

BIZCARD OPTICAL CHARACTER RECOGNITION APP

BIZCARDX : EXTRACTING BUSINESS CARD DATA WITH OCR

SYNOPSIS

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INTRODUCTION

Bizcard OCR App is a Streamlit application designed to streamline the process of extracting information from business cards using Optical Character Recognition (OCR) technology. The app provides an intuitive interface for users to upload business card images, extract relevant data, and store it in a database.

FEATURES

- **Business Card Image Upload:** Users can upload images of business cards in common formats such as PNG, JPEG, or JPG.
- **OCR Extraction:** The application utilizes the easyOCR library to extract text from the uploaded business card images. It identifies and extracts relevant information such as company name, cardholder name, designation, contact details, email address, website URL, address, city, state, and pin code.
- **Database Storage:** Extracted information, along with the uploaded business card images, is stored in a SQLite database. This allows users to maintain a digital repository of business card data for easy access and retrieval.

- **Data Management:** Users can view, update, and delete entries from the database through the application's graphical user interface (GUI). This provides flexibility in managing and organizing business card information effectively.
- **User Authentication:** The application supports user authentication to ensure secure access to its features. Users can log in with their credentials to interact with the application and manage their data securely.
- **Data Visualization:** To provide insights into the extracted business card data, the application includes data visualization features. Users can visualize trends, patterns, or distributions in the data using interactive charts and graphs.
- **Error Handling and Logging:** Robust error handling mechanisms are implemented to gracefully handle exceptions and errors that may occur during application execution. Logging frameworks are utilized to log important events and errors for debugging and monitoring purposes.
- **Internationalization (i18n) Support:** The application incorporates internationalization support to cater to users from different regions. It supports multiple languages and translations, enhancing accessibility for a global user base.
- **Continuous Integration/Continuous Deployment (CI/CD):** A CI/CD pipeline is set up to automate the testing, building, and deployment process of the application. This ensures efficient development and deployment workflows, reducing manual intervention and accelerating delivery cycles.

PROJECT OVERVIEW

The Bizcard OCR App aims to simplify the management of business card data by leveraging OCR technology. Users can easily digitize and organize business card information, making it readily accessible and searchable. The application offers a user-friendly interface and robust functionality to meet the diverse needs of users in managing their contact information effectively.

Key Features:

- **Streamlit UI:** Provides the interface for users to interact with the application and access its features.
- **OCR Engine:** Utilizes the easyOCR library to extract text from uploaded business card images accurately.
- **SQLite Database:** Stores extracted information along with the uploaded images for future reference, providing a centralized repository for business card data.
- **Python Script:** Contains the logic for image processing, OCR, database operations, user authentication, data visualization, error handling, and logging.

SIGNIFICANCE:

The Bizcard OCR App holds significant importance in various domains, including business networking, contact management, and digital transformation. Here are some key points highlighting its significance:

1. **Efficient Contact Management:** Traditional methods of managing business card information are often time-consuming and error-prone. By leveraging OCR technology, the app automates the extraction process, allowing users to efficiently digitize and organize their contact information.
2. **Enhanced Networking Opportunities:** Networking plays a crucial role in professional success. The app empowers users to expand their network by digitizing business card data and facilitating seamless communication with contacts. This leads to enhanced networking opportunities and potential collaborations.
3. **Streamlined Business Processes:** In today's digital age, businesses rely on streamlined processes to optimize efficiency and productivity. The app

streamlines the process of capturing and storing business card information, thereby contributing to more efficient business operations.

4. **Improved Accessibility and Searchability:** Storing business card data in a digital format enhances accessibility and searchability. Users can quickly search for specific contacts, access relevant information, and retrieve contact details whenever needed, leading to improved workflow and productivity.
5. **Data Analytics and Insights:** The app provides opportunities for data analysis and insights generation. By visualizing trends and patterns in business card data, users can gain valuable insights into their networking efforts, identify key connections, and tailor their networking strategies accordingly.

INNOVATION:

The Bizcard OCR App introduces several innovative features and functionalities that set it apart from traditional contact management methods. Here are some key innovations:

1. **OCR Integration:** Leveraging Optical Character Recognition (OCR) technology, the app automates the extraction of text from business card images. This innovative feature eliminates the need for manual data entry, saving time and reducing errors.
2. **Database Integration:** By integrating with a SQLite database, the app provides users with a centralized repository for storing and managing business card information. This innovation ensures data consistency, accessibility, and scalability.
3. **User Authentication:** Implementing user authentication features enhances the security of the application, allowing users to securely access

and manage their data. This innovation ensures that sensitive information remains protected from unauthorized access.

4. **Data Visualization:** The inclusion of data visualization features enables users to gain insights from their business card data. By visualizing trends, patterns, and distributions, users can make informed decisions and optimize their networking strategies.
5. **Continuous Integration/Continuous Deployment (CI/CD):** Setting up a CI/CD pipeline automates the testing, building, and deployment process of the application. This innovation ensures efficient development workflows, reduces manual intervention, and accelerates delivery cycles.

TECHNOLOGIES USED

- **Python:** Programming language used for application development and scripting.
- **Streamlit:** Web application framework used for building interactive user interfaces.
- **easyOCR:** Python library for optical character recognition (OCR), used to extract text from images.
- **SQLite:** Relational database management system used for storing extracted information.
- **Pandas:** Data manipulation library used for handling structured data and data analysis tasks.

INSTALLATION

To run the Bixcard OCR project, follow these steps:

Install Packages:

```
pip install streamlit streamlit_option_menu easyocr pillow numpy pandas  
sqlite3
```

- **streamlit**: The main package for creating the web application interface.
- **streamlit_option_menu**: An additional package used for creating option menus in Streamlit.
- **easyocr**: A library for optical character recognition (OCR) used to extract text from images.
- **pillow**: Python Imaging Library (PIL) fork, used for opening, manipulating, and saving many different image file formats.
- **numpy**: A fundamental package for scientific computing with Python, used for numerical operations.
- **pandas**: A powerful data manipulation library, used for handling structured data.
- **sqlite3**: SQLite3 is included in Python's standard library and provides a simple way to work with SQLite databases.

CONCLUSION

The Bizcard OCR App offers a convenient solution for digitizing business card data and managing contact information effectively. With its intuitive interface, robust functionality, and support for features such as user authentication, data visualization, and error handling, the application empowers users to streamline their networking efforts and maintain organized records.