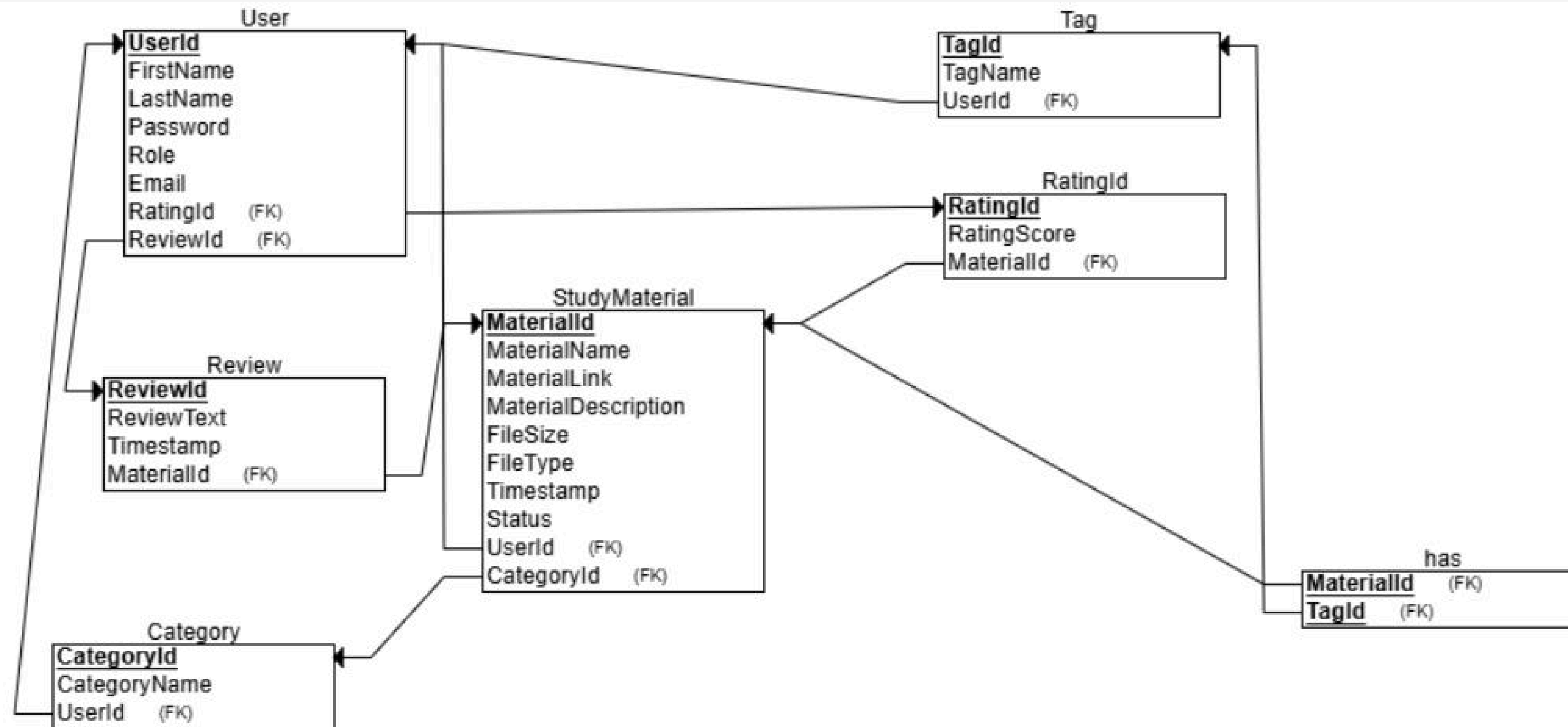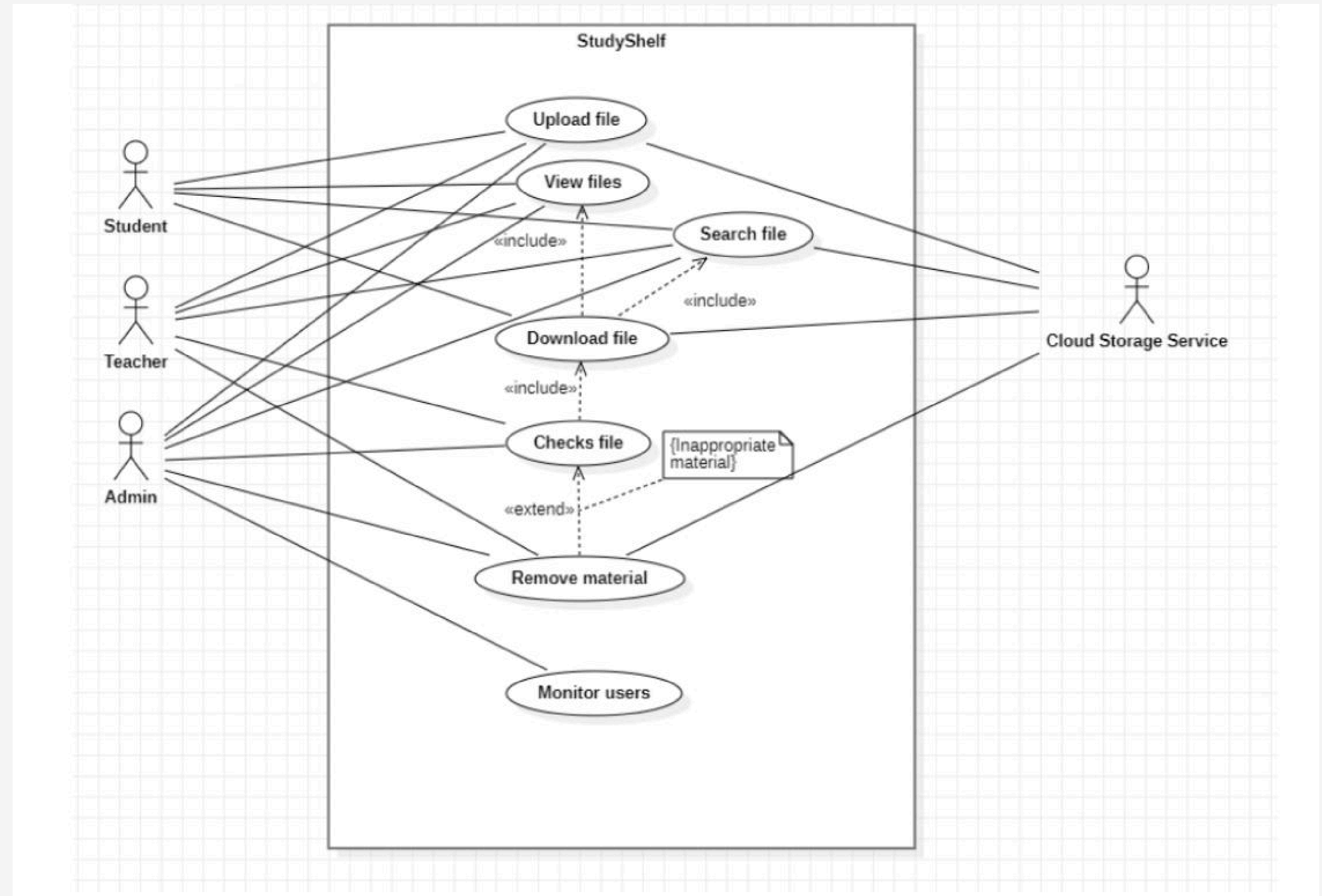# Architectural Design

Relational Database Schema
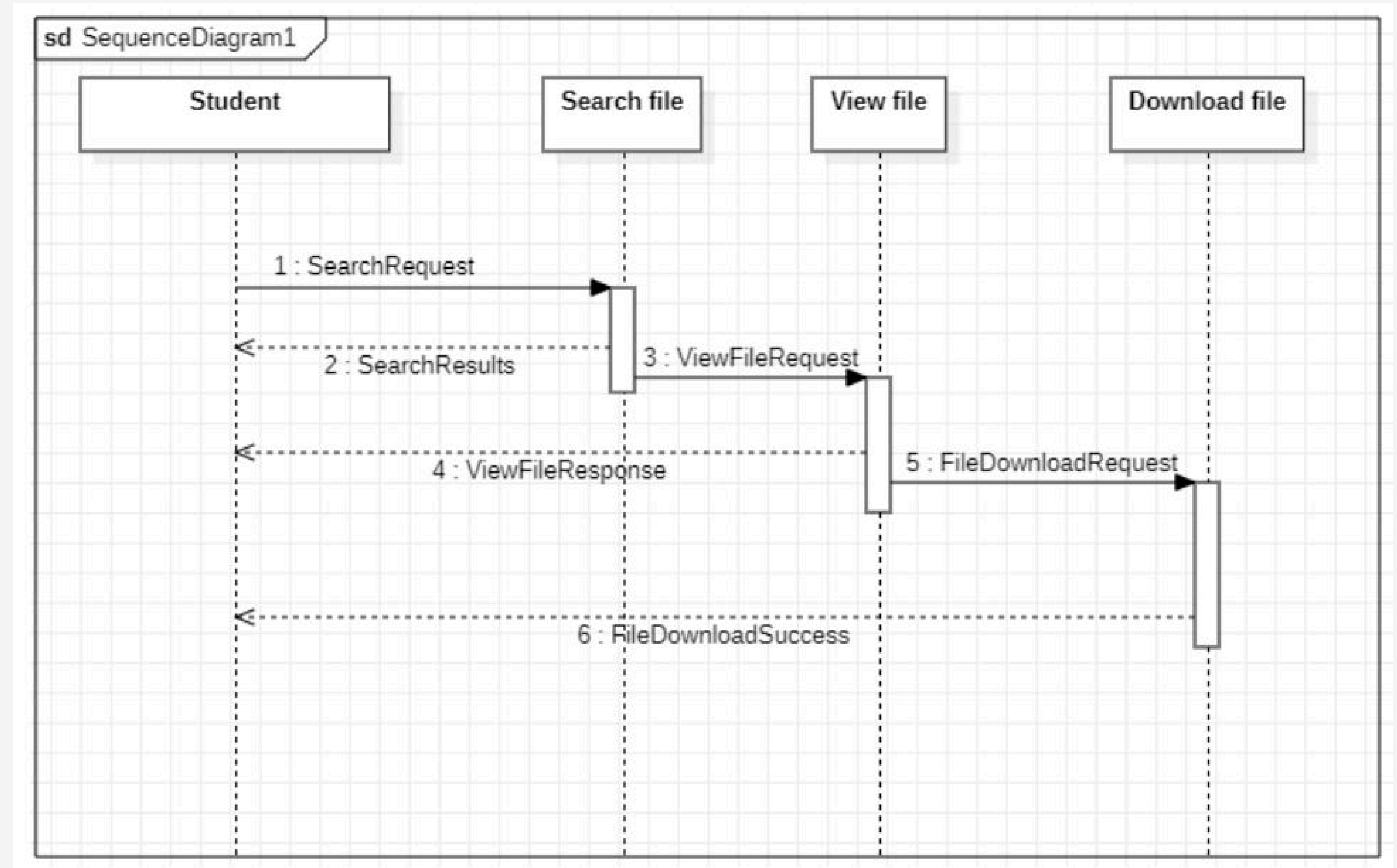
Architectural Design

Use Case Diagram
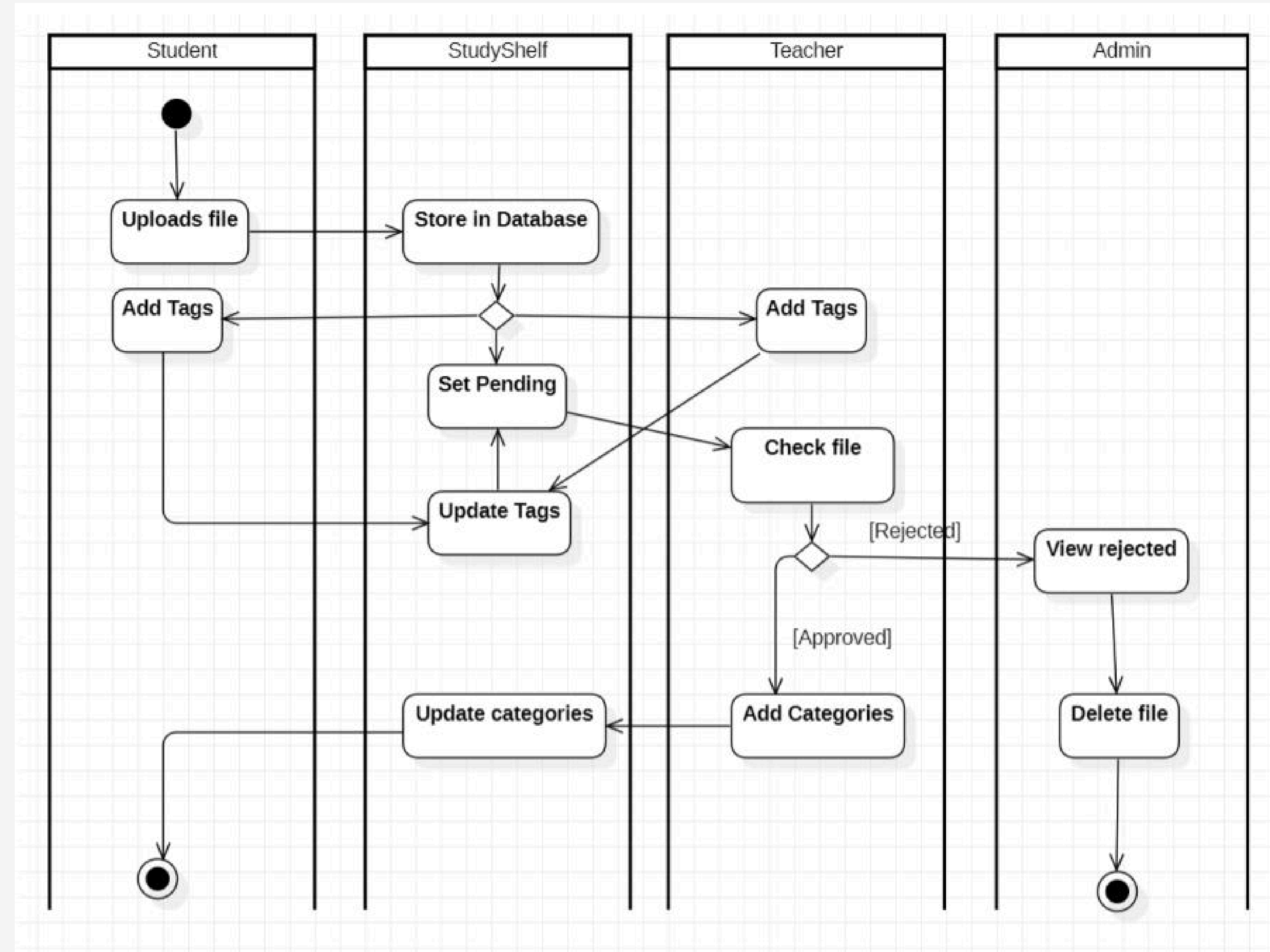
Architectural Design

Sequence Diagram

Architectural Design

Activity Diagram

Architectural Design

Class Diagram

StudyMaterialService
- -repository
- +uploadMaterial(content[*], filename, uploader, name, description, category)

GoogleDriveService
- -driveService
- -CREDENTIALS_PATH
- -JSON_FACTORY
- -SCOPES[*]
- +uploadFile(content[*], filename, contentType)

Review
- -reviewId: int
- -reviewText: String
- -timestamp: LocalDateTime
- -user: User

StudyMaterialRepository
- +findById(id: int): StudyMaterial
- +findByNameOrDescription(query: String): StudyMaterial[*]
- +findAllStudyMaterials(): StudyMaterial[*]

PreviewGeneratorService
- +generatePreview(content[*], fileType): [*]
- -generatePDFPreview(content[*]): [*]
- -generateImagePreview(content[*]): [*]
- -generateWordPreview(content[*]): [*]
- -generateDefaultPreview(): [*]

ReviewRepository
- +findById(id: int): Review

StudyMaterial
- -materialId: int
- -uploader: User
- -name: String
- -description: String
- -link: String
- -fileSize: Float
- -fileType: String
- -timestamp: LocalDateTime
- -previewImage: byte[*]

User
- -userId: int {unique}
- -FirstName
- -LastName
- -Email
- -Password
- -role: Role

SearchService
- -materialRepository: StudyMaterialRepository
- -categoryRepository: CategoryRepository
- +searchMaterials(query: String): StudyMaterial[*]
- +searchCategories(query: String): Category[*]

Role
- -id: Integer
- -users: User[*]

Rating
- -ratingId: Integer
- -user: User
- -ratingScore: int

Category
- -categoryId: int
- -name: String
- -creator: User

CategoryRepository
- +findById(id: int): Category
- +findMaterialsByCategory(category: Category): StudyMaterial[*]
- +findAll(): Category[*]
- +findByName(name: String): Category[*]
- +findMaterialsByUserInCategory(user: User, category: Category): StudyMaterial[*]
- +findMaterialsExceptUserInCategory(user: User, category: Category): StudyMaterial[*]

Tag
- -tagId: int
- -tagName: String
- -creator: User

CategoryService
- -repository: CategoryRepository
- +getMaterialsByCategory(Category)

Permission
- -id: Integer

RatingRepository
- +findById(id: int): Rating
- +findByMaterial(material: StudyMaterial): Rating[*]

RoleRepository
- +findById(id: int): Role
- +save(role: Role): Role
- +findByName(roleType: RoleType): Role

UserRepository
- +findById(id: int): User
- +save(user: User): User
- +findByEmail(email: String): User

PermissionRepository
- +save(permission: Permission): Permission
- +findById(id: Long): Permission
- +findAll(): Permission[*]
- +delete(id: Long): void
- +findByName(name: String): Permission
- +findByType(type: PermissionType): Permission

RatingService
- +RatingRepository
- +getAverageRating(StudyMaterial)
- +rateMaterial(int, StudyMaterial, User): Rating

UserService
- -userRepository
- -roleRepository
- +registerUser(firstName, lastName, email, password, roleType)
- +authenticateUser(email, password)
- +updateUser(firstName, lastName, email, password, roleType)

TagRepository
- +findById(id: int): Tag

Permission Service
- +hasPermission(User, PermissionType)
- +hasPermissionOnResource(User, String, int)

BaseRepository
- +save(entity: T): T