Emergency Call Dispatcher

- A C++ Project Simulating Backend Emergency Response
- Presented by:
  - Abrar musharaf mir- 12309655
  - Faizan Iqbal- 12322498
  - Arshit sharma- 12309455
- Under the guidance of: Chirag sir and Nitish sir
- Lovely professional university

Problem Statement & Objective

Problem Statement:

In real-world emergency situations, delays or miscommunication during dispatch can cost lives.

Traditional systems often face issues like:

- Manual handling of critical information
- No centralized log of emergency calls
- Slow or incorrect routing to the right team

Project Objective:

To create a **C++ simulation of a backend emergency call dispatcher** that:

- Accepts caller details (name, location, emergency type)
- Validates and categorizes the emergency (Police, Fire, Medical)
- Dispatches the appropriate team
- Logs each valid call with a timestamp
- Provides an interface to view all past emergency logs

Key Features

Smart Dispatcher Simulation (Using C++)

- Accepts emergency calls from users via a menu-driven CLI
- Inputs: Caller name, location, and emergency type
- Validates emergency type: Only "Police", "Fire", or "Medical" allowed

Intelligent Dispatch Logic

- Based on the type, the appropriate team is dispatched:
  - *Police*
  - *Fire Department*
  - *Medical Services*
- Invalid entries are rejected with an error message

Log Viewer Option

- View all previously handled emergency calls through the menu
- Helps in review and tracking of all emergency events

Technology Used & Code Flow

Technology Stack

- **Language**: C++
- **IDE**: Visual Studio Code
- **Compiler**: MinGW (g++)
- **Core Concepts Used**:
  - File handling
  - Conditional logic
  - Loops and menus
  - Time and date functions
  - String manipulation

Code Flow Overview

1. Start Program
2. Display Menu:
[1] Take Emergency Call
[2] View Call Log
[3] Exit
3. If [1] → Input name, location, type
↳ If valid type → Dispatch + Log
↳ If invalid → Show error
4. If [2] → Display log file contents
5. Repeat until [3] (Exit)

Sample Output & Log File

Sample Terminal Interaction

====== Emergency Call Dispatcher ======

1. Take Emergency Call

2. View Call Log

3. Exit

Enter your choice: 1

Taking new emergency call...

Enter caller's name: Aisha

Enter location: Mumbai

Enter emergency type (Police/Fire/Medical): Fire

Fire department dispatched.

Emergency recorded and team dispatched.

Sample Log File Entry (emergency_log.txt)

[2025-07-13 18:43:07] Name: Aisha, Location: Mumbai, Type: Fire

Conclusion & Future Scope

Conclusion

Our **Emergency Call Dispatcher** successfully simulates the backend logic of an emergency response system using C++. It:

- Accepts and validates emergency calls
- Dispatches appropriate services based on type
- Logs all valid emergencies with timestamps
- Allows reviewing the full emergency call history
- This project strengthened our understanding of:
- Practical C++ programming
- Real-world logic simulation
- Team collaboration and problem-solving

Future Scope

- **Real Call Integration** using APIs like Twilio to place actual emergency test calls
- **Graphical User Interface (GUI)** to make it more user-friendly
- **Database Support** (e.g., SQLite) to replace text-based logs for scalability
- **Statistics Module** to show number of calls per service, time patterns, etc.
- **Web or Mobile App** version to expand accessibility

Thank You

GitHub link: https://github.com/abrarmusharaf/Emergency-Call-Dispatcher