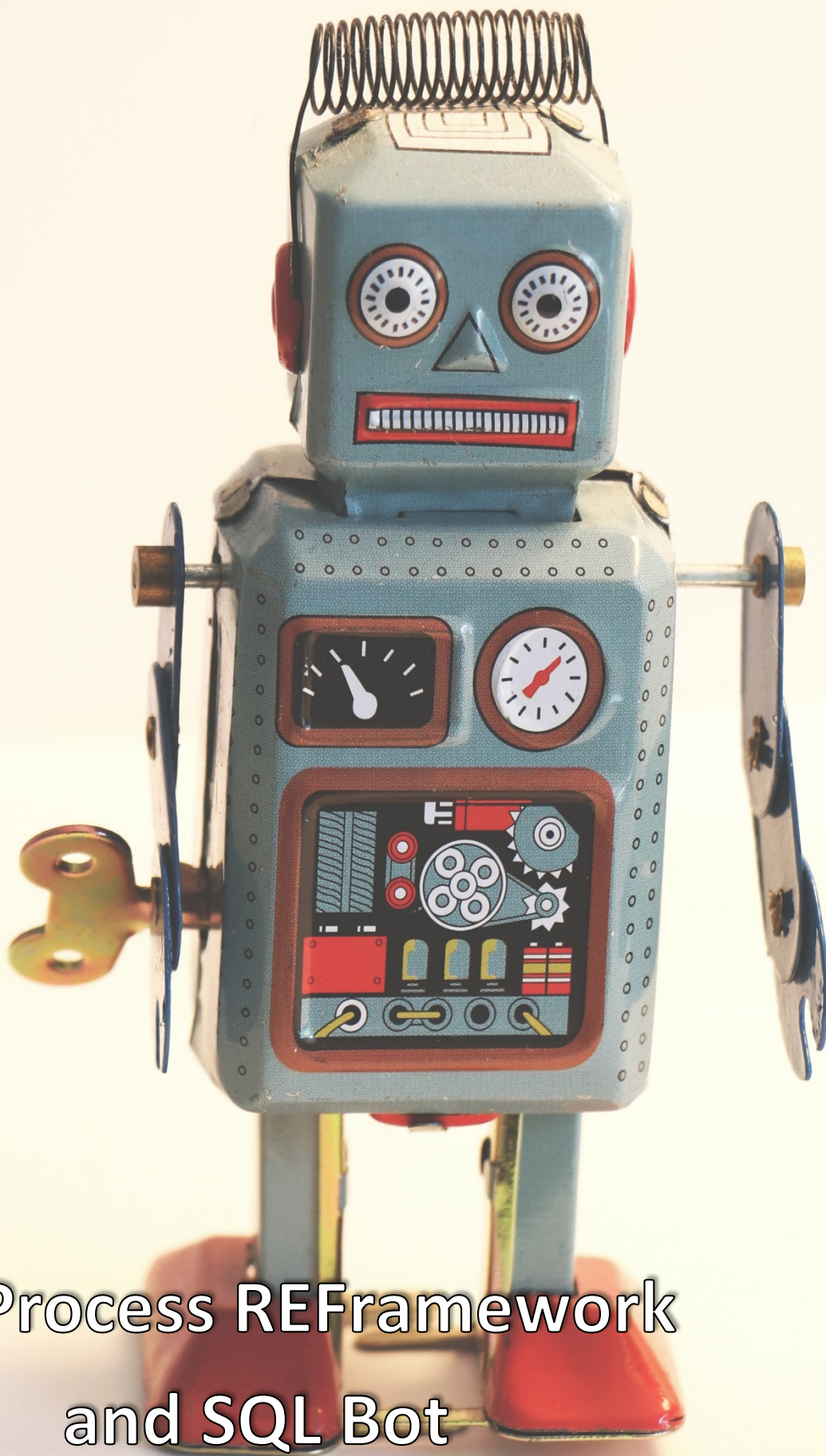


Project by Brayan Jimenez



Doc Process REFramework
and SQL Bot

USE CASE

As is process:

Video de proceso:

<https://drive.google.com/file/d/1DSfbOZSYEUUyiYlwsXX0dLP8wT3VoD3f/view?usp=sharing>

Una empresa recibe los siguientes tipos de documentos a través de Outlook:

- Invoice
- Receipt
- W9 Form
- Certificate of filing

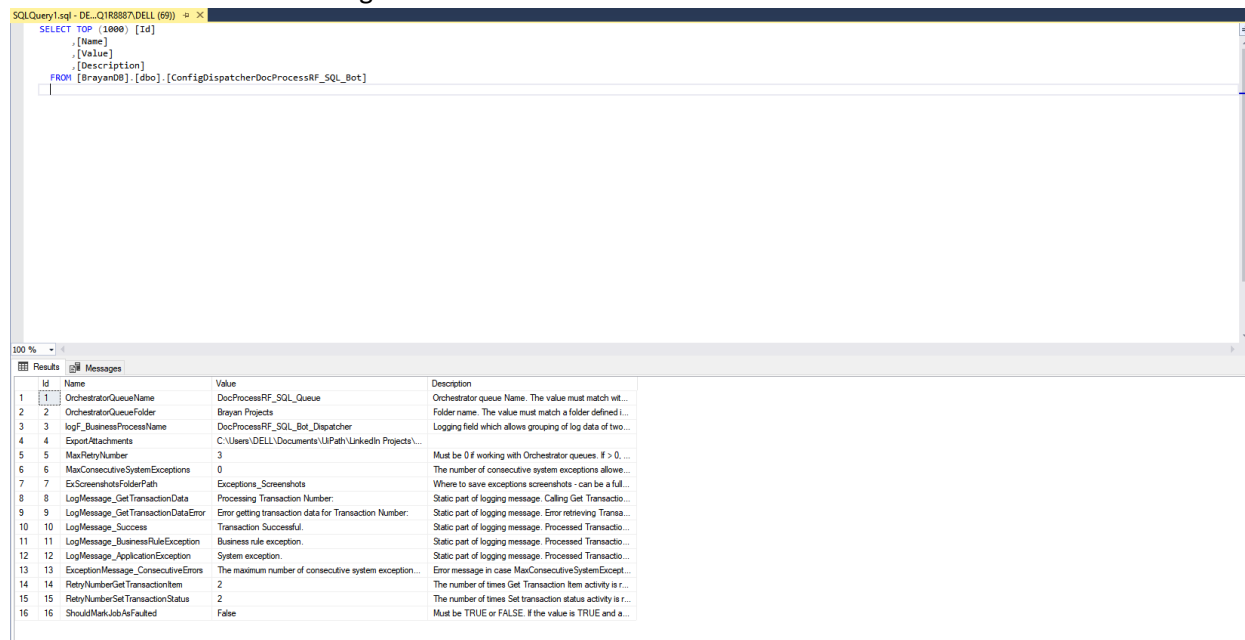
Estos documentos deben ser extraídos del email automáticamente, luego descargados, luego subidos a filas en el orquestador, luego procesados para extraer los datos de cada tipo de documento para su posterior exportación a Excel, la información será extraída de cada archivo pdf y luego exportada en un Excel para cada tipo de documento.

Se deben utilizar triggers, para disparar el dispatcher, y triggers para disparar el performer.

To be process:

Dispatcher:

- Es obligatorio utilizar la base de datos para esta automatización, en este caso para almacenar el archivo de configuración.



```
SELECT TOP (1000) [Id]
      ,[Name]
      ,[Value]
      ,[Description]
FROM [BrayanDB].[dbo].[ConfigDispatcherDocProcessRF_SQL_Bot]
```

Id	Name	Value	Description
1	OrchestratorQueueName	DocProcessRF_SQL_Queue	Orchestrator queue Name. The value must match wit...
2	OrchestratorQueueFolder	Brayan Projects	Folder name. The value must match a folder defined i...
3	logF_BusinessProcessName	DocProcessRF_SQL_Bot_Dispatcher	Logging field which allows grouping of log data of two...
4	ExportAttachments	C:\Users\DELL\Documents\UIPath\LinkedIn Projects\...	
5	MaxRetryNumber	3	Must be 0 if working with Orchestrator queues. If > 0, ...
6	MaxConsecutiveSystemExceptions	0	The number of consecutive system exceptions allowe...
7	ExScreenshotsFolderPath	Exceptions_Screenshots	Where to save exceptions screenshots - can be a full...
8	LogMessage_GetTransactionData	Processing Transaction Number:	Static part of logging message. Calling Get Transac...
9	LogMessage_GetTransactionDataError	Error getting transaction data for Transaction Number:	Static part of logging message. Error retrieving Transa...
10	LogMessage_Success	Transaction Successful.	Static part of logging message. Processed Transac...
11	LogMessage_BusinessRuleException	Business rule exception.	Static part of logging message. Processed Transac...
12	LogMessage_ApplicationException	System exception.	Static part of logging message. Processed Transac...
13	ExceptionMessage_ConsecutiveErrors	The maximum number of consecutive system exception...	Error message in case MaxConsecutiveSystemExcept...
14	RetryNumberGetTransactionItem	2	The number of times Get Transaction Item activity is r...
15	RetryNumberSetTransactionStatus	2	The number of times Set transaction status activity is r...
16	ShouldMarkJobAsFailed	False	Must be TRUE or FALSE. If the value is TRUE and a...

- Si la tabla no está creada se utilizará un flujo de trabajo llamado "Load Config File to SQL" que se encargará de cargar la configuración en la base de datos además de crear la tabla.
- Se crea una cola en el orquestador que es donde se cargarán posteriormente todos los documentos.
- The dispatcher se crea mediante REFramework para que el Lineal Process cargue los documentos descargados a través de Outlook en la cola del orquestador.
- Integration service se utiliza para utilizar un activador de eventos a través de una conexión con Outlook 365. Este trigger será utilizado por el dispatcher y permitirá que el

dispatcher sea automáticamente disparado cuando nuevos items, en este caso documentos descargados, sean cargados a la cola. El trigger de eventos supervisa Outlook para recibir un correo electrónico con el asunto "Uipath" y que contenga documentos.

Performer:

- El performer se crea mediante el Document Understanding Framework y se configura los assets, primero se configuran los ajustes y se indican el DocumentUnderstandingQueueName, el Target file, el ExportsFolder, etc. A continuación, se configura la hoja de assets. Para ello, primero se crean todos los assets en el orquestador para poder utilizarlos en la hoja de assets del archivo de configuración.
- Aquí también se utilizará la tabla de base de datos para almacenar el archivo de configuración del performer

SQLQuery2.sql - DE_Q1R8887/DELL (79)

```
SELECT TOP (1000) [Id]
, [Name]
, [Value]
, [Description]
, [NameAsset]
, [Asset]
, [DescriptionAsset]
FROM [BrayanDB].[dbo].[ConfigPerformerDocProcessRF_SQL_Bot]
```

100 %

Results Messages

Id	Name	Value	Description	NameAsset	Asset	DescriptionAsset
1	TemporaryLocalFolder	Data\TempFolder	Auxiliary folder where the job will download files wh...			
2	ExportsFolder	C:\Users\DELL\Documents\Uipath\Unkined Projects\...	Output folder for exported data	AlwaysValidateClassification	AlwaysValidateClassificationDP_RFSQL_Bot	If set to True, classification will always go through ma...
3	ReceiptsTrainingFolder	Data\ReceiptsTraining\	Path for ML model training - Receipts	AlwaysValidateExtraction	AlwaysValidateExtractionDP_RFSQL_Bot	If set to True, extracted data will always go through m...
4	InvoicesTrainingFolder	Data\InvoicesTraining\	Path for ML model training - Invoices	SkipClassifierTraining	SkipClassifierTrainingDP_RFSQL_Bot	If set to True, classifier training will not be performed...
5	ClassifierLearningFilePath	DocumentProcessing\IntelligentKeywordLearningFile.json	Path to the learning file of the classifier	SkipExtractorTraining	SkipExtractorTrainingDP_RFSQL_Bot	If set to True, extractor training will not be performed...
6	UPathOcrEndpoint	https://du.upath.com/ocr	UPath public endpoint for DocumentOCR	ActionCatalog	ActionCatalog_DP_RFSQL_Bot	Action Catalog Name. The asset value overrides the ...
7	ReceiptsEndpoint	https://du.upath.com/ie/receipts	UPath public endpoint for receipts	ActionFolderPath	ActionFolder_DP_RFSQL_Bot	Path to the Orchestrator Folder where the Action Cata...
8	InvoicesEndpoint	https://du.upath.com/ie/invoices	UPath public endpoint for invoices	StorageBucketName	StorageBucket_DP_RFSQL_Bot	Storage Bucket Name (required when Action Center i...
9	ClassificationEndpoint	https://du.upath.com/svc/intelligentkeywords	UPath public endpoint for classification	StorageBucketDirectoryPath	StorageBucketPath_DP_RFSQL_Bot	Path inside the Storage Bucket where actions will sto...
10	FormExtractorEndpoint	https://du.upath.com/svc/formextractor	UPath public endpoint for Form Extractor	DocumentUnderstandingQueueName	QueueName_DP_RFSQL_Bot	The name of the Orchestrator Queue. The asset valu...
11	AlwaysValidateClassification	True	If set to True, classification will always go through ...	DocumentUnderstandingQueuePath	QueuePath_DP_RFSQL_Bot	Path to the Orchestrator Folder where the Queue resi...
12	AlwaysValidateExtraction	True	If set to True, extracted data will always go through...	ClassificationThreshold	ClassificationThreshold_DP_RFSQL_Bot	Classification threshold for Classification Business Rul...
13	SkipClassifierTraining	False	If set to True, classifier training will not be perform...			
14	SkipExtractorTraining	False	If set to True, extractor training will not be perform...			
15	ClassificationThreshold	0.5	Classification threshold for Classification Business R...			
16	TargetFileKey	Path	Key in the Transaction Item's dictionary that holds t...			
17	ActionCatalog		Action Catalog Name. Has a corresponding asset t...			
18	ActionFolderPath		Path to the Orchestrator Folder where the Action C...			
19	StorageBucketName		Storage Bucket Name (required when Action Cente...			

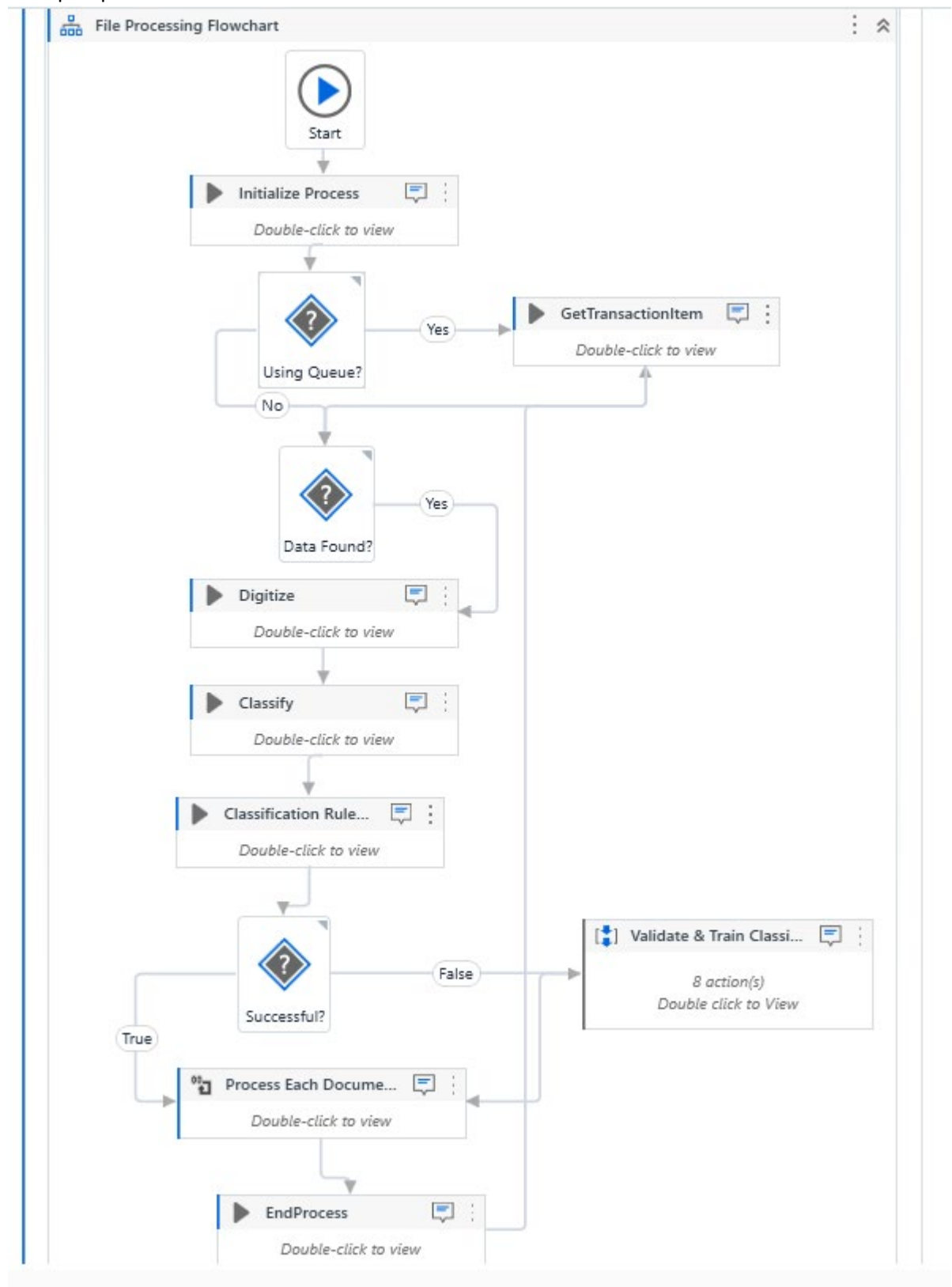
Id	Name	Value	Description	NameAsset	Asset	DescriptionAsset
20	StorageBucketDirectoryPath		Path inside the Storage Bucket where actions will ...			
21	DocumentUnderstandingQ...	DU_Invoice	The name of the Orchestrator Queue. Has a corres...			
22	DocumentUnderstandingQ...		Path to the Orchestrator Folder where the Queue re...			
23	MaxExecutionAttempts	3				
24	MaxExecutionAttemptsDig...	3				
25	MaxExecutionAttemptsCa...	3				
26	MaxExecutionAttemptsEtr...	3				
27	MaxLockTimeout	30				
28	RetryInterval	30				
29	ClassificationActionTitle	Classify -				
30	ValidationActionTitle	Validate -				
31	LogMessage_DocumentT...	Processing document:				
32	LogMessage_InitStarted	Project initialization started				
33	LogMessage_DigitizationS...	Digitization started for:				
34	LogMessage_DigitizationF...	Digitization finished				
35	LogMessage_AutoClassific...	Automatic classification started				
36	LogMessage_Classificato...	Classification finished				
37	LogMessage_AutoClassific...	Automatic classification results				
38	LogMessage_CreateClassi...	Creating classification validation action				

Results	Messages						
Id	Name	Value	Description	Name/Asset	Asset	Description/Asset	
39	LogMessage_WaitOnClas...	Waiting on classification validation action #					
40	LogMessage_ShowClassifi...	Presenting Classification Station					
41	LogMessage_ResumeAthe...	Resuming after classification validation(0). Document(s)...					
42	LogMessage_TrainClassifi...	Train classifiers started					
43	LogMessage_ClassifierTrai...	Classification retraining failed					
44	LogMessage_ClassifierTrai...	Classifiers trained successfully					
45	LogMessage_DataExtracti...	Data extraction started for:					
46	LogMessage_DataExtracti...	Data extraction finished					
47	LogMessage_CreateValida...	Creating data validation action for:					
48	LogMessage_WaitOnValid...	Waiting on data validation action #					
49	LogMessage_ShowValidat...	Presenting Validation Station for:					
50	LogMessage_ResumeAthe...	Resuming after data validation(0). Document: (1)					
51	LogMessage_TrainExtract...	Train extractors started					
52	LogMessage_DataExportS...	Data export started for:					
53	LogMessage_EndProcess...	End process started					
54	LogMessage_ExtractionBu...	Extraction Business Rule Validation started for:					
55	LogMessage_Classificati...	Classification Business Rule Validation started for:					
56	LogMessage_GetWritePer...	Getting file write permission					
57	LogMessage_GiveUpWrit...	Giving up file write permission					
58	LogMessage_LockFile...	Locking keyword file:					
59	LogMessage_UnlockFile...	Unlocking keyword file:					
60	LogMessage_UnlockFile...	Unlock complete!					
61	LogMessage_GetTransact...	Get Transaction Item started					
62	LogMessage_TransactionI...	No transaction item found in the queue					
63	LogMessage_TargetFileM...	Transaction item does not specify the file to be process...					
64	LogMessage_SetTransact...	Transaction Successful					
65	LogMessage_SetTransact...	Transaction failed due to Business Rule Exception:					
66	LogMessage_SetTransact...	Transaction failed due to System Exception:					
67	LogMessage_SetTransact...	Updating transaction progress to:					
68	TransactionProgress_Clas...	Validating Classification					
69	TransactionProgress_Extra...	Validating Extracted Data					
70	WarnMessage_Document...	Failed to process page range (0) in file (1) due to (2) vi...					
71	ErrorMessage_InputDocu...	Cannot find input document:					
72	ErrorMessage_AsyncFai...	Failed to load asset:					
73	ErrorMessage_ProcessAb...	Process was aborted due to (0) with message: (1) Full ...					
74	LogMessage_InvoicePost...	Starting Invoice Post Processing					
75	LogMessage_InvoicePost...	Parsing the Date has failed!					
76	LogMessage_InvoicePost...	One or more of the mandatory were missing!					
90	Shipping Address-Confiden...	50					
91	Invoice Number-Confidence	85					
92	PO Number-Confidence	85					
93	other-Confidence	50					
94	LogMessage_ReceiptPost...	Starting Receipt Post Processing					
95	LogMessage_ReceiptPost...	Parsing the Date has failed!					
96	LogMessage_ReceiptPost...	One or more of the mandatory were missing!					
97	LogMessage_ReceiptPost...	AutoExtraction is already set to false in a previous step ...					
98	LogMessage_ReceiptPost...	Total Computation Failed!					
99	LogMessage_ReceiptPost...	Subtotal Pass with subtotal: (0)					
100	LogMessage_ReceiptPost...	These are the fields that failed:					
101	SubTotalFieldsReceipt	Tax Amount	Each field present in the list here, will be added to t...				
102	MandatoryFieldsReceipt	Receipt Number,Tax Amount>Total Value,Receipt Date	These fields are mandatory. If they have not been ...				
103	MandatoryColumnFieldsRe...	Line Amount	These column fields are mandatory. If they have no...				
104	ConfidenceFieldsReceipt	Receipt Date,Receipt Number	List of fields which will be checked versus a specifi...				
105	OtherConfidenceFieldsRec...	Phone Number,Tax Amount>Total Value	List of fields which will be checked versus a single ...				
106	Receipt Date-Confidence	50					
107	Receipt Number-Confidence	85					
108	otherReceipt-Confidence	50					

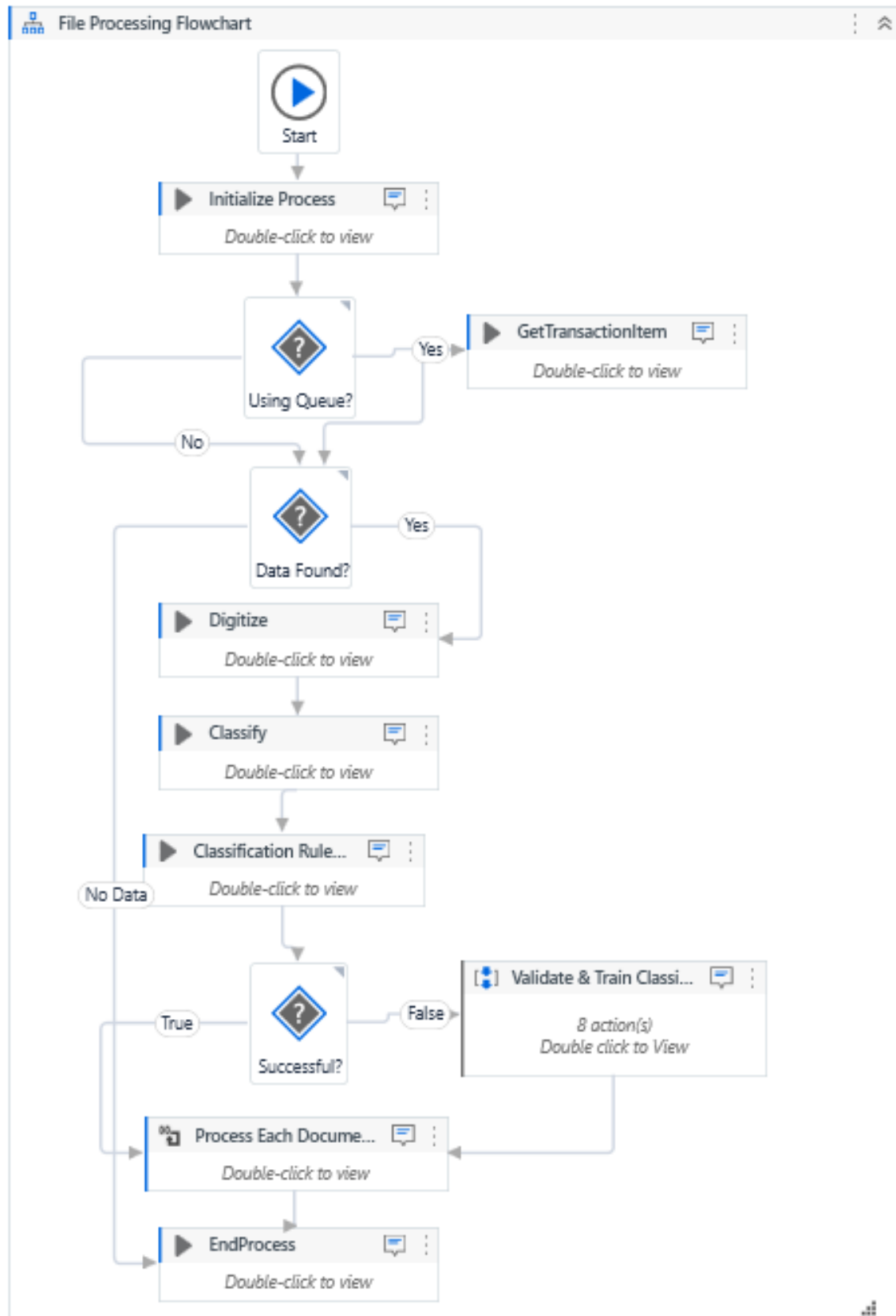
-
-
- Aqui Tambien si la tabla no esta creada será usado un workflow llamado “Load config file to SQL” y esto se encargará de subir el config a la base de datos además de crear la tabla.
- Document Understanding framework trabaja bajo el concepto de “a single job”, lo que significa que a diferencia del REFramework, solo ejecuta un job o transacción a la vez, asi que tendrías que correr el performer varias veces si hay varios documentos. Hay dos opciones, ya sea es ejecutado varias veces para procesar cada invoice, o una modificación es hecha para correrlo una sola vez y procesar todas las invoices con un solo job, esta ultima opción es la única que aplicaremos en este caso.
- La clasificacion y validacion será hecho a traves de action center.
- Es importante crear y editar los assets.





Se elimina la rama que no proviene de la decisión del Flujo "¿Data found?" y también se conecta la rama del proceso final con el Flujo de Trabajo GetTransactionItem, de esta forma se procesan

múltiples pdf.







Si el objetivo es trabajar bajo el concepto de “a single job ”the workflow should have the following structure:







 DispatcherDocProcessRF_SQL_Bot	11/11/2023 11:27 PM	File folder
 FilesInput	11/12/2023 12:35 AM	File folder
 FilesOutput	11/12/2023 12:51 AM	File folder
 PerformerDocProcessRF_SQL_Bot	11/11/2023 3:49 PM	File folder

- Documentos guardados obtenidos por medio de Outlook con ayuda del trigger y dispatcher

 Certificate of filing.pdf	10/25/2023 9:30 PM	Microsoft Edge P...	93 KB
 Invoice.pdf	10/25/2023 9:30 PM	Microsoft Edge P...	32 KB
 Receipt.pdf	10/25/2023 9:30 PM	Microsoft Edge P...	1,722 KB
 W-9.pdf	10/25/2023 9:30 PM	Microsoft Edge P...	1,209 KB

- Cuando los documentos son procesados (clasificados, validados, y exportados. Se producirá las siguientes extracciones.

 Certificate of filing_1-1.xlsx	10/25/2023 9:32 PM	Microsoft Excel W...	7 KB
 Invoice_1-1.xlsx	10/25/2023 9:34 PM	Microsoft Excel W...	10 KB
 Receipt_1-1.xlsx	10/25/2023 9:37 PM	Microsoft Excel W...	10 KB
 W-9_1-1.xlsx	10/25/2023 9:41 PM	Microsoft Excel W...	8 KB

Es recomendable dirigirse al video donde el proceso completo es explicado paso por paso.

<https://drive.google.com/file/d/1DSfbOZSYEUUyiYlwsXX0dLP8wT3VoD3f/view?usp=sharing>