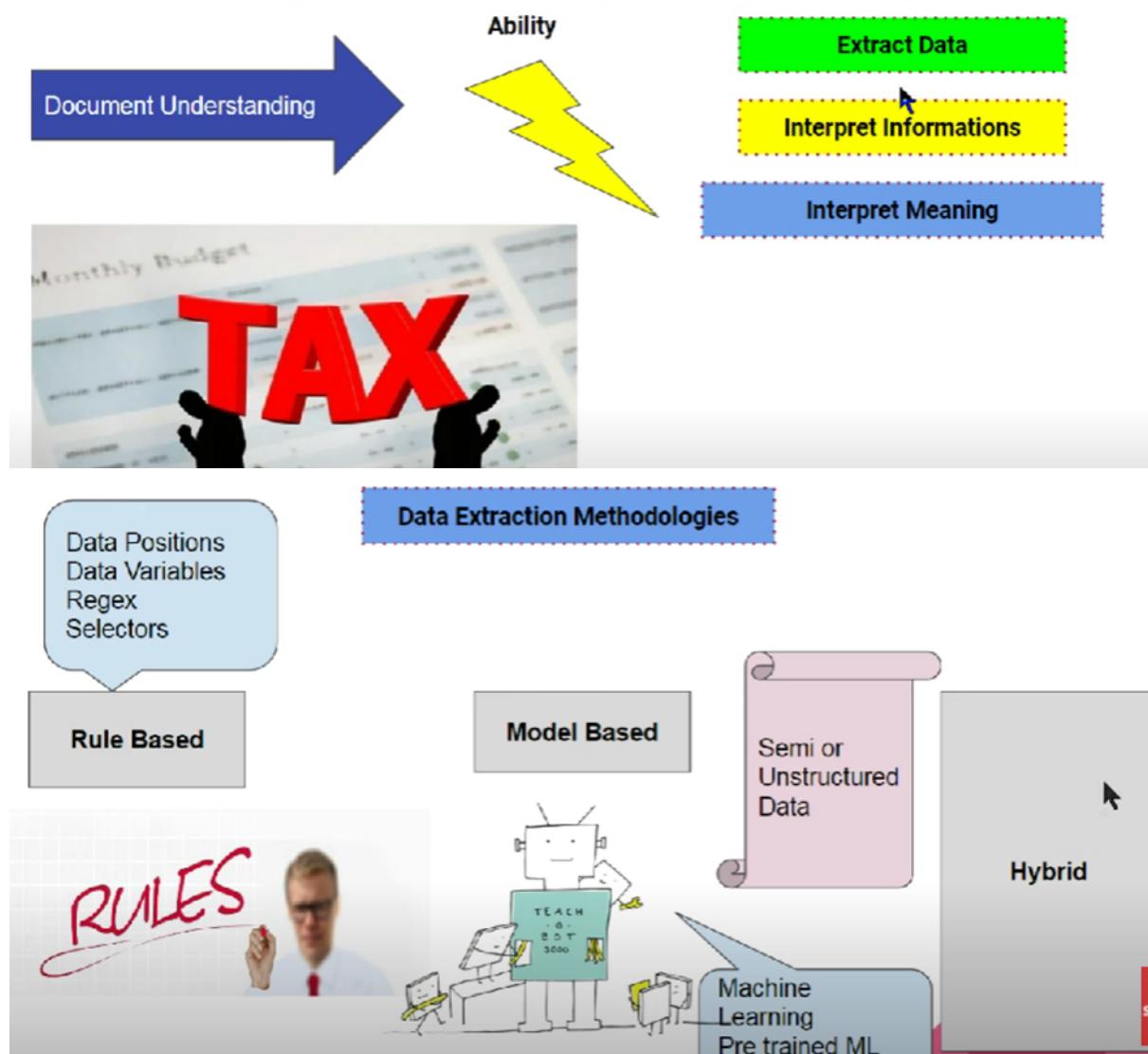


## DOCUMENT UNDERSTANDING

Is an ability or a technique using which we can extract data. In case of unstructured or semi structured format where we will not be able to extract data from it, document understanding uses AI to interpret information.

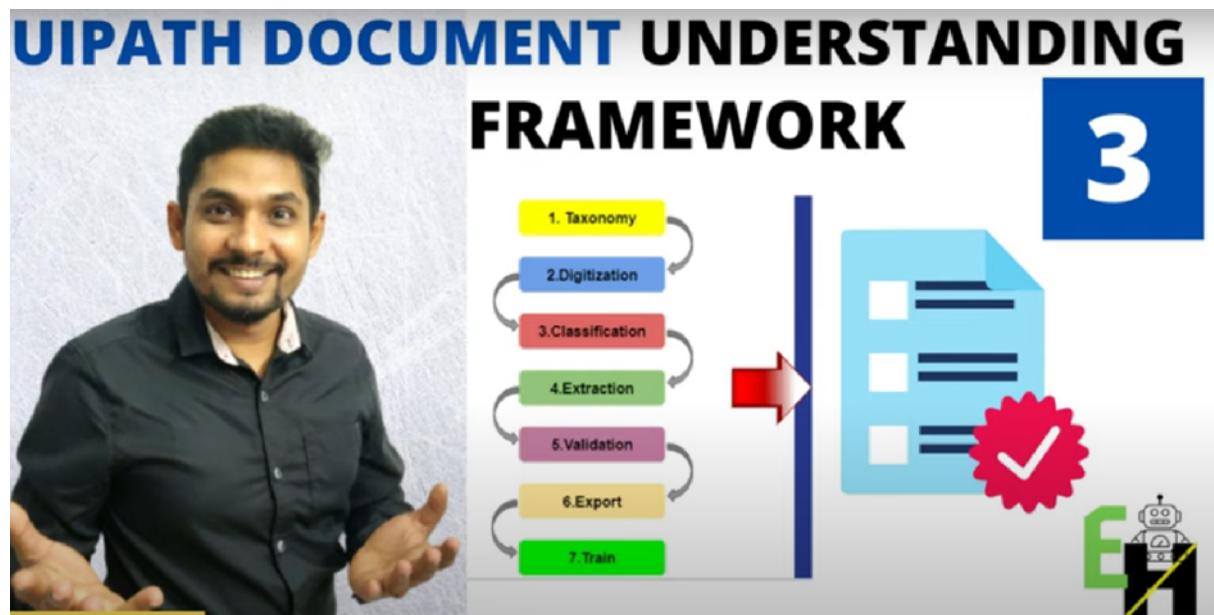
When we are given a paragraph to read, we read it and understand what is what. Reading or extracting data is easy but interpreting info from a paragraph interpreting meaning from scanned docs these all uses AI techniques which is in total called as Document understanding

Document understanding is an ability to extract data interpret information and meaning out of it using AI techniques

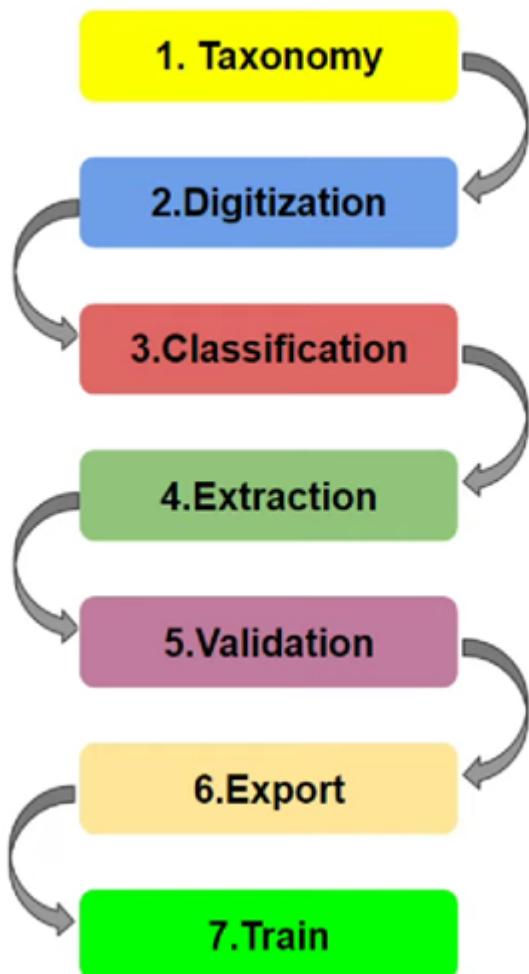


Rule based data extraction is where we use selectors regex data positions and data variables model based data extraction is where we use machine learning techniques

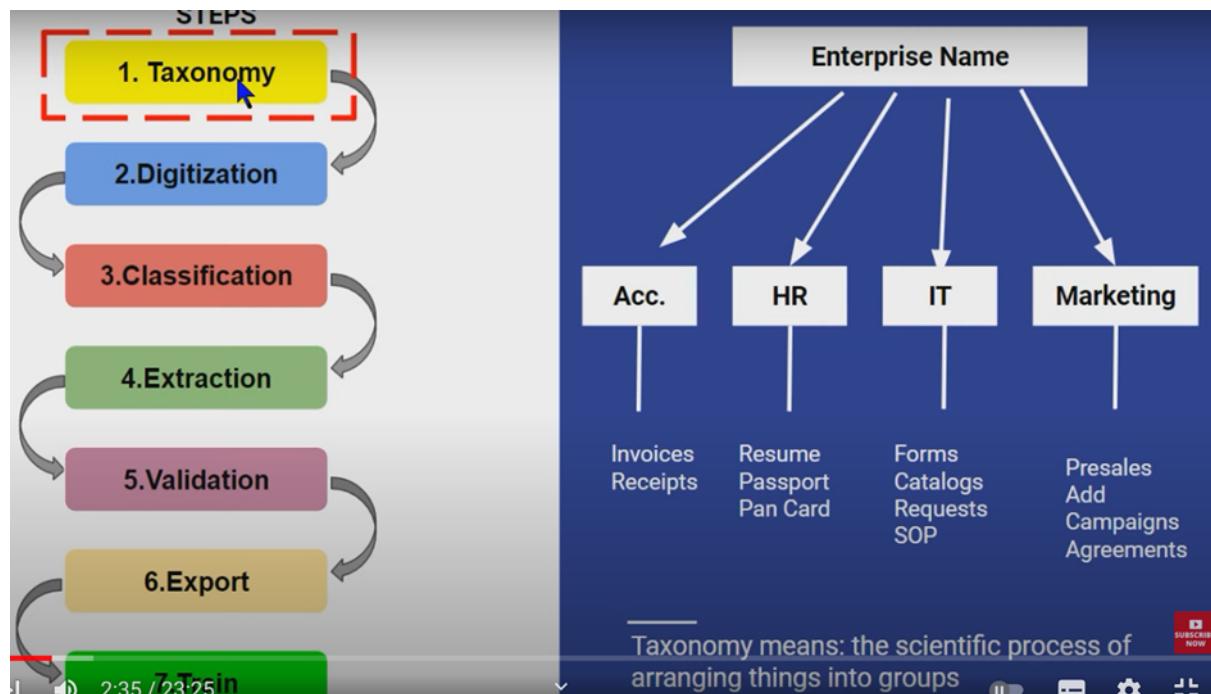
to identify the data if it is semi or unstructured. mixing rule based and model based gives the hybrid type of data extraction.



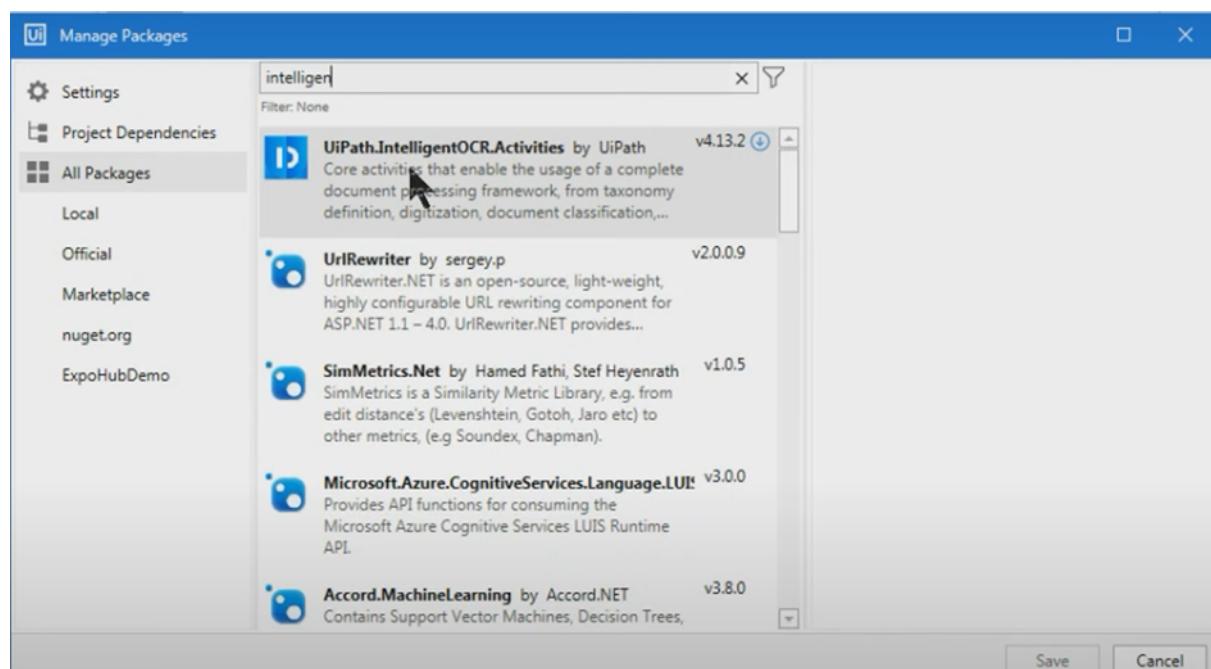
### DOCUMENT UNDERSTANDING FRAMEWORK STEPS



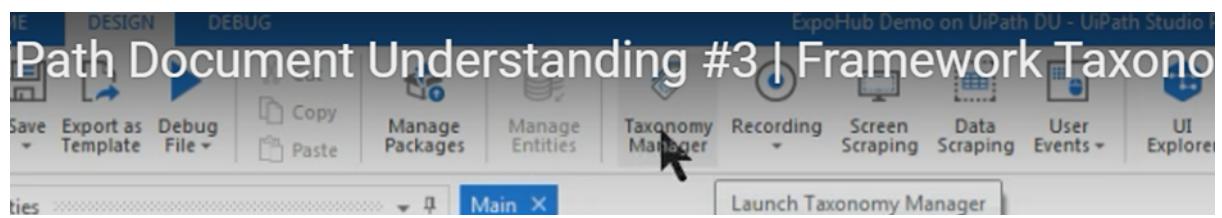
Taxonomy here means organizing the documents.



A company will be dealing with various kinds of documents depending on various departments it has. It has specific ways to organise all these documents.



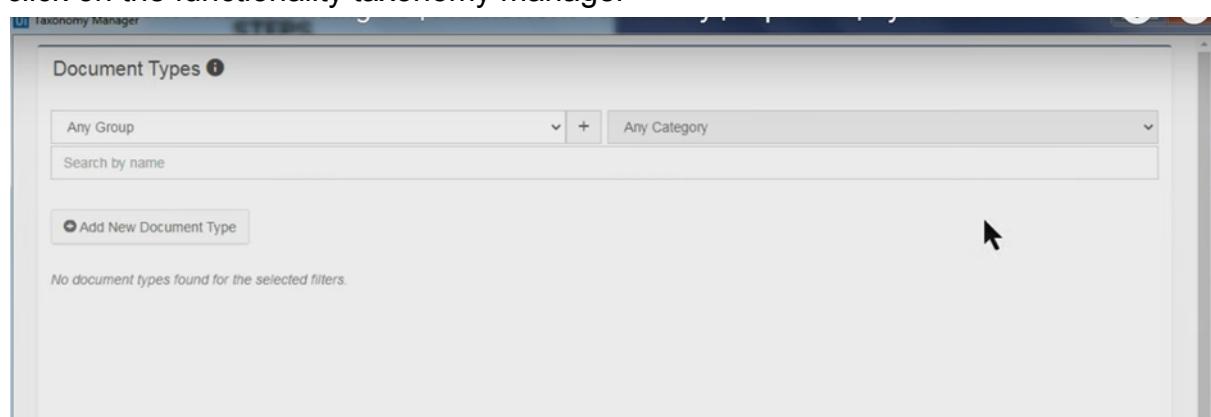
In the ribbon you can see the new functionality added. taxonomy manager.



## Activities

A screenshot of the Activities palette in UiPath Studio. The left pane shows a tree view of available activities under the "Available" section, with "Document Understanding" expanded. Under "Actions", the "Document Understanding" item is highlighted with a red box and a cursor arrow. Other items include Extractors, Classify Document Scope, Data Extraction Scope, Digitize Document, Export Extraction Results, Load Taxonomy, Present Classification Station, Present Validation Station, Train Classifiers Scope, and Train Extractors Scope. The right pane shows a list of activity categories: Favorites, Recent, Available, Default Activities, App Integration, Document Understanding, System, Workflow, UiPath.Excel.Activities, UiPath.Mail.Activities, UiPath.OCR.Activities, UiPath.System.Activities, and UiPath.UIAutomation.Activities.

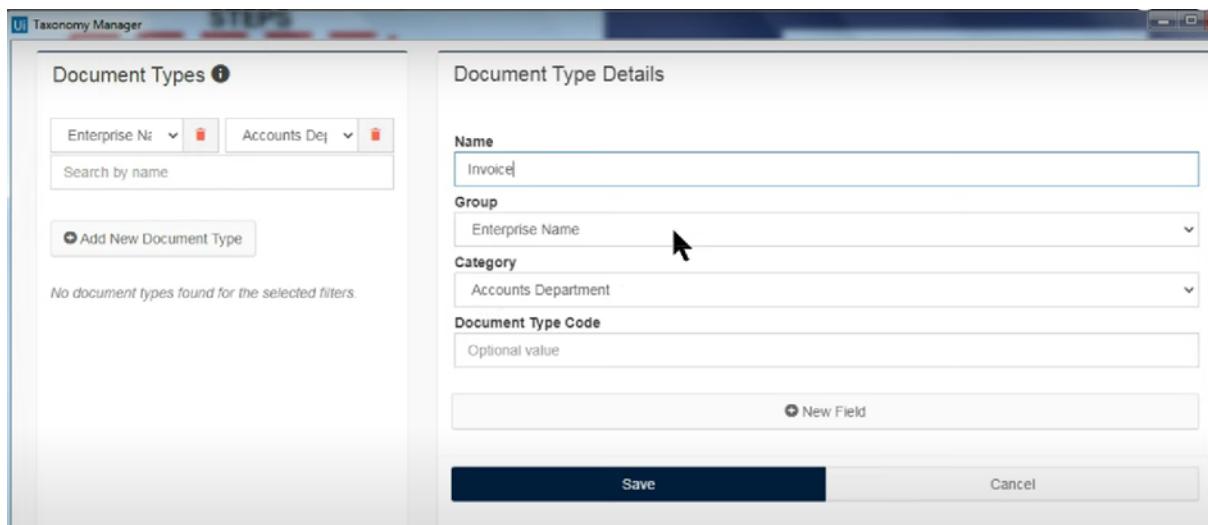
click on the functionality taxonomy manager



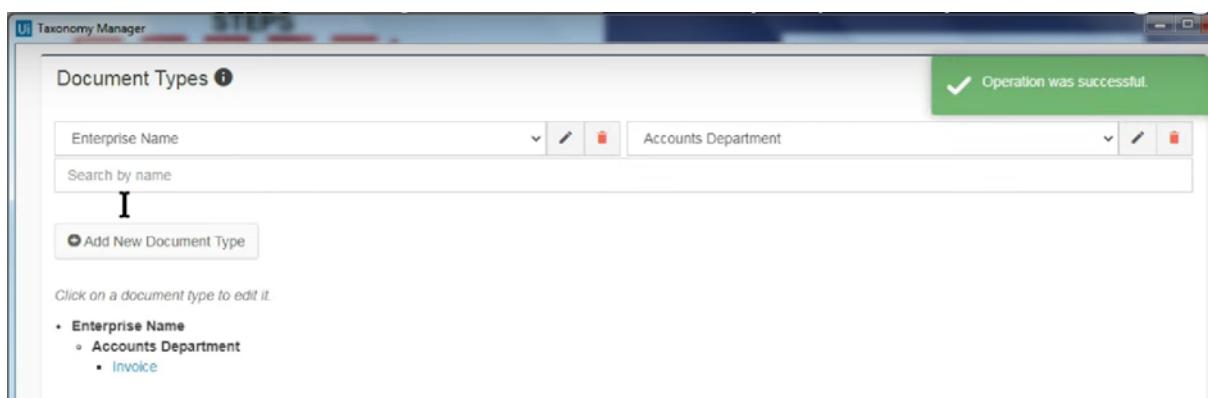
Once you click, Taxonomy.JSON file will get created. Whatever you are going to create it will be stored there.

Add group called enterprise name. add category called accounts, IT, HR, and so on.  
Add Document type.

Here we are just creating structures.



Once you click on Save, you can find this



We can also add other kind of receipts under Document type. Below you can see mini document types under many other categories.

Document Types

Enterprise Name	
Search by name	

Click on a document type to edit it.

- Enterprise Name
  - HR
    - Resume
    - Passports

If we just click on any category we can see all the categories and all the documents under that category.

Enterprise Name	
Search by name	

Click on a document type to edit it.

- Enterprise Name
  - Accounts Department
    - Invoice
    - Receipts
  - HR
    - Resume
    - Passports

Now we have finished the very first step. installing the package and creating taxonomy.

There are 2 steps in taxonomy

Create & load

In the above steps, we have already created the structure of documents & defined the types. Now we need to create the fields that we want to extract after which we can load. We need to define what all fields we need as in the below 2<sup>nd</sup> image.

The screenshot shows the 'Manage Packages' interface in the UiPath Studio. A package named 'UiPath.IntelligentOCR.Activities' is selected. The package icon is a blue square with a white 'D'. The title bar displays the package name and a subtitle: 'Core activities that enable the usage of intelligent document processing and optical character recognition (OCR) in your RPA solutions.' Below the title, there is a section titled 'Taxonomy Manager' with a small icon of a tag.

Ui Path.IntelligentOCR.Activities  
Core activities that enable the usage of intelligent document processing and optical character recognition (OCR) in your RPA solutions.

Taxonomy Manager

Document Types ⓘ

Any Group

Search by name

Add New Document Type

No document types found for the selected filters.

## Create and Load Taxonomy

The screenshot shows the configuration of a 'Load Taxonomy' activity. The activity has an output named 'Taxonomy' and a placeholder text box labeled 'Enter a VB expression'.

Load Taxonomy

Output

Taxonomy

Enter a VB expression

The screenshot shows the Taxonomy Manager interface. On the left, there's a sidebar titled "Document Types" with search filters for "Any Group" and "Any Category", and a "Search by name" input field. Below it is a button to "Add New Document Type". A tree view lists categories: "Enterprise Name" (Accounts Department: Invoice, Receipts), "HR" (Resume, Passports). In the center, "Document Type Details" are shown for "EnterpriseName.AccountsDepartment.Invoice". Fields include "Name" (Invoice), "Group" (Enterprise Name), "Category" (Accounts Department), "Document Type Code" (Optional value), and a "New Field" button. At the bottom are "Save" and "Cancel" buttons. On the right, a modal window titled "Edit Field" is open, containing fields for "Name" (Invoice Number), "Is Multi-Value" (unchecked), "Requires Reference" (checked), and "Type" (Number). It also has "Save" and "Cancel" buttons.

Type the field names that you need, it doesn't require exact name as in the document. Also define the type as below & save

The "Edit Field" dialog box is displayed. It contains the following fields:

- Name:** Invoice Number
- Is Multi-Value:**
- Requires Reference:**
- Type:** Number

At the bottom are "Save" and "Cancel" buttons. A cursor is hovering over the "Save" button.

Create as many fields as you want as below

The screenshot shows two panels of a software application for managing document types.

**Document Types Panel:**

- Header: Document Types ⓘ
- Search bar: Any Group ▾ + Any Category ▾
- Search input: Search by name
- Button: ⚡ Add New Document Type
- Text: Click on a document type to edit it.
- Tree view:
  - Enterprise Name
    - Accounts Department
      - Invoice**
      - Receipts
    - HR
      - Resume
      - Passports

**Document Type Details Panel:**

- Header: Document Type Details
- Text: Document Type ID: EnterpriseName.AccountsDepartment.Invoice
- Name:** Invoice
- Group:** Enterprise Name
- Category:** Accounts Department
- Document Type Code:** Optional value
- Fields:** (highlighted in yellow)
  - Invoice Number (with a red error icon)
  - Billed to Date
- Buttons: ⚡ New Field, Save, Cancel

Creating & defining is the 1<sup>st</sup> step of Taxonomy which is done, lets load by using the activity “Load Taxonomy”

Before that go to the projects tab and click on refresh. You will see document processing folder. Inside that there will be taxonomy Json file. Load taxonomy is the activity that is going to interact with taxonomy json file. If you open the taxonomy file you can see the below

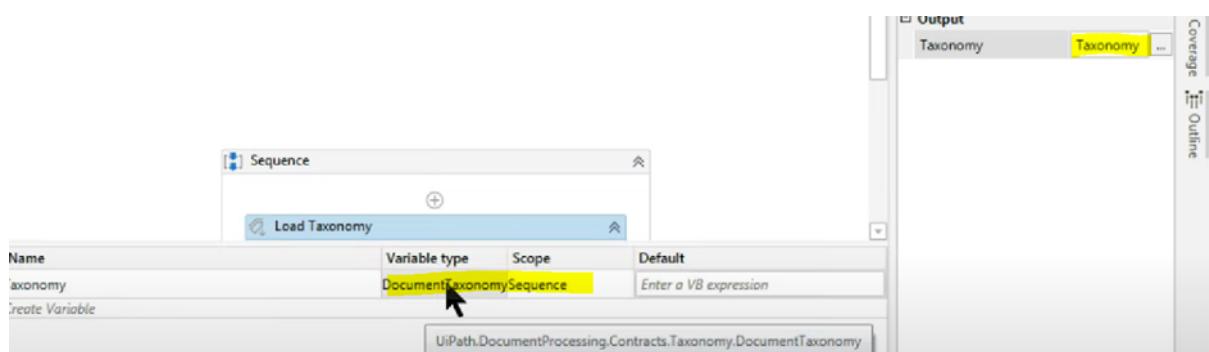
```
taxonomy - Notepad
File Edit Format View Help
{
    "DataContractVersion": "1.1",
    "DocumentTypes": [
        {
            "DocumentTypeId": "EnterpriseName.AccountsDepartment.Invoice",
            "Group": "Enterprise Name",
            "Category": "Accounts Department",
            "Name": "Invoice",
            "OptionalUniqueIdentifier": null,
            "TypeField": {
                "FieldId": "EnterpriseName.AccountsDepartment.Invoice.DocumentType",
                "FieldName": "Document Type"
            },
            "Fields": [
                {
                    "FieldId": "EnterpriseName.AccountsDepartment.Invoice.InvoiceNumber",

```

What is the use of load taxonomy activity?

Once you create taxonomy, everything will get stored in the taxonomy Json file. If you want to use something from that file, or extract data from that file, to have it loaded into a variable, we will use this activity.

Just create a variable using Control+K and you can see the below



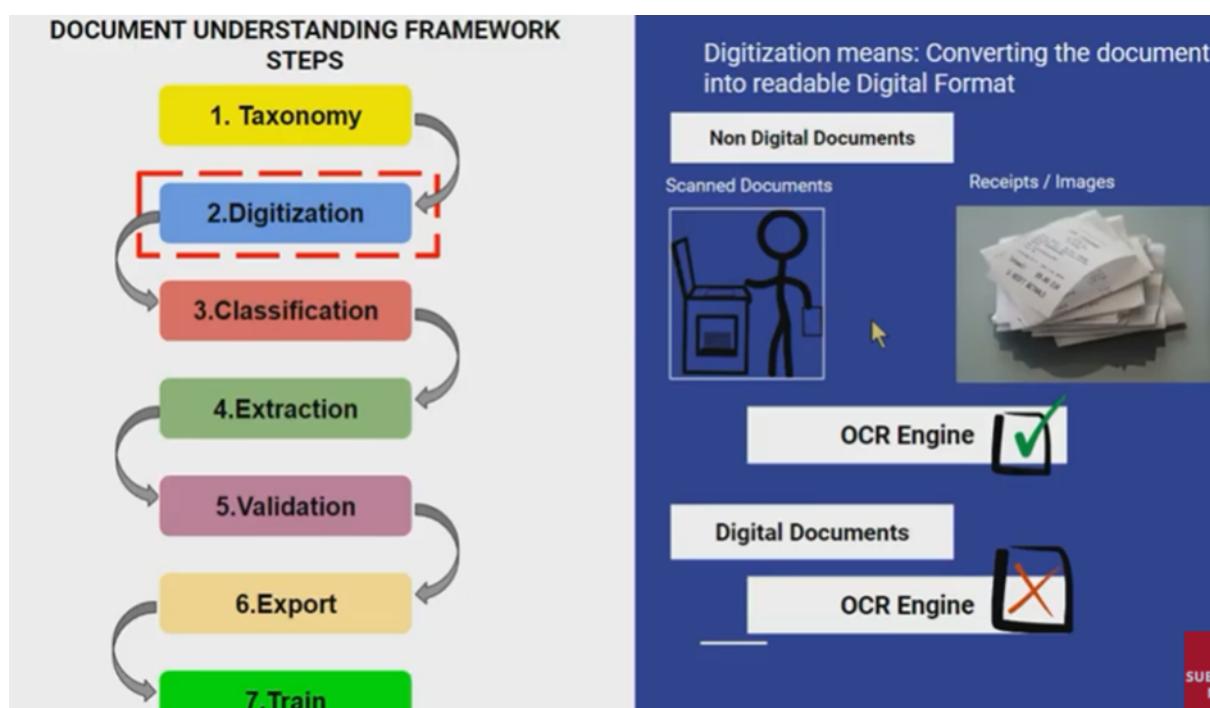
## Top 5 Questions on UiPath Document Understanding - Taxonomy

- 1. How many steps do you have in UiPath Document understanding framework?**
- 2. What is Taxonomy in UiPath DU?**
- 3. Can you name one package you need to install for document understanding?**
- 4. What is Taxonomy.JSON file and what it contains and how it gets created?**
- 5. What is the use of Load Taxonomy activity?**



1. There are 7 steps: Taxonomy, Digitization, Classification, Extraction, Validation, Export & Train.
2. Taxonomy means arranging anything in a group manner. Arranging something in a grouped way. In UiPath DU, we organise all the document types, we group them which is possible by taxonomy. We do this in Taxonomy manager where we can organise all the doc types.
3. UiPath. IntelligentOCR. Activities package
4. Created when we go to taxonomy manager & create Group name, category, doc type and fields names. As and when we edit or update the document, it gets saved. It is a file that contains all the details of how we have organised the taxonomy manager.
5. Once JSON file gets created through Taxonomy manager, to read this JSON file, this activity helps to extract data and load it to a variable.

DIGITIZE:



Activity: Digitize document

**Digitize Document**

**Input**

Document Path  
"C:\Users\user\Desktop\Sample PDF\Receipt1.png"

**Output**

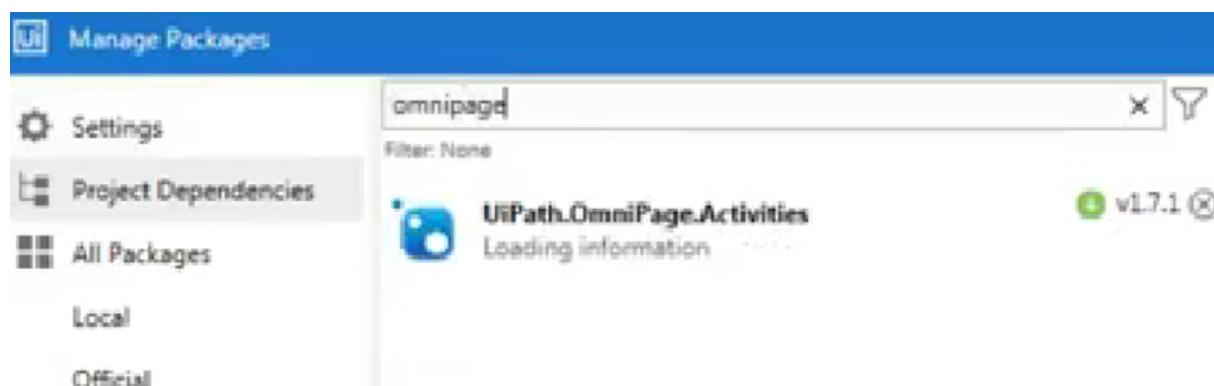
Document Text  
DigitalText

Document Object Model  
DOM

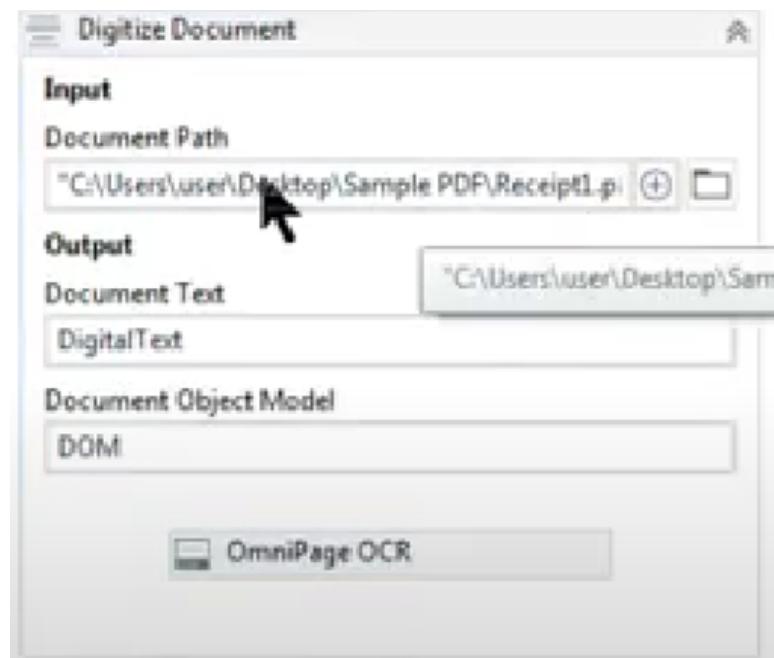
Drop OCR Engine here:

DOM contains all the details like position, number of pages, etc.

To use OCR engine, install package called omnipage.



Use OmniPage OCR engine



4<sup>th</sup> document

4:30 mins