GDG ON CAMPUS - THE UNIVERSITY OF MANCHESTER WORKSHOP AGENDA

Engineering a Fintech Payment API
How Payment Systems Differ from Normal Web APIs

Workshop Details
- **Host:** GDG on Campus, The University of Manchester
- **Presenter:** Kamran Khalid (Senior Backend Architect and Technical Leader)
- **Type:** Hands-on technical workshop (CS Year 1-2 friendly)
- **Date:** February 25, 2026

Project and Materials
Workshop Page: https://www.kamrankhalid.co.uk/fintech-api-workshop.html

Student Demo Repository: https://github.com/kamrankhalid786/fintech-payment-api-architecture/tree/main

Workshop Objective
A normal API handles data. A fintech API handles money and legal responsibility. Students will learn why fintech APIs require security, compliance, fraud controls, ledger entries, and auditability in a single request flow.

Prerequisites
- What an API is
- Basic HTTP methods (GET, POST)
- JSON format
- Basic Node.js concepts

Learning Outcomes
- Explain how fintech APIs differ from regular APIs
- Understand idempotency and why it prevents double charges
- Understand basic compliance and fraud concepts
- Test and run a local payment API project
- Read and follow a backend request flow end-to-end

Agenda and Timeline (90 Minutes)

Time	Session Description
0:00 - 0:10	Opening and context: Why payment APIs differ; Real-world risk and trust.
0:10 - 0:25	Core concepts: Validation, Idempotency, and Compliance (KYC/AML).
0:25 - 0:45	Architecture walkthrough: Request workflow from Router to Ledger/Audit.
0:45 - 1:05	Live coding: Run local API, execute payment, and verify idempotency keys.
1:05 - 1:20	AI Fraud Detection: Using Gemini to classify suspicious payment patterns.
1:20 - 1:30	Q&A + Student Challenge: Testing scenarios and repository exercises.

AI Fraud Detection with Gemini

New module focusing on AI-assisted fraud scoring, prompt templates for risk signals, and logging AI decision context into an audit trail.

Contact

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