Project Report Proposal – Big Data Course

1. Project Name

Ares: Real-Time Anti-Cheat Detection Analytics System

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2. Team Members

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3. Project Mission, Problem to Be Solved, Goals, and Main Beneficiaries

Project Mission

The mission of *Ares* is to design and implement an intelligent, real-time anti-cheat analytics system that detects unfair gameplay behavior in online multiplayer games. The system analyzes high-frequency gameplay data using Big Data technologies to identify cheating patterns such as aimbots, no-recoil macros, and abnormal movement dynamics.

Problem to Be Solved

Cheating in online games is a major threat to competitive integrity and user experience. Traditional anti-cheat systems rely on client-side scans or manual reports, which often fail to detect advanced cheats or behavioral anomalies. Current solutions also lack scalability, real-time detection capabilities, and data-driven decision-making.
Ares addresses these limitations by using streaming analytics and machine learning to monitor gameplay behavior at scale.

Project Goals

1. Collect and process real-time gameplay telemetry through Apache Kafka.

2. Analyze player behavior using Spark Structured Streaming.

3. Apply machine learning models to detect abnormal and non-human-like actions.

4. Generate cheat probability scores for each player.

5. Provide a backend API and a dashboard interface for live monitoring.

6. Support both real and synthetic gameplay data sources for testing and evaluation.

Main Beneficiaries

- **Game Developers & Game Studios** – enhanced cheat detection and better player retention.

- **eSports Organizations** – improved competitive fairness and match integrity.

- **Security Analysts** – advanced monitoring tools and behavioral insights.

- **Online Gaming Communities** – safer, fairer, and more enjoyable gameplay environments.

- **Academic Researchers** – a modern platform for studying data-driven anti-cheat systems.