# Invoice Entity Extraction – Product Design

## Overview

The Invoice Entity Extraction and Conversion SaaS is a cloud-based solution designed to automate the process of extracting key information from invoices captured as images and converting them into structured data formats like Excel or JSON. This solution targets businesses across various industries, offering them a streamlined approach to handle invoice management efficiently.

## Product Features

### Image Recognition

Utilizing advanced Optical Character Recognition (OCR) technology, the system extracts textual data from invoice images accurately, regardless of the format or layout.

### Entity Extraction

The system identifies and extracts essential invoice entities such as vendor name, customer name, vendor GST, customer GST, invoice number, date, line items, HSN, quantities, prices, taxable amount, and total amounts with high precision.

### Multiple Invoice Support

Capable of processing multiple invoices simultaneously, the system efficiently handles bulk uploads, making it suitable for businesses dealing with a large volume of invoices.

### Cloud-Based Storage

All processed invoices and extracted data are securely stored in the cloud, providing users with convenient access from anywhere at any time while ensuring data integrity and compliance with security standards.

### Export Options

The solution offers flexibility in exporting extracted data by supporting formats such as Excel or JSON.

### Dashboard and Reporting

Users can monitor processing status, view analytics, and generate comprehensive reports to gain insights into invoice processing efficiency and performance metrics.

### Multiple Page Invoice Consolidation

The system supports consolidating multiple pages of an invoice into a single PDF document, simplifying the document management process and ensuring coherence in data extraction and analysis.

### UI-Based Output Modification

Users can interact with a user-friendly interface to review and modify the extracted data before finalizing the conversion process. This feature allows for manual corrections, additions, or adjustments to ensure the accuracy and completeness of the converted data.

### OCR Error Correction

In cases where OCR may produce inaccuracies or errors in text recognition, the system provides tools for users to identify and correct mistakes directly within the UI. This capability enhances the accuracy of the extracted data and minimizes the need for manual intervention in subsequent processing stages.

## Technical Features

### Data Validation

Employing validation algorithms, the solution ensures the accuracy and reliability of extracted information by cross-referencing against predefined templates or validation rules.

### API Integration

Provides RESTful APIs for seamless integration with third-party applications, allowing businesses to incorporate invoice processing capabilities into their existing workflows and software systems.

### Scalability and Performance

Built on scalable cloud infrastructure, the SaaS model ensures optimal performance and scalability, capable of accommodating growing demands and fluctuations in processing requirements.

### Customization and Training

Administrators can fine-tune the extraction process by defining custom extraction rules and training the system to recognize specific invoice formats unique to their business requirements.

## Why is the SaaS model suitable for our product?

The Software as a Service (SaaS) model is particularly well-suited for the Invoice Entity Extraction and Conversion solution due to its inherent advantages in terms of accessibility, scalability, and ease of maintenance. Let's delve into the pros and cons of using the SaaS model for this specific application.

**Accessibility:** Users can access the platform from anywhere with an internet connection, enabling remote work and collaboration.

**Scalability:** The platform can easily scale to accommodate growing volumes of invoices and users without requiring significant infrastructure investments.

**Ease of Maintenance:** Maintenance tasks, updates, and infrastructure management are handled by the SaaS provider, freeing users from these responsibilities.

**Cost-Efficiency:** SaaS follows a subscription-based pricing model, allowing businesses to pay for only the services they use without upfront investments.

**Rapid Deployment:** Deployment is quick and straightforward, allowing businesses to start using the platform without lengthy setup processes.

## Payment Type: Credit-based Model

### Description

The Invoice Entity Extraction and Conversion SaaS platform operates on a credit-based payment model. Users are allocated a certain number of credits that can be used to perform tasks such as invoice processing, data extraction, and conversion. Initially, users are provided with 50 credits free of charge upon signing up for the service.

### Key Features

Initial Credit Allocation

Upon registration, users receive an initial allocation of 50 credits, which can be used to explore the platform and perform a limited number of tasks without incurring any charges.

Usage-Based Billing

Users consume credits based on the volume and complexity of tasks performed on the platform. Tasks such as processing invoices, extracting data, correcting OCR errors, and converting files consume varying amounts of credit depending on their scope and complexity.

Credit Refill Options

Users have the option to replenish their credit balance by purchasing additional credits as needed. The platform offers flexible pricing plans and credit refill options to accommodate varying usage patterns and business requirements.

Credit Management

The platform provides users with visibility into their credit balance, usage history, and remaining credits through an intuitive dashboard or user interface. This allows users to track their usage, monitor credit consumption, and plan accordingly.

### Benefits

**Cost Control:** The credit-based model allows users to control their expenses by paying only for the services they use. It provides transparency and predictability in billing, enabling users to manage their budget effectively.

**Flexibility:** Users have the flexibility to choose how they allocate their credits based on their priorities and business needs. They can adjust their usage patterns, upgrade their subscription plans, or purchase additional credits as required.

**Risk-Free Trial:** The initial allocation of 50 free credits serves as a risk-free trial, allowing users to experience the platform's capabilities firsthand before committing to a paid subscription. It encourages adoption and reduces barriers to entry for new users.

**Scalability:** The credit-based model scales seamlessly with the user's usage and business growth. Users can scale their credit consumption up or down according to fluctuations in demand, ensuring that they always have access to the resources they need.

**Incentivized Usage:** By offering a limited number of free credits initially, the platform incentivizes users to explore and utilize its features. It encourages engagement, promotes user adoption, and fosters a positive user experience.

### Credits Calculations

## AWS Deployment Pricing

Here is the Link for AWS Price Calculation Summary: <https://calculator.aws/#/estimate?nc2=h_ql_pr_calc&id=9d53c81370e0b99b00b99d86c3495b1b3d97e6f6>

|  |  |
| --- | --- |
| **Instance Name:** | t4g.large |
| **vCPU:** | 2 core – 4 threads |
| **RAM:** | 8GB |
| **Storage (Cold HDD store):** | 500 GB |

**Note: AWS very less downtime. (Will not go with Azure)**

**Note:**

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| --- |
| **In Azure only for Annual Plan the price in cheaper than AWS Otherwise the monthly cost is above in pay as you go (without temporary storage).  Refer: Figure 3 Azure Instance Configuration pricing** |

**Reservation Term: 1 Year (EC2 Savings Plan)**

|  |  |  |
| --- | --- | --- |
| **Description** | **Cost in USD** | **Cost in INR** |
| EC2 Plan Monthly Cost:  Refer: Figure 3 EC2 Monthly pricing. | $20.66 | ₹ 1713.00 |
| Elastic Block Store Cost (Cold HDD store): | $8.70 | ₹ 721.35 |
| Approx Monthly Cost: Refer: Figure 1 AWS Monthly Rate for deployment | $29.36 | ₹ 2434.34 |

A screenshot of a website

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Figure‑1 AWS Monthly Rate for deployment.

A screenshot of a computer

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Figure-2 Instance Configuration

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Figure‑3 EC2 Monthly pricing.

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Figure 3 EC2 Monthly pricing.

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Figure‑3 Azure Instance Configuration pricing.