

TECH-PIRATES (ASPIRING MINDS)

**ROUND 2**



**PARTICIPANTS**

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**7. QUESTION**

An OCR based data extraction which should accept Image/PDF of India Passport, India PAN Card and give the output as follows not limiting to

* Accept image/pdf files of Indian Passport (Not only limiting to Indian Passport)
* Accept image/pdf files of Indian PAN Card
* Extract all the possible data from the input file
* Publish an REST API which gives the data which is extracted

***Source Code GIT Repository:***

**Web Browser Link:**

[**https://github.com/Tech-Pirates-Aspiring-Minds/springboot-ocr-data-extraction**](https://github.com/Tech-Pirates-Aspiring-Minds/springboot-ocr-data-extraction)

**GIT Clone Link:**

[**https://github.com/Tech-Pirates-Aspiring-Minds/springboot-ocr-data-extraction.git**](https://github.com/Tech-Pirates-Aspiring-Minds/springboot-ocr-data-extraction.git)

***Frameworks:***

**Optical Character Recognition**

**Optical Character Recognition**, or **OCR**, is a technology that enables you to convert different types of documents, such as scanned paper documents, PDF files or images captured by a digital camera into editable and searchable data.

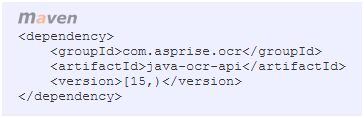
**Asprise OCR**

Asprise Java OCR (optical character recognition) and barcode recognition SDK offers a high performance API library to equip Java web with functionality of extracting text from scanned documents.

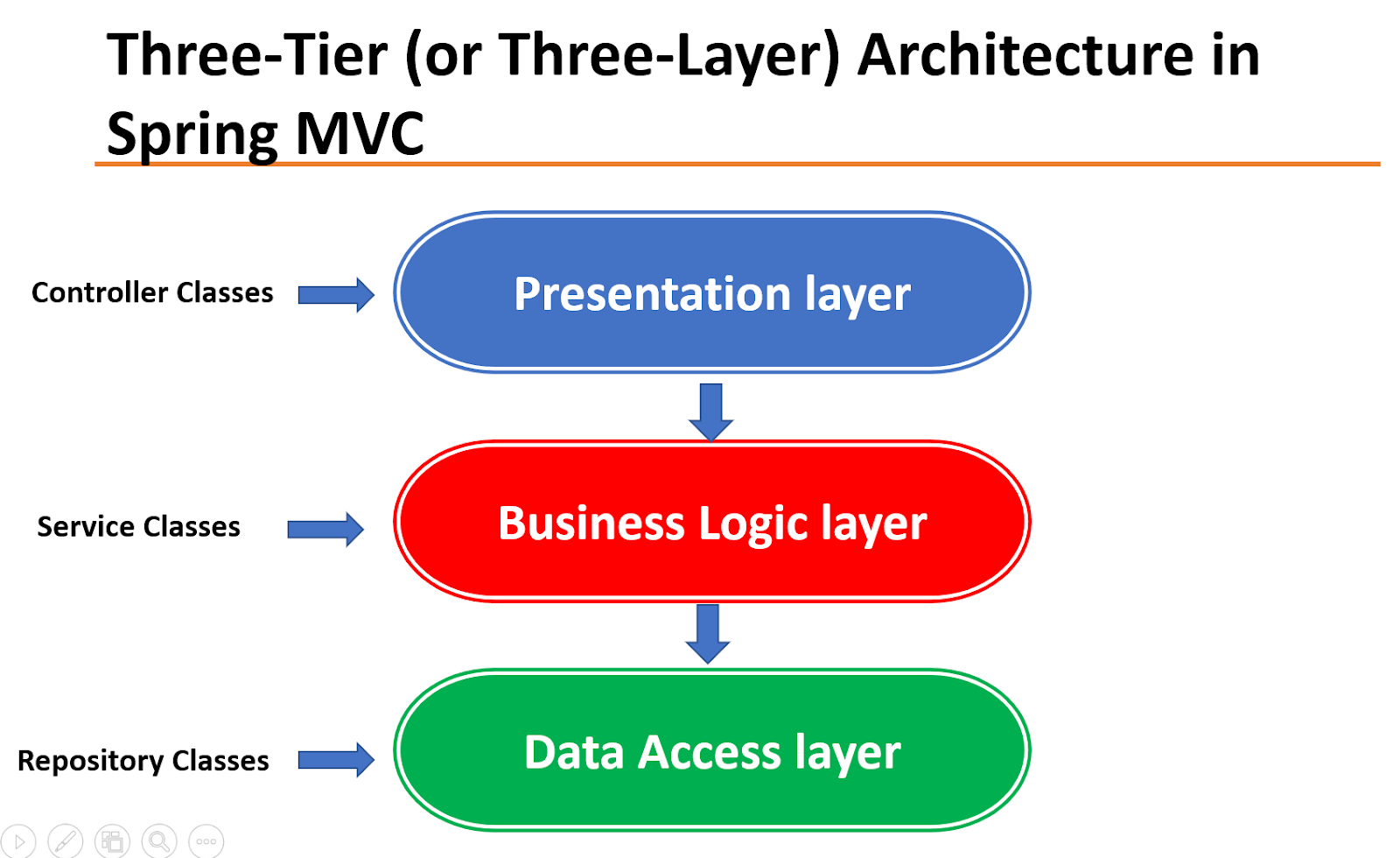
# High speed OCR engine

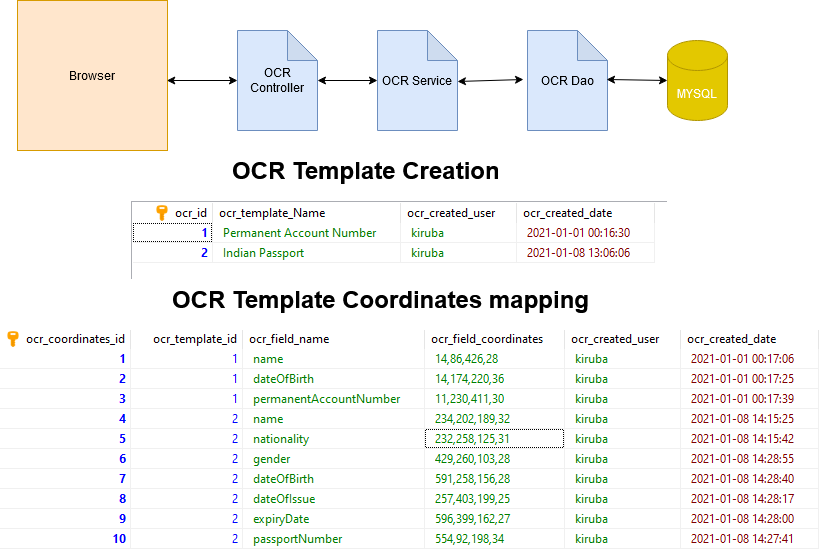
Asprise OCR uses optimized OCR engine to perform excellent recognition in short time. Speed can be further improved through multi-threading and optional GPU acceleration.

**Maven Dependency:**

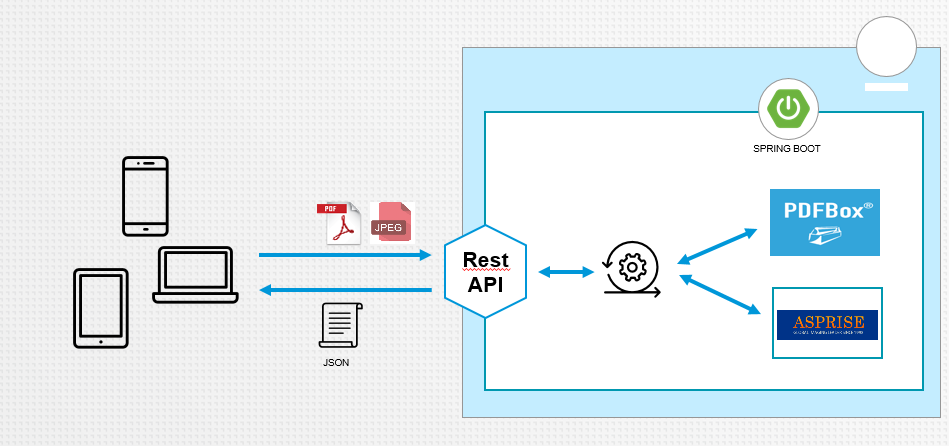
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**Spring Boot Architecture**



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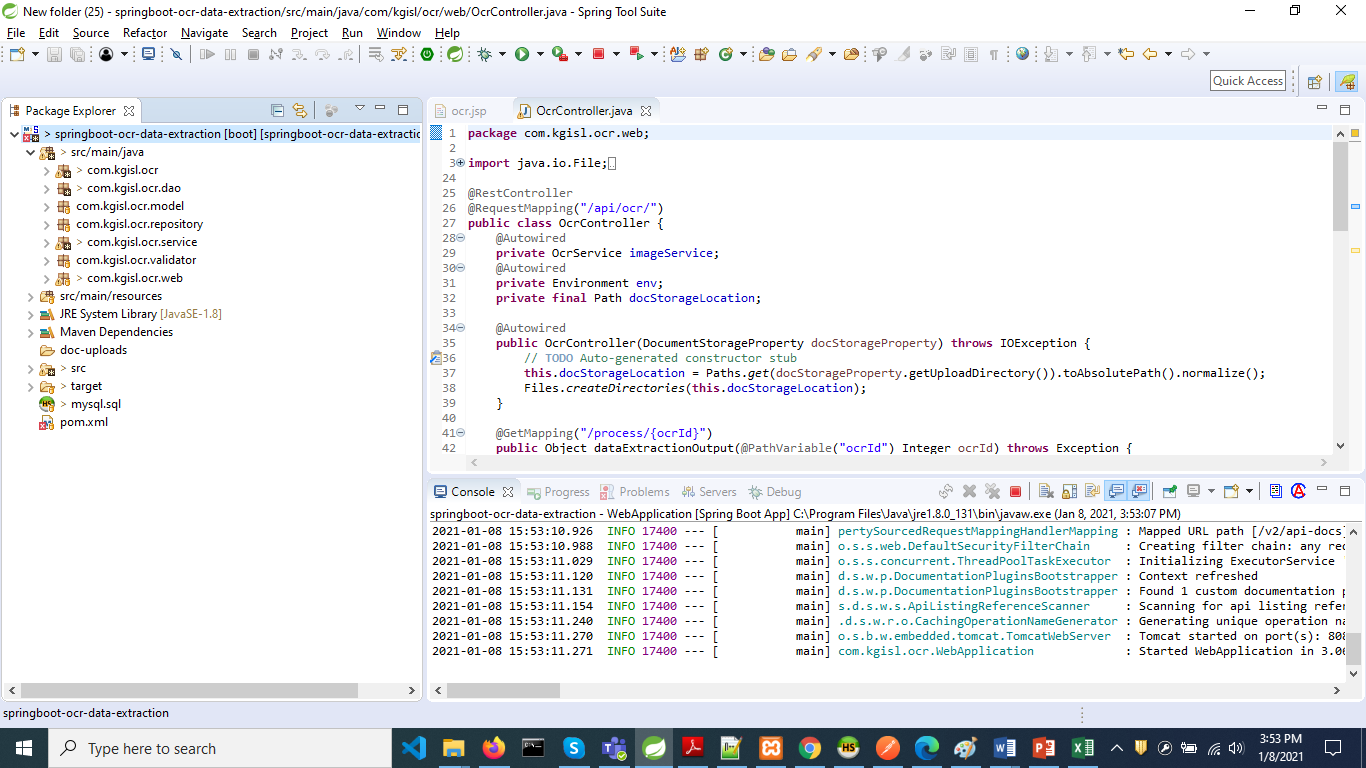
**OCR Processing Flow Diagram**

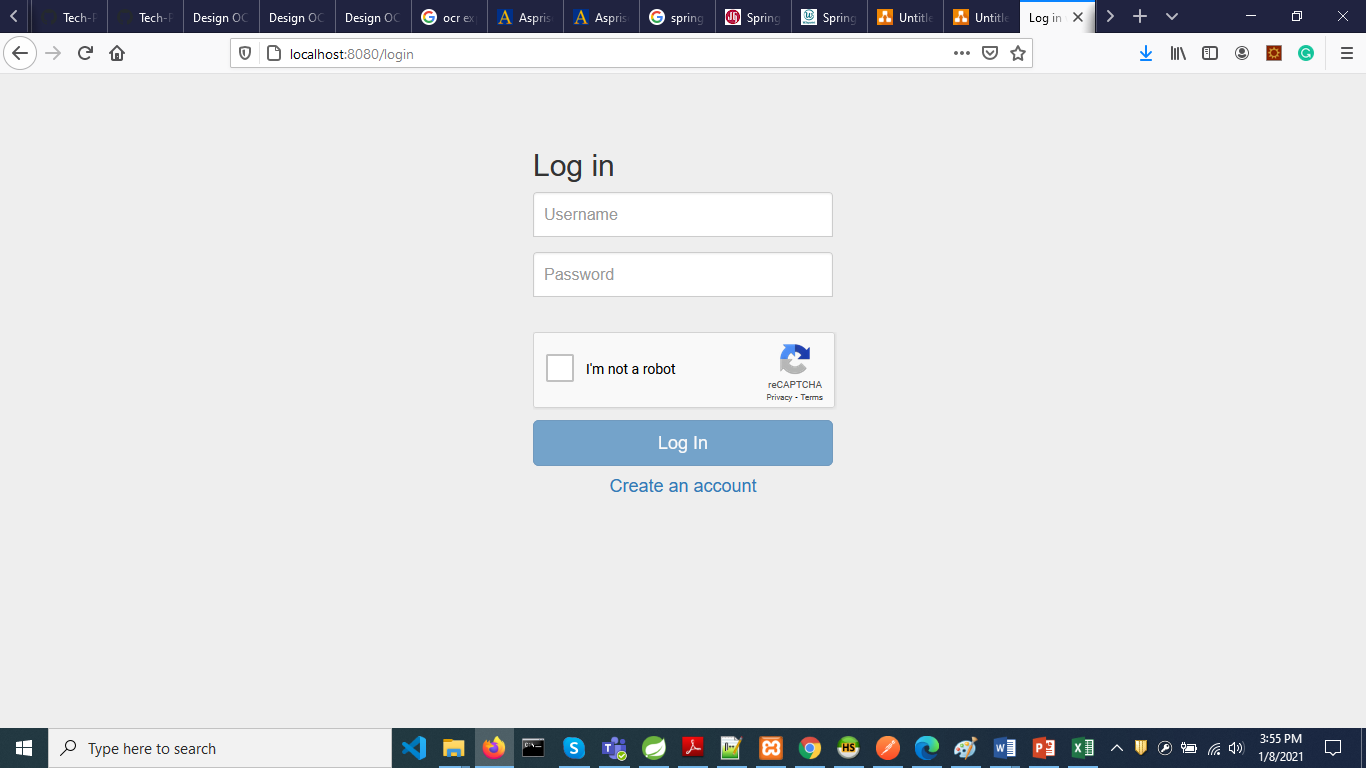
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**Application Process Flow:**

By default, spring boot application runs at port 8080. To run this application, mysql.sql file which is attached in the project source code has to be executed in the mysql server.

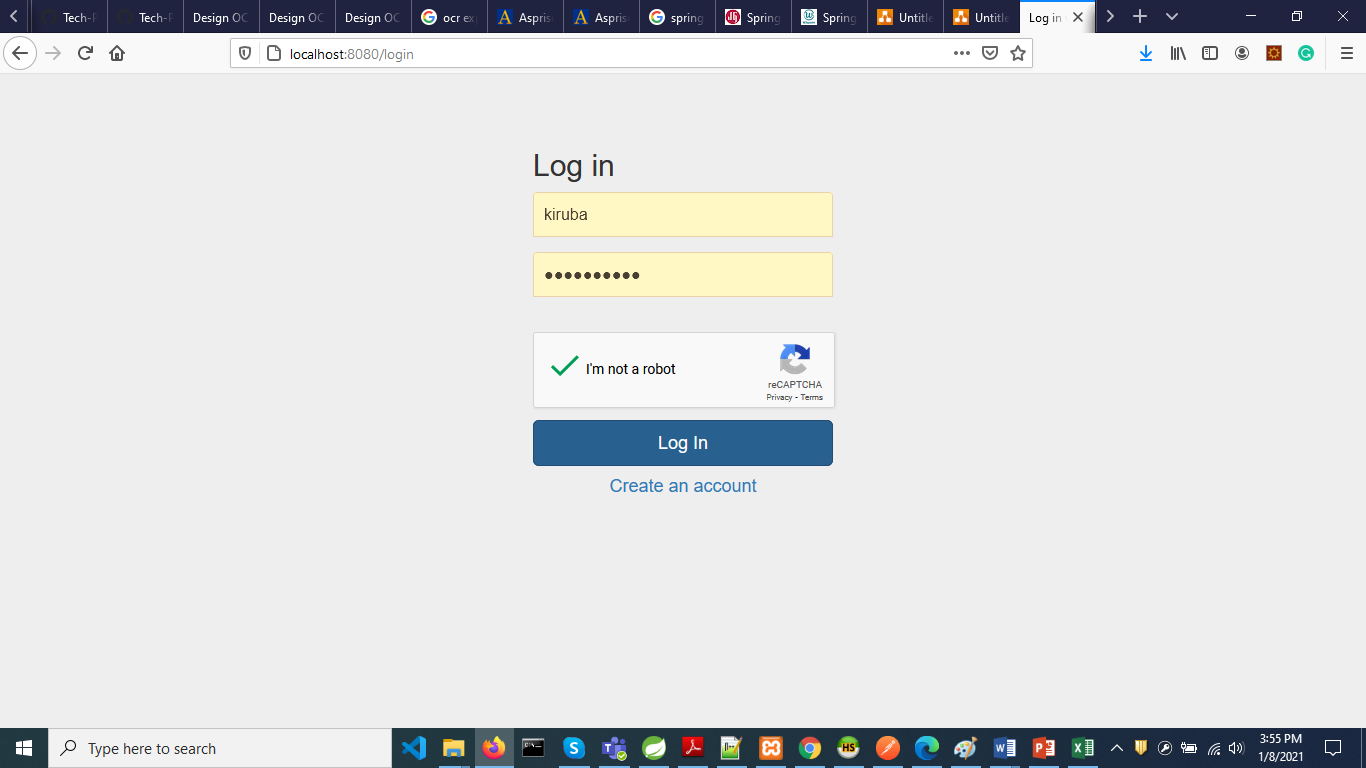
<http://localhost:8080/login>





**Credentials:**

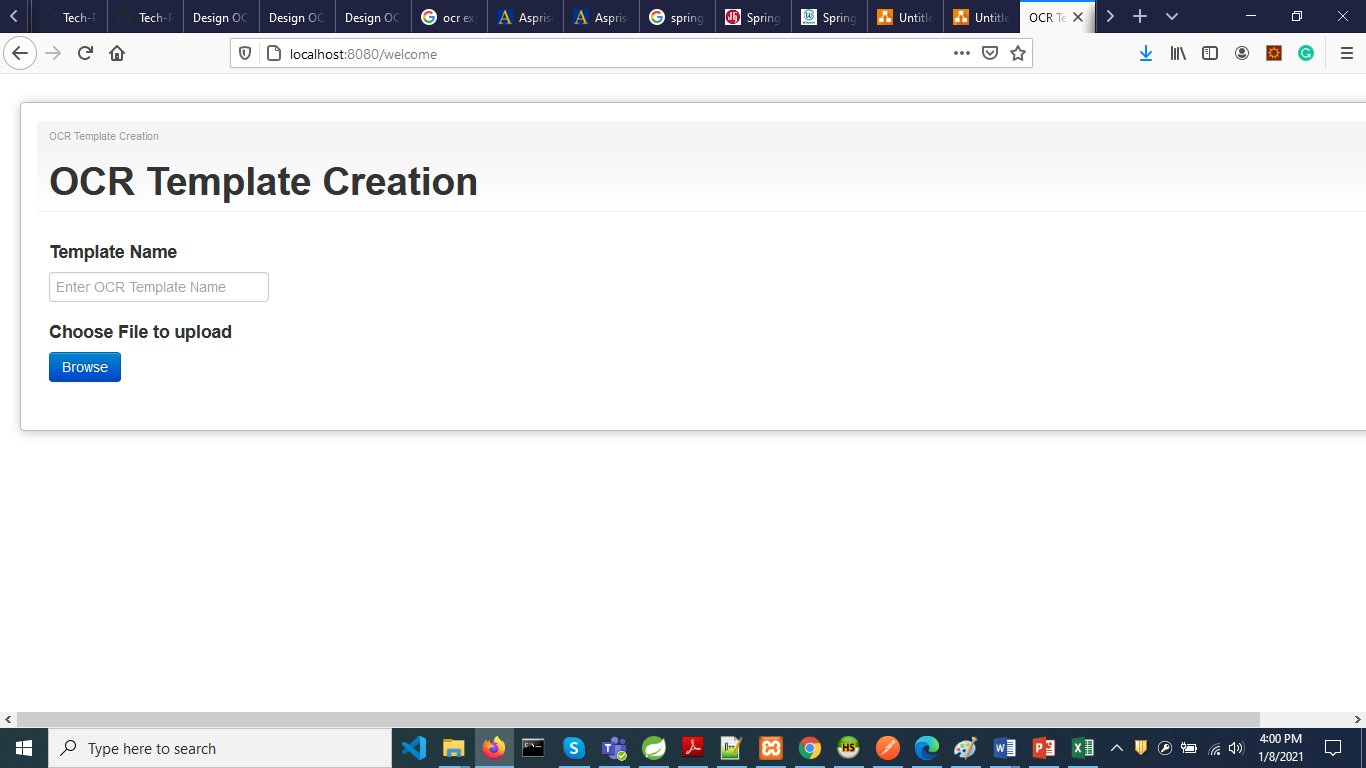
* Username: Kiruba
* Password: Kiruba@123



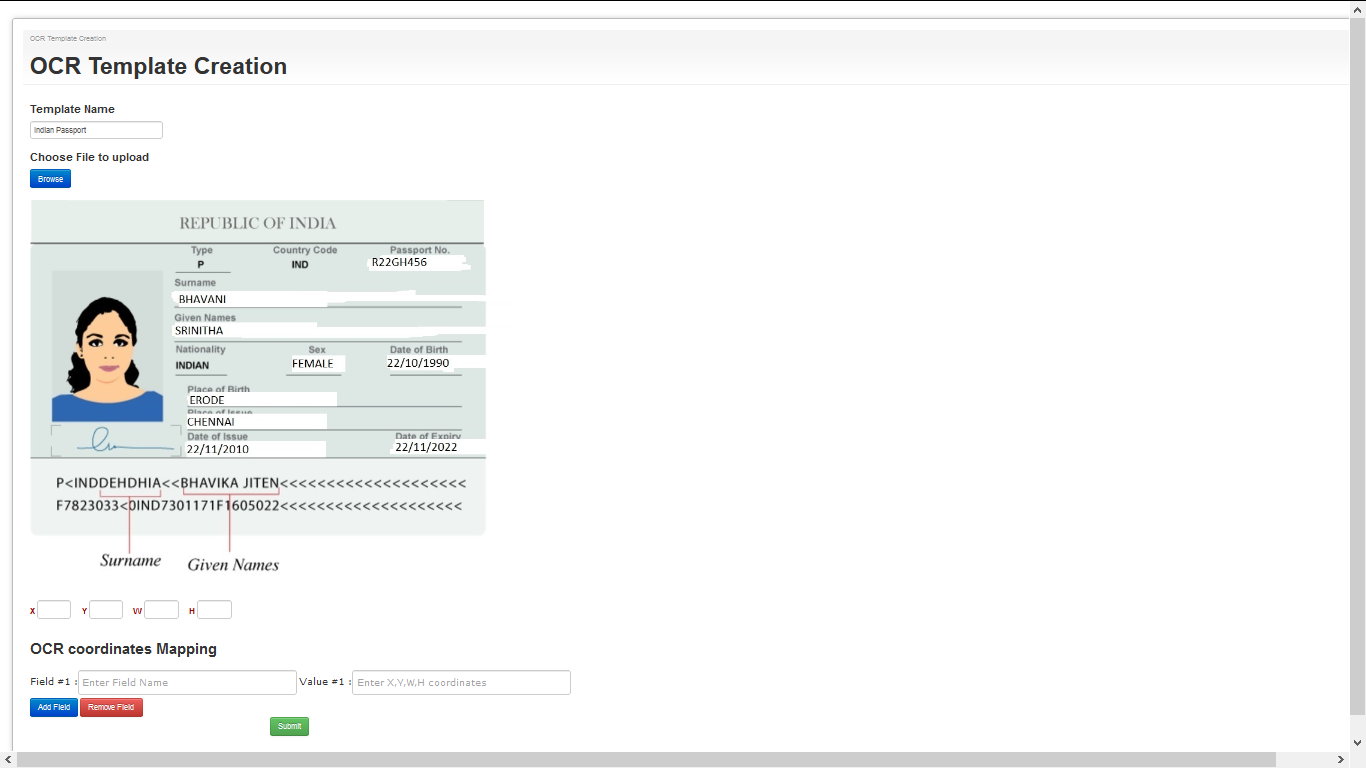
**OCR Template**

Dynamic OCR template creation can be designed using this page.

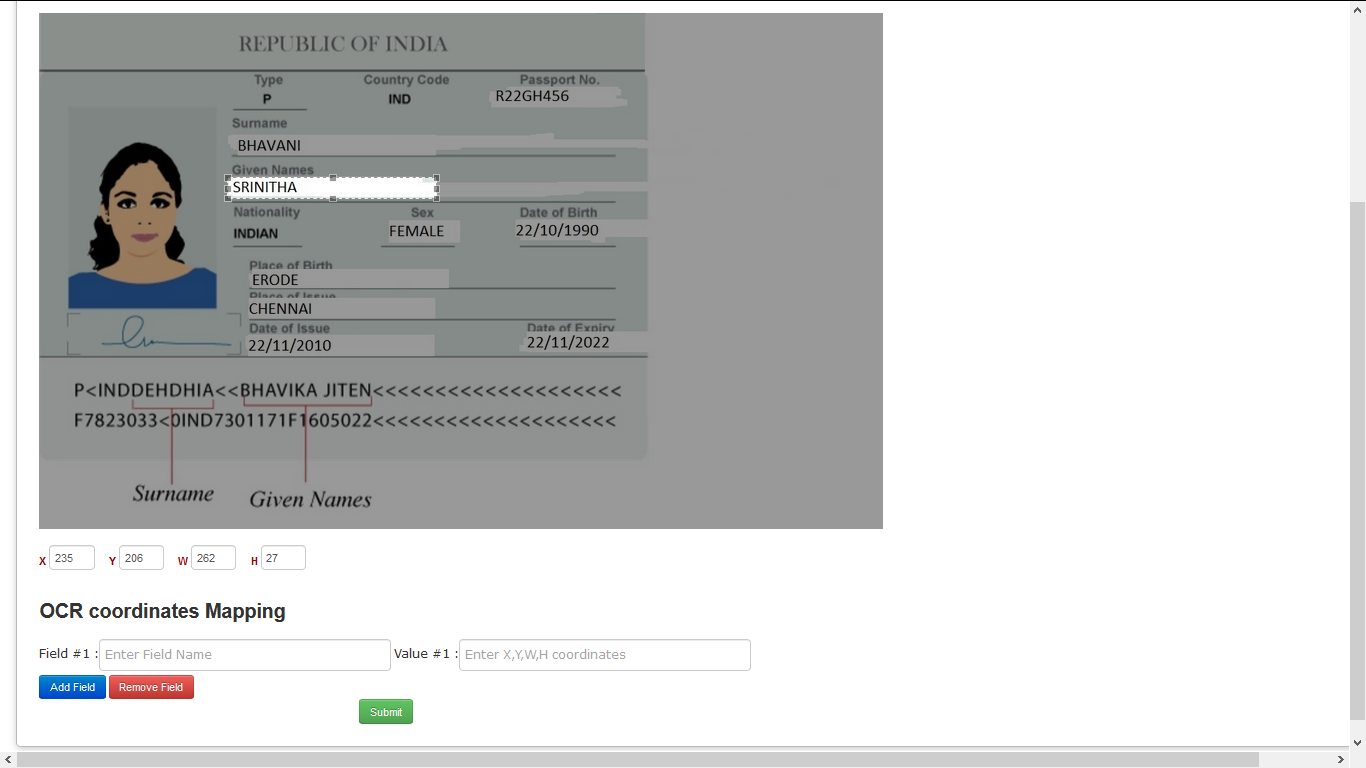
User can enter template Name and choose Images/PDF from local computer to design the OCR X, Y, W, H coordinates for data-extraction.



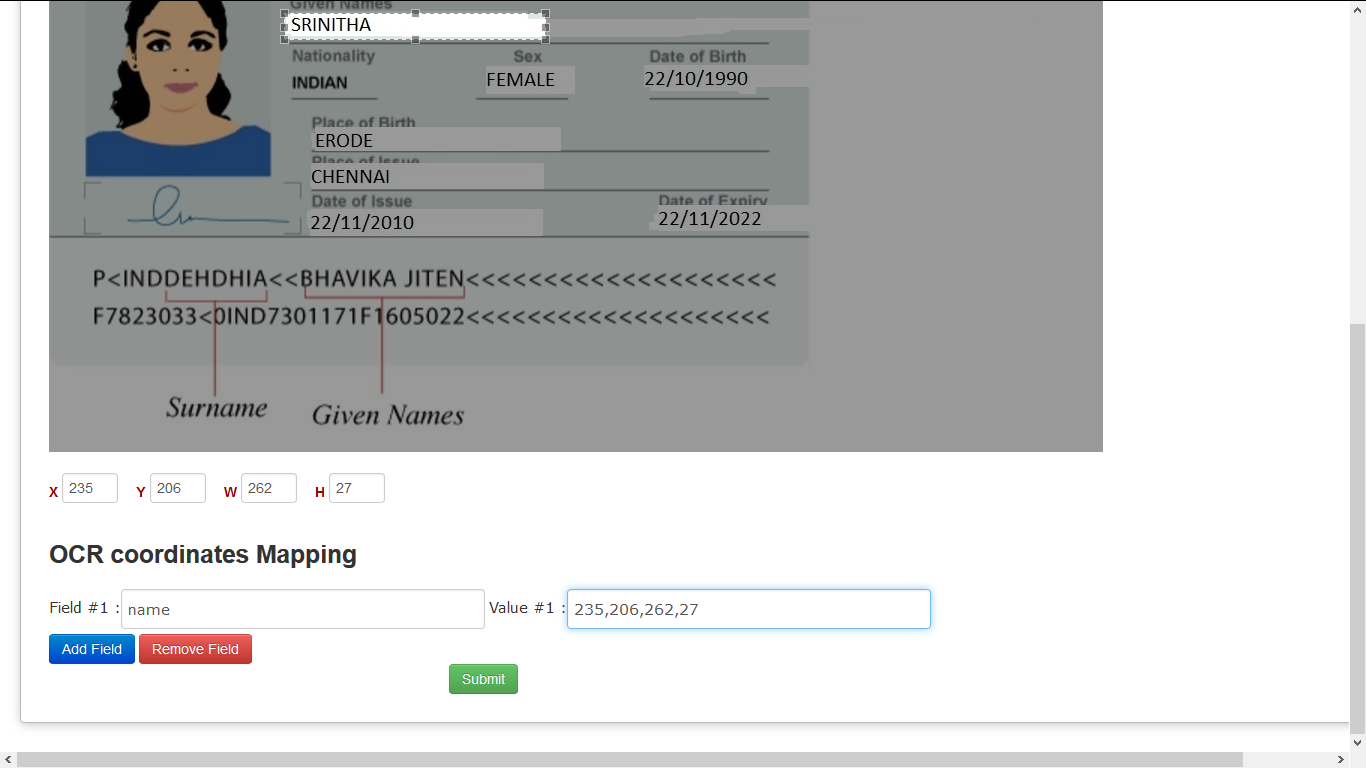
Once file has been uploaded, preview of the file as shown below



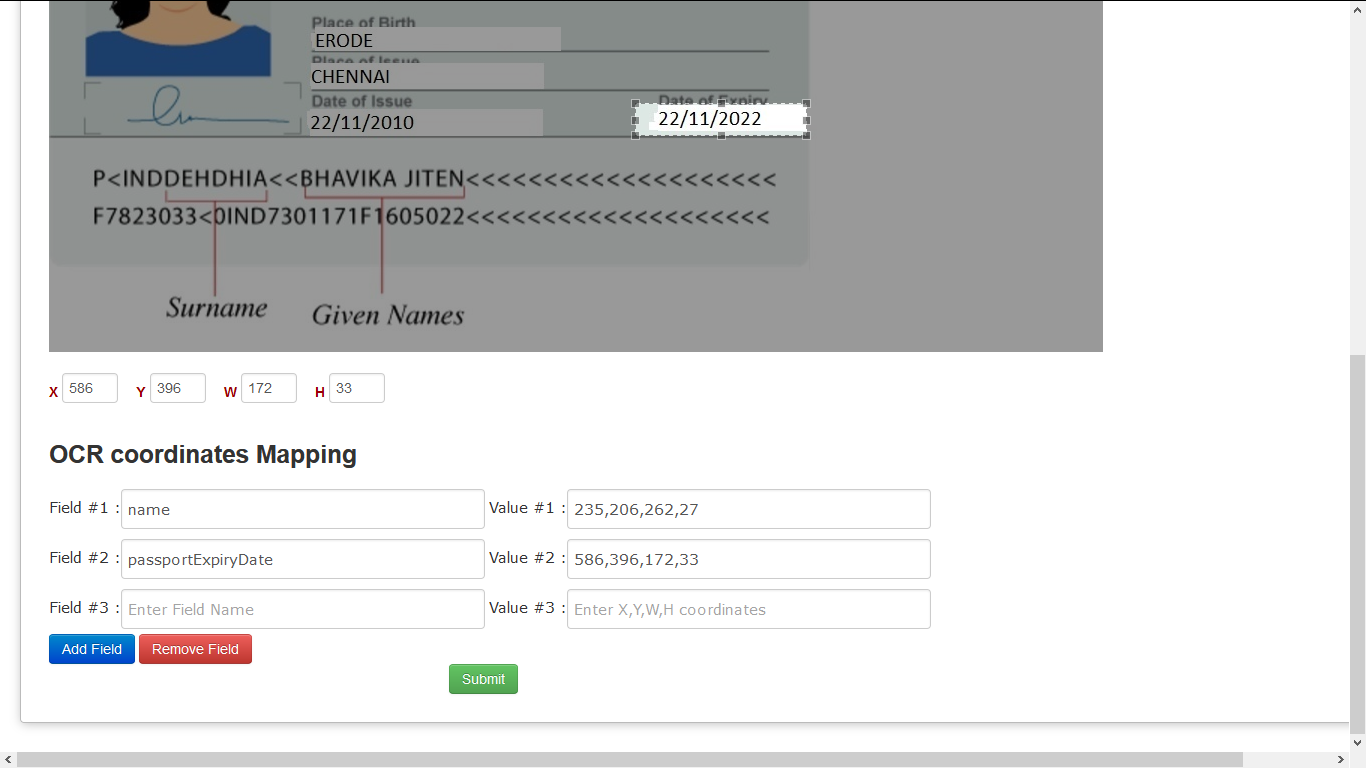
User can just drag and choose the area to extract. Once it is selected, then we get the X, Y, W, H coordinates of the file in the textboxes as shown below



User can then create fieldname to map the coordinates as shown below

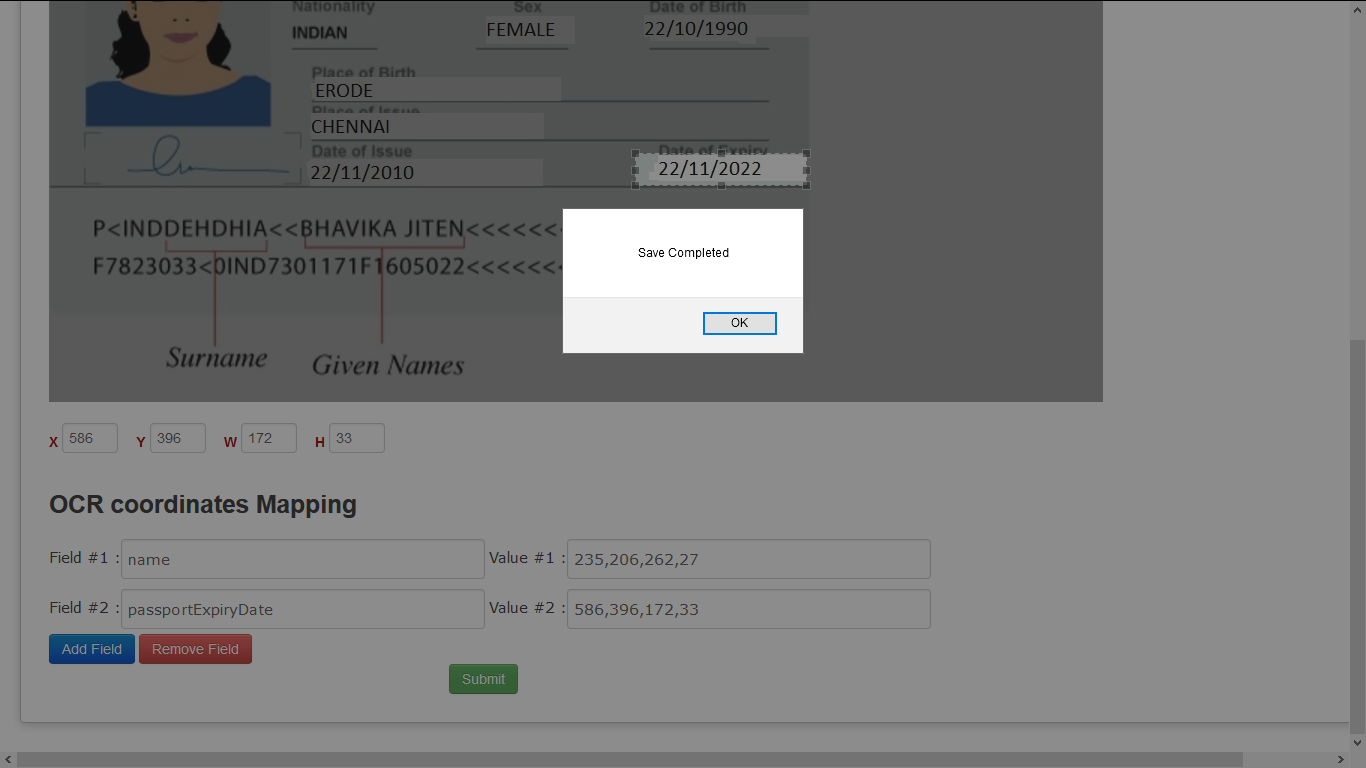


Field Name can be dynamically created as shown below



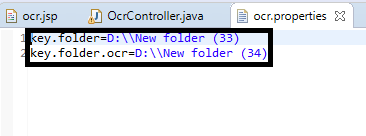
Once the required fieldname and field value is ready, user can submit the data to save in the MYSQL table.

**Note:** Template name, Field name and Field value are mandatory to create OCR templates.

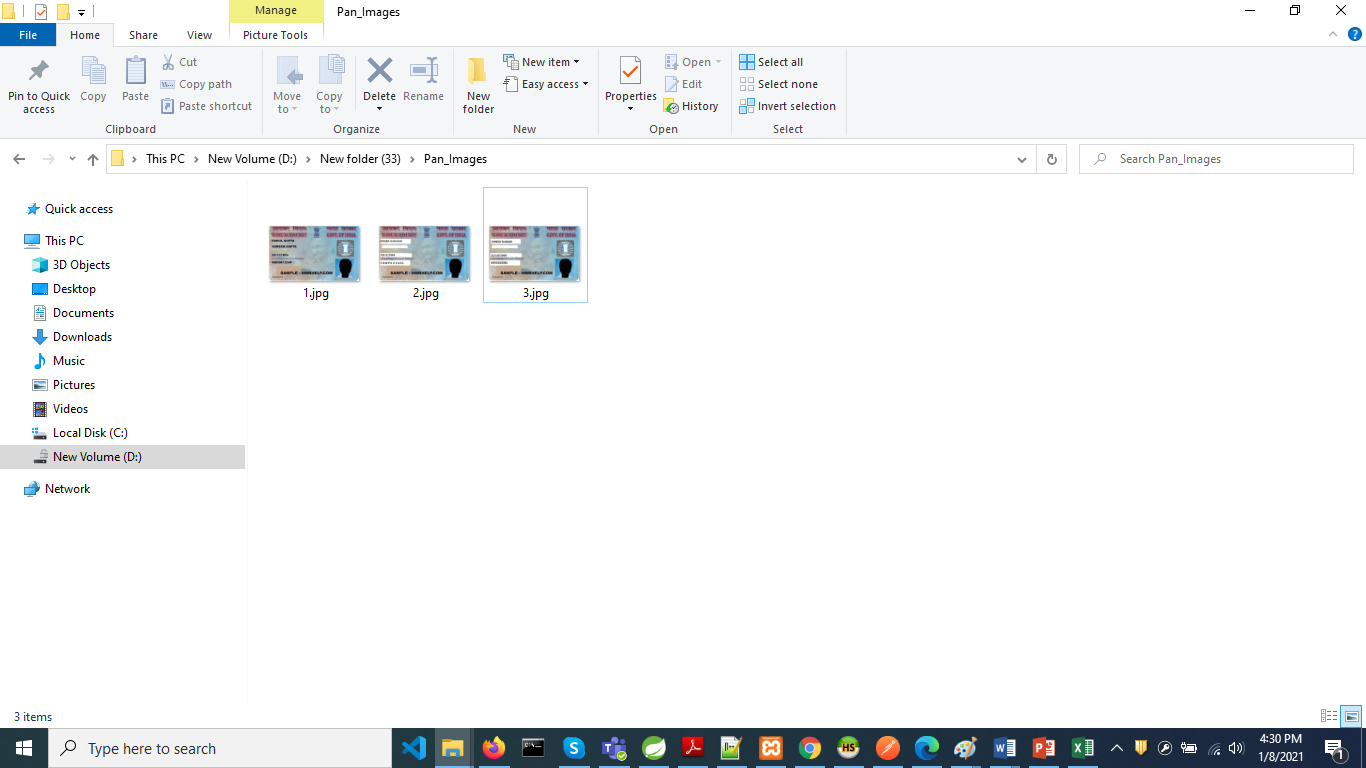


Once the template creation has been completed, we need to configure the folder for batch automatic OCR data-extraction processing.

For POC Purpose, we have configured the windows folders in ***ocr.properties*** file



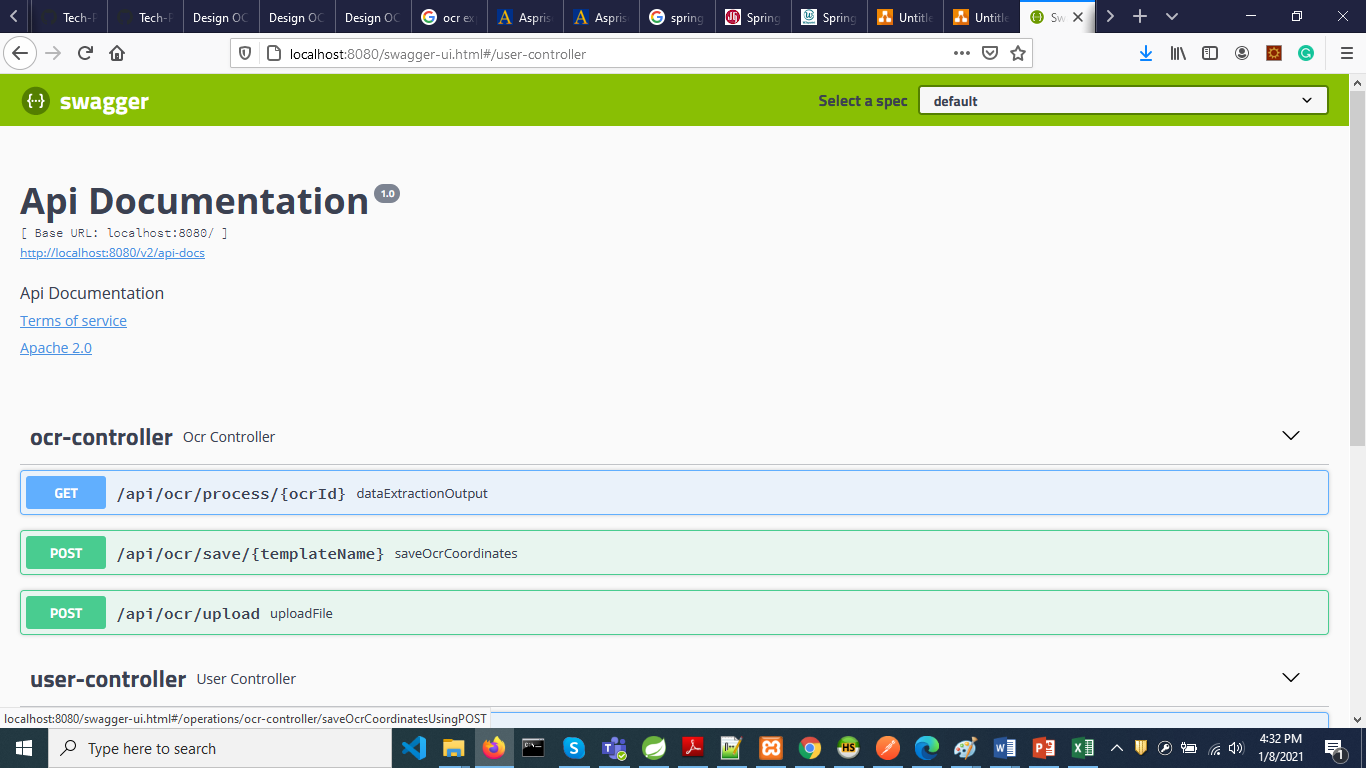
Put some sample files for batch processing



Using Rest API, we can trigger the batch process to get the data-extraction results in Json response.

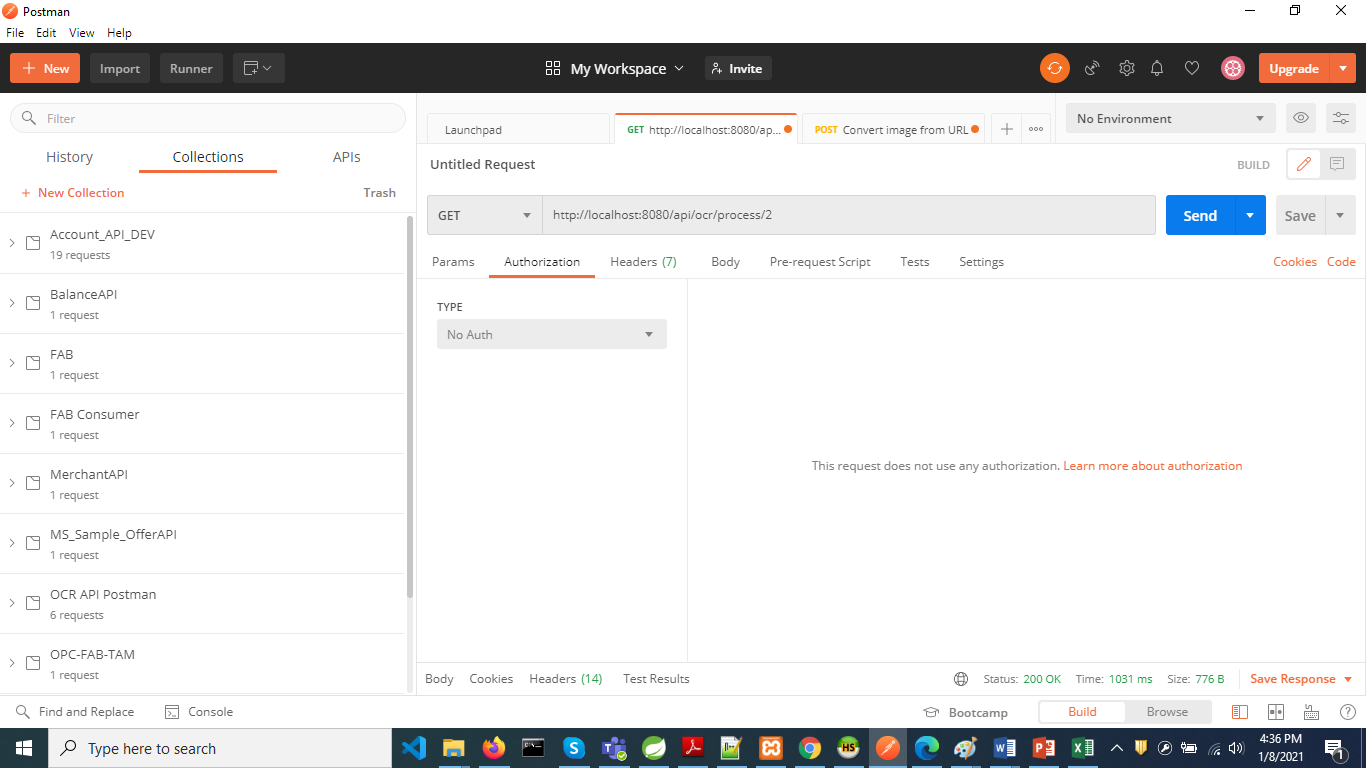
***Swagger UI***

Swagger UI has been included in this project for Rest API documentation



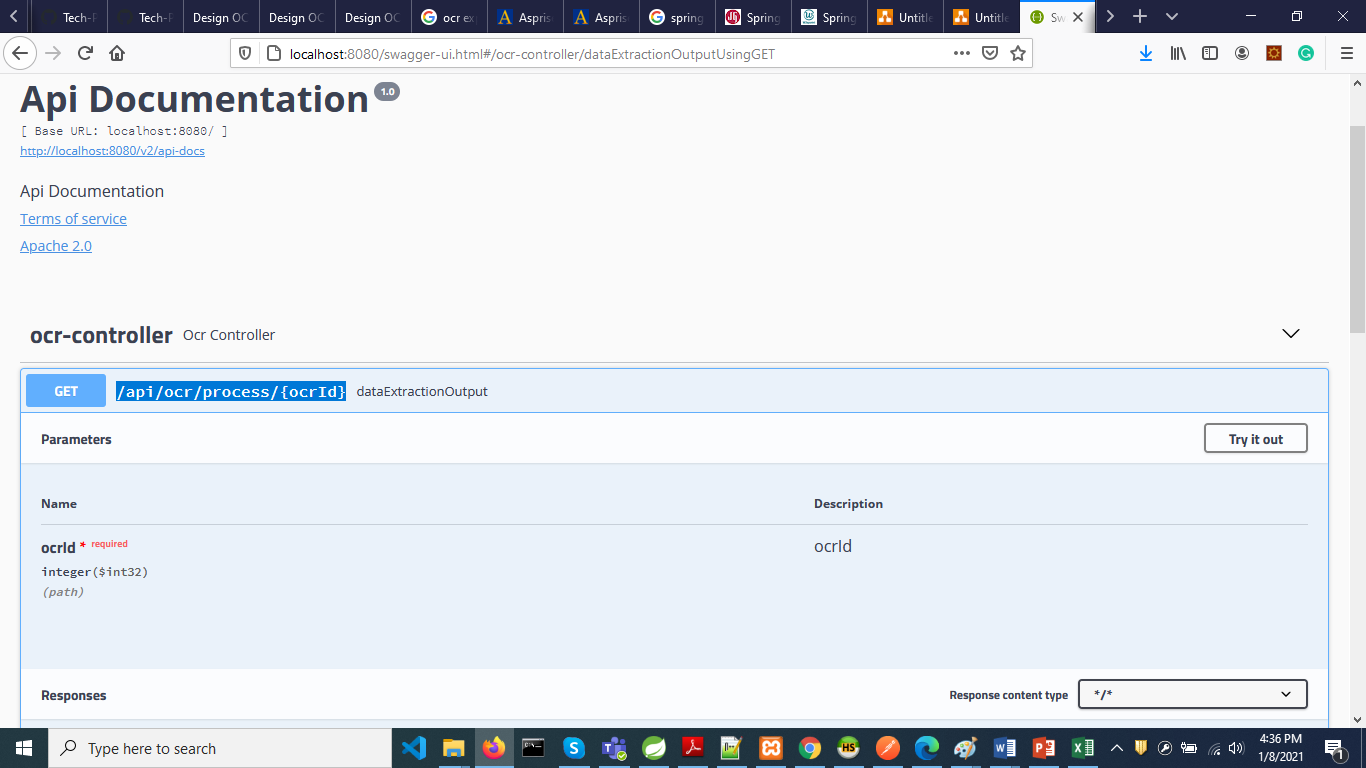
We can use Postman to test the results

**Postman Rest API Testing:**

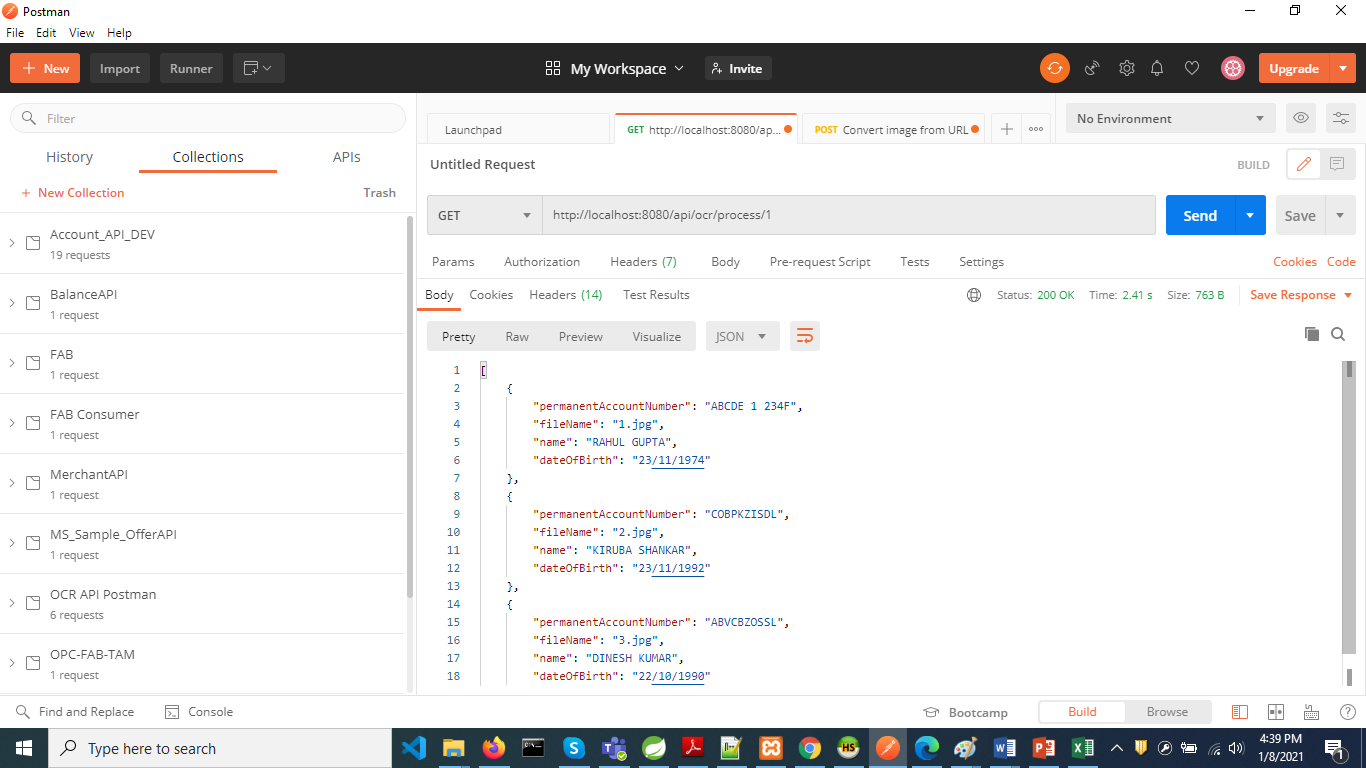


<http://localhost:8080/api/ocr/process/1>

**Note:** ocrId is the unique templateId for identifying file templates



Once this API is triggered, all the files will be processed using Asprise OCR Engine with the help of already defined OCR coordinates in the MYSQL table to provide data extraction results in json response.



Since we placed 3 different pan images, Rest API processed and provided the three different JSON objects for 3 images.

Likewise, we can create and map templates dynamically for batch processing.

***Note:*** OCR accuracy is not 100% proof. We have utilized the maximum possible output through Asprise OCR Engine.

***Test Results Attached: ***