High Level Design Document

Introduction

This High Level Design (HLD) document outlines the architecture and core design for **MediaPulse - Entertainment Content Analytics**. The project aims to deliver a Tableau dashboard for analyzing streaming content performance, including viewership trends, genre popularity, and user ratings, with interactive filters for content type and time period.

1. System Architecture Overview

Architecture Description:
MediaPulse consists of three main layers: Data Source, Data Processing, and Visualization. Data is ingested from streaming content sources, processed and transformed, then visualized in Tableau dashboards.

Module/Component	Role/Responsibility
Data Source	Stores raw streaming content data (viewership, ratings)
Data Processing Layer	Cleans, aggregates, and transforms data for analytics
Tableau Dashboard	Visualizes analytics with interactive filters

2. Component Interactions

Sequence Step	Interaction Description
1	Data Source provides raw data to Data Processing Layer
2	Data Processing Layer transforms and loads data into Tableau-compatible format
3	Tableau Dashboard connects to processed data and renders analytics with user interactivity

3. Data Flow Overview

Data Flow Step	Source	Destination	Data Type/Content
Raw Data Ingestion	Data Source	Data Processing	Viewership logs, ratings, genre metadata
Data Transformation	Data Processing	Tableau Extract	Aggregated, cleaned analytics data
Visualization	Tableau Extract	Tableau Dashboard	Analytics for display and filtering

4. Technology Stack

Layer/Component	Technology/Framework

Data Source	CSV/Database (e.g., SQL)
Data Processing	Tableau Prep / ETL Scripts
Visualization	Tableau Desktop/Server

5. Scalability & Reliability

- **Scalability:**
  Designed for easy scaling by updating data sources and ETL processes; Tableau dashboards can handle increased data volumes with extract refreshes.
- **Reliability:**
  Data validation in processing layer ensures dashboard accuracy. Tableau Server provides user access control and scheduled data refreshes.
- **Security:**
  Access to dashboards and data is managed via Tableau's built-in authentication and permissions.

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