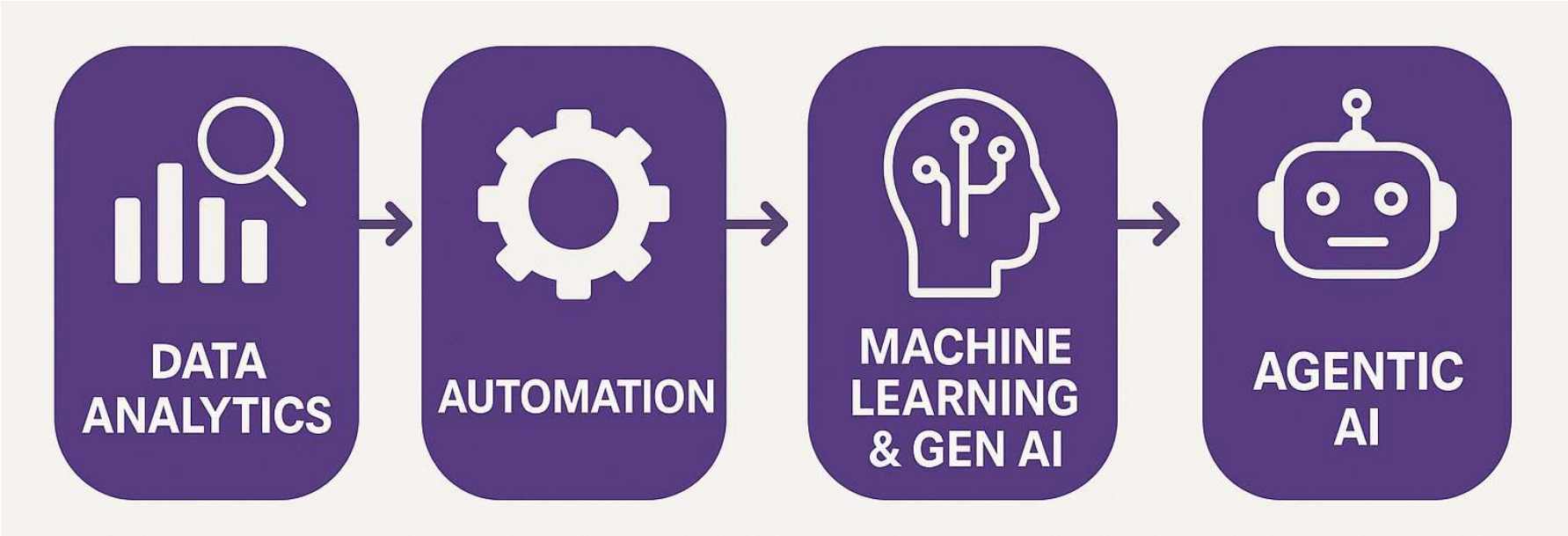
Course Overview



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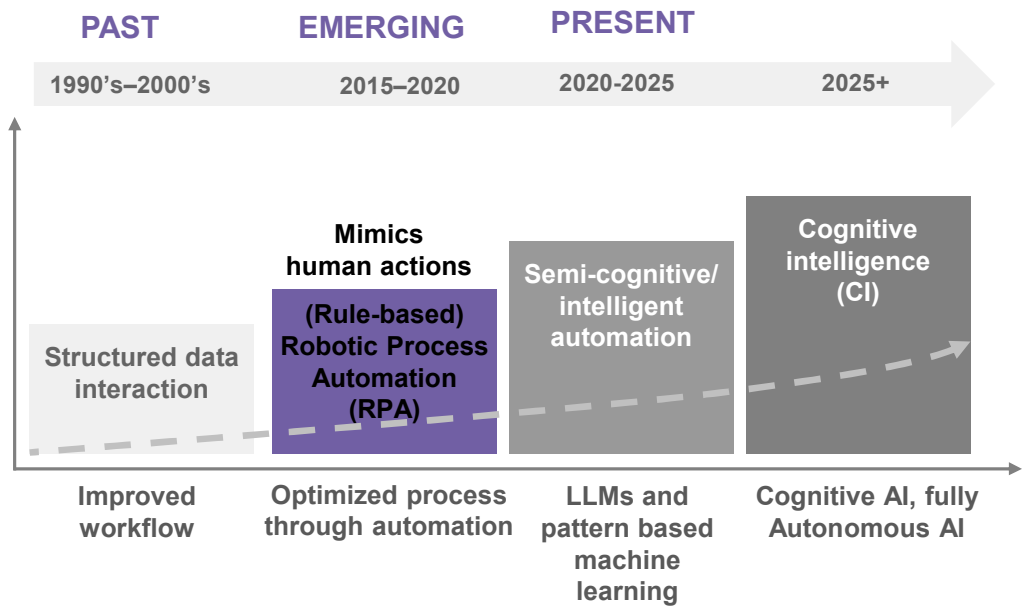
Defining RPA:

Definition:

Robotic Process Automation

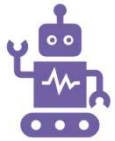
- Software that mimics human action and connects multiple fragmented systems and activities together through automation without changing the current enterprise IT landscape



The real power of automation:

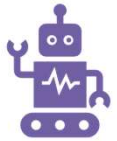
RPA takes the robot out of the human

RPA implementation steps:



- **Identify the right process(es) to automate:**
  - Review the process characteristics previously identified that can be best suited for RPA.
- **Understand the process:**
  - Ensure a complete understanding of the process to be automated, including the different systems that will be engaged, the data inputs and outputs used, any checks or controls imposed and all people involved in the process.
- **Develop a flowchart of the process:**
  - Helps ensure all steps and the logical flow of the process are known (including when there may be decisions that lead to different outcomes).
  - Flowcharts are often the way RPA software programs (or tools) organize the process steps for automation.
  - It is also often helpful to break the process into smaller, more manageable sub-processes.

RPA implementation steps:



- **Program the bot using an RPA tool:**
  - The process for programming the bot will vary based on the tool.
- **Test the bot:**
  - Before implementing the newly automated task, it is critical that you test it to make sure everything works as required.
  - Testing should be performed periodically to ensure the bot is functioning as required.
- **Deploy the bot:**
  - The organization will use the bot in accordance with approved standards and methodologies.

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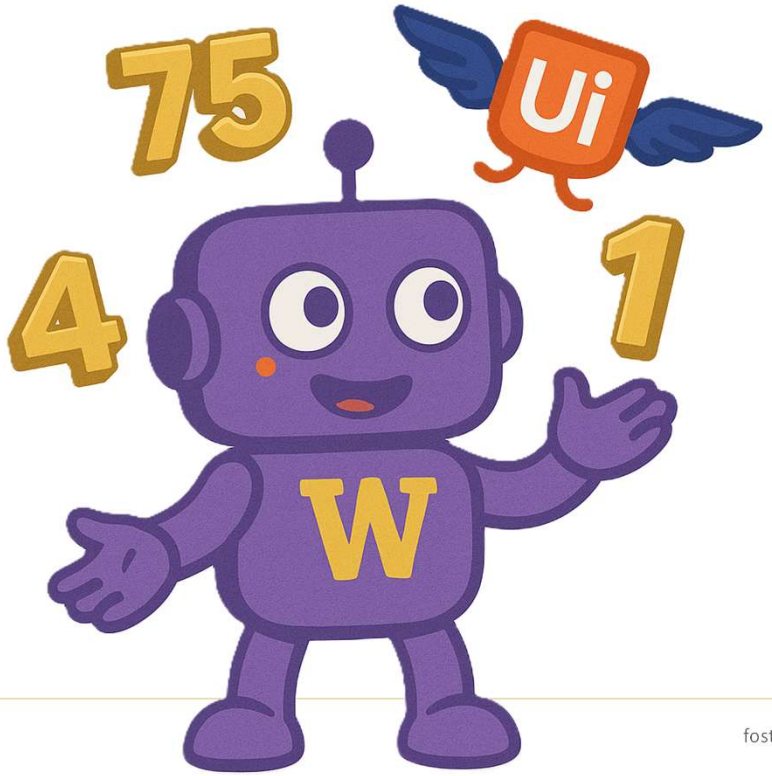
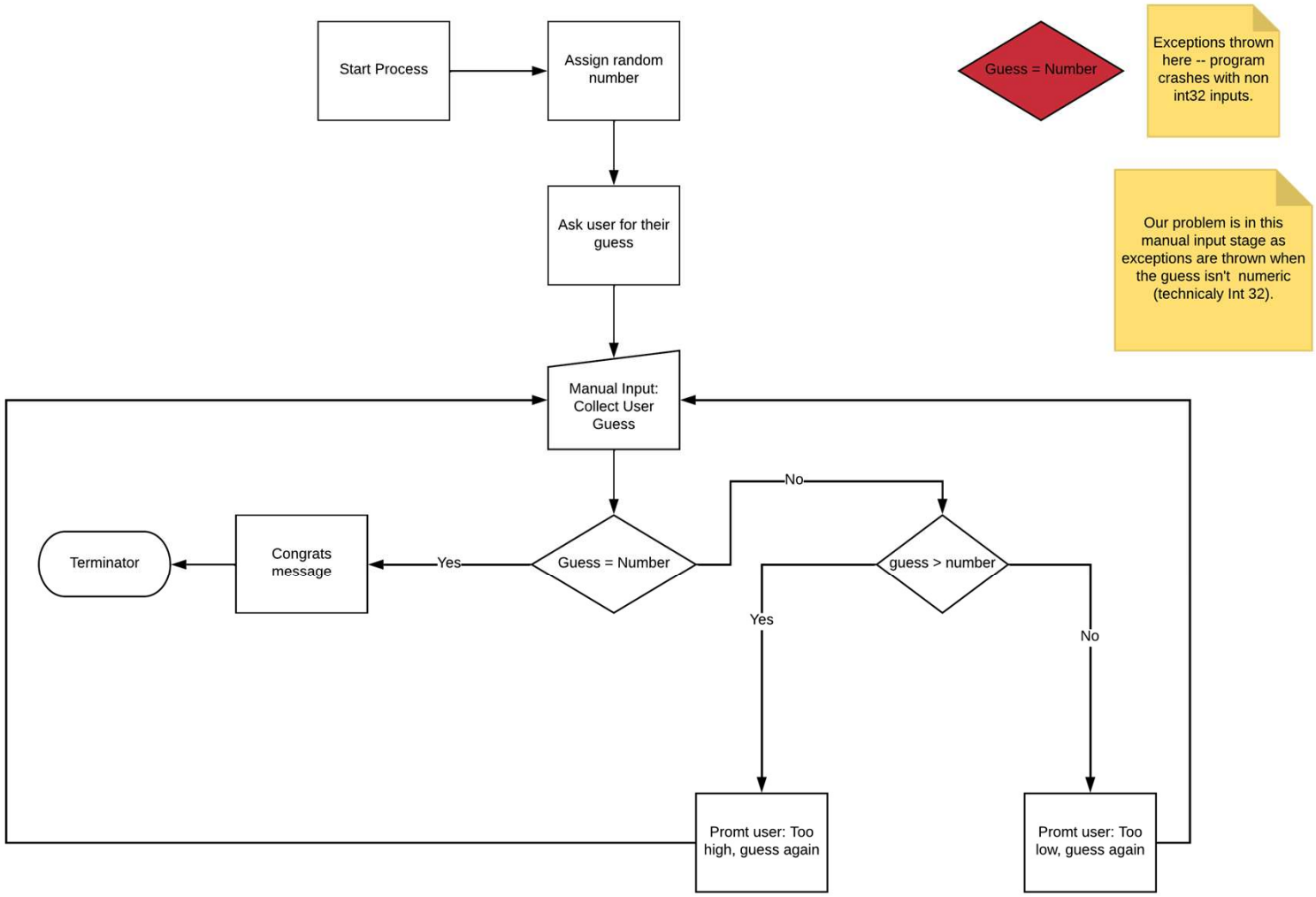
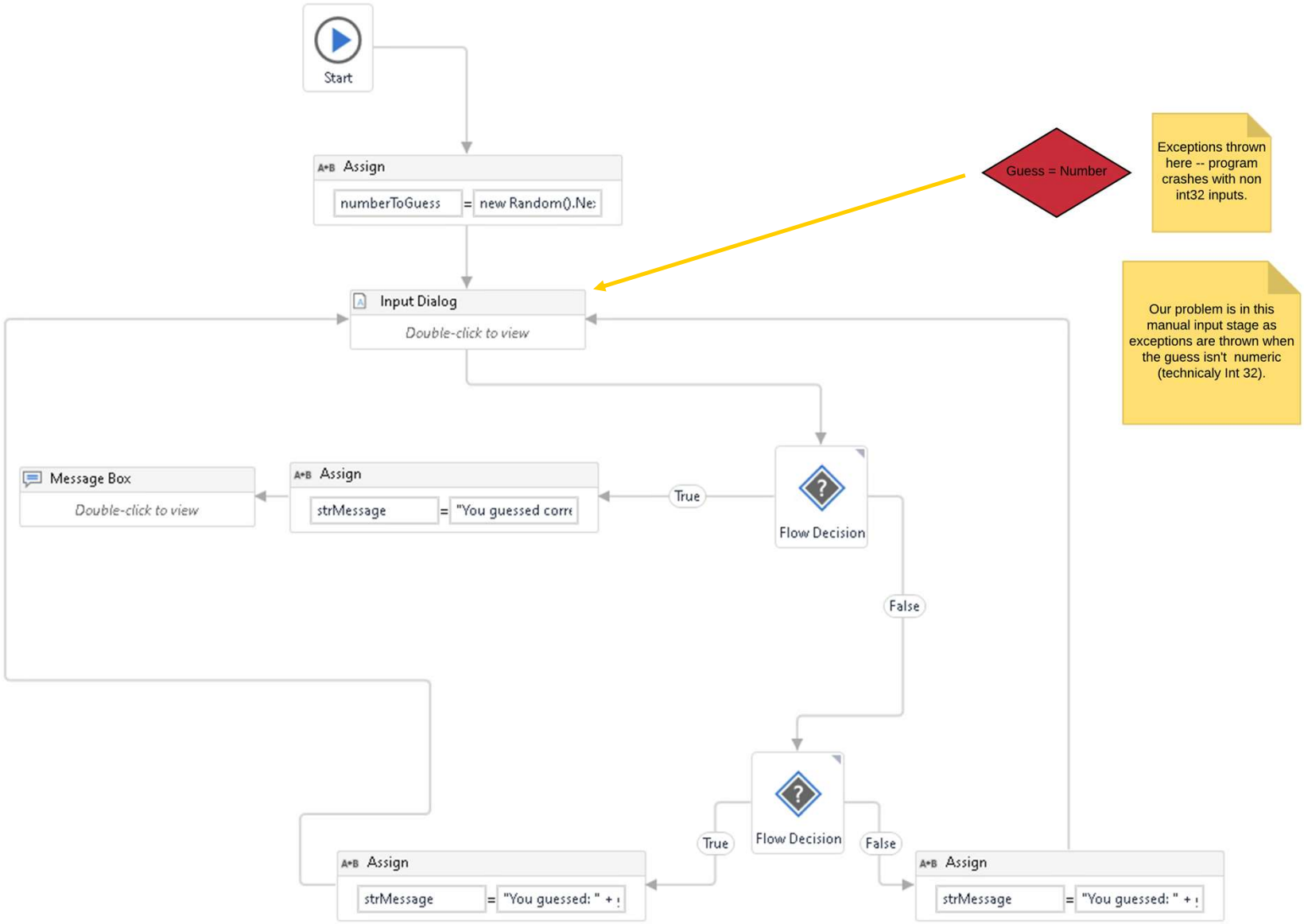
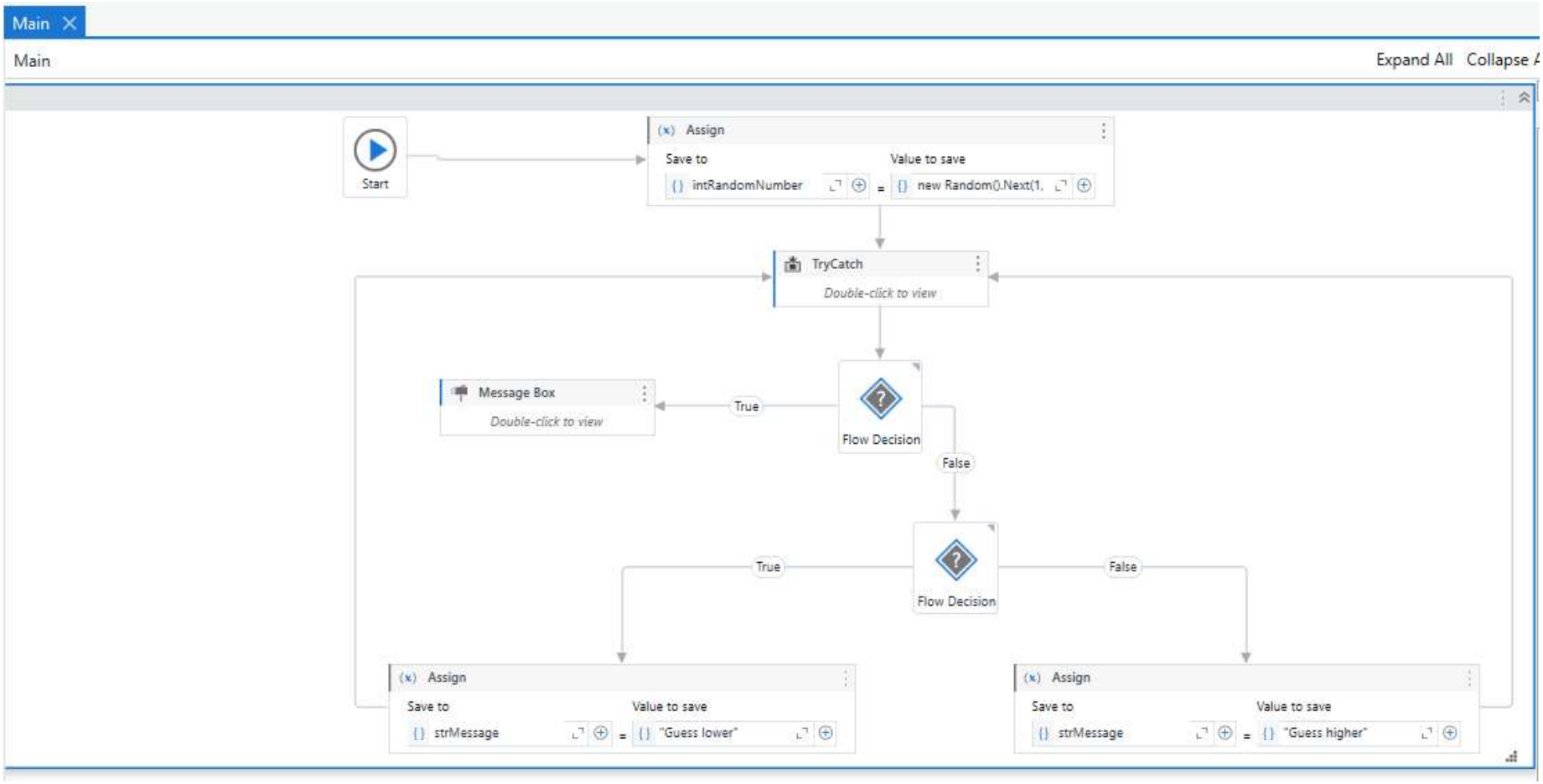
RPA Cases

- **Guessing Game / Our first RPA Bot** (and user/input controls):
  - Understanding loops, variables, process flows, and try/catch.

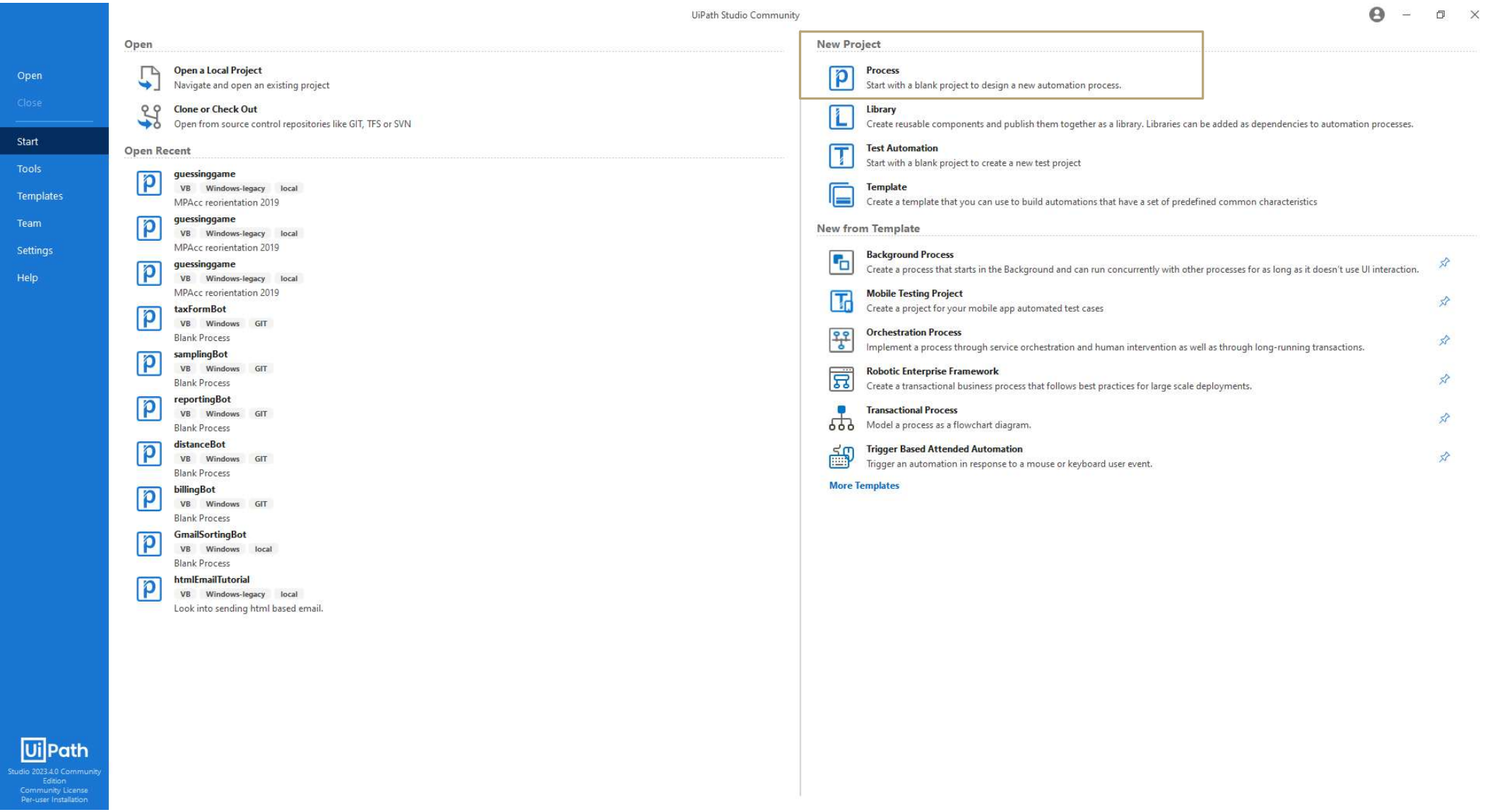


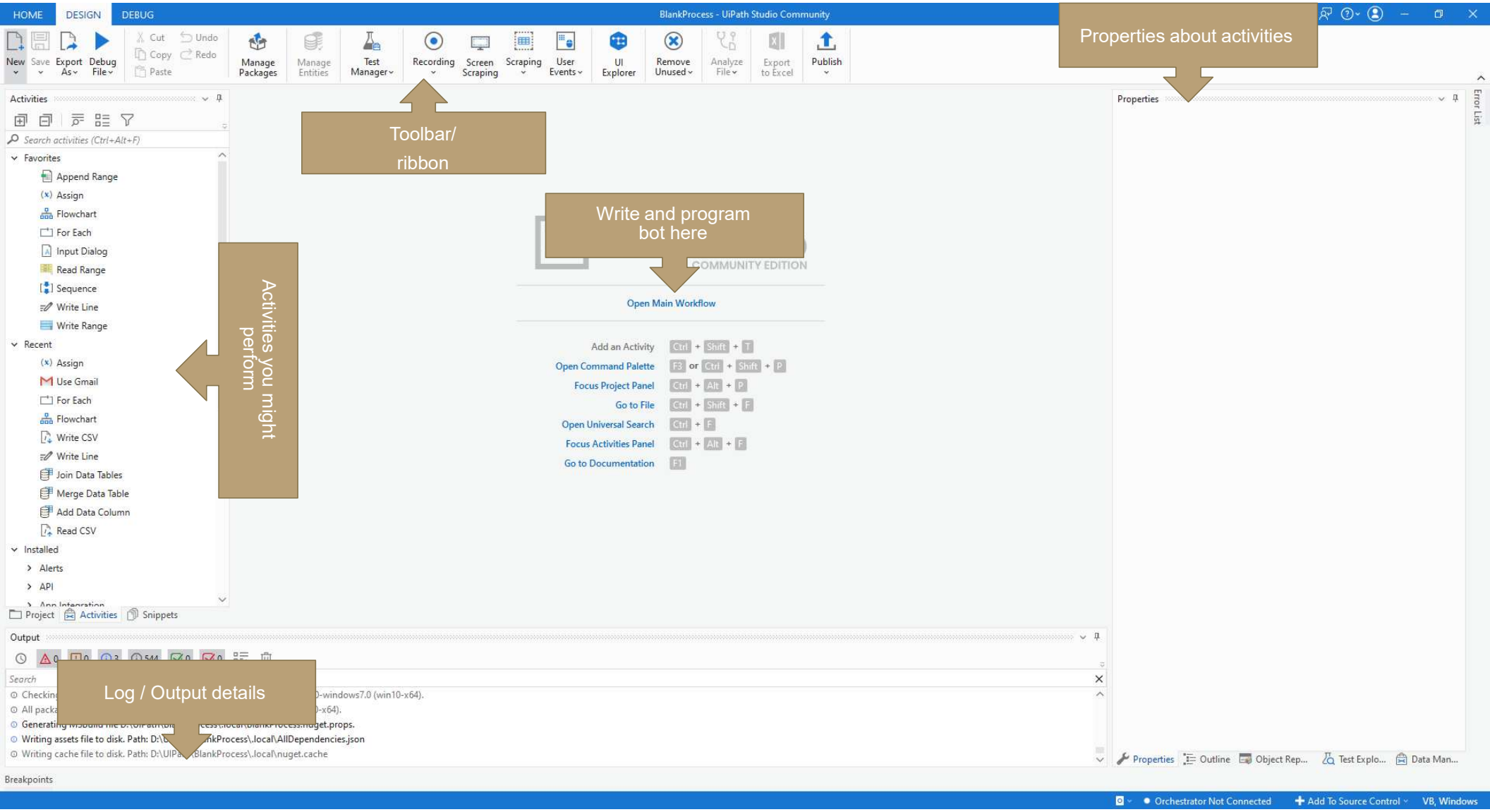

Start Process
Assign random number
Ask user for their guess
Manual Input: Collect User Guess
Guess = Number
No
Yes
Congrats message
Terminator
guess > number
Yes
No
Promt user: Too high, guess again
Promt user: Too low, guess again
Guess = Number
Exceptions thrown here -- program crashes with non int32 inputs.
Our problem is in this manual input stage as exceptions are thrown when the guess isn't numeric (technicaly Int 32).

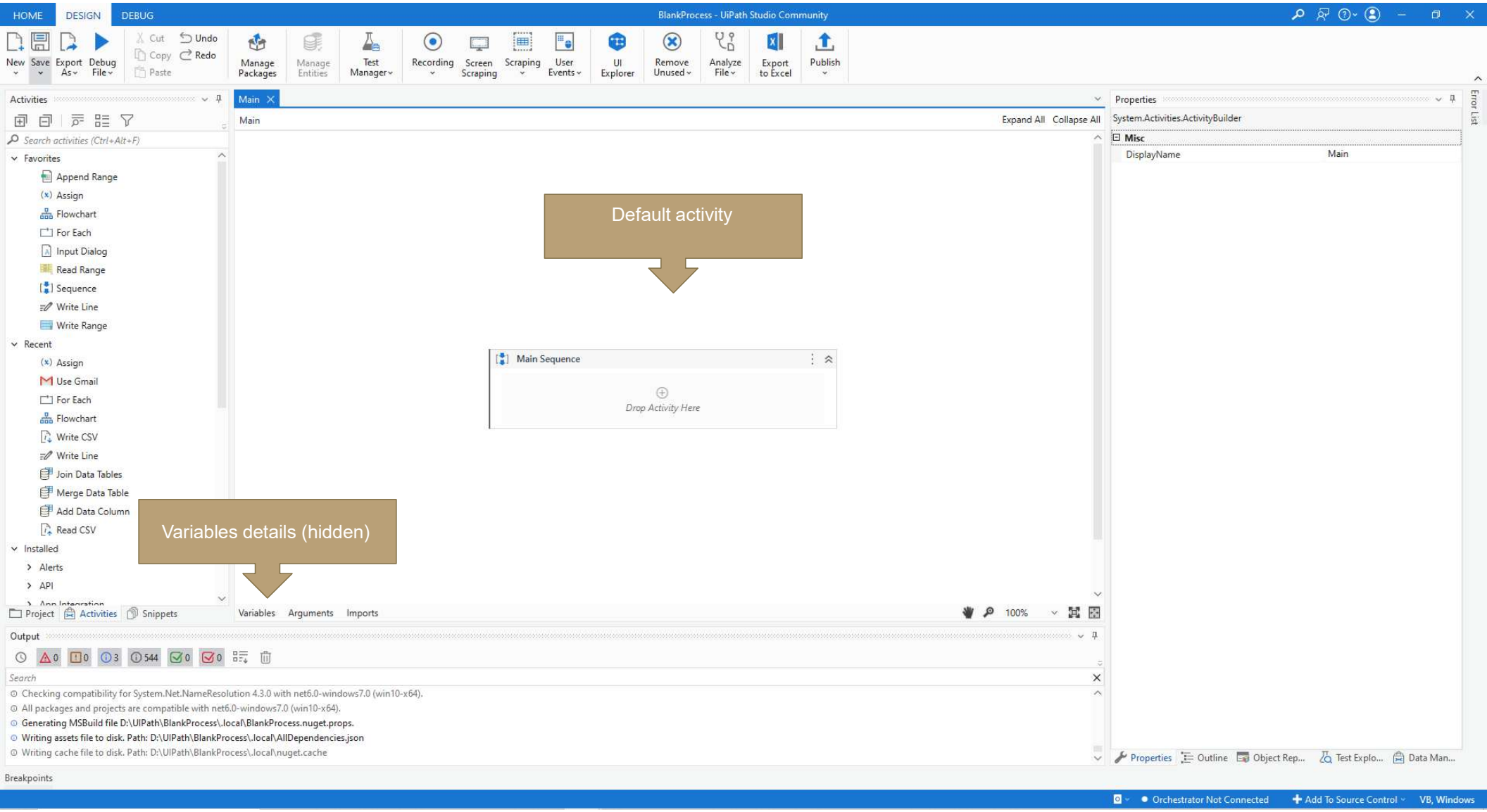

Start
Assign
numberToGuess = new Random().Ne
Guess = Number
Exceptions thrown here -- program crashes with non int32 inputs.
Input Dialog
Double-click to view
Our problem is in this manual input stage as exceptions are thrown when the guess isn't numeric (technicaly Int 32).
Message Box
Double-click to view
Assign
strMessage = "You guessed corre
True
Flow Decision
False
True
Flow Decision
False
Assign
strMessage = "You guessed: " +
Assign
strMessage = "You guessed: " +


Main
Main
Expand All
Collapse A
Start
Assign
Save to
Value to save
intRandomNumber
=
new Random().Next(1,
TryCatch
Double-click to view
Message Box
Double-click to view
True
Flow Decision
False
True
Flow Decision
False
Assign
Save to
Value to save
strMessage
=
"Guess lower"
Assign
Save to
Value to save
strMessage
=
"Guess higher"

Lab: Navigating UIPath's User Interface (UI)


UiPath Studio Community
Open
Close
Start
Tools
Templates
Team
Settings
Help
Open
Open a Local Project
Navigate and open an existing project
Clone or Check Out
Open from source control repositories like GIT, TFS or SVN
Open Recent
guessinggame
VB Windows-legacy local
MPAcc reorientation 2019
guessinggame
VB Windows-legacy local
MPAcc reorientation 2019
guessinggame
VB Windows-legacy local
MPAcc reorientation 2019
taxFormBot
VB Windows GIT
Blank Process
samplingBot
VB Windows GIT
Blank Process
reportingBot
VB Windows GIT
Blank Process
distanceBot
VB Windows GIT
Blank Process
billingBot
VB Windows GIT
Blank Process
GmailSortingBot
VB Windows local
Blank Process
htmlEmailTutorial
VB Windows-legacy local
Look into sending html based email.
New Project
Process
Start with a blank project to design a new automation process.
Library
Create reusable components and publish them together as a library. Libraries can be added as dependencies to automation processes.
Test Automation
Start with a blank project to create a new test project
Template
Create a template that you can use to build automations that have a set of predefined common characteristics
New from Template
Background Process
Create a process that starts in the Background and can run concurrently with other processes for as long as it doesn't use UI interaction.
Mobile Testing Project
Create a project for your mobile app automated test cases
Orchestration Process
Implement a process through service orchestration and human intervention as well as through long-running transactions.
Robotic Enterprise Framework
Create a transactional business process that follows best practices for large scale deployments.
Transactional Process
Model a process as a flowchart diagram.
Trigger Based Attended Automation
Trigger an automation in response to a mouse or keyboard user event.
More Templates
UiPath
Studio 2023.4.0 Community Edition
Community License
Per-user Installation


HOME
DESIGN
DEBUG
BlankProcess - UiPath Studio Community
New
Save
Export As
Debug File
Cut
Copy
Paste
Undo
Redo
Manage Packages
Manage Entities
Test Manager
Recording
Screen Scraping
Scraping
User Events
UI Explorer
Remove Unused
Analyze File
Export to Excel
Publish
Properties about activities
Activities
Search activities (Ctrl+Alt+F)
Favorites
Append Range
Assign
Flowchart
For Each
Input Dialog
Read Range
Sequence
Write Line
Write Range
Recent
Assign
Use Gmail
For Each
Flowchart
Write CSV
Write Line
Join Data Tables
Merge Data Table
Add Data Column
Read CSV
Installed
Alerts
API
Project
Activities
Snippets
Toolbar/ ribbon
Write and program bot here
COMMUNITY EDITION
Open Main Workflow
Add an Activity Ctrl + Shift + T
Open Command Palette F3 or Ctrl + Shift + P
Focus Project Panel Ctrl + Alt + P
Go to File Ctrl + Shift + F
Open Universal Search Ctrl + F
Focus Activities Panel Ctrl + Alt + F
Go to Documentation F1
Activities you might perform
Properties
Error List
Output
Search
Log / Output details
Writing assets file to disk. Path: D:\UiPath\BlankProcess\.local\AllDependencies.json
Writing cache file to disk. Path: D:\UiPath\BlankProcess\.local\nuget.cache
Properties
Outline
Object Rep...
Test Explo...
Data Man...
Breakpoints
Orchestrator Not Connected
Add To Source Control
VB, Windows


HOME
DESIGN
DEBUG
BlankProcess - UiPath Studio Community
New
Save
Export As
Debug File
Cut
Copy
Paste
Undo
Redo
Manage Packages
Manage Entities
Test Manager
Recording
Screen Scraping
Scraping
User Events
UI Explorer
Remove Unused
Analyze File
Export to Excel
Publish
Activities
Search activities (Ctrl+Alt+F)
Favorites
Append Range
Assign
Flowchart
For Each
Input Dialog
Read Range
Sequence
Write Line
Write Range
Recent
Assign
Use Gmail
For Each
Flowchart
Write CSV
Write Line
Join Data Tables
Merge Data Table
Add Data Column
Read CSV
Installed
Alerts
API
Project
Activities
Snippets
Main
Main
Expand All
Collapse All
Default activity
Main Sequence
Drop Activity Here
Variables details (hidden)
Variables
Arguments
Imports
100%
Properties
System.Activities.ActivityBuilder
Misc
DisplayName
Main
Error List
Output
Search
Checking compatibility for System.Net.NameResolution 4.3.0 with net6.0-windows7.0 (win10-x64).
All packages and projects are compatible with net6.0-windows7.0 (win10-x64).
Generating MSBuild file D:\UIPath\BlankProcess\.local\BlankProcess.nuget.props.
Writing assets file to disk. Path: D:\UIPath\BlankProcess\.local\AllDependencies.json
Writing cache file to disk. Path: D:\UIPath\BlankProcess\.local\nuget.cache
Properties
Outline
Object Rep...
Test Explo...
Data Man...
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Orchestrator Not Connected
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Important UIPath Commands

- Activities Tab (left): Where the activities (i.e., tools) can be found and added to a workflow
- Properties Tab (right): Where we edit the activities on the workflow.
- Control + k: allows us to use “Set Var:” to create a new variable.
- Variable Tab (bottom of screen):
    - Name: The name assigned to the variable
    - Variable Type: The format the variable is stored as (e.g.: Integers, String etc)
    - Scope: The part of the workflow in which the variable can be accessed
    - Default: A default value for the variable.

Today's bot extra hints:

The formula for the "numberToGuess" is new Random().next(1,101)

The variable guess is saved from the "Input Dialog" Activity in the "Output/Result" remember to create the variable using Control + k.

The first flow decision uses the logic guess=numberToGuess (with true going to congrats message and false to the next flow decision)

The second Flow Decision uses the logic guess>numberToGuess (with true going to the "too high" hint and false going to the "too low" hint.

Thank you

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