Karnataka State Police
Government of Karnataka

DATATHON 2024

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TEAM NAME: AUTHENTICATORS

INSTITUTE NAME : NIST UNIVERSITY,BERHAMPUR

PROBLEM STATEMENT: DATA PRIVACY IN LAW ENFORCEMENT

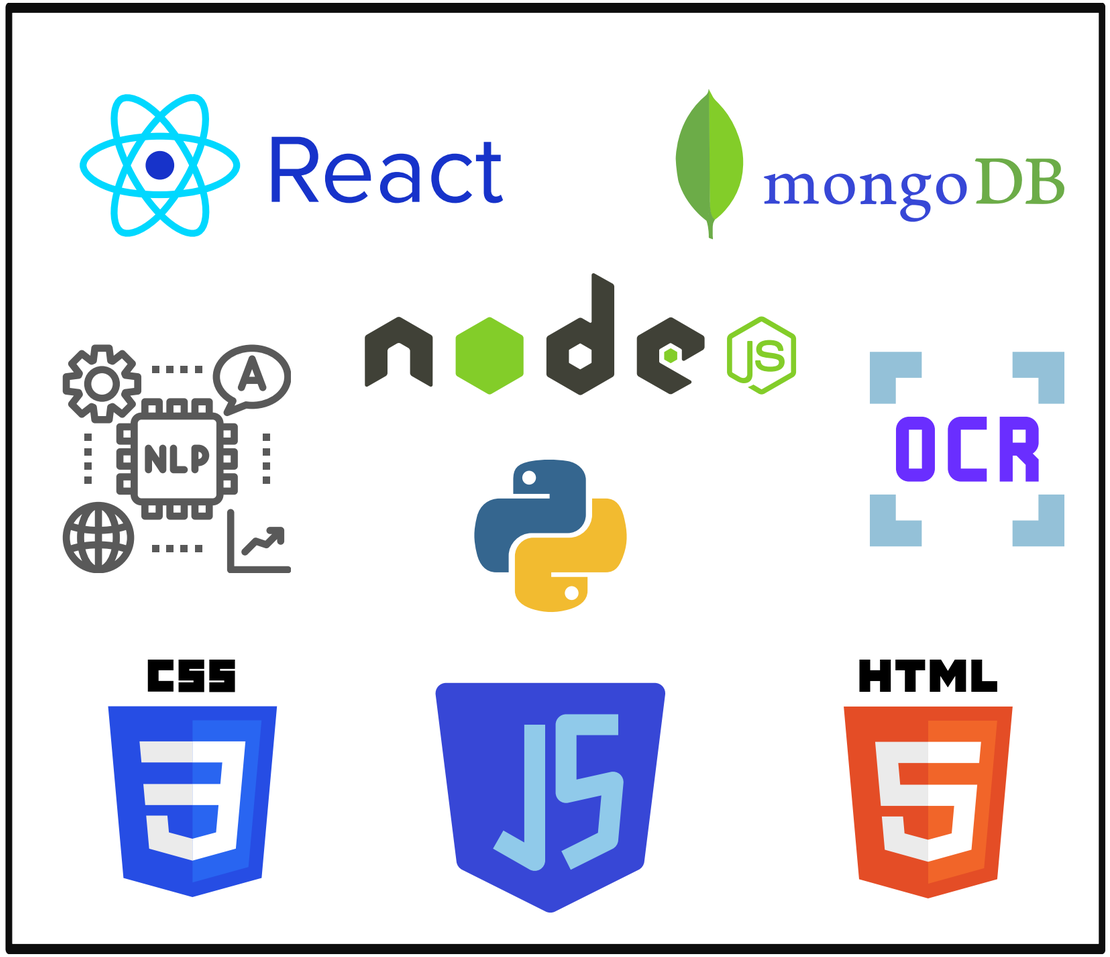
IDEA BREIF :

We have engineered a secure web application featuring robust authentication and an intuitive user interface to deter unauthorized database alterations. Noteworthy aspects comprise hierarchical security levels, alert mechanisms for data input, restricted access for data modifications, text data extraction, natural language processing (NLP), authentication for case closure, and approval by station authorities. This dynamic application prioritizes user-friendliness, incorporates anonymization protocols, accommodates diverse languages, and upholds decentralization to ensure privacy and uphold data quality.

IDEA DESCRIPTION

- Hierarchical security levels based on officer's position.
- Data input with confirmation alerts to prevent manipulation
- Only Database Administrators and higher can modify data
- Tool processes documents, extracts text data
- NLP libraries extract and process data, hiding personal information.
- Once the case closed , Reopening it requires authentication from higher-ups.
- Station authorities required approval from the officer in charge to access data.

TECHNOLOGY USED



IDEA EXPLANATION :

Login Credentials:

- Police ID
- Email
- Phone Number

Upon successful login, you will access a user-friendly interface customized according to your hierarchical position. The system categorizes users based on their level of authority, facilitating efficient access to pertinent functions.

Hierarchy Functions:

1. View: This function permits users to examine case files and charge sheets.
2. Upload: Users can submit FIRs (First Information Reports) in different formats such as PDF, DOCX, and more. They can use the **online scanner integrated** into the web application or **option for physical scanners**. Additionally, FIRs can be **manually** inputted into the system.
3. Reopen: Authorized individuals can utilize this feature to reopen cases for additional investigation or adjustments.

Functionalities Overview:

- **Upload**: FIRs can be uploaded in various formats or manually input, offering flexibility and ease for law enforcement personnel. The system includes online scanning capabilities to streamline document integration.
- **View**: Access to case files and charge sheets is granted based on hierarchical permissions. While lower-ranking officers have viewing rights, access to specific confidential information is restricted in compliance with constitutional privacy regulations. Complete access privileges are reserved for the highest-ranking authority.
- **Modification Restrictions**: Once a lower-ranking officer finalizes a charge sheet, modifications are restricted unless special authentication is provided. However, cases can be reopened for necessary amendments or further investigation. Similarly, superior authorities cannot directly alter finalized charge sheets but have the prerogative to reopen cases with the required authentication.

Data Integrity Assurance:

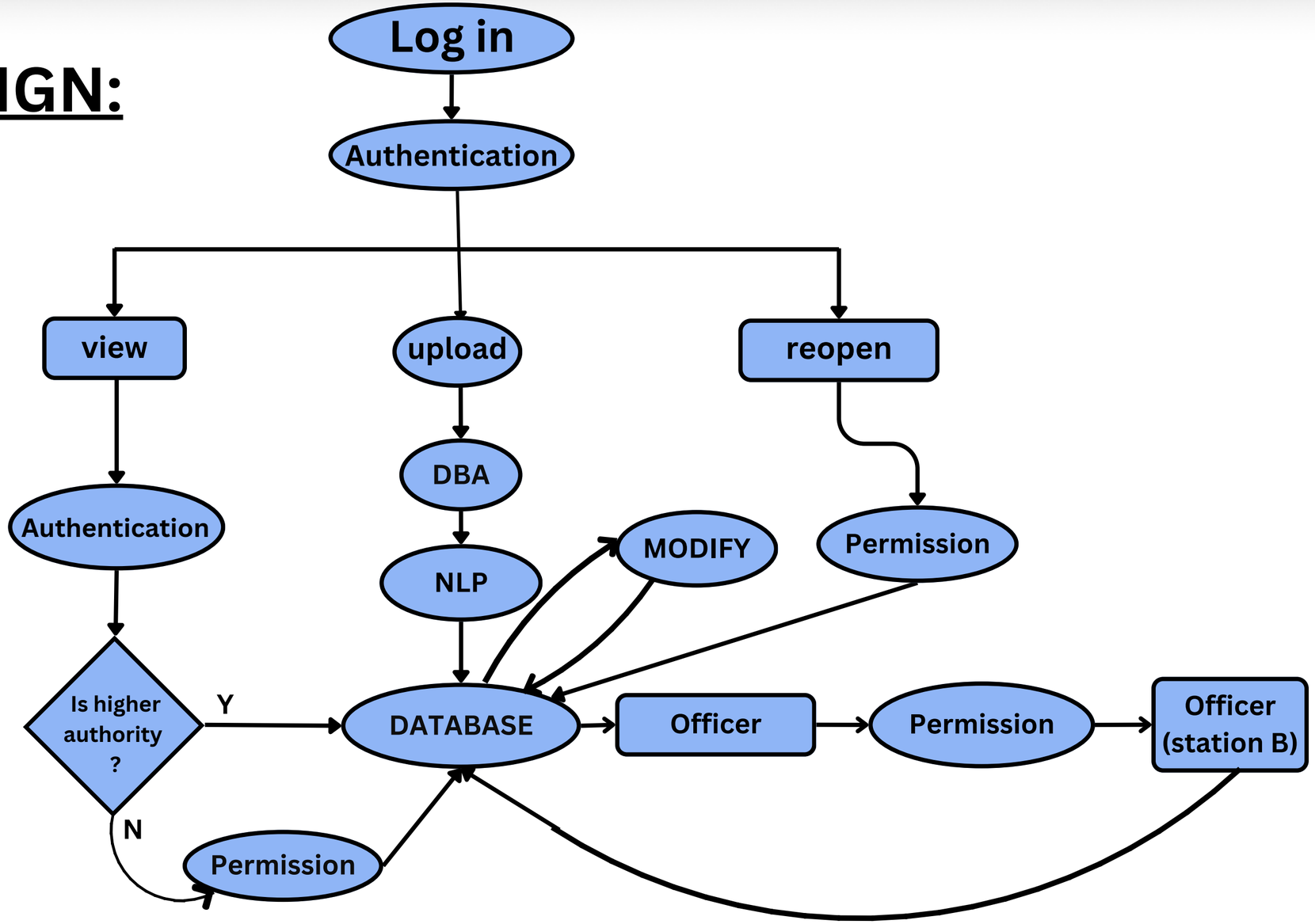
- Authentication Protocols: Tailored authentication protocols are in place for critical actions, like reopening cases and modifying charge sheets, to uphold accountability and data integrity.
- Access Controls: Rigorous access controls are enforced to deter unauthorized alterations or access to confidential data. This level of control extends even to web developers and database administrators, ensuring the highest level of integrity.

Our system places a premium on security, efficiency, and adherence to legal standards to enhance law enforcement operations effectively. It simultaneously protects sensitive data, upholds constitutional rights, and ensures compliance with regulations.

What positive and unique solutions your idea have?

- Highly dynamic in case of implementation.
- User friendly Interface in a **structured** manner.
- User can set **anonymization rules apart** from basic anonymization.
- **Language diversity** ,so that local language can be converted to English .
- **Decentralize** anonymization platform, while maintaining privacy, integrity and quality.
- New officer **registration done by DBA only**, no direct registration in the web for maintain integrity.
- **Online Scanner** so that data insertion becomes easy, also support for **physical scanner**.

ARCHITECT DESIGN:



Summary

Based on our research, numerous incidents have been reported concerning the manipulation of **confidential databases**, whether in offline or online systems. In response to mitigating such criminal activities, we have engineered a web application tailored to provide **enhanced security features**, including robust authentication protocols and an intuitive user interface. By engaging with our solution, you can expect to gain a **comprehensive understanding** and valuable insights into this critical area.

Dependencies

- Data sets
- NLP libraries
- OCR tool

MENTOR :

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