**1. Project Goals and Objectives**

**Project Goals**

These are the high-level strategic outcomes we aim to achieve with the solution:

1. **Deliver a fully AWS-native Movie API** that enables search and discovery features for movie metadata and ratings.
2. **Ensure the API is extensible, modular, and well-documented**, to allow future feature additions with minimal disruption.
3. **Leverage modern cloud-native patterns and AWS services**, avoiding any on-prem or manually managed infrastructure.
4. **Empower developers** with isolated development environments (AWS Workspaces) and shared CI/CD pipelines.
5. **Implement strong observability, security, and governance** in alignment with enterprise standards and cloud best practices.
6. **Provide a resilient, scalable, and production-grade solution** that is testable, secure, and maintainable.

**Project Objectives**

These are the specific, measurable outcomes needed to fulfill the above goals:

1. **Build and expose** a RESTful API that supports:
   * Listing all movies (with pagination)
   * Retrieving movie details by ID
   * Filtering by genre or release year
2. **Support Spring Boot 3.x-based Java implementation** with AWS-native integrations (Cognito, RDS, ECS, CloudWatch).
3. **Host API logic on ECS Fargate** using Docker containers, automatically deployed from GitHub via GitHub Actions.
4. **Use PostgreSQL (RDS) or SQLite (for dev)** for structured data access, accessible securely via IAM or parameterized secrets.
5. **Secure all endpoints using Amazon Cognito and JWT authentication**.
6. **Ensure CI/CD automation** for builds, tests, and deployments using GitHub workflows and CDK scripts.
7. **Establish monitoring/alerts** using CloudWatch, SNS notifications, and API Gateway throttling to enforce rate limits.
8. **Roll out a phased deployment plan** (Dev → Staging → Production), with rollback capabilities and canary release support.
9. **Support isolated developer workspaces** (Amazon Workspaces Win 11) preloaded with SDKs, IDEs, Docker, and AWS CLI.