

System Design for Spheremovie

Group 3

EECS 3311

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Table of Contents

CRC for all the classes.....	3 - 6
Software Architecture Diagram.....	7

Class Name: Movie

Parent Class (if any): N/A

Subclasses (if any): N/A

Responsibilities:

- Model a document representing a movie stored in the MongoDB collection of movies
- Attributes will include the movie's unique ID, its IMDb ID, its title, the release date, a link to a trailer, a poster, backdrops, and genres
- Keep a reference to associated reviews

Collaborators:

- Review class: it has a list of review objects that are needed to link or keep track of movie reviews.

Class Name: Movie Controller

Parent Class (if any): N/A

Subclasses (if any): N/A

Responsibilities:

- It manages and responds HTTP requests associated with the movie data
- Makes an endpoint to retrieve all the movies and a single movie by the imdb ids

Collaborators:

- Optional: Holds the movie data for when a response is not available
- Spring Framework: for annotations such as `@CrossOrigin`
- MovieService class: handles the logic necessary to access movie data
- Movie class: holds the movie details provided in the responses

Class Name: Movie Repository

Parent Class (if any): Mongo Repository

Subclasses (if any): N/A

Responsibilities:

- It is an interface that interacts with the MongoDB for the operation to create, read, update, and delete(CRUD) on the Movie class documents

- Implements method to retrieve a movie using the imdb id

Collaborators:

- Optional
- Mongo Repository
- Movie class

Class Name: Movie Service

Parent Class (if any): N/A

Subclasses (if any): N/A

Responsibilities:

- Provides service layer which interacts with the repository for managing the movie data
- Retrieves all the movies from the repository and any specific movie by the imdb id

Collaborators:

- Movie class
- Optional
- MovieRepository class

Class Name: Review

Parent Class (if any): N/A

Subclasses (if any): N/A

Responsibilities:

- This is a document for review which is stored in the collection of mongodb reviews
- Includes a constructor to initialize a review with the time details and content

Collaborators:

- LocalDateTime
- ObjectId
- Movie class

Class Name: Review Controller

Parent Class (if any): N/A

Subclasses (if any): N/A

Responsibilities:

- It manages and responds HTTP requests associated with the movie reviews
- Makes an API endpoint to create new reviews where it receives the review data and associates with a movie using the imdb id

Collaborators:

- Spring Framework
- Map
- ReviewService class
- Review class

Class Name: Review Repository

Parent Class (if any): MongoRepository

Subclasses (if any): N/A

Responsibilities:

- Provides access of database stored in mongodb to the Review documents
- Reviews are handled by the operation to create, read, update, and delete(CRUD)

Collaborators:

- MongoRespository
- ObjectId
- Review class

Class Name: Review Service

Parent Class (if any): N/A

Subclasses (if any): N/A

Responsibilities:

- New reviews are created and saved in the database
- For database operations, the mongodb tools are used
- Adding new reviews using the imdb id to the list of movie reviews

Collaborators:

- MongoTemplate

- Review class
- Update
- LocalDateTime
- ReviewRepository
- Criteria
- Movie

Class Name: Spheremovie Application

Parent Class (if any): N/A

Subclasses (if any): N/A

Responsibilities:

- Starts the sphere movie application
- The spring boot application is started
- Manages HTTP requests with the RestController default

Collaborators:

- Spring Framework
- SpringApplication
- RestController

Software Architecture Diagram

