* **General Description (three to five sentences)**
  + The project on multimedia data management focusing on Formula 1 (F1) tracks aims to develop a comprehensive system for organizing, analyzing, and accessing diverse types of multimedia data related to F1 circuits worldwide. This system will integrate various data forms, including images, videos, text, to provide an enriched, multi-dimensional perspective on each F1 track. Through advanced feature extraction techniques, the project seeks to deliver insights into track characteristics, historical race data, enhancing the experience for fans, teams, and analysts.
* **Input data (type of data) with examples**
  + **Images and Videos**: High-resolution aerial photographs and onboard camera footage for each track, showcasing the layout, turns, and key features such as elevation changes and pit lanes.
  + **Textual Data**: Track history, records, and event descriptions, facilitating content searchability and thematic analysis.
  + **Geospatial Data**: GPS coordinates for tracks, enabling detailed mapping and analysis of track layouts and comparison between circuits.
* **Feature Extraction**
  + **Image Processing**: Use computer vision techniques to identify track boundaries, segment different track areas (e.g., asphalt, gravel traps), and classify features such as turns, straights, and elevation changes.
  + **Text Analysis**: Implement natural language processing (NLP) to extract key information from textual data.
  + **Geospatial Analysis**: Utilize GPS data to create detailed maps of F1 circuits, allowing for spatial analysis of tracks, comparison of circuit features, and integration with external geographic information system (GIS) data for broader contextual insights.

**Metadata:**

Textual Data: Descriptive metadata for each circuit, including location, length, number of turns, fastest lap records, and historical event information.

**Semi-structured data (taxonomies):**

* **Sport**
* **Events**
* **Circuits**
* **Technologies**
* **Regulations**
* **Use cases (2 or 3)**
  + **Enhanced Race Viewing Experience**: Develop an application that synchronizes video footage with real-time data overlays, such as current driver positions, lap times, and key statistics like fastest lap and tire choices. This can be achieved by integrating live timing data feeds with broadcast video, offering viewers a more informative and engaging experience.
  + **Interactive Track Information Portal**: Create a web-based portal where users can select an F1 track and access a wealth of information, including basic track facts (length, number of turns, lap records), current weather conditions, and upcoming events. This portal could leverage existing data sources for weather and event schedules, and present information in an easy-to-navigate format, using interactive maps and infographics.
  + **Safety Enhancements**: Analysis of track features and historical incident data can identify potential safety improvements. By examining areas with high incidents rates or analyzing conditions leading to accidents, organizers can implement changes to enhance driver and spectator safety.