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**Institution:** Government college of Engineering, Erode.

**Department:** B.Tech, Information Technology

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# 1.Problem statement

# Crime patterns vary across locations and time, making it difficult for authorities to predict and prevent incidents effectively. By analyzing geographic and temporal data, we aim to uncover trends, identify hotspots, and support smarter, data-driven crime prevention strategies.

# 2.Objectives of the project

# Map crime hotspots across different regions.

# Analyze crime patterns over time (daily, monthly, seasonal).

# Identify factors influencing crime trends.

# Predict future crime occurrences using data analysis.

# Support better resource planning for crime prevention.

# 3.Source of the project

# Government crime databases (e.g., NCRB, FBI UCR).

# Local police department crime records.

# Open data portals (e.g., Kaggle, data.gov).

# Geospatial data (GIS maps, census data).

# Time-based logs (e.g., timestamps from reports or 911 calls).

# 4.Data Source

# National Crime Records Bureau (NCRB) data

# City police department crime logs

# Kaggle crime datasets

# Open Government Data (OGD) platforms

# GIS and census data for location mapping

# 5.High level methodology

# Data Collection – Gather crime, location, and time-based datasets.

# Data Cleaning – Remove errors, handle missing values, and standardize formats.

# Exploratory Analysis – Visualize and identify basic crime patterns.

# Geospatial & Temporal Analysis – Map hotspots and analyze time-based trends.

# Predictive Modelling – Use ML/statistics to forecast future crime trends.

# 6.Tools and Technologies

# Python – For data analysis and modelling.

# Pandas & NumPy – For data manipulation.

# Matplotlib & Seaborn – For visualizations.

# Folium / Geo-Pandas – For geospatial mapping.

# Jupiter Notebook – For interactive coding and reporting.

# 7.Team Members

# Team leader

# Sivaranjani S

# Team Members

# Suvitha S

# Saraswathi D

# Sivaranjani S

# Rithika G

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