Quantanite –

Scrapping Phone Number – Solution Design Document V0.3



24 January 2020

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# 1. Introduction

## 1.1 Purpose

The purpose of this document is to outline the RPA solution design created for Scrapping Phone Number process and is aimed at those developing and testing the process as a technical overview of the solution. During this engagement, Quantanite will be responsible for the implementation of the process automation using UiPath Studio automation software using its components and orchestrator, which has been selected by Quantanite as the automation software to be used in this implementation instance. The focus of the project will be to build a reliable, robust and efficient solution to support the existing business team by the automation of the Scrapping Phone Number process.

In this document, the scope and description of the process as well as a breakdown of the sub processes and the various components will be outlined. This information is based on the ‘To-Be’ Process maps that were created during process definition.

## 1.2 Scope

The process is about scrapping phone number for a given address. First, we need to open the excel file in which the addresses are placed. Then copy the address line 1, address line 2, premise city, premise state, premise zip code value and search it to google. If we find the phone number, we need to copy it then update the excel file accordingly with phone number, source of finding. If not, then we search in Facebook and Yelp and Yellow pages and Loopnet with the same search value previously extracted. If phone number is found from any of these sites, we update the excel file as like we did for google. In case the phone number is not found on any of these sites we write unsuccessful in particular column of the excel file. When the whole process is done for every address, we send an email to notify that the work is done.

## 1.3 Applications used in the process

The table includes a comprehensive list all the applications that are used as part of the process automated, at various steps in the flow:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | **Application name & version** | **Thin/Thick Client** | **Environment / Access Method** | **Comments** |
| **1** | Google Chrome | Thick Client | Web Browser |  |
| **2** | Google Sheet | Thick Client | Web Browser |  |

### 1.4.1 Input Data

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Input Type** | **Location** | **Inputs are standard? (Yes / No)** | **Inputs are structured? (Yes / No)** | **Data to be used from file** | **Sample file attached** |
| Phone Number Lookup Sheet | Google Sheets | [Phone Number Lookup Sheet link](https://docs.google.com/spreadsheets/d/14YcFXTgHuX-2UJo0oHU_kVbtTzJ0RZi55Zkc7gUCNkU/edit?ts=5e1851dd#gid=1450343560) | Yes | Yes | **Address Line 1 Address Line 2 Premise City Premise State Premise Zip Code** |  |

*\* Inputs are* ***standard*** *if the content is positioned in the same place even if the input types are different.*

*E.g. a process that uses at each transaction the same template, so fields to be extracted are always fixed..*

*Inputs are* ***structured*** *if it is machine readable and digital. Scanned PDF Images/ Free flow texts in Emails are unstructured inputs*

*If the file is marked structured and inputs are marked as standard, then they would need to remain the same and any changes to this will require a change request.*

### 1.4.2 Output Data

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Output Type** | **Location** | **Sample file attached** |
| Phone Number Lookup Sheet | Google Sheets | [Phone Number Lookup Sheet link](https://docs.google.com/spreadsheets/d/14YcFXTgHuX-2UJo0oHU_kVbtTzJ0RZi55Zkc7gUCNkU/edit?ts=5e1851dd#gid=1450343560) | As referenced in input data [1.4.1](#_1.4.1_Input_Data) |

## 1.5 Key Contacts

|  |  |  |  |
| --- | --- | --- | --- |
| **Role** | **Name** | **Contact Details (email & phone number)** | **Notes** |
| Process SME | Abu Ashik | Abu.ashik@taskeater.com |  |
| Process Reviewer | N/A | N/A |  |
| Process Owner | Imratul Jannat | Imratul.jannat@quantanite.com |  |

## 1.6 Definitions

|  |  |
| --- | --- |
| TBC | To Be Confirmed |
| TBD | To Be Determined |
| N/A | Not Applicable |
| VM | Virtual Machine |
| RPA | Robotic Process Automation |
| PC | Personal Computer |
| PDD | Process Definition Document |

## 1.7 Document Reference(s)

|  |  |
| --- | --- |
| [1] | [To Be Map\Quantanite\_Brycer\_Process\_PDF\_v0.2\_20200128.pdf](To%20Be%20Map/Quantanite_Brycer_Process_PDF_v0.2_20200128.pdf) |
| [2] |  |
| [3] |  |

# 2. Solution Design

For the process development purpose, each developer will use a single VDI with the UiPath studio installed and configured. Developers and robots accounts will be created within Quantanite’s domain.

All automation and logical components will be created according to the current Quantanite best development standards. Each component being created in their specified folder are incorporating the UiPath REFramework files within.

UiPath Studio project has been set-up on the following Quantanite’s Shared Network Drive location:

* {Insert Location}

UiPath Studio project folder structure includes Development, Test and Production folders, representing environments for each built State Machine. In each environment folder, the following folder structure is present:

* Configuration
* Shared components
* Reading Data from Google Sheet
* Fetch Item from Queue and create Search text
* Send Email
* Search in Google
* Add Phone Number and other information
* Search in Facebook
* Search in Yelp
* Search in LoopNet
* Search in Yellow page

Under each of the subprocess folders, the following UiPath Studio file / folder structure is built:

* .Screenshots
* Data
* Documentation
* Exceptions\_Screenshots
* Framework
* Process Specific Components
* Sub Processes
* Tests
* Project.Json
* Main.xaml
* Process.xaml
* README.md
* Brycer Process Folder

**Data folder** contains the config.xlsx file, input and output folders. **Input and Output folders** both contains the **Copy of Phone Number Lookup List 1.3.2020.xlsx** file.

**Main.xaml file** is the State Machine Layer (the highest layer of the subprocesses for all of the processes). This layer is used within UiPath’s REFramework to retrieve and process the transaction items from the Orchestrator. **Exceptions\_Screenshots** will contain the image files that capture the screen of the VDI in the instant an exception occurs during the process execution.

The process utilises the Orchestrator to store queue items in different queues. The web address for the Orchestrator used is <https://platform.uipath.com/taskeaterbangla/TaskeaterBangladeshLtdDefault/?fid=66087&tid=65905> with the Tenant Name **TaskeaterBangladeshLtdDefault** and **Windows ID** as the login information. In addition to that, {list any other addresses} address is….

# 3. Automation Solution

The solution will be done in 2 parts for performing the full Brycer process for Scrapping Phone Number. One is Dispatcher for adding data in the queue and another is Performer to extract data for a given address from different websites.

The process is about scrapping phone number for a given address. For the Dispatcher part first, we need to open the excel file in which the addresses are placed. Then copy the address line 1, address line 2, premise city, premise state, premise zip code value. A Queue in the Orchestrator will be using for storing the data. For that, each of the address as a single string will be stored in the queue. For each row in the sheet the process will be performed.

Finally, for the Performer part the bot will be performing similar activities for each queue item in the Orchestrator.

First, the BOT will get data from the queue and open web browser. Then it will go to Google and search for the phone number for a single Queue item. If the address is found for multiple property, the BOT will crosscheck the exact match for the property name. If it is mentioned that “Permanently Closed” ,this case should be skipped. After getting the phone number from google , the excel file will be updated accordingly with additional information along with source of finding.

If Phone Number not found in Google, then we search in Facebook and Yelp and Yellow pages and Loopnet with the same search value previously extracted. If phone number is found from any of these sites, we update the excel file as like we did for google.

In case the phone number is not found on any of these sites we write unsuccessful in particular column of the excel file. When the whole process is done for every address, we send an email to notify that the work is done.

#### Required Objects/Components

The following Components will be used, created or updated:

|  |  |  |
| --- | --- | --- |
| **Object/Component Name** | **Needs Updating**  **(Y/N/NEW)** | **If Yes :- Reason** |
| Example: Excel – Read Input File | N |  |
| Example: SMTP – Send Email | N |  |

# 4. Process Work Queues

The process in total uses 1 queue. Queue 1 used by …

Queue 1 contains the following structure and data items.

|  |  |  |
| --- | --- | --- |
| **Queue Name:** | **Address\_Queue** | |
| **Data Item Name** | **Data Item Type** | **Purpose** |
| Full Address | **String** | The date is extracted from **Copy of Phone Number Lookup List 1.3.2020.xlsx** sheet by taking the values from column **‘I’, ‘J’, ‘K’, ‘L’** of the Excel file to complete the full address string. |
| Spreadsheet Key | **String** | Identifying the unique Sheet |
| Current Row Number | **String** | The **Current Row Number** is also recorded for further tracking of the row. |

# 5. Work Scheduling

TBD

[Sample: 35 Hours a week from Monday to Friday 10.00 am to 06.00 pm.]

{Please write how often the process should run, when the input file drops in to the folder, who is responsible for the file, does the process has to run on time, if so why? Etc)

# 6. Business Exception Details

The Business Process Owner and Business Analysts are expected to document below all of the business exceptions identified in the automation process. These can be classified as:

|  |  |
| --- | --- |
| **Known** | **Unknown** |
| Previously encountered. A scenario is defined with clear actions and workarounds for each case. | New situation never encountered before. It can be caused by external factors. Cannot be predicted with precision, however if it occurs, it must be communicated to an authorised person for evaluation. |

## 6.1 Known Exceptions

The table below reflects all the business process exceptions captured during the process capture. These are known exceptions, met in practice before. For each of these exceptions, a corresponding expected action is defined that the robot should complete if it encounters the exception.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **BE #** | **Exception Name** | **Step** | **Parameters** | **Action to be taken** |
| **1** | Any data field is missing | As referenced in PDD [1.7 Document Reference(s)](#_1.7_Document_Reference(s)) | Address properties missing information | Update with ‘n’ in column **‘J’** |

## 6.2 Unknown Exceptions

For all the other unanticipated or unknown business (process) exceptions, the robot should:

Send an email notification at {insert email address} and error message screenshot attached.

# 7. Application Error and Exception Handling

A comprehensive list of all errors, warnings or notifications should be consolidated here with the description and action to be taken, for each, by the Robot.

Errors identified in the automation process can be classified as:

|  |  |  |
| --- | --- | --- |
| **Area** | **Known** | **Unknown** |
| **Technology / Applications** | Experienced previously, action plan or workaround available for it. | New situation never encountered before or may happened independent of the applications used in the process. |

## 7.1 Known Errors or Exceptions

The table below reflects all the errors identifiable in the process capture. For each of these errors or exceptions, a corresponding expected action is defined that the robot should complete if it encountered.

## 7.2 Unknown Errors or Exceptions

For all the other unanticipated or unknown application exceptions/errors, the robot should:

Send an email notification at [Imratul.jannat@quantanite.com](mailto:Imratul.jannat@quantanite.com) [abu.ashik@taskeater.com](mailto:abu.ashik@taskeater.com) and error message screenshot attached.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | **Error Name** | **Step** | **Parameters** | **Action to be taken** |
| **1** | Web Browser unresponsive | Any step | No response / Blank page | 1. Retry 3 times.  2. Close the web browser and  open it again |

# 8. Folder Structure

{Please insert the full folder structure here}

# 9. Application Configuration

## 9.1 Process Metrics

Based on the process metrics collected during process capturing phase, on Production a 1 Runtime Resource would be sufficient for a robot to process requests in a time that meets SLA.

|  |  |
| --- | --- |
| **Predicted Weekly Volumes:** | ~7,500 rows of Data |
| **Predicted Unit Time:** |  |
| **Total Weekly Processing Time:** | ~35 hours example |
| **Number of VMs:** | 1 |
| **Process SLA(s)** |  |

## 9.2 Performance Considerations

No performance considerations need to take place for this process.

## 9.3 Assets

|  |  |  |  |
| --- | --- | --- | --- |
| **Asset Name** | **Type** | **Value for Test** | **Value for Production** |
| **TBD** | Number | 200 | 200 |

## 9.4 Application Constraints

|  |  |
| --- | --- |
| **Application** | **Availability** |
| N/A | N/A |

## 9.5 Process and Email Alerts

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Scenario** | **Email Alert Y/N** | **Sender (Email Account Details)** | **Recipient(s)** | **Sample File\*** |
| Success Email | Y | Sample.robot@quantanite.com | [Imratul.jannat@quantanite.com](mailto:Imratul.jannat@quantanite.com) [abu.ashik@taskeater.com](mailto:abu.ashik@taskeater.com) |  |
| Business Exception | N | N/A | N/A | N/A |
| Application Exception | Y | Sample.robot@quantanite.com | [Imratul.jannat@quantanite.com](mailto:Imratul.jannat@quantanite.com) [abu.ashik@taskeater.com](mailto:abu.ashik@taskeater.com) |  |

\*All e-mail samples are in HTML format

# 10. Data Policies

It is highly important that the data the process works with is classified and handled in an appropriate manner. The following sections will highlight the defined data requirements for the Scrapping Phone Number process.

## 10.1 Data Privacy

The automation solution implemented provides a secure, auditable record of all activities undertaken. The level of these logs can be altered dependent on the sensitivity of the data being worked with, ensuring that sensitive, critical or secret data is not inadvertently logged for the inappropriate audience to see.

Access to the automated environment is security controlled. It is important that a record be made of the activity undertaken against each transaction to allow for reporting used to generating insight and understanding of how the process is operating.

The Scrapping Phone Number process will ensure that only the following items are logged in such a manner that general supporting users will be able to see: -

• Item Key (obfuscated ID representing the case being worked)

• None sensitive, critical or secret data relating to a work item

Where any particular piece of information is not desired, the logging of this individual data item may be turned off completely (without affecting the others).

## 10.2 Data Preservation

All logs within the solutions will be preserved for a period of {x} days after which they will be archived. This is the responsibility of Quantanite IT team to manage logs archiving.

The time period that logs are stored for and any rules around archiving will be reviewed and defined as part of the overall project.

# 11. Release Details

To ensure that the process is packaged and migrated correctly the solution design document should list all dependent elements of the process. The list below will be used to form a packaged release of the process, specific considerations for each element will be noted and use during transition between environments: -

|  |  |
| --- | --- |
| **Processes** |  |
|  |
|  |
|  |
|  |
| **Work Queues** |  |
|  |
|  |
|  |
| **Schedules** |  |
|  |
|  |
| **Calendars** |  |
|  |
|  |
| **Fonts** |  |
|  |
|  |

# 12. Outstanding Queries and Actions

Detailed below are a list of questions or anomalies found by Quantanite during the analysis phase. In order to proceed each of these needs to be clarified or addressed.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Query** | **Reference** | **Owner** | **Date to be resolved by** | **Comment** | **Resolved (Y/N)?** |

# 13. Acceptance

By signing off and accepting this document the nominated approver is on behalf of Quantanite confirming that the contents of this document are accurate and in so doing is authorising Quantanite to proceed to the configuration phase for this process.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Approved on behalf of Quantanite:** | | | | |
| **Document Section** | **Name of Approver** | **Title of Approver** | **Date** | **Signed** |
| Full Section | Imratul Jannnat | Process Owner |  |  |
| Full Section | Abu Ashik | SME |  |  |
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