**Demo – Document Intelligence Platform Loan Application**

|  |  |
| --- | --- |
| The Document Intelligence Platform (DIP) is a framework to quickly build AI solutions for document intensive use cases that require a “skilled reviewer”, a "skilled reviewer" being a resource that can review, identify and perform tasks on said documents based on certain criteria.  The Document Intelligence Platform included in this repository processes W-2 forms and financial tables. However, it can be **customized** for a variety of use cases | |
| **DIP Specifics**  The Document Intelligence Platform (**DIP**) is a prime example of a Cognitive Solution.   * Automates the setup and configuration o f numerous Azure services.   + Resource providers   + Resource group   + Storage account / containers   + CosmosDB account / database / collections   + Form Recognizer service / models   + App service plan   + DocumentDB / Blob api connections   + Function Apps   + Logic Apps * Receives unstructured data as input: financial tables and W2 forms. * Ingestion   + Uploads the unstructured data to blob containers within cloud storage. * Enrichment   + Utilizes AI models to extract key-value pairs, text, and tables from the documents. Shapes the data and stores it in CosmosDB database collections. * Analysis   + Processes the data from the various documents of a single applicant and produces new metrics such as spending forecasts and ratings. * Presentation:   + Deploys a website which displays the resulting information in an intuitive interface.     **References :**   1. Start this demo by accessing the application here.   <https://neu-demo-knowledge-mining-wb.azurewebsites.net/Home/Dashboard>   1. A presentation that refers to Decision Management :   <https://github.com/bartczernicki/ArtificialIntelligence-Presentations>   1. To Install this on your system – Git Hub Repository :   Note: This is for demonstration purposes, The collateral is still owned by Neudesic. Please contact them if you would like to use  The base code for an MVP  <https://github.com/neudesic/Document-Intelligence-Platform> | |
| **Problem:**  Bob is a mortgage loan officer. He is responsible for processing mortgage applications. In order to do so Bob must:  Organize and validate a variety of documents  Create company standard KPIs  Calculate a risk score  Approve or reject the application  Bob is skilled at what he does. His time is best spent analyzing relevant and organized information. However Jim faces a major challenge. The majority of his time is spent ingesting, organizing and extracting information from documents |  |
| Microsoft Azure AI, Machine Learning, and Storage can help address this challenge by automating the:   * Classification of documents * Validation of documents * Extraction of relevant information * Storage of information   Setting up such a solution involves three major stages:   1. Setting up the Azure platform. This stage is relatively simple and does not require too much technical knowledge. 2. Configuring multiple Azure services and training AI models. This step is more involved and requires moderate technical knowledge. 3. Building the pipeline: bringing everything together to form a complete and seamless solution. This stage is sophisticated and demands technical expertise.   The complete solution is a **Cognitive Solution**. A cognitive solution transforms unstructured data into insights and actions that solve business problems. The unstructured data goes through ingestion, enrichment, analysis, and insights. |  |
| Bob immediate can see in the dashboard his KPI:s and goals be needs to reach, and the color coded loans that are needed o be Approved, pending or rejected. He then has to look and examine those that need his pending approval.  There is a notice at the bottom and a notification that June Marie Sample has a new pending load  **CLICK ON VIEW IN BOX CALLED LOAN PENDING REVIEWS** |  |
| Here you can see a lost of people needing load approval June marie is on top  **CLICK ON JUNE MARIE SAMPLE** |  |
| Upon investigating June Marie Sample we find out that  Marie has a Risk score of 45, still in Green but a borderline, An Employment rating of A, Credit history of A etc. but her income is Low D,  Her credit history in 692 but has 2 late payments in the tab called **CREDIT** lets examine more things about her |  |
| **CLICK ON IDENTIFICATION TAB**  Here we are using our Cognitive Services OCR which extracts data from the driver’s license Our OCR is top leading tool in the industry’s for its high accuracy. IT is able to extract text from images and pass facial images to our cognitive facial recognition services facial recognition, It can read larger and smaller fonts and also different languages ( April private preview) |  |
| **CLICK ON THE NEXT TAB**  Here we are extracting from the W2 form data on Marie’ s Income. We are using Forms Recognizer to extract key value pairs from the document .among them are the federal , Special, medicare tax  Note some are Tabs are Greyed .These are nonfunctional and will be added later |  |
| **CLICK ON EXPENSE TAB**  This is in RED meaning there is something of a warning here an we see her income is negative 547.  This uses again our Forms Understanding service for OCR |  |
| Since Marie has a consistent income and a good credit score . Bob decide to accept the pending load appciation by clicking on the **ACCEPT BUTTON BELOW** |  |
| A notification saying load in approved and the KPI:s are updates respectively ., |  |
| Now you can look at another applicant Select any in the list but most popular is Lucille Ball. Lucille has risk score of 56 and fails in several categories.  Open up each tabs belonging now to Lucille and recite all the values extracted from OCR and Forms Recognizer |  |
| Press the REJECT BUTTON when done. |  |
| Summarize the demo with the strengths of our cognitive services plus the |  |