Solution Design Document

UiPath

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I. PURPOSE

Outlines the major components of the Master Project (the overall output of the development, containing one or multiple projects that together cover the scope of the robotic process automation) taking into account all the business restrictions (scheduling, peaks, future increases in volume etc.). The focus of the Solution Architect will be on:

- Robustness;
- Scalability;
- Efficiency;
- Replicability;
- Reusability of component

The information herein is targeted primarily at the developers that will initially implement the solution and subsequently at the support developers in case of change requests.

II. AUTOMATED PROCESS DETAILS

Item	Description
Master Project Name	Main
Robot Type	FOR
Orchestrator used?	No
Scalable	No
UiPath version used	2023.12.

III. RUNTIME GUIDE

1. Master Project Runtime Details

ITEM NAME	DESCRIPTION *Fill in each bolded section - empty fields are not allowed. If the section does not apply to your automation then mark as n/a.*
Production environment details	*n/a*
Prerequisites to run	*Having Excel on the machine* *Having Chrome on the machine (with UiPath extension)*
Input Data	*One valid email* *Maximum 3 YouTube video links*
Expected output	*An email like:* *From: raportgenerationemail@gmail.com* *To: [Recipient's email]* *Subject: YouTube Comment Filter - Analysis Report* *Body:* *Dear [Recipient's email],* *We hope this email finds you well.* *Attached, you'll find the analysis report for the video/s:* *[Bullets for video(s) name(s)]* *Should you have any questions or require further information, please don't hesitate to reach out.* *Best regards,* *Dev Team* *Contact us: raportgenerationemail@gmail.com*
How to start the automated process	*Run from UiPath*
Reporting (queues reporting, Kibana or another platform)	*n/a*
How is Orchestrator used?	*n/a*
Password policies (mention any specific compliance requests)	*n/a*
Stored credentials	*n/a*

(Never use hardcoded credentials in the workflow!)	
List of queues names (Naming convention: ProcessName_QueueName)	*n/a*
Schedule Details	*n/a*
Multiple Resolutions Supported? (in case of image automation / Citrix and VDI)	*Yes*
Recommended Resolution	*1920x1080*

2. Project name

ITEM NAME	DESCRIPTION *Fill in each section - empty fields are not allowed. If the section does not apply to your automation then mark as n/a.*
Environment used for development (name, location, configuration details etc)	*UiPath computer*
Environment prerequisites (OS details, libraries, required apps)	*Windows 11, Community license, Microsoft Excel, Microsoft Outlook, OpenAI,*
Repository for project (where is the developed project stored)	*https://github.com/MogageNicolae/RPA-Project*
Configuration method (assets, excel file, Json file)	*n/a*
List of reused components	*n/a*
List of new reusable components	*Custom Activity – Report Generation*

3. Project(s) workflows

Workflow Name	Description
Example: Main	*Reads the email from the user, then proceeds to read the YouTube links and to verify them, then invokes the other methods to deal with the rest of the problem. In the end, it sends the excel folder created through the email.*
CommentsClassification	*Receives the list of the YouTube links, takes the first maxResults comments from each one and classify them.*

	Inputs: youtubeLinkList - List<String> *maxResults – Int32 (if it is equal to –1, then it will classify all the comments)* *Outputs: commentsClassificationList - List<Dictionary<String,String>>*
GetVideoNames	*Gets the title of the videos to be written in the sheet name.* *Inputs: youtubeLinkList – List<String>* *Outputs: youtubeNameList - List<String>*
ReportGeneration	*It creates an Excel file such that for each link there will be a separate sheet with its name. It also calls Statistics to write the report.* *Inputs: commentsClassificationList – List<Dictionary<String, String>, youtubeNaeList – List<String>* *Outputs:*
Statistics	*Generates the statistical report of the comments.* *Inputs: positive – Int32, negative – Int32, neutral – Int32* *Outputs: positivePercentage – String, negativePercentage – String, neutralPercentage - String*

4. Packages

Package Name	Description
ReportGeneration.2.0.16.nupkg	***A software library that produces an Excel report, utilizing input data containing video names and a dictionary pairing comments with corresponding sentiments. The generated report provides statistical insights into the distribution of sentiments.***
Previous releases: ***ReportGeneration.1.0.1.nupkg, ReportGeneration.1.0.2.nupkg, ReportGeneration.1.0.3.nupkg, ReportGeneration.1.0.4.nupkg, ReportGeneration.1.0.5nupkg, ReportGeneration.1.0.6nupkg, ReportGeneration.1.0.7.nupkg, ReportGeneration.1.0.8.nupkg, ReportGeneration.1.0.9.nupkg, ReportGeneration.1.0.10.nupkg, ReportGeneration.1.0.11.nupkg, ReportGeneration.1.0.12.nupkg, ReportGeneration.1.0.13.nupkg, ReportGeneration.1.0.14.nupkg, ReportGeneration.1.0.15.nupkg, ReportGeneration.1.0.16.nupkg, ReportGeneration.1.0.17.nupkg, ReportGeneration.2.0.1.nupkg, ReportGeneration.2.0.2.nupkg, ReportGeneration.2.0.3.nupkg, ReportGeneration.2.0.4.nupkg, ReportGeneration.2.0.5nupkg, ReportGeneration.2.0.6nupkg, ReportGeneration.2.0.7.nupkg, ReportGeneration.2.0.8.nupkg, ReportGeneration.2.0.9.nupkg, ReportGeneration.2.0.10.nupkg, ReportGeneration.2.0.11.nupkg, ReportGeneration.2.0.12.nupkg, ReportGeneration.2.0.13.nupkg, ReportGeneration.2.0.14.nupkg, ReportGeneration.2.0.15.nupkg***	

IV. OTHER DETAILS

Future Improvements

To verify the link without opening the browser
Uploading it to orchestrator (Logging purposes)

Other Remarks

It is important to remark the fact that if a video has a fewer number of comments than selected by the user, that will be the number returned. Also, if the video has disabled videos, for now, it will not throw an exception, but will return the excel with apparently an empty sheet (it still contains the headers).

V. GLOSSARY

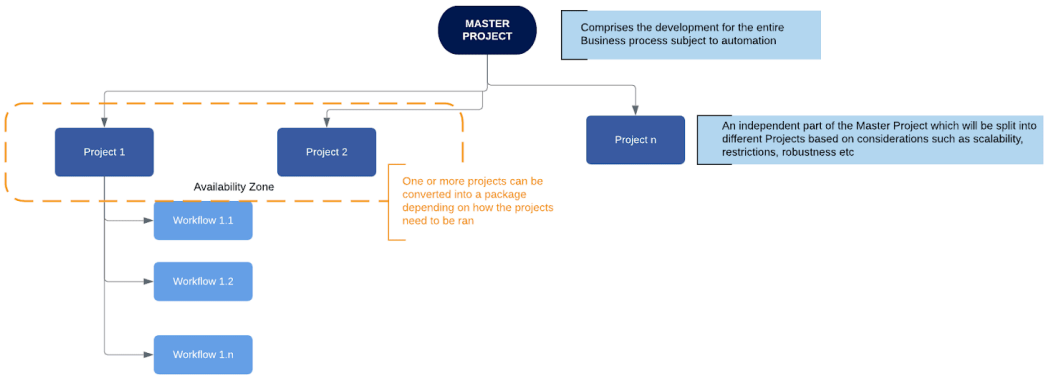
The main terms used in the Solution Architecture Document are defined below:

Master project - the overall output of the development, containing one or multiple projects that together cover the scope of the robotic process automation. There is a 1 to 1 connection between the Master Project and the Process to be automated (As presented in the PDD).

Project - an UiPath Studio project containing one or multiple workflow files. A project can be converted to a package and run independently, covering a particular scope within the master project. Or multiple projects can be converted into one package depending on the aims and restrictions of the automation. The project is used when defining the development and support phase of the automation.

Package - the output of compiling one or multiple projects. A package can be deployed on the robot machine and be executed by the robot service. Only one package can be executed at a given time by a robot. The package is used when defining the running phase of the automation.

Workflow - a component of the package, the workflow encapsulates a part of the project logic. The workflow can be of type: sequence, flowchart or state machine. A workflow is saved as an .xaml file inside the project folder. A workflow file can be invoked from another workflow and by default there is an initial workflow file that will run when executing the package.



Activity - an action that the robot executes.

Sequence - a workflow where activities are executed one after another, in a sequential order

Flowchart - a workflow where activities are connected by arrows and the logic of the workflow can be easily followed in a visual manner. The flowchart can also be exported as an image from UiPath studio.

State machine - a more advanced way of organizing a workflow, similar to a flowchart.

BOR - Back office robot

FOR – Front office robot

Orchestrator – Enterprise architecture server platform supporting: release management, centralized logging, reporting, auditing and monitoring tools, remote control, centralized scheduling, queue/robot workload management, assets management.