**🧠 Project Summary – Dynamic Movie Recommendation System for CineNiche**

**Client**: CineNiche — a niche-focused movie streaming startup offering curated international, indie, and hard-to-find content across platforms (Windows, Mac, iOS, Android, Roku, AppleTV, GoogleTV, etc.)

**Objective**: Build a full-stack web prototype that delivers **personalized movie recommendations using machine learning**, supports admin catalog management, and ensures secure, scalable deployment.

**🛠️ Tech Stack & Infrastructure**

* **Frontend**: React.js
* **Backend**: ASP.NET Core API 8.0
* **Database**: Any cloud-hosted DBMS (e.g., Azure SQL, PostgreSQL)
* **Deployment**: Microsoft Azure or AWS
* **Authentication**: ASP.NET Identity with Role-Based Access Control (RBAC)
* **Security**:
  + HTTPS w/ TLS (force redirect from HTTP)
  + GDPR-compliant privacy policy + cookie consent
  + CSP headers
  + Secure credential handling (via environment variables or secrets manager)
  + MFA, HSTS, data sanitization/encoding, optional 3rd-party auth
* **ML Integration**: Python or Azure ML Studio (with .ipynb deliverables)
* **Poster Storage**: Title-named JPGs in cloud storage for movie visuals

**🔒 User Roles & Permissions**

| **Role** | **Access Level** |
| --- | --- |
| **Unauthenticated** | View homepage, create account, login |
| **Authenticated User** | Browse/search/rate movies, view personalized recommendations |
| **Admin** | Add/edit/delete movies in a paginated management interface |

**📊 Dataset Overview**

**Three core tables (CSV + SQLite)**:

1. **movies\_users** – Demographics + streaming service subscriptions
2. **movies\_titles** – Show metadata (genre, cast, description, etc.)
3. **movies\_ratings** – User ratings (1-5 scale)

**Extensible**: Fields can be modified/expanded to support model performance.

**🤖 ML Requirements**

* **On Show Detail Page**: Hybrid **collaborative + content-based filtering** for related titles
* **On Home Page**: Multi-list recommendations (e.g., genre-based, user-history-based)
* **Evaluation Standard**: CRISP-DM (Data Understanding, Preparation, Modeling, Deployment)
* **Automation**: Optional pipeline automation encouraged but not required

**🎨 UX/UI Requirements**

* Responsive desktop-first design using Figma (with persona-driven wireframes & TV prototype)
* Movie cards w/ image, filterable by genre, searchable, infinite scroll
* Admin dashboard for catalog management
* GDPR compliance + favicon, branding, and consistent UI

**📅 Agile Methodology**

* **Scrum-based sprint cycles** over 4 days (daily submissions)
* Product/Sprint goals, Trello backlog, team roles, Figma board, personas
* Final deliverables: GitHub repo, deployed site, .ipynb files, secure login credentials, and demo videos