**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

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| --- | --- | --- | --- |
| **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

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| **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. |