**GraphQL API Report**

**Project Overview**

The GraphQL API implementation of the Movie Rating project provides flexible data querying and manipulation capabilities. Built with GraphQL.NET and ASP.NET Core, the system supports dynamic queries and efficient data retrieval.

**Models**

* The implementation includes User, Movie, and Rating models.
* Relationships between models enable nested querying, such as retrieving all ratings for a specific movie or user.

**Queries**

* Queries are available for all models, including advanced ones like:
  + Retrieving movies with their average ratings.
  + Searching for movies by title or genre.
* Example query: Retrieve all movies rated by a specific user with the rating score and timestamp.

**Mutations**

* Mutations are provided for:
  + Creating, updating, and deleting movies.
  + Adding and updating ratings.
* These cover all Create, Update, and Delete (CUD) operations for all models.

**ORM**

* Entity Framework powers database interactions.
* Advanced functionalities include filtration and aggregation, like calculating top-rated movies by genre.

**Complexity**

* The system supports dynamic, nested queries for complex data retrieval.
* Secure authentication ensures only authorized users can perform mutations.
* Designed for scalability and ready for deployment in production.

**Authorization**

* JWT authentication protects the GraphQL API.
* Role-based access controls ensure data security.