PAN CARD TAMPERING MINI-PROJECT

Introduction:

The purpose of this internship mini-project is to develop a system that can detect tampered PAN cards using Python, tesseract, openCV, and other relevant technologies. This project aims to address the issue of fraudulent practices in obtaining PAN cards through tampering of personal information such as name, date of birth, and photograph. The project involves building a program that can recognize and compare the content of a scanned PAN card with a standard PAN card template to detect any discrepancies.

Overview of the Project:

The project involves developing a program that can identify tampered PAN cards through the use of image processing and optical character recognition (OCR) techniques. The system will require the user to input a scanned copy of the PAN card, and the program will then analyze the image to determine whether any tampering has taken place. The project will be implemented using Python as the primary programming language, with the use of tesseract and openCV libraries for OCR and image processing, respectively.

Project Objectives:

The primary objective of the project is to develop a system that can detect tampered PAN cards accurately and efficiently. The specific objectives of the project include:

Developing a program that can read and extract text from scanned PAN card images using OCR technology.

Designing a standard PAN card template for the system to compare the scanned PAN card with and identify any differences.

Integrating the image processing techniques to detect any tampering in the scanned image such as photo manipulation or alterations in the personal details of the cardholder.

Providing a user-friendly interface for users to input the scanned PAN card and display the results of the tampering detection analysis.

Methodology:

The methodology for the PAN Card Tampering Detection project involves a series of steps that are necessary for the system to work correctly. The steps are:

Image Preprocessing: The system will use openCV libraries to preprocess the scanned PAN card image, which includes resizing, cropping, and color conversion to improve the image quality.

Text Extraction: The tesseract OCR library will be used to extract the text content of the PAN card image.

Template Matching: The program will use the standard PAN card template as a reference to compare with the scanned image to identify any differences.

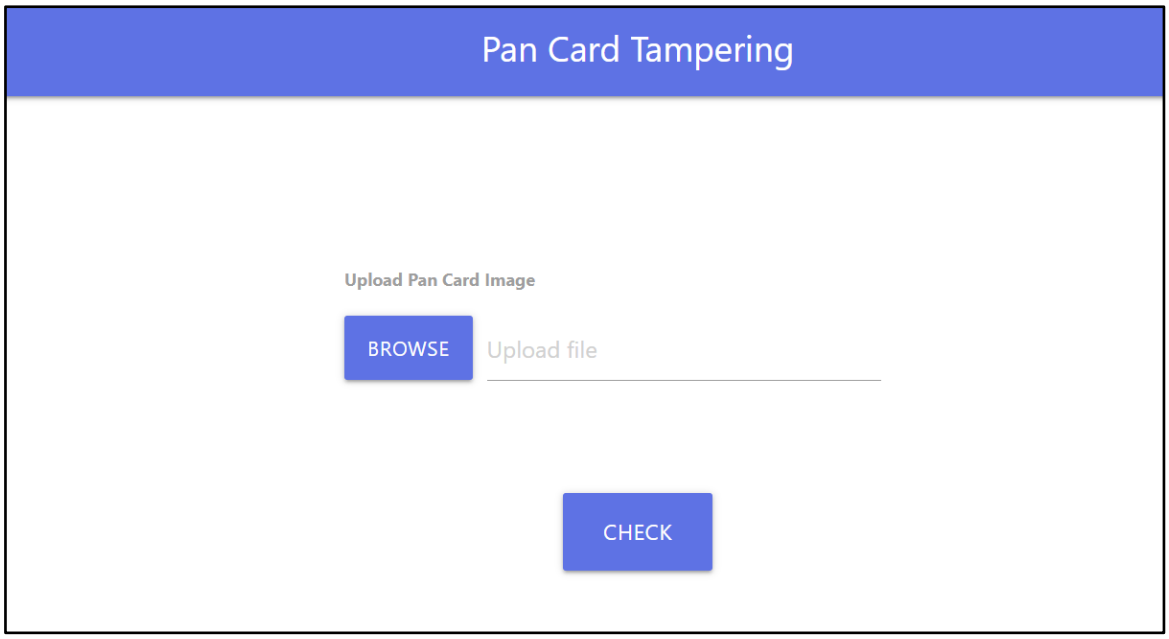
Image Comparison: The system will utilize image processing techniques such as histogram equalization and edge detection to identify any discrepancies in the scanned PAN card image compared to the template.

Tampering Detection: The program will analyze the text and image data of the scanned PAN card to identify any tampering or alterations made to the card.

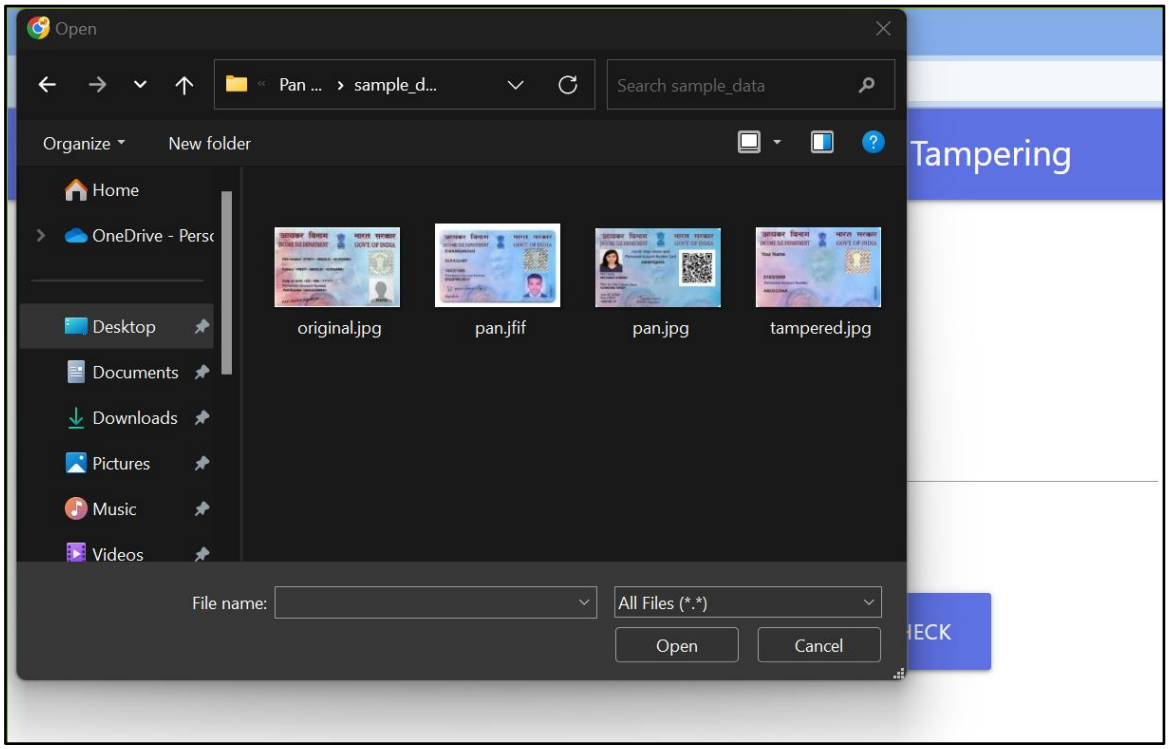
User Interface: The program will provide a user-friendly interface for users to input the scanned PAN card and display the results of the tampering detection analysis.

Conclusion:

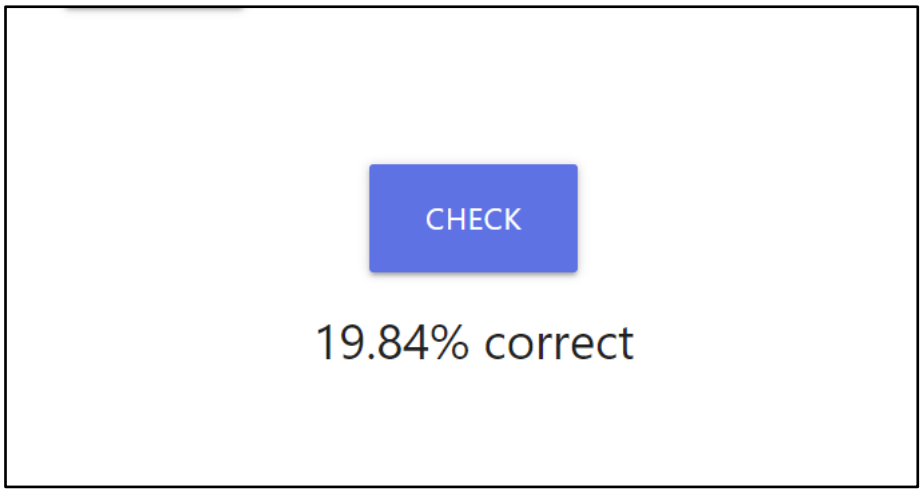
The PAN Card Tampering Detection project is a significant initiative in addressing the issue of fraudulent practices in obtaining PAN cards through tampering of personal information. The system developed using Python, tesseract, and openCV technologies can accurately and efficiently detect tampered PAN cards, providing a reliable solution to the problem. The project's successful implementation will provide a valuable contribution to the government's efforts in ensuring the security and integrity of PAN cards issued to citizens.



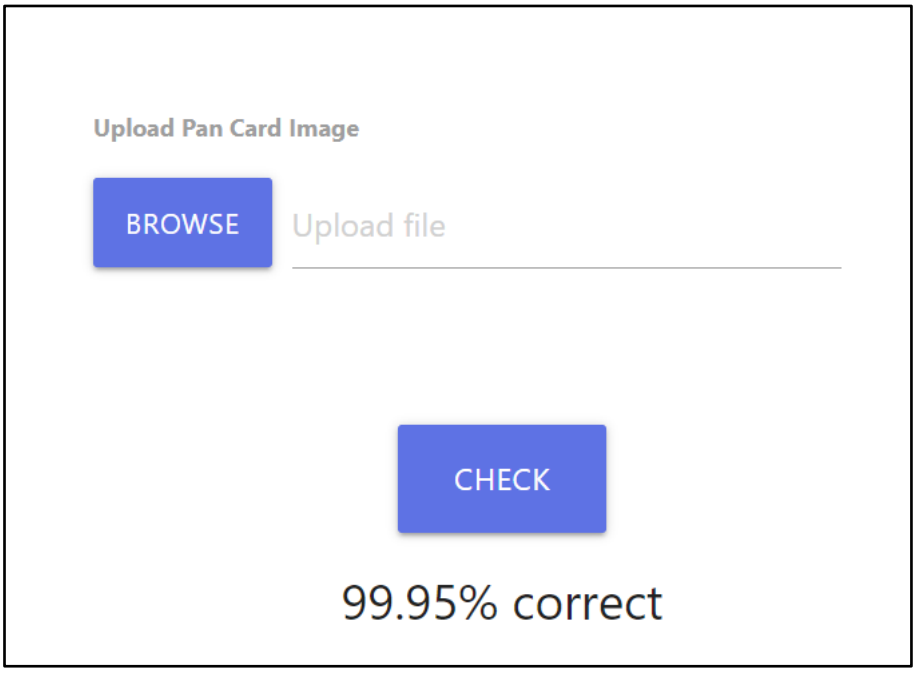
Initial UI of the application



Upload Section to upload the Pan Card Image



Result of Tampered Pan Card



Result of an original Pan Card