UiPath

Analysis – Business, RPA Manager, PRA COE, Business Analyst

1. BOT Intake
2. Analysis
3. Process Walkthrough – Business, Business Analyst

PDD – Process Definition Document

PDD Review.xlsx

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.No | Step Name | Query | Who Responsible | Status |
|  |  |  |  |  |

Design

1. Design – RPA Developer  
     
   Solution Design Document – Approval/Signoff – Requirement Freeze

Development

1. Development
2. Unit Testing
3. Integration Testing

Testing

1. UAT Deployment
2. System Test (UAT)

Dev – UAT - Prod

Production

1. Production Deployment
2. Production Dry Runs
3. Hypercare
4. Live

3 Components  
  
1. Studio – System

2. Assistant – System

3. Orchestartor – Web application

2 kinds  
  
Attended & Unattended

Public Cloud – Learning – 1 attend , 1 unattended, 1 developer 2023.4.3

Enterprise – Organization – Silver, Gold, Diamond – 2021.10.4

Debug File – Run the highlighted file in debug mode

Run File – Run the highlighted file in normal mode

Debug – Run the Main file in debug mode

Run – Run the main file in normal mode

Workflow / Subtask / Task

Sequence -

Flowchart -

State Machine

Workflow

UiForm

Global Handler

Main.Xaml – Start point of BOT – Run/Debug

Modules – Workflows

Joining a google meet

1. Get Your Credentials
2. Log into Gmail
3. Check Available meetings
   1. No meetings warning
   2. Fetching multiple meetings
4. Ask you to select meeting
5. Join Meeting



UiPath.Database.Activities

UiPath.WebAPI.Activities – JSON/XML/API

UiPath.Form.Activities – UiPath Forms

Default :   
System, Testing, Mail, Excel & UI

Variable Types

Boolean – True/False

Int32/Integer – 1/2/40/-20/-50

String – “shiva145()dprohjp” / “iuhgo oirgij\_iufrhgio-ijbgi”

Object –

Data Table – Rows & Colo

Array – {1, 2, 3}/{“adgn”,”dngo”,”jgn”}

Conditions & Loops

Condition – IF Else

IF 🡪 Then & Else

Condition is True 🡪 Then

Condition is False 🡪 Else

Loops

* For Each – Defined data, Array/List/DataTable/Table Rows/Table Columns/Files/Folder/  
  Mails
* While – Undefined , condition
* Do While - Undefined , condition
* Repeat Number of Times – Number

1 + 1 = 2

“shiva” + “Rama” = “shivarama”

1 + “Shiva” = Error

“1” + “Shiva” = “1Shiva”

“1” + “ “ + “Shiva” = “1 Shiva”

Break -   
Continue –

Loop 10

Step1

Step2

If loop=5 then Continue

Step3

Loops steps until the condition met

While  
  
- Check the condition if – true

Loop

Array (Int)

Arry(String)

Array (Variable Type)

Set of data

{1,34,25,678,857,46436,46} – Array of integers of length 7

{“shiva”,”Ram”,”Seshu”,”Bala”,”Praveen”,”krishna”} – nameArray

nameArry[0]=”Shiva”

{{1,2,3},{4,5,7},{6837,409,95}} – Array(Array(int)) – mutiArray

multiarray[0]={1,2,3}

multiarry[0][1] = 2

{1,2,3}[1] = 2

Switch – Parameter

Case 0

Case 1

Case n

Default

Switch - MathOperation

Case Add

Step1

Step2

Step3

Case Sub

Step 1

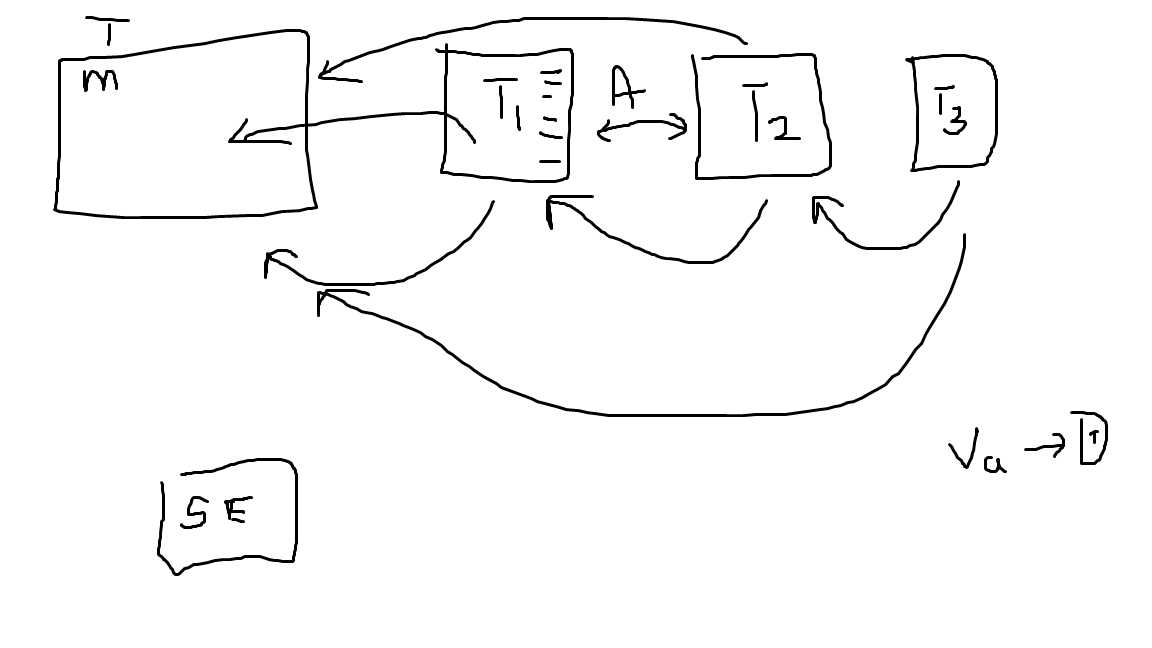
“Shiva” Not equal to “shiva”

SHIVA SHIVA

True & true

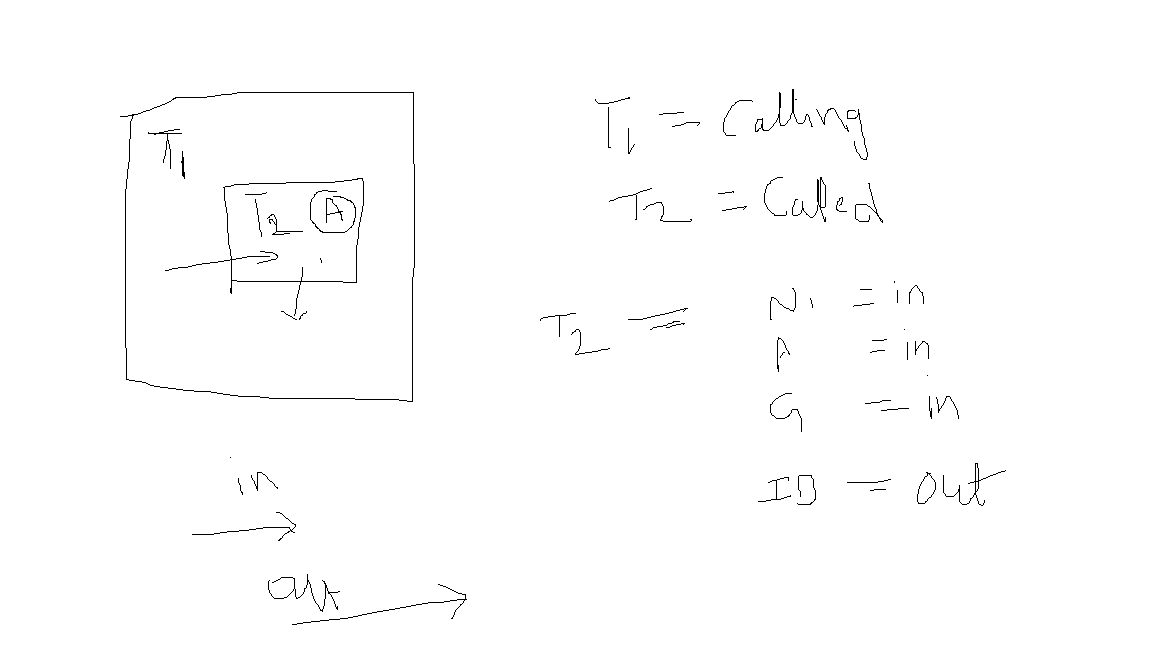
11-May-2023

11-MAY-2023



Invoking the Workflow

Arguments

1. Called Task
2. Calling Task
3. 
4. In Argument : T2 is requesting input from T1
5. Out Argument : T2 is sending output to T1
6. Inout Argument : T2 is requesting input & modifies it and sending the same as output to T1

Main🡪T2 🡪 T3🡪T4

1. T2 will get your name
2. T3 will get your age
3. T4 will get your gender
4. Main will display all 3 information

Data Table

Data Row

DataTable -

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **FName** | **LName** | **Age** |
| 101 | Shiva | K | 30 |
| 102 | Praveen | Seshu | 29 |
| 103 | Bala | K | 29 |
| 104 | Krishna | R | 28 |

DataRow

DataTable.Rows.Count = 4

DataTable.RowsCount = 4

DataTable

1. Manual of creation data table
2. Excel data
3. Web application data

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Email Subject | Process Status | Email From | Email To | Email Time | Email Type | Remarks |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

1. Reading
2. Writing

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **ID** | **FName** | **LName** | **Age** |
| Row 0 | 101 | Shiva | K | 30 |
| Row 1 | 102 | Praveen | Seshu | 29 |
| Row 2 | 103 | Bala | K | 29 |
| Row 3 | 104 | Krishna | R | 28 |
| Row 4 | 105 |  |  |  |

1. Looping each row and get required info – For each row in data table

Datatable.Rows(1)(“ID”) = 102

Datatable.Rows(1)(0) = 102

Datatable.Rows(2)(3) = 29

Cell Address  
  
A1 B4 D7

Range

A1:B3

ExcelReference.Sheet(“SheetName”).Cell(“A1”)

ExcelReference.Sheet(‘SheetName”).Range(“A2:H10”)

Exercise 1 :

1. BOT need to ask you to select the file
2. BOT Reads data from sheet ‘Data’
3. BOT loop through each record
4. As per the age BOT will add the record to respective sheet (Below)
   1. Age below 40
   2. Age 40 to 50
   3. Age 50 plus

UI Automation

User Interface Automation – Visible windows

1. Web Application – Chrome / Edge – Remote server – via Internet

* Chrome /Edge/Firefox/Any browser
* Remote server
* Internet
* UiPath Extension
* Can able to see the code written by developer
* We can see selector manually / via uipath

1. System Installed application / Desktop application / Standalone application

* Not possible to see Selector manually – only via uipath
* No Extension

Ui Element

UI Selector - Like query to identify the element

* 2 Types of Automation
  + Automatic Recording – Create automation/code automatically - It will not record the validation
  + Manual UI Automation – You need to write the code for each step

Uiautomation

Open application/Browser

Options

1. Open
   1. Always : Open new session every time
   2. IfNotOpen :
   3. Never:
2. Close
   1. Always
   2. Never
   3. Ifopenbybrowseractivity
3. Inputmode
   1. Hardware Events
   2. Simulate
   3. Chromium
   4. Windows Message
   5. Backgroud
4. Divide the string into chars -
5. Loop through each char – Loop – For each

UiAutomation – Web Application

Browser

Extension need to be enabled – In normal Mode & Incognito Mode/Private Mode

Only if you have internet

Activity in web application  
  
check first and then do it

Happy Path & Automation Path

UiAutomation

Selectors

Wild Characters

\* is to replace 0 or more characters

? is to replace single character

Textbox?

Id=Textbox1 /Textbox2/Textbox3

Textbox\*

Id= Textboxset123/ Textboxline1379 / Textbox0005 /Textbox / Textbox 1234

String Methods  
  
Split – I am Shiva – Shiva,rama,krishna,reddy

Replace -

Index – Shiva,Rama

Substring – Shiva Ram

Regex – CASE-101

\_\_Hello <> Hello

Your running every day at 9 AM

06-Jun-2023 09AM

31-May-2023 09AM

d – Date 1-31

dd – Date 01, 02…31

ddd – Sun, Mon…

dddd – Sunday, Monday…

M – Month 1…12

MM – 01, 02….12

MMM – Jan, Feb, Mar

MMMM- January, February

yy – Year 23, 24

yyyy – 2023, 2024

HH – hours 01, 02…24

mm – minutes

ss - seconds

3 modes/Type

1. Web incoming & outgoing
2. Outlook client
3. Orchestrator Integration
4. Send Email
5. Read Email
6. Reply Email
7. Forward Email
8. Move Email
9. Delete Email
10. **Web Incoming & outgoing**

IMAP & SMTP & POP3

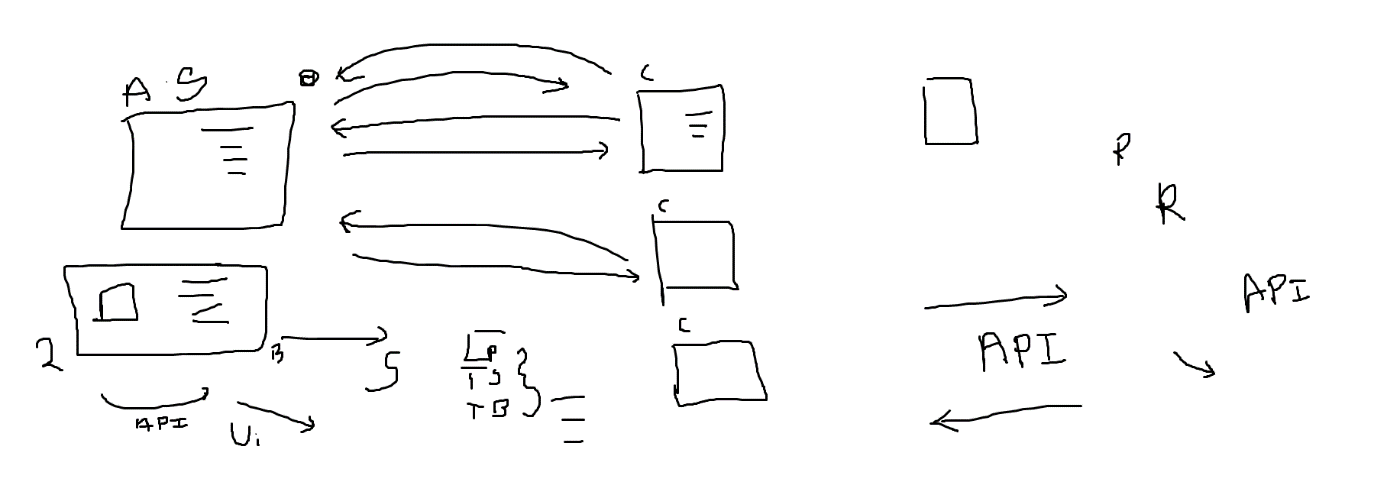
SMTP - > Send Email

IMAP 🡪 Read Email & Move Email

Server & Port

1. Outlook client
2. Integration Services

API



API – GET, UPDATE, PUT , POST, DELETE, FETCH

API  
  
Method - GET, UPDATE, PUT , POST, DELETE, FETCH

URL –

Request Parameters – Username, Authentication code

Request Headers – Content-Type : Text / Json / XML

Request Body – Customer number , customer name

Response Code : 200 – Success

300 – In progress

400 – Not found / issue

500 – server error

Response Message : { customer details}

Currency Convertor

Method : GET

URL :

Request Headers : Authentication code

Paraments : From : USD, To : INR, Amount : 200

Exchange Rates – Symbols

Request :

Method : GET

URL : https://api.apilayer.com/exchangerates\_data/symbols

Parameters:

Headers:

Apikey : xvLUyLnYZmdazEaurMCuUp9ZoIotjy7E

Body:

Response :

JSON & XML

{

“key” : “Value”,

}

XML Format

<Employee>

<Name>Shiva</Name>

<Age>30</Age>

<Job Data>

<Job Type>Software</Job Type>

</Job Data>

</Employee>

Exception Handling  
  
Try Catch – Activity

Try – All your code

Catch 1 – General Exception – What is the alternative process – Plan b / Mail to support team / simply update log and exit

Catch 2 – Null Pointer

Catch 3 - Aggregate

.

Catch n

Finally –

Exception variable

Exception.Source

Exception.Message

Database

Table – Rows & Columns

Fetch

Update

Create

Delete

Connection String

1. POC for Database support in you org
2. Get the access & connection string for the database
3. ODBC conn/ Connection string

UiPath Forms

Form Arguments – Field Keys – Which hold the form data

IN – From uipath to UiForm

Out – From UiForm to UiPath

In/OUT – From Uipath to UiForm and UiForm to UIPath

Analysis

Design

Development

Testing

Production

Hypercare

Live

3 Environments

Dev, UAT & Prod

UiPath orchestrator in their

<https://uipath-dev.sr.com> - Developer

<Https://uipath-uat.sr.com> – View/ Read & Manage

<https://uipath.sr.com> – View/Read

Developer Licence

Studio Yes, Assistant yes

Assistant run – Yes

Orchestrator – no run

Attended License

Studio no, Assistant – yes

Assistant – Yes

Orchestrator – No

Unattended licence (Non-prod/Prod)

Studio No, Assistant Yes

Assistant Run – Yes

Orchestrator – Yes

Dispatcher – Add items to queue – 1 machine

Performer – process those queue items – More than 1 machine

All or Nothing – Upload all items / Fail all – 1000 records – add all 1000 or 0

Process all independently – 1000 – 950 uploaded 50 failed

RE Framework

4 Stages

1. Initialization
   1. Init All settings – Reading login details, username, pass & Payment info
   2. Kill All Application – Closing all unnecessary applications.
   3. Init All Applications – Log into irctc
2. Get Transaction Data – Reading booking info – From, TO, Name, age, id, train num
3. Process
   1. Process Transaction – Book ticket
   2. Update transaction status – Status of each ticket
4. End Process
   1. Kill All Applications – logout & close browser

Config(“Username”)

Config(“NumberAsset”) = 4567

Config update in excel

Init all application

Kill process

Process