PROJECT PHASE I

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**Crime Data Analytics & Response Time Analysis**

**Objective:** This project aims to analyse crime trends over time, identify peak crime hours, determine crime hotspot areas, and measure police response times. By leveraging big data technologies, it provides valuable insights into crime patterns and law enforcement efficiency. The results are stored in PostgreSQL and visualized through graphs and dashboards.

**Dataset:** https://www.kaggle.com/datasets/sudhanvahg/indian-crimes-dataset

**Tools Used:**

* Big Data Processing: Apache Spark (PySpark/Scala)
* Storage: Hadoop HDFS, PostgreSQL
* Visualization: Matplotlib, Seaborn, Power BI

**Key Components & Implementation:**

1. Data Ingestion & Storage
2. Crime Trends & Peak Crime Analysis
3. Crime Hotspot Analysis
4. Police Response Time Analysis

**Final Outputs & Reports:**

1. PostgreSQL Database storing crime trends and response time analysis.
2. Visual Dashboards using Power BI, Matplotlib, and Seaborn.
3. Optimized Spark SQL queries for efficient large-scale analysis.