Part 2: Evaluating FutureMart's data architecture: Strengths and areas for improvement

Assess FutureMart's enterprise data architecture by analyzing its key components. Identify strengths and areas for improvement to enhance efficiency, scalability, and security. *Refer to Part 2 in the lab instructions.*

1. Name of the enterprise: FutureMart

2. Strengths

Sr. No.	Strength	Description	Impact
1	API-first & streaming integration	Use of robust tools like **AWS API Gateway**, **Apache Kafka**, and **Google Pub/Sub** ensures high-throughput real-time data exchange across platforms.	Enables seamless and scalable integration between e-commerce, CRM, and inventory systems for real-time insights.
2	Cloud-native and modular design	Use of **Snowflake**, **Amazon Redshift**, **AWS Lambda**, and **serverless computing** ensures horizontal scaling.	High scalability supports dynamic workload fluctuations and business growth without infrastructure bottlenecks.
3	Multi-layered security tools	Incorporation of **encryption**, **OAuth**, **RBAC**, **Splunk**, and **GDPR compliance platforms (OneTrust)**.	Strong defense against breaches and ensures compliance with international data privacy laws.

3. Areas for improvement

Sr. No.	Area for improvement	Description	Impact
1	Integration consistency	Tools are varied and potentially siloed across domains; missing centralized orchestration layer (e.g., no mention of workflow management like **Airflow**).	Could lead to fragmented data lineage and delayed updates across systems.
2	Resource optimization and cost visibility	No clear mention of resource monitoring or auto-scaling analytics for cost control.	May lead to resource wastage and unpredictable costs as workloads scale.
3	Unified threat response framework	No consolidated view or automated incident response mechanism mentioned.	Slower threat detection and resolution times during security incidents.