**SMART ID SCANNER**

VMware Tanzu Build-A-Thon

Build Modern Apps & Deploy on VMware Tanzu Application Service

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**1. INTRODUCTION**

          1.1 Overview

      we have Came across a banner or any picture with text or a visiting card? Would you like to store the information in that image as text for future use? It is possible by extracting the text from the image. This application helps you do that. Browse the image get the text extracted. to develop an end-to-end application where users can register and login to their respective accounts. Once logged in, the user should be able to upload an image for text extraction. Then the API sends the image for processing. Users can check and acknowledge whether the text extracted is accurate or not. If the user accepts the output then they can save it in the database. Also, the user should be able to access the previously uploaded images in their respective dashboards.

    1.2 Purpose

       we build the application that helps to extract the text from the  browsed image  and we can store the extracted data for future. This application stores the extracted data in the database later the user can retrieve the data. And the user can browse the image of which the text has to be extracted and he can retrieve in future

**2. LITEATRUE SURVEY**

        2.1 Existing problem

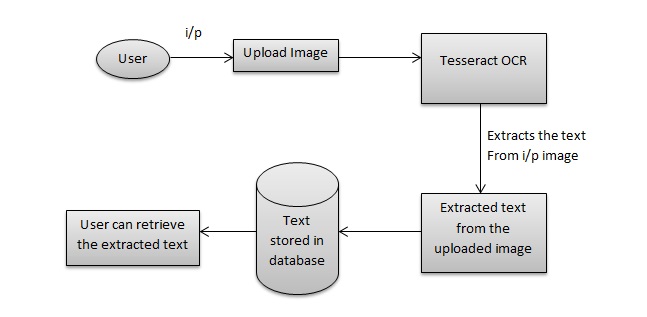
  We have come across a banner or any picture with text or a visiting card? Would you like to store the information in that image as text for future use?

      2.2 Proposed solution

   To develop an end-to-end application where users can register and login to their respective accounts. Once logged in, the user should be able to upload an image for text extraction. Then the API sends the image for processing. Users can check and acknowledge whether the text extracted is accurate or not. If the user accepts the output then they can save it in the database. Also, the user should be able to access the previously uploaded images in their respective dashboards

**3. THEROTICAL ANALYSIS**

       3.1 Block diagram



3.2 Hardware /Software Designing

  Software Requirements

• Operating System: Windows 10

• Text Editor / IDE: Jupyter Notebook, Visual Studio Code

• Language: Python, HTML, Bootstrap

• Distribution Software: Anaconda

• Framework: Flask 2.2

Hardware Requirements

• Processor: Intel Core i5 8th gen

• RAM: 8GB DDR3

• Hard Disk: 500GB

**4. EXPERIMENTAL INVESTIGATIONS**

* https://www.pyimagesearch.com/2017/07/10/using-tesseract-ocr-python/
* https://www.researchgate.net/publication/338355561\_Handwritten\_Optical\_Character\_Recognition\_OCR\_A\_Comprehensive\_Systematic\_Literature\_Review\_SLR

**5. FLOWCHART**

  User

Registered?

Sign in

  [yes]

  [No]

Upload Image

Sign up

Browse the image

Text is extracted by Tesseract OCR

  [Yes] [No]

Text

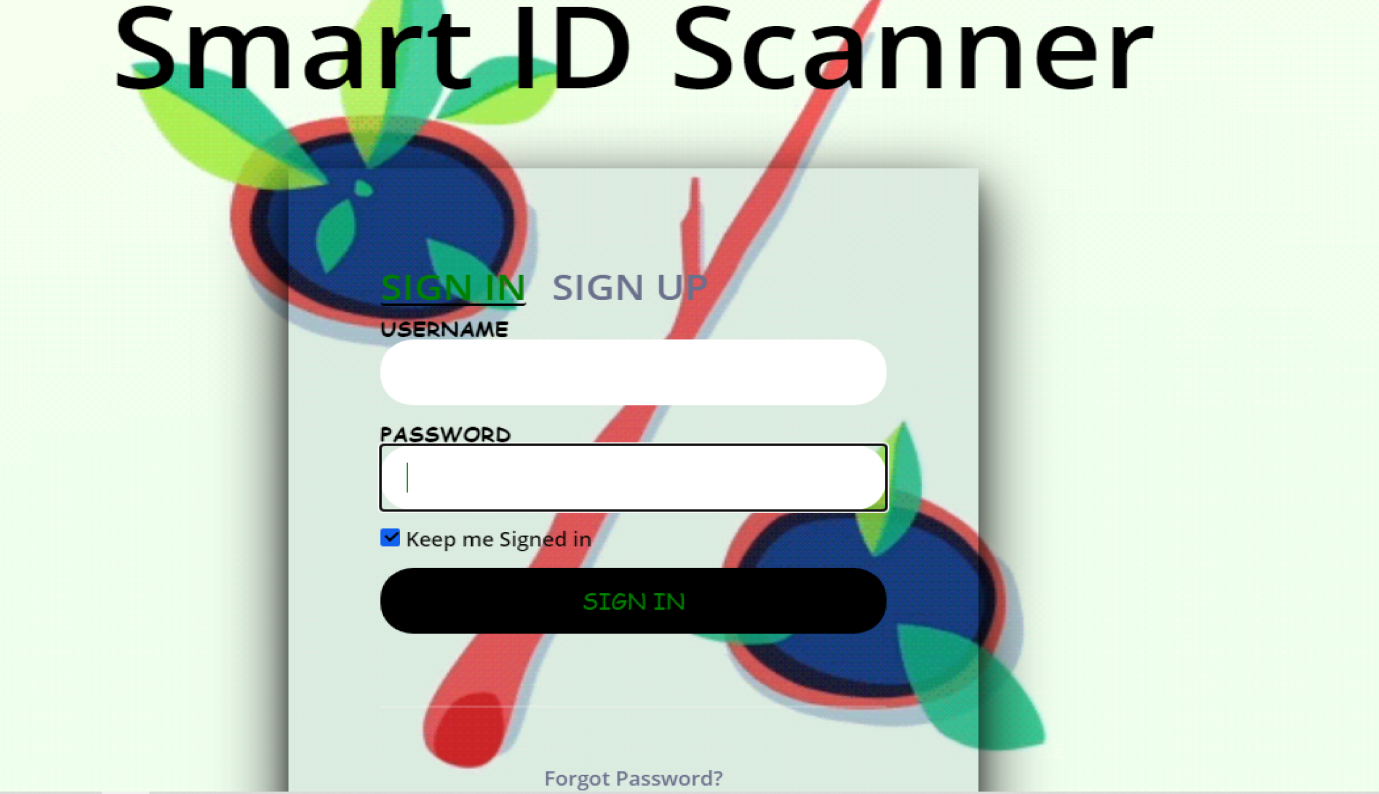
Stored in database

Output: user can retrieve the extracted text

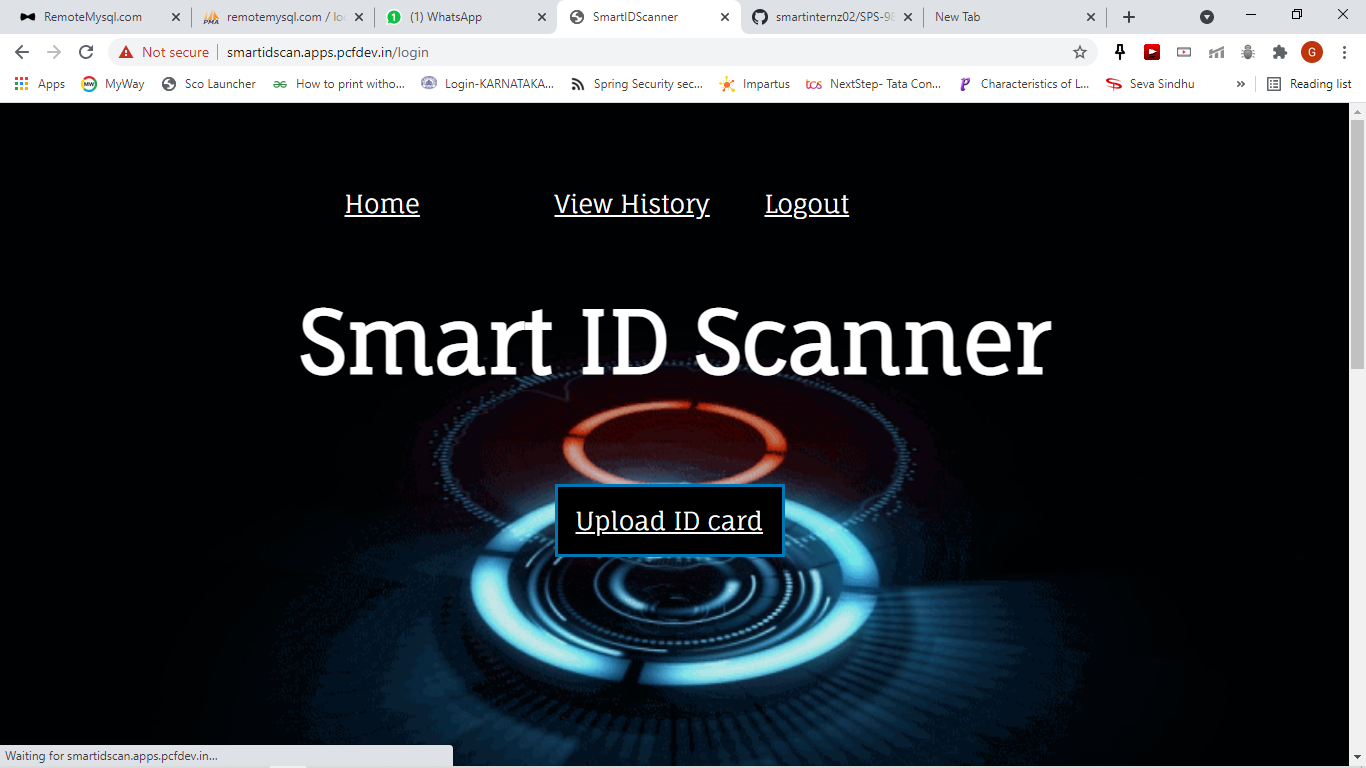
**6. RESULTS**

****

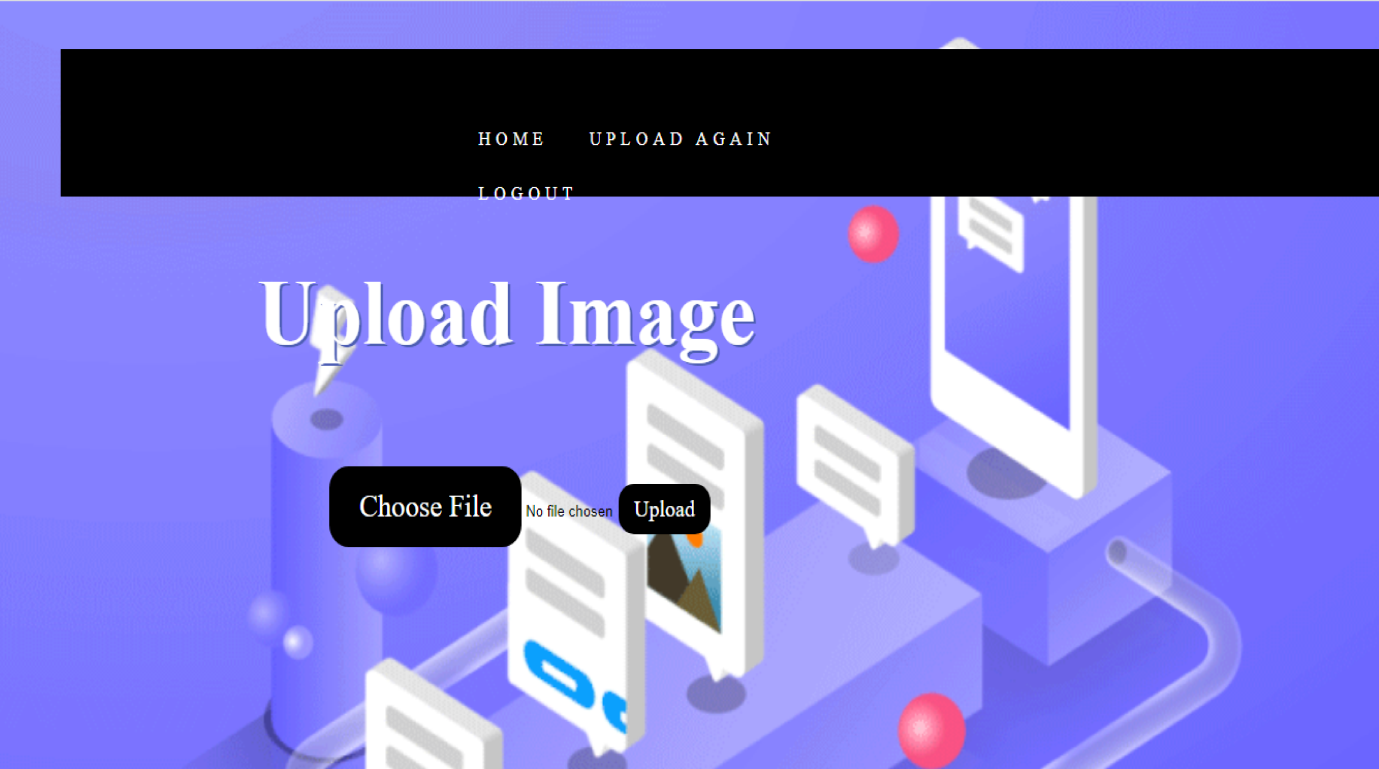
                                       HOME PAGE

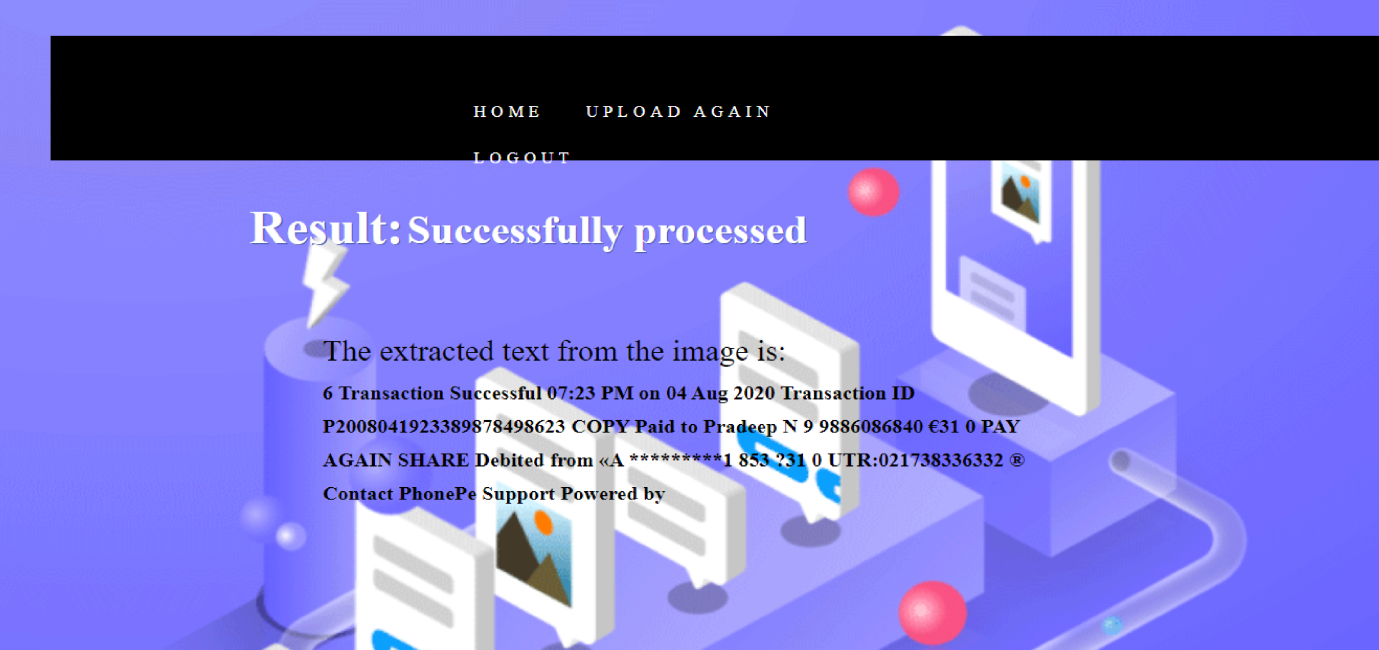


SIGN IN/UP



  UPLOAD PAGE





Retrieving extracted text stored in database

**7.  ADVANTAGES AND DISADAVANTAGES**

       Advantages

* scanning relieves the burden of filing paper forms and simplifies document sharing. Using special software, you can extract the text from scanned documents, making them easier to search. Scanning has also proven a boon to photographers, who can retouch and repair old photographs digitally.
* Here we can store the data for future
* Data security is of utmost importance for any organization. Paper documents are easily prone to loss or destruction. Papers can be misplaced, stolen, or destroyed by natural elements such as moisture, pests, and fire. However, this is not the case with data that is scanned, analyzed, and stored in digital formats

       Disadvantages

* 1 OCR text works efficiently with the printed text only and not with handwritten text
* Handwriting must be learnt by the pc.
* Quality of the ultimate image depends on quality of the first image

* OCR often must take a color/grayscale photo and convert it to plain black and white to       reduce blurred text and better separate black and white text from its background

**8. APPLICATIONS**

* 1 HR can conveniently capture applicant information and populate their databases to save for existing or future openings
* A mortgage provider can digitize all loan paperwork and collaborate to process with related service providers, such as an escrow company, insurance companies, and more.
* Widely Used in Banking
* There are many industries that continue to heavily rely on paperwork and healthcare is one of them. But, as more healthcare organizations continue to adopt the electronic healthcare record (EHR), OCR will play a critical role.
* In airports, for passport recognition and [information extraction](https://en.wikipedia.org/wiki/Information_extraction)
* Automatic insurance documents key information extraction

**9. CONCLUSION**

Through Tesseract and the Python-Tesseract library, we have been able to scan images and extract text from them. This is Optical Character Recognition and it can be of great use in many situations.

We have built a scanner that takes an image and returns the text contained in the image and integrated it into a Flask application as the interface. This allows us to expose the functionality in a more familiar medium and in a way that can serve multiple people simultaneously.

**10. FUTURE SCOPE**

OCR can become a powerful tool for future data entry applications. However, the limited availability of funds in a capital-short environment could restrict the growth of this technology. But, given the proper impetus and encouragement, a lot of benefits can be provided by the OCR system. They are:-The automated entry of data by OCR is one of the most attractive, labor reducing 85 technology The recognition of new font characters by the system is very easy and quick. We can edit the information of the documents more conveniently and we can reuse the edited information as and when required.The extension to software other than editing and searching is topic for future works. The Grid infrastructure used in the implementation of Optical Character Recognition system can be efficiently used to speed up the translation of image based documents into structured documents that are currently easy to discover, search and process.

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**APPENDIX**

           Source code

app.py file

# -\*- coding: utf-8 -\*-

from flask import Flask, render\_template, request, redirect, url\_for, session

from flask\_mysqldb import MySQL

import MySQLdb.cursors

from views import get\_attendence

import mysql.connector

import io

app = Flask(\_\_name\_\_)

app.config['MYSQL\_HOST'] = 'remotemysql.com'

app.config['MYSQL\_USER'] = 'LbFmCiFR24'

app.config['MYSQL\_PASSWORD'] = 'zxhwCpQCGJ'

app.config['MYSQL\_DB'] = 'LbFmCiFR24'

mysql = MySQL(app)

app.secret\_key = 'a'

@app.route('/')

def homer():

    return render\_template('home.html')

@app.route('/signup',methods =['GET', 'POST'])

def signup():

    msg = ''

    if request.method == 'POST' :

        name = request.form['name']

        email = request.form['email']

        mobile = request.form['mobile']

        password = request.form['password']

        session["name"] = name

        cursor = mysql.connection.cursor()

        cursor.execute('INSERT INTO user VALUES ( NULL, % s, % s, % s, % s)', (name, email,mobile,password))

        mysql.connection.commit()

        msg = 'You have successfully registered ! Sign in Now'

    return render\_template('sign.html', msg = msg)

@app.route('/login', methods =['GET', 'POST'])

def login():

    msg = ''

    if request.method == 'POST' and 'name' in request.form and 'password' in request.form:

        name = request.form['name']

        password = request.form['password']

        cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)

        cursor.execute('SELECT \* FROM user WHERE name = % s AND password = % s', (name, password ))

        account = cursor.fetchone()

        if account:

            session['loggedin'] = True

            session['id'] = account['id']

            userid=  account['id']

            session['username'] = account['name']

            msg = 'Logged in successfully !'

            return render\_template('upload.html', msg = msg)

        else:

            msg = 'Incorrect username / password !'

    return render\_template('sign.html', msg = msg)

@app.route('/logout')

def logout():

    session.pop('loggedin', None)

    session.pop('id', None)

    session.pop('name', None)

    return render\_template('home.html')

@app.route('/filehtml')

def filehtml():

    return render\_template('file.html')

@app.route('/home')

def home():

    return render\_template('upload.html')

ALLOWED\_EXTENSIONS = set(['png', 'jpg', 'jpeg'])

def allowed\_file(filename):

    return '.' in filename and \

           filename.rsplit('.', 1)[1].lower() in ALLOWED\_EXTENSIONS

# route and function to handle the upload page

@app.route('/fileupload', methods=['GET', 'POST'])

def upload\_page():

    if request.method == 'POST':

        # check if there is a file in the request

        if 'file' not in request.files:

            return render\_template('upload.html', msg='No file selected')

        file1 = request.files['file']

        # if no file is selected

        if file1.filename == '':

            return render\_template('upload.html', msg='No file selected')

        if file1 and allowed\_file(file1.filename):

            # call the OCR function on it

            extracted\_text = get\_attendence(file1)

            #extracted\_text = get\_text\_from\_api(file)

            data=extracted\_text

            cursor = mysql.connection.cursor()

            SQLInsertCmd = """INSERT INTO

                 exdata VALUES (%s,%s)"""

            cursor.execute(SQLInsertCmd,(session['id'],data,))

            mysql.connection.commit()

# Execute the query and commit the database.

            # extract the text and display it

            return render\_template('file1.html',

                                   msg='Successfully processed',

                                   extracted\_text=extracted\_text,

                                   )

    elif request.method == 'GET':

        return render\_template('upload.html')

@app.route('/viewhistory')

def viewhistory():

    print(session["username"],session['id'])

    cursor = mysql.connection.cursor()

    cursor.execute('SELECT data FROM exdata WHERE userid = % s', (session['id'],))

    account = cursor.fetchall()

    return render\_template('viewhistory.html',account = account)

if \_\_name\_\_ == '\_\_main\_\_':

   app.run(debug = True)