Database diagram:  
  
erDiagram

    USER ||--o{ VIDEO : owns

    CATEGORY ||--o{ VIDEO : categorized

    CATEGORY ||--o{ CATEGORY : parent\_of

    VIDEO ||--o{ VIDEOTAG : tagged

    TAG ||--o{ VIDEOTAG : tag\_applied

    VIDEO ||--o{ METADATAAUDITLOG : change\_tracked

    USER {

        int Id PK

        string Username

        string Email

        string PasswordHash

    }

    CATEGORY {

        int Id PK

        string Name

        int ParentId FK

    }

    VIDEO {

        int Id PK

        string Title

        string Description

        string UploadUrl

        datetime UploadedAt

        int CategoryId FK

        int UserId FK

        bool IsUploaded

        float Filesize

        int UploadedBlockCount

        string FileHash

    }

    TAG {

        int Id PK

        string Name

    }

    VIDEOTAG {

        int VideoId PK, FK

        int TagId PK, FK

    }

    METADATAAUDITLOG {

        int Id PK

        int VideoId FK

        string OldMetadataJson

        string NewMetadataJson

        datetime ChangedAt

    }

    APPLICATIONLOG {

        int Id PK

        string EventType

        int UserId

        string Entity

        int EntityId

        string Data

        datetime CreatedAt

    }

A screenshot of a computer

AI-generated content may be incorrect.

Architecture Diagram

**graph** TD

%% FRONTEND

**subgraph** Frontend

    LoginPage

    RegisterPage

    UploadUI[Upload UI]

    UpdateUpload[Update Upload]

    ExploreUI[Explore/Search UI]

    CategoryUI[Category Tree / Selection UI / Create Category]

    TaggSuggestionButton[Tag Suggestion Button]

**end**

%% MIDDLEWARE (BIG BOX between frontend and API/services)

**subgraph** MiddlewareBox["Middleware Layer"]

    Middleware[Middleware Intercepts Requests]

**end**

%% API LAYER

**subgraph** APILayer

    VideoController[VideoController]

    CategoryController[CategoryController]

    TagController[TagController]

    AuthController[AuthController]

    SearchController[SearchController]

**end**

%% SERVICES

**subgraph** Services

    AuditLoggerConsumer

    AuditLogProducer

    UserService[UserService]

    VideoService[VideoService]

    CategoryService[CategoryService]

    TagService[TagService]

    SearchService[SearchService]

**end**

%% EXTERNAL SERVICES

**subgraph** ExternalServices

    RabbitMQ[RabbitMQ]

    AzureBlob[Azure Blob Storage]

    Elasticsearch[Elasticsearch]

    AzureOpenAI[Azure Open AI]

**end**

%% REPOSITORIES

**subgraph** Repositories

    CategoryRepository[CategoryRepository]

    TagRepository[TagRepository]

    UserRepository[UserRepository]

    VideoRepository[VideoRepository]

    MetadataAuditLogRepository[MetadataAuditLogRepository]

**end**

%% DATABASE

**subgraph** Database

    SQLDB[(SQL Server)]

**end**

%% FRONTEND TO MIDDLEWARE

LoginPage **-->** Middleware

RegisterPage **-->** Middleware

UploadUI **-->** Middleware

UpdateUpload **-->** Middleware

ExploreUI **-->** Middleware

CategoryUI **-->** Middleware

TaggSuggestionButton **-->** Middleware

%% MIDDLEWARE TO API LAYER

Middleware **-->** AuthController

Middleware **-->** VideoController

Middleware **-->** CategoryController

Middleware **-->** TagController

Middleware **-->** SearchController

%% CONTROLLER TO SERVICE

AuthController **-->** UserService

VideoController **-->** VideoService

CategoryController **-->** CategoryService

TagController **-->** TagService

SearchController **-->** SearchService

%% SERVICE LOGIC

UserService **-->** UserRepository

UserRepository **-->** SQLDB

CategoryService **-->** CategoryRepository

CategoryRepository **-->** SQLDB

TagService **-->** AzureOpenAI

VideoService **-->** VideoRepository

VideoService **-->** TagRepository

VideoService **-->** CategoryRepository

VideoService **-->** MetadataAuditLogRepository

TagRepository **-->** SQLDB

VideoRepository **-->** SQLDB

SearchService **-->** Elasticsearch

UploadUI **-->** AzureBlob

MetadataAuditLogRepository **-->** SQLDB

Middleware **-->** AuditLogProducer

SQLDB **-->** AuditLogProducer

SearchService **-->** AuditLogProducer

TagService **-->** AuditLogProducer

AuditLogProducer**-->** RabbitMQ

RabbitMQ **-->** AuditLoggerConsumer

AuditLoggerConsumer **-->** SQLDB

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Sequence Diagram

Txt files