FUNCTIONAL REQUIREMENT DOCUMENT

OCR Based Form Filling

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# 1. Introduction

1.1 Purpose

This FRD outlines the functional requirements for an OCR-based form filling application. The application will utilize Optical Character Recognition (OCR) technology to extract text from scanned documents or images and automatically populate corresponding fields in digital forms.

## 1.2 Scope

The scope of this document includes the core functionalities of the OCR-based form filling application. It covers the process of scanning documents, extracting text using OCR, mapping extracted text to form fields, and automatically filling out the form.

# 2. Functional Requirements

## 2.1 Document Scanning

* **Requirement:** The application should allow users to scan documents using a connected scanner or upload images of documents.
* **Acceptance Criteria:**
  + The application should support various image formats (e.g., JPEG, PNG, PDF).
  + The scanning process should be user-friendly and provide options for adjusting image quality and size.
  + The application should handle errors gracefully, such as when a scanner is not detected or an image file is corrupted.

## 2.2 OCR Text Extraction

* **Requirement:** The application should accurately extract text from scanned documents or images using OCR technology.
* **Acceptance Criteria:**
  + The OCR engine should have a high accuracy rate for extracting text from various document types and handwriting styles.
  + The application should provide options for customizing OCR parameters, such as language, font size, and image preprocessing.
  + The extracted text should be displayed in a readable format, allowing users to verify its accuracy.

## 2.3 Form Field Mapping

* **Requirement:** The application should enable users to map extracted text to corresponding fields in digital forms.
* **Acceptance Criteria:**
  + The mapping process should be intuitive and allow users to manually select fields or use automatic mapping based on field labels and positions.
  + The application should provide mechanisms for handling ambiguous or multiple matches for a single field.
  + Users should be able to edit and refine the mapping as needed.

## 2.4 Form Filling

* **Requirement:** The application should automatically populate form fields with extracted text based on the defined mapping.
* **Acceptance Criteria:**
  + The form filling process should be accurate and efficient, ensuring that extracted text is correctly entered into the corresponding fields.
  + The application should handle errors gracefully, such as when a field is not found or the extracted text doesn't match the expected format.
  + Users should be able to review and edit the filled form before submitting it.

## 2.5 Data Validation

* **Requirement:** The application should validate extracted text and filled form data to ensure accuracy and completeness.
* **Acceptance Criteria:**
  + The validation process should check for missing or invalid data, as well as inconsistencies between extracted text and form fields.
  + The application should provide clear error messages and guidance to users for correcting validation issues.

# 3. Non-Functional Requirements

* **Performance**: The application should perform efficiently, processing documents and extracting text in a timely manner.
* **Usability:** The user interface should be intuitive and easy to navigate, with clear instructions and helpful tooltips.
* **Security:** The application should protect sensitive data, such as extracted text and form information, from unauthorized access.
* **Scalability:** The application should be able to handle a large volume of documents and forms without significant performance degradation.