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Solution Design

Document

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# 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.

# Automated process details

Details filled in need to reflect the actual information for the Master Project released for production. The following table will be populated:

|  |  |
| --- | --- |
| **Item** | **Description** |
| **Master Project Name** | Automated Car Searching |
| **Robot Type** | Unattended |
| **Orchestrator used?** | Yes |
| **Scalable** | Yes |
| **UiPath version used** | 2025.0.157 |

# Runtime guide

## Architectural structure of the Master Project

Display the interaction between components (package / robots, Orchestrator queues, and running order) in a diagram

## Master Project Runtime Details

Outlines the details of the automated process by filling in the table below.

|  |  |
| --- | --- |
| **ITEM NAME** | **DESCRIPTION** |
| **Production environment details** | *Runs on Orchestrator server, with an unattended robot.* |
| **Prerequisites to run** | *Internet connection, Excel installed.* |
| **Input Data** | ***Correct completion of the fields necessary for filtering*** |
| **Expected output** | *Filtered Excel report sent via email.* |
| **How to start the automated process** | *From UiPath Apps.* |
| **Reporting**  **(queues reporting, Kibana or another platform)** | *Orchestrator logs.* |
| **How is Orchestrator used?** | ***Orchestrator is used to host the process.*** |
| **Password policies**  **(mention any specific compliance requests)** | *N/A* |
| **Stored credentials**  **(Never use hardcoded credentials in the workflow!)** | *N/A* |
| **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** | *FullScreen* |

## 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)** | |  |  | | --- | --- | |  | *DEV\_ENV* | |
| **Environment prerequisites**  **(OS details, libraries, required apps)** | Windows 11, UiPath Studio, Excel installed. |
| **Repository for project**  **(where is the developed project stored)** | *Stored locally and in version control (GitHub).* |
| **Configuration method**  **(assets, excel file, Json file)** | *JSON configuration file and Orchestrator Cloud.* |
| **List of reused components** | ***N/A*** |
| **List of new reusable components** | *SendReportOnEmail.xaml, CreateReport.xaml, ExportToExcel.xaml* |

## Project(s) workflows

Workflows specific to: Specify Project Name from section above

For the workflow files defined below please specify the input and output parameters.

|  |  |
| --- | --- |
| **Workflow Name** | **Description** |
| Main.xaml | Receives data from Uipath Apps and calls the workflow that accesses the sites. |
| AutoScout24.xaml | Scrapes autoscout24.ro website for car listings. |
| MobileDe.xaml | Scrapes mobile.de website for car listings. |
| Wagen.xaml | Scrapes 12gebrauchtwagen.de website for car listings. |
| CreateReport.xaml | Consolidates data from AutoScout24, Wagen and MobileDe. |
| ExportToExcel.xaml | |  |  | | --- | --- | |  | Saves the report to Excel. | |
| SendReportOnEmail.xaml | Sends the Excel report via email. |

## Packages

Include the list of packages and high-level description for each of them, to explain their purpose

|  |  |
| --- | --- |
| **Package Name** | **Description** |
| UiPath.Excel.Activities | Execute Excel related operations using the Open Office XML format (XLSX) or Excel.Interop |
| UiPath.Email.Activities | Retrieve and send mail using POP3, IMAP, SMTP and Exchange protocols. |
|  |  |

## Architectural structure of the Master Project

Display the interaction between components (package / robots, Orchestrator queues, and running order) in a diagram.

## A diagram of a software company Description automatically generated with medium confidence

# Other Details

**Future Improvements**

* **Add support for additional car listing platforms.**
* **Include error-handling and retry mechanisms.**
* **Ensure the automation process runs after website updates.**

# 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.