

S.No	Problem Statement ID	Problem Statement Name	Domain
2	CT-DFIR - 02	Tower Dump Analysis For Crime Investigation	DFIR

Description :

This project involves creating a tool to analyze cell tower dump data, which is a collection of location data for mobile phones connected to a specific tower at a given time. Law enforcement agencies use this data to identify potential suspects by finding common mobile numbers that appear at crime scenes or key locations.

Students will simulate this process using a database of dummy mobile numbers and timestamps, identifying overlaps to narrow down suspect movements. The tool will automate the analysis and provide clear, actionable insights for investigations.

Objectives :

1. Prelims :

- Analyze cell tower dump data to identify common mobile numbers that appear in the same place within a specific timeframe.
- Develop a system that can handle multiple datasets (e.g., Excel sheets with dummy data).

2. Mains :

- Extend the tool to analyze multiple locations.
- Identify mobile numbers that appear across different locations at different times.
- Generate a route map showing the movement of suspects, including date and time stamps.

3. Automation :

- Create a simple, user-friendly tool to automate the tedious task of manually sifting through tower dump data.

Expectations :

1. For Students/Developers :

- Simulate cell tower data using Excel sheets with hundreds of dummy mobile numbers and timestamps.
- Build a database system to store and analyze this data.
- Implement features to compare and find common numbers across multiple datasets.

2. For Law Enforcement :

- Provide a tool to quickly identify suspects based on cell tower data.
- Generate clear visuals and route charts of suspect movements.

3. For End Users :

- Ensure the tool is intuitive, with simple inputs like uploading data files.
- Deliver results in a structured format, such as tables and maps.

Expected Results :

1. Tower Dump Analysis :

- Identify mobile numbers common to a specific location during a specific timeframe.
- Reduce the list of potential suspects efficiently.

2. Multi-Location Analysis :

- Pinpoint numbers appearing at multiple locations (e.g., Place X, Y, Z) with their respective timestamps.
- Visualize suspect movements using maps or timelines.

3. Route Chart Mapping :

- Generate a route map showing where and when a suspect was present based on tower data.
- Provide detailed logs for law enforcement to use in investigations.