

Solution Overview: The solution consists of several components:

1. **Flask Application:** A Flask web application serves as the middleware to handle incoming requests, fetch data from the third-party API, and transform it as necessary.
2. **Third-party API Integration:** The application integrates with a third-party API to retrieve events data and team rankings for a specified sports league (in this case, the NFL).
3. **Data Transformation:** The retrieved data is transformed to adhere to a standardized schema defined in an OpenAPI specification.
4. **Error Handling:** Error handling mechanisms are implemented to handle exceptions and return appropriate error responses to clients.

Rationale:

1. Flask Application:

- Flask is chosen as the framework for building the API due to its simplicity and ease of use for creating RESTful web services.
- It provides features like request handling, routing, and JSON serialization, making it suitable for this task.

2. Third-party API Integration:

- The application interacts with the third-party API using HTTP requests, specifically GET requests to fetch events data and team rankings.
- The API endpoints provided by the third-party service are utilized to retrieve the necessary data.

3. Data Transformation:

- The retrieved data from the third-party API may not conform to the desired schema or format. Therefore, it needs to be transformed to match the expected output schema defined in the OpenAPI specification.
- Data transformation involves selecting relevant fields, filtering events based on the specified date range, and formatting the response according to the schema.

4. Error Handling:

- Error handling is crucial to provide informative responses to clients in case of failures or unexpected scenarios.
- In the implemented solution, exceptions are caught and appropriate error messages are returned along with the corresponding HTTP status codes.
- For example, if the start date provided in the request is greater than the end date, a controlled error response is returned with a status code of 400 (Bad Request).

Conclusion: The implemented solution effectively integrates with the third-party API to fetch events data for a specified sports league, filtering the results based on date range. By adhering to the OpenAPI specification and best practices in API design, the solution provides a standardized and reliable interface for clients to consume the data.

