

# CREATATHON

## E-BEAT MANAGEMENT SYSTEM

### TEAM BLUESKRIPT

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### PROBLEM STATEMENT

The current manual process of managing police beats is time-consuming, error-prone, and inefficient. There is a need for a digital solution that can automate and streamline the process of managing police beats. An e-beat management system would enable police departments to more effectively manage their resources, monitor their beats, and improve overall public safety. However, the development of such a system poses several challenges, including the need to ensure data security, scalability, and usability for police officers who may have varying levels of technical proficiency. Therefore, the problem statement is: "How can an e-beat management system be developed for police departments that addresses the challenges of data security, scalability, and usability while improving the efficiency and effectiveness of managing police beats?"

### VISION

The vision for developing an e-beat management system for police departments is to create a comprehensive, user-friendly, and secure platform that enhances the overall efficiency and effectiveness of policing. This system will provide real-time access to critical information, including beat schedules, crime data, incident reports, and officer locations, to help police departments better manage their resources and respond quickly to emergencies.

The e-beat management system will also incorporate advanced analytics and data visualisation tools, enabling police departments to identify trends, forecast future crime patterns, and allocate resources proactively. By streamlining processes and automating tasks, the e-beat management system will reduce the workload for police officers, allowing them to focus more on community engagement and building trust with the public.

The vision for the e-beat management system is to improve public safety, increase operational efficiency, and foster collaboration and communication among police departments. Ultimately, the e-beat management system will enhance the quality of life for citizens by promoting safer communities and reducing crime rates.

## APPROACH

To develop an e-beat management system for police departments, the following approach can be adopted:

Gather requirements from stakeholders.

Design system architecture for security and scalability.

Develop and test the system, involving end-users.

Deploy the system and provide training and support.

Monitor system performance and improve based on feedback.

This approach ensures the efficient and effective development of a user-friendly, secure, and data-driven e-beat management system that enhances public safety and fosters collaboration among police departments.

## FEATURES

Here are some potential features that an e-beat management system for police departments could include:

- **Beat scheduling:** A tool for creating and managing beat schedules for police officers, including shifts, assignments, and location tracking.
- **Incident reporting:** An easy-to-use interface for officers to report incidents and enter incident details such as location, time, and nature of the incident.
- **Crime data analytics:** Advanced analytics tools that enable police departments to analyze crime data, identify trends, and predict future crime patterns, allowing them to allocate resources proactively.
- **Real-time communication:** A messaging feature that allows officers to communicate with each other, supervisors, and dispatchers in real-time, enhancing situational awareness and improving response times.
- **Officer performance tracking:** A performance tracking system that enables supervisors to monitor officer performance, including response times, incident reports, and adherence to schedules.
- **Mobile accessibility:** A mobile application that allows officers to access the system from their smartphones or tablets, enabling them to stay connected and access critical information while on the go.
- **GIS integration:** Integration with geographic information system (GIS) technology to enable officers to view maps, crime hotspots, and other relevant location-based data.
- **Data security:** Advanced security measures, including role-based access control, encryption, and firewalls, to protect sensitive data and ensure system integrity.

## TECHNOLOGIES USED

React JS (Frontend Application)

Flutter (Mobile Application)

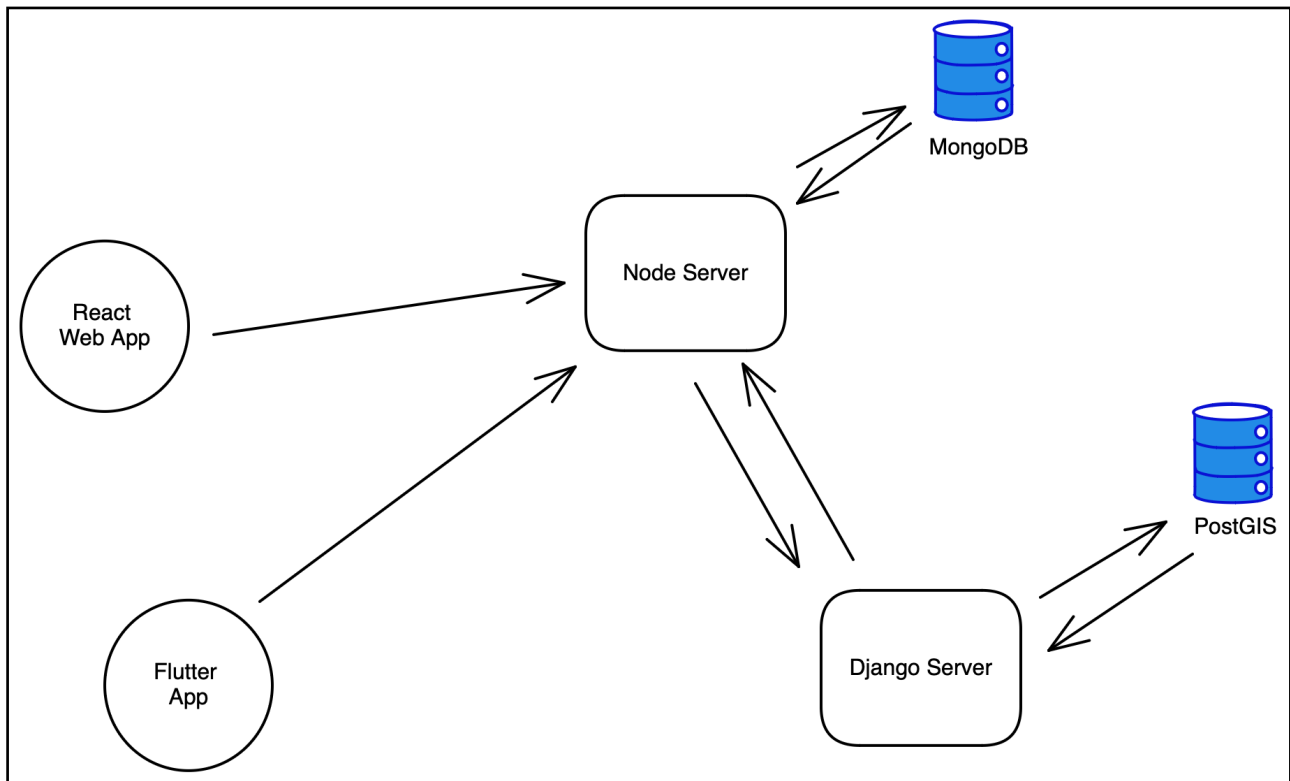
Node JS (API Gateway)

Django (Backend Application)

PostGIS Database (Geo-spatial Database)

MongoDB (NoSQL Database)

## SYSTEM ARCHITECTURE



## DEVELOPER MACHINE SETUP

1. Run everything in docker containers
  - Install Docker (Link)
2. To run each service locally
  - Install Python (Installation Link)
  - Install Node (Installation Link)

## SYSTEM ARCHITECTURE

1. **React JS Documentation:** <https://reactjs.org/docs/getting-started.html>
2. **Django Documentation:** <https://docs.djangoproject.com/en/4.1/>
3. **Node JS Documentation:** <https://nodejs.org/en/docs>
4. **Flutter Documentation:** <https://docs.flutter.dev/>
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