Cheque Book Processing(Module 8)

1 Technical Design Document

Version 1.0

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Document Version Control

Date Issued	Version	Description	Author
13th Jan 2021	1.0	Initial Draft	Tabrej Khan

Contributors

The content of this document has been authored with the combined input of the following group of key individuals.

Name	Section Worked Upon
Tabrej Khan	Initial Draft

Document Classification

Classification	Company Confidential
Definition	Information is Group confidential and needs to be protected
Context	Where the loss of information confidentiality would result in significant harm to the interests of the organisation, financial loss, embarrassment or loss of information

Contents

1. Introduction

The goal here is to build an end to end automated Computer vision/Deep Learning solution where the user will only give the bank cheque leaf to be scan and uploaded, and the result will be the best performing model to extract the information from cheque. The user will also get privileges to choose the deployment options.

This project shall be delivered in two phases:

Phase 1: All the functionalities with PyPi packages.

Phase2: Integration of UI to all the functionalities.

The technical design document gives a design blueprint of the Cheque Book Processing module. This document communicates the technical details of the solution proposed.

In addition, this document also captures the different workflows involved to build the solution, exceptions in the workflows and any assumptions that have been considered.

Once agreed as the basis for the building of the module, the flowchart and assumptions will be used as a platform from which the solution will be designed.

Changes to this business process may constitute a request for change and will be subject to the agreed agility program change procedures.

Note: All the code will be written in python version 3.7

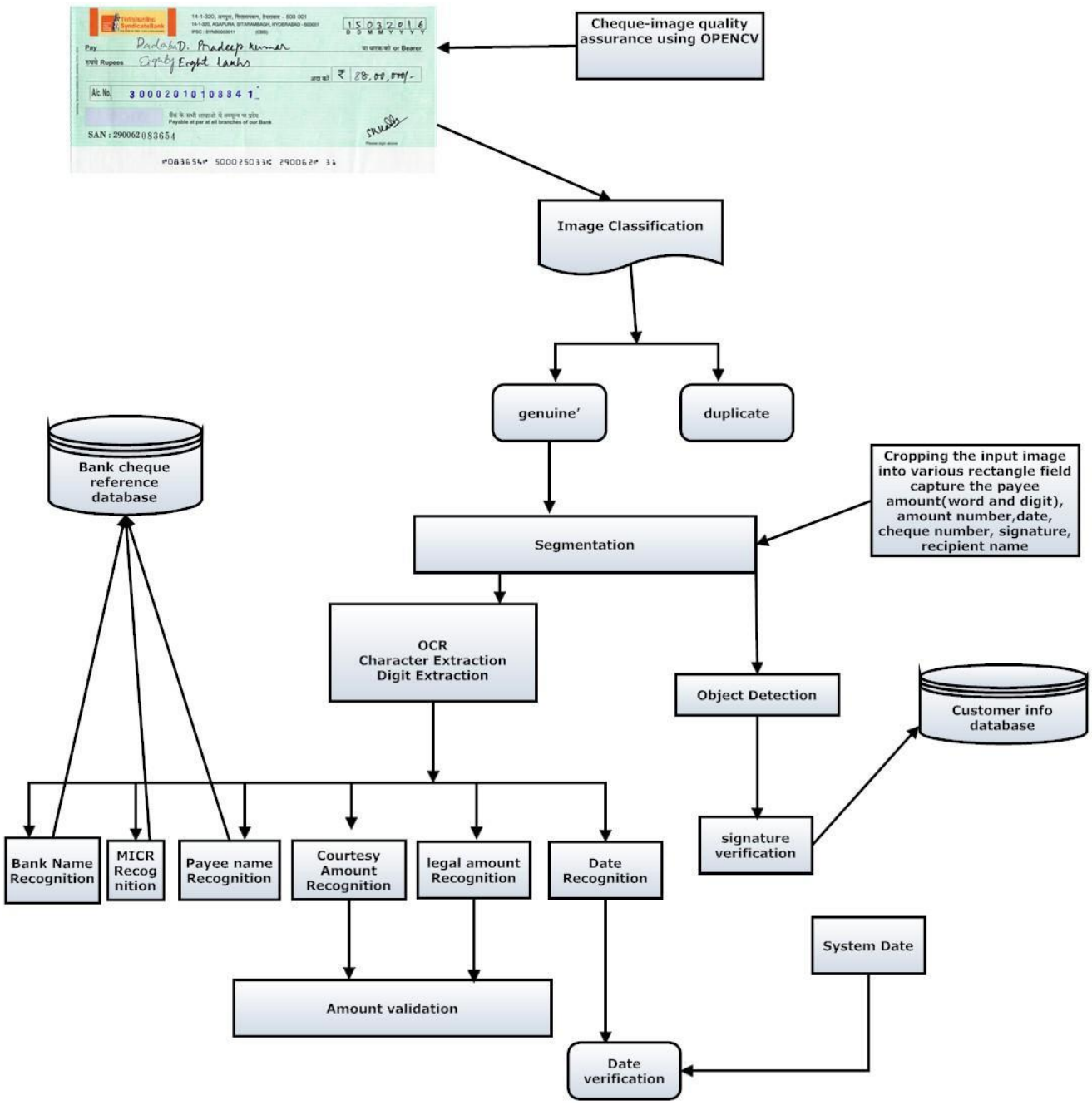
High level objectives

The high-level objectives are:

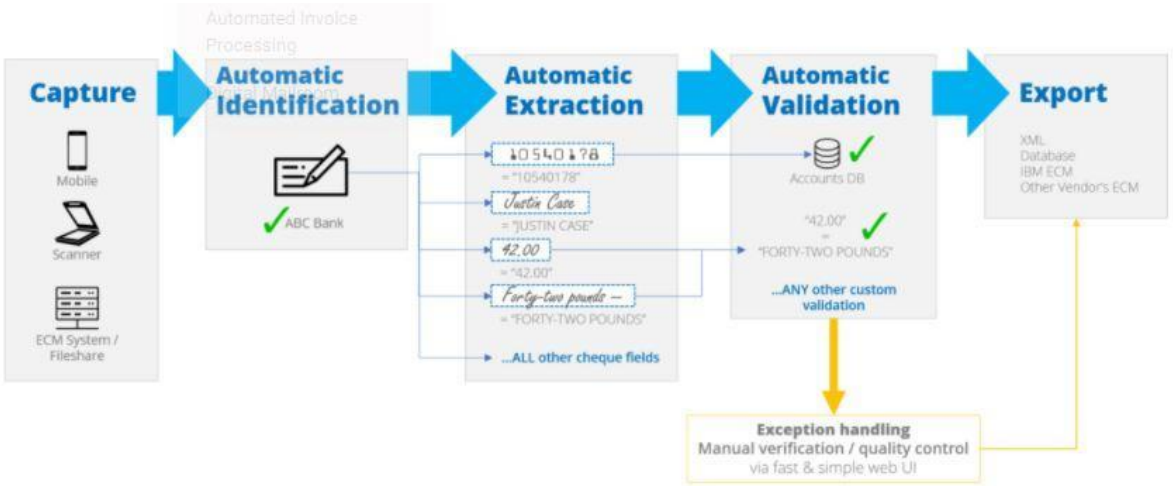
1. Enable reading/loading of Cheque leaf from the user.
2. Enhanced or Check Cheque leaf image quality is better for further processing.
3. Classify the Cheque leaf is genuine of fake (using Classification)
4. Segmentation: Cropping the input image into various rectangle field capture the payee amount (word and digit) amount number,date,cheque number, signature, recipient name.
5. Perform any object detection model for signature verification.(e.g Yolo v5)
6. Perform any OCR for charater and digit extraction from Cheque leaf .
7. Perform bank name recognition and payee name recognition from bank Cheque reference database (Given).
8. Perform statistical analytics of the data and prepare a table for the analysis and show it on screen.
9. Amount validation by comparing courtesy amount and legal amount.
10. Perform Cheque date verification from system date.
    Phase 1: Create Pypi packages
    Phase 2: Create UI

2 Workflow

Application Flow



3 Proposed user interface



Dataset:

https://www.idrbt.ac.in//icid.html

References:

https://patentimages.storage.googleapis.com/32/26/d5/f785055d07ce5d/US20190213822A1.pdf

https://ieeexplore.ieee.org/document/9076541

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