**Use Case Project-1**

**Domain:** Public Safetyand Prevention of Crimes

**Context:** AI cameras in cities can create a powerful system for detecting and predicting crimes using data science and AI.

This integrated approach can provide valuable insights to law enforcement agencies for crime prevention and public safety.

**Objective:**

To predict, detect and prevent the crimes which may happen by analysing the crime records, case studies and personal details/ history regarding criminals with help of data science and AI cameras in cities.

**Data:**

• Historical crime records

• Case studies of past criminal incidents

• Detailed personal information (with appropriate privacy measures) about known criminals.

• Integrated data, such as time and location of past crimes, criminal profiles, demographic data, socioeconomic factors and events.

• Video footage and images from AI camera

**Methods:**

**1. Data Collection and Integration:**

Gather historical crime records, case studies of past criminal incidents, and detailed personal information (with appropriate privacy measures) about known criminals.

Combine this data with real-time information from AI-enabled surveillance cameras placed strategically throughout the city.

**2. Data Pre-processing:**

Clean and pre-process the collected data, including crime records, case studies, personal details, and AI camera footage.

Standardize formats, handle missing values, and anonymize sensitive information.

**3. Feature Engineering:**

Extract features from the integrated data, such as time and location of past crimes, criminal profiles, demographic data, socioeconomic factors, weather conditions, and events.

These features contribute to building a comprehensive understanding of crime dynamics.

**4. Real-time Surveillance and Data Generation:**

AI cameras continuously monitor various areas of the city, capturing video footage and images.

These data streams are analysed in real time using computer vision techniques to detect anomalies, recognize faces, identify vehicles, and track movements.

**5. Predictive Modelling:**

Utilize machine learning models to predict potential crime hotspots, times, and types based on historical crime patterns, environmental factors, and real-time surveillance data.

These models can include time-series analysis, spatial clustering, and predictive analytics.

**6. Event Detection and Anomaly Identification:**

Implement AI algorithms to analyse the camera data for unusual patterns, behaviours, or activities.

This could include loitering, aggressive behaviour, sudden crowd formations, or abandoned objects. Detected anomalies trigger alerts for further investigation.

**7. Risk Scoring and Prioritization:**

Assign risk scores to different areas or individuals based on predictive models.

High-risk areas can be prioritized for increased police presence, community engagement, or preventive measures.

**Challenges:**

• The predictions may not be 100% accurate

• Need to ensure any privacy laws and regulations when handling personal data are not breached.

• Regularly assess and mitigate any biases introduced by the AI models or camera surveillance, especially with regard to race, gender, or socioeconomic factors.

• Need to provide explanations for model predictions and surveillance activities to build public trust and address concerns.

**Conclusion:**

By combining historical data, real-time surveillance, predictive analytics, and community engagement, this approach empowers cities to proactively address and prevent crime while respecting privacy and ethical considerations.