High-Level Plan with Solution Architecture and Milestones

Objective: To design and implement a scalable ETL solution that integrates event data from the Ticketmaster API with weather data from the OpenWeatherMap API. The solution will provide valuable insights and visualizations, allowing users to understand historical weather patterns during past events and predict weather conditions for upcoming events.

Date	Task	Description	Deliverables
8/7 - 8/8	Project Planning and Setup	Define project requirements and goals, set up development environment	Project plan, environment setup
		Project Structure	Clear project structure, code documentation, detailed markdown documentation
		Version Control	Git commits and push, Git branching, Pull request and review
8/8 - 8/9	Data Integration (Batch)	Extract data from Ticketmaster and OpenWeatherMap APIs using Airbyte, load into Snowflake	Data extracted and loaded into Snowflake
8/16	Data Modeling	Design dimensional model schema, implement schema in Snowflake, validate and test the data model	Dimensional model in Snowflake
8/10- 8/11	Data Transformation	Set up dbt project, create transformation models, run transformations to join event and weather data	Transformed data in Snowflake
		Change Data Capture (CDC)	Implement CDC for incremental data updates
		SCD Type 2	Implement Type 2 Slowly Changing Dimensions
		Advanced Fact Tables	Implement snapshot or accumulating fact tables
8/17	Data Quality Testing	Implement data quality tests using dbt, integrate tests into CI/CD pipeline	Data quality tests in place
8/12- 8/14	Real-Time Data Processing	Configure Kafka, implement Kafka producers, set up Clickhouse to consume and store real-time data	Real-time data streaming into Clickhouse
8/15	Data Orchestration	Install and configure Dagster, define and schedule pipelines	Scheduled and orchestrated data pipelines
8/17	Data Visualization	Set up Preset, create dashboards to display event and weather data, configure real-time updates	Interactive dashboards
8/18	Version Control and CI/CD, Final Deployment	Ensure code version control with Git, finalize CI/CD pipelines, deploy components on AWS or SaaS platforms	Complete deployment and CI/CD setup
8/19	Project Presentation	Prepare and rehearse project demo showcasing the ETL solution	Final project presentation and demo

Proposed Solution Architecture