Marwadi University	**Marwadi University Faculty of Technology Department of Information and Communication Technology**	
Subject: AI (01CT0616)	**AIM: AI-Based Visiting Card Info Extractor**	
Project Defination	**Date: 16-03-2025**	**Enrolment No:92200133003, 92420133001**

Name : Prashant Sarvaiya
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Project Title: AI-Based Visiting Card info Extractor

Project Description :
This project is about making a smart system that can read visiting cards and pick out important details like the owner's name and company name. It will use OCR (Optical Character Recognition) to read the text from the card and NLP (Natural Language Processing) to understand and sort the details properly. The goal is to make storing and using business contacts easier.

Steps to Complete the Project (With Timeline) :

1. Week 1: Understanding the Problem & Research
   Decide what the project will do.
   Learn about OCR and NLP techniques.

2. Week 2: Collecting Data & Preprocessing
   Gather visiting card images for training.
   Clean images (convert to black & white, remove extra noise, etc.).

3. Week 3: Extracting Text Using OCR
   Use Tesseract OCR or Google Vision API to read text from images.
   Test on different card designs.

4. Week 4: Finding Names Using NLP
   Use spaCy or BERT to find owner names and company names.
   Improve accuracy using predefined word lists and patterns.

5. Week 5: Improving Model & Testing
   Train the system with more data to improve results.
   Compare results using different models.

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6. Week 6: Making a Simple Interface & Testing
   Create a basic webpage or app where users can upload cards.
   Store extracted details in a file or database.

7. Week 7: Finalizing & Submission
   Write down how the project works.
   Prepare a final report and presentation.

OCR Processing Details:
Since this project does not use a predefined dataset, OCR technology will be employed to extract text directly from images. The system will process images by:

- Capturing and scanning visiting card images.
- Preprocessing images (grayscale conversion, noise reduction, edge detection).
- Using OCR (Tesseract or Google Vision API) to extract raw text.
- Refining extracted text using NLP techniques.
- Validating and formatting structured data for storage.

The OCR system's accuracy will be evaluated based on:

- Precision and recall of extracted text.
- Performance on different card layouts and fonts.
- Ability to handle low-quality images and multi-language text.

Other Important Details:
- Technology Used: Python, OpenCV, Tesseract OCR, spaCy, BERT, Flask (for interface if needed).
- Final Output: A structured file (JSON/CSV) with owner and company names.
- Challenges: Different fonts, low-quality images, and multi-language cards.
- Future Ideas: System can extract phone.replace.