Project Roadmap

1 — Week 1
Research & Planning
Define project goals, dataset, and architecture.
Choose the dataset (CIC-IDS2017 or UNSW-NB15).

2 — Week 2
Data Collection & Analysis
Import, clean, and analyze network traffic data.
Identify anomaly indicators (e.g., unusual IPs, high packet rate).

3 — Week 3
Model Development (Phase 1)
Select and train baseline anomaly detection models.
Split dataset (Train: 80%, Test: 20%).

4 — Week 4
Model Optimization
Tune hyperparameters and add explainability features
Save best-performing model (model.pkl).

5 — Week 5
Real-Time Threat Detection
Simulate live data stream and create alert system.
using socket or Kafka.

6 — Week 6
Chatbot Integration
Build AI chatbot for security explanations and commands.

7 — Week 7
Integration & Deployment
Combine all modules and deploy prototype.

8 — Week 8
Testing & Final Report
Evaluate system, create demo, and prepare submission

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