MICHIGAN STATE UNIVERSITY

Project Plan

AVAST: Amazon Video and Shopping Technology

The Capstone Experience

Team Amazon

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From Students…
…to Professionals

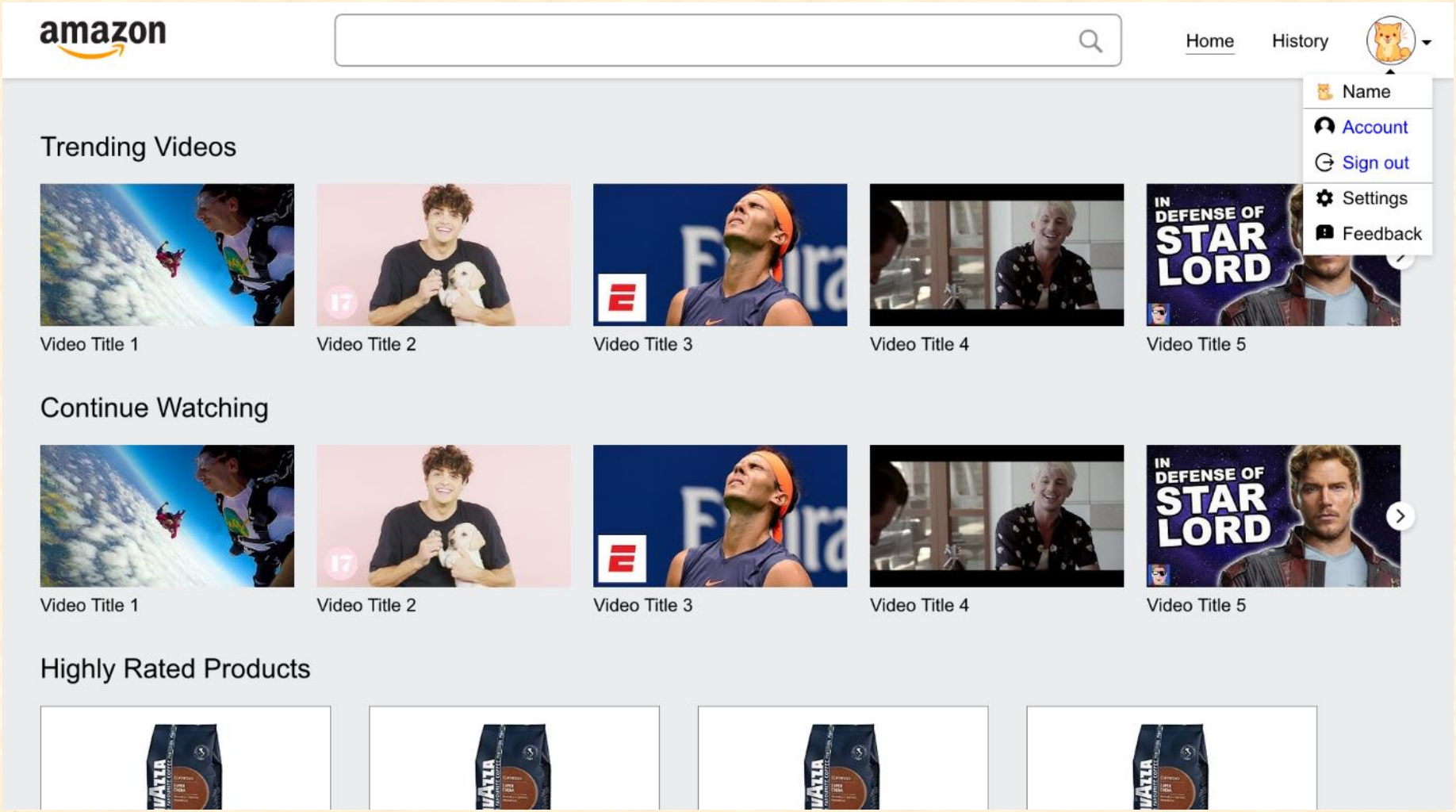
Functional Specifications

- Leverage user's interest in the items shown in their favorite movies and music videos
- Let users log in with Amazon account and link their account from other video source websites (YouTube, Twitch, etc.)
- Search and play videos from external sources and view streaming history
- Recommend users a list of appropriate products from Amazon in real-time while streaming the videos

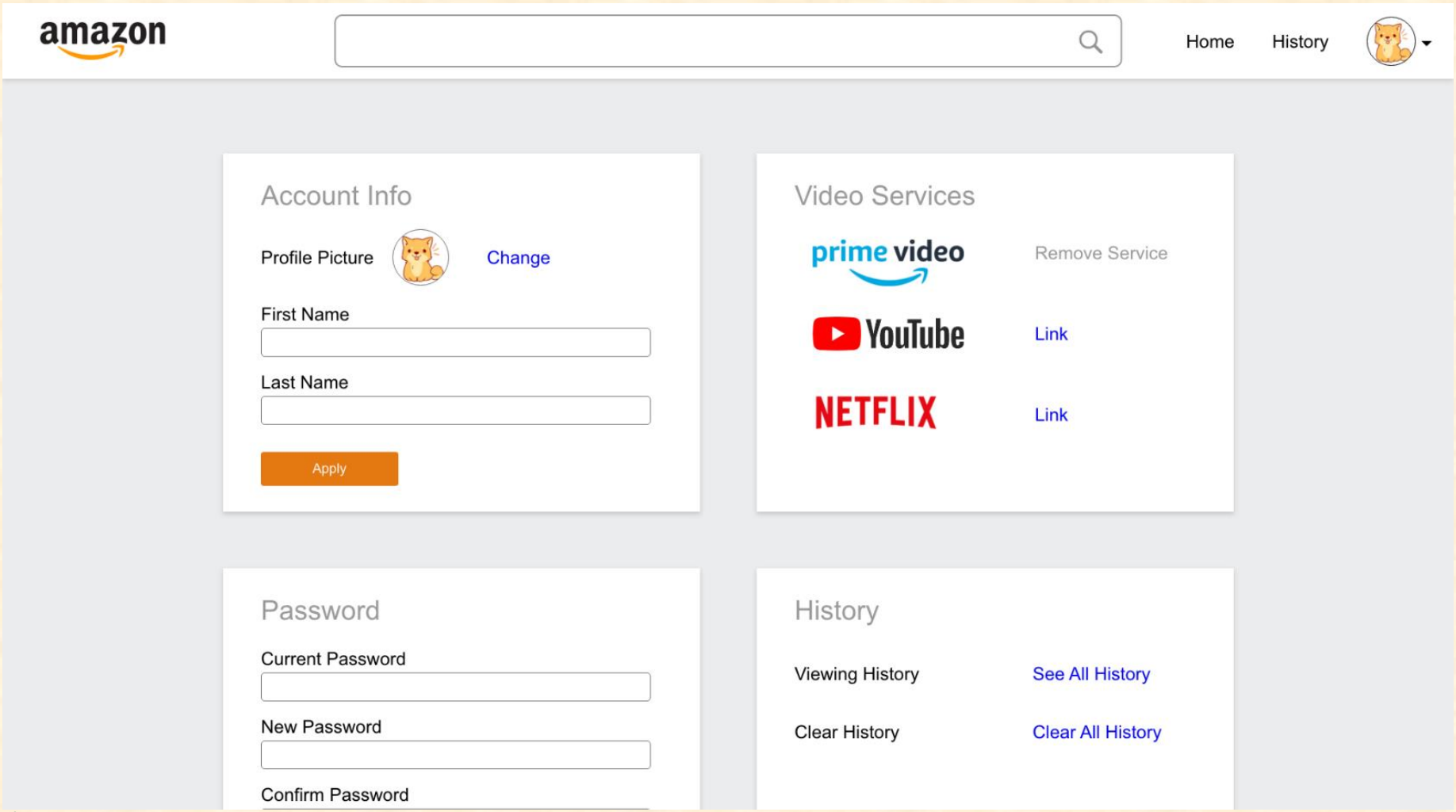
Design Specifications

- Web Application
  - Browser and screen size independent
- Uninterrupted video streaming
- Integration with multiple streaming services
  - Single search bar to search across many difference services
- Minimal learning curve
  - Katal web components to match Amazon's UX
  - Similar UX to other streaming services

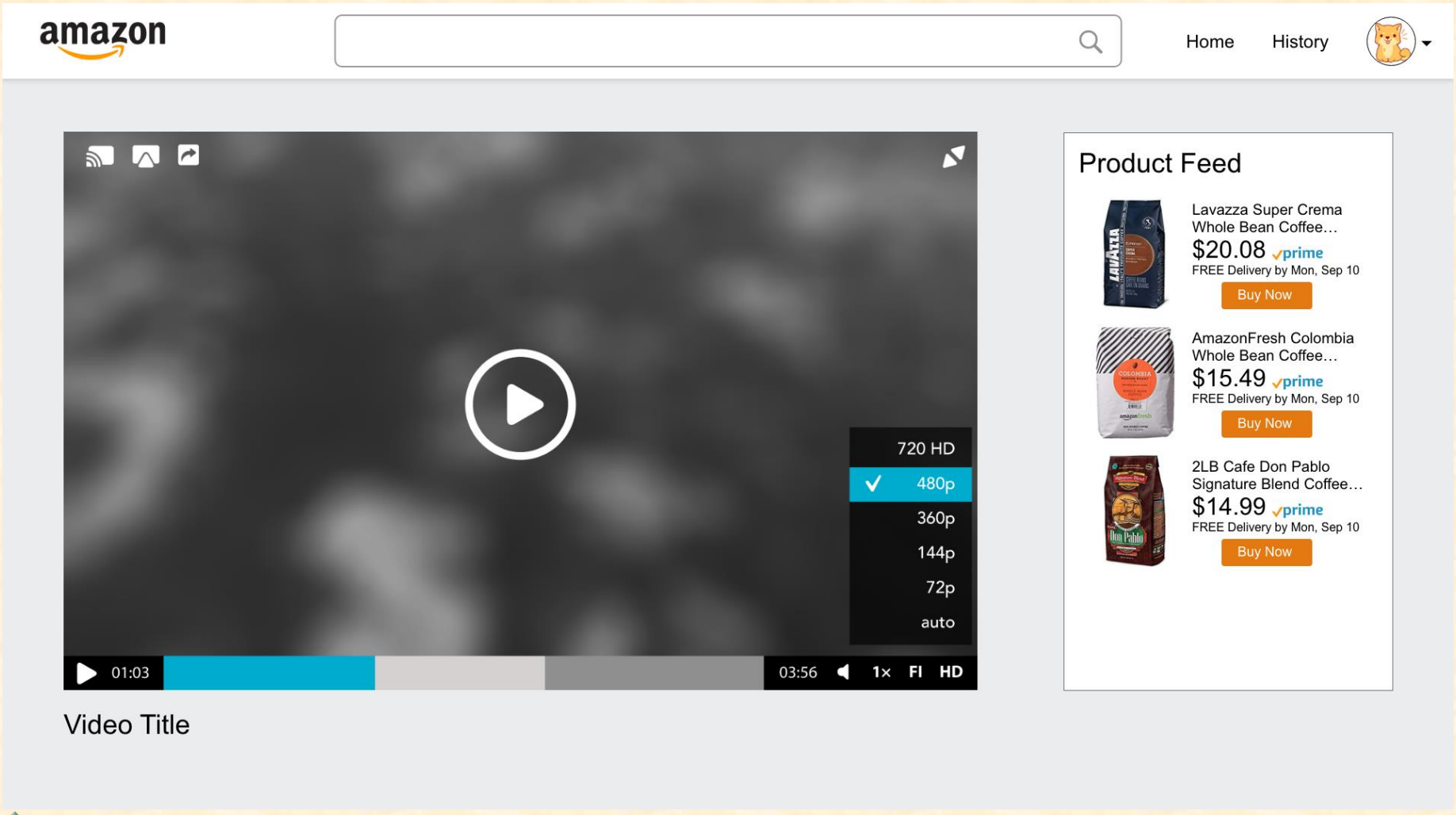
Screen Mockup: User Home Page



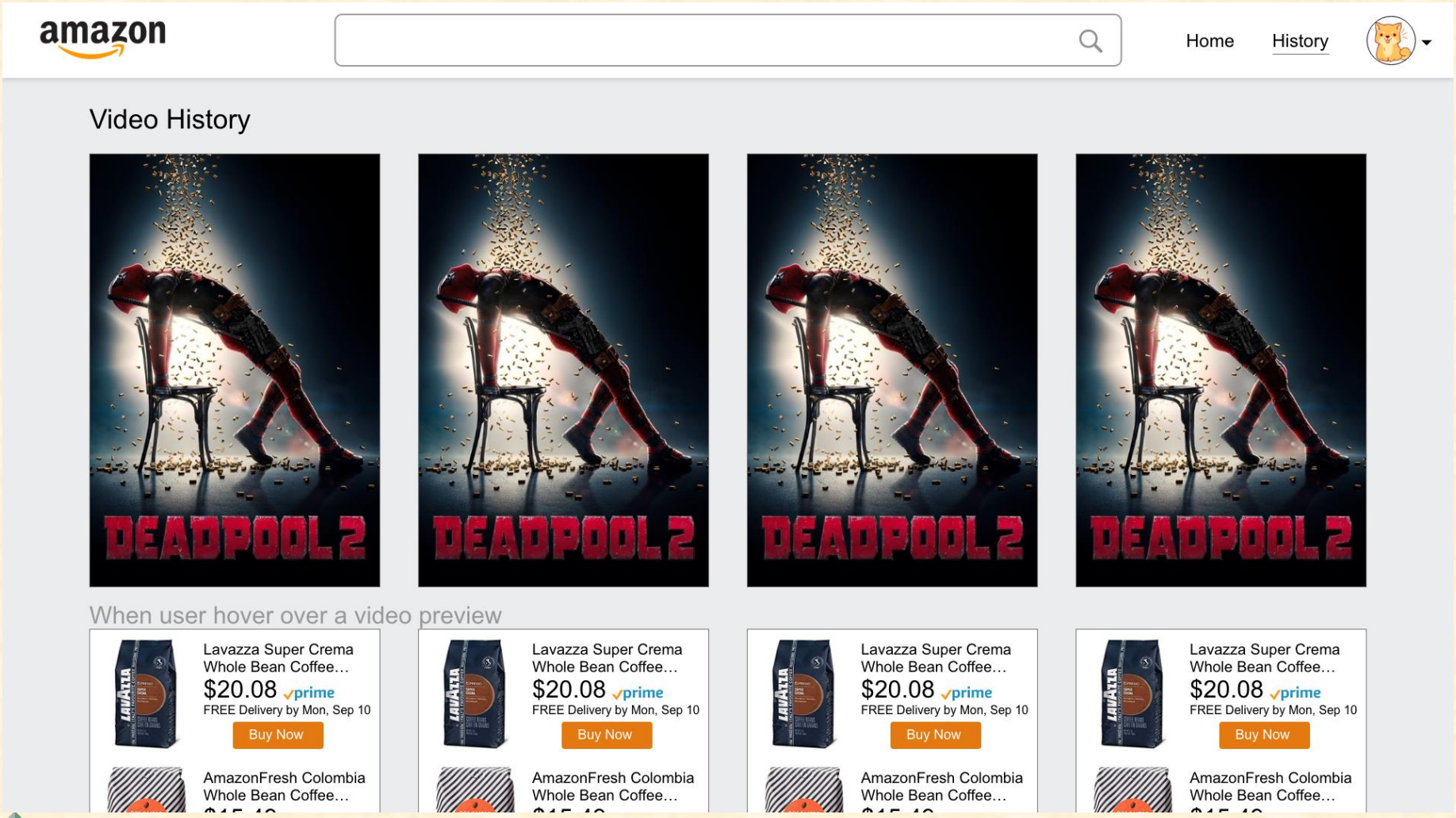
Screen Mockup: Account Page



Screen Mockup: Video Page



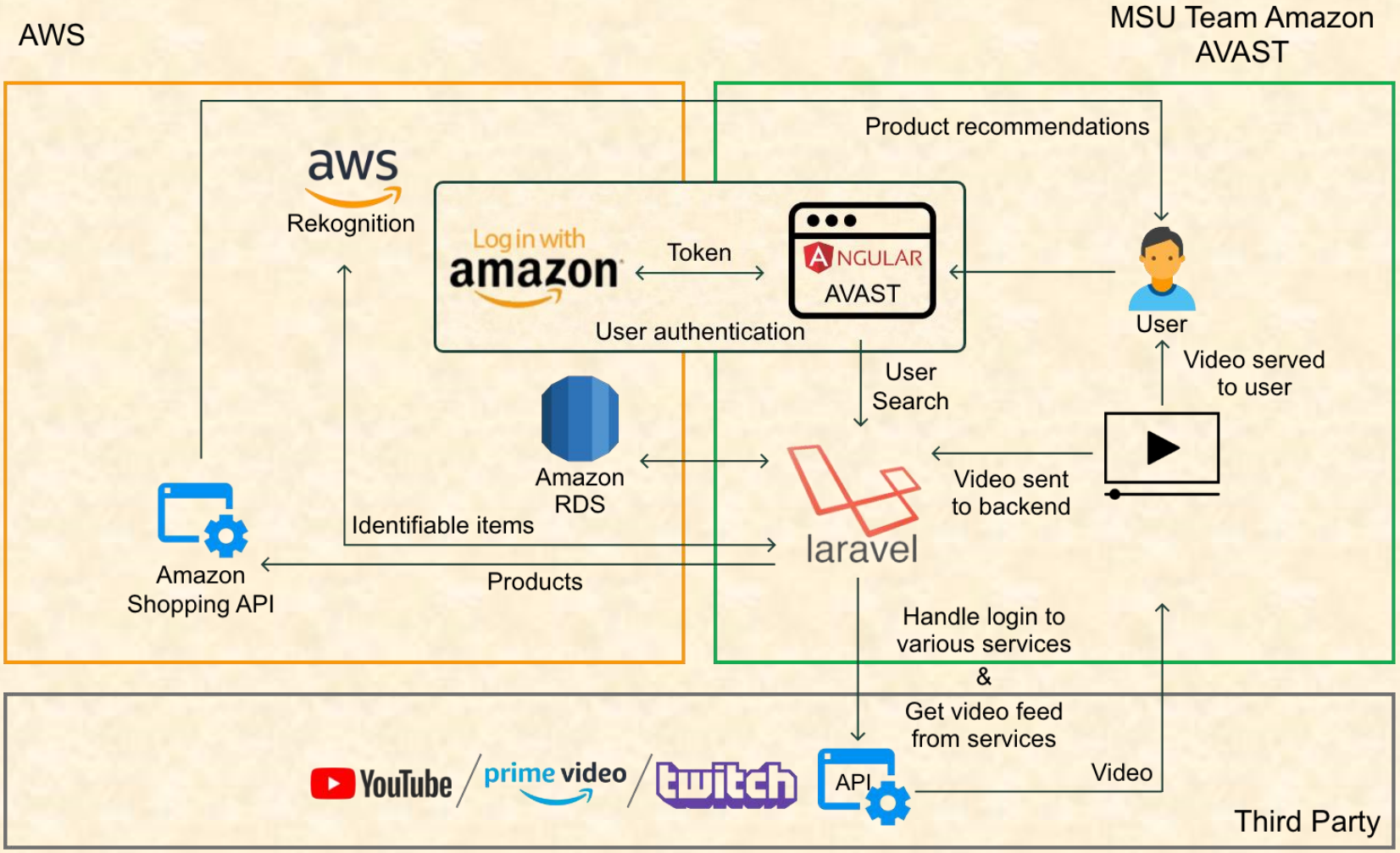
Screen Mockup: History Page



Technical Specifications

- JavaScript (Angular 6) frontend
  - Login with Amazon
  - Product Recommendation Container & Display Service
- PHP (Laravel 5.7) backend
  - User Accounts
  - Search API
  - SourceVideo API
- Third-party video API (YouTube, Twitch, etc.)
- Amazon Web Services
  - API: Kinesis Video Stream, Rekognition, Shopping
  - Hosting: CodeCommit, S3, CodePipeline, Jenkins, EC2, CloudWatch

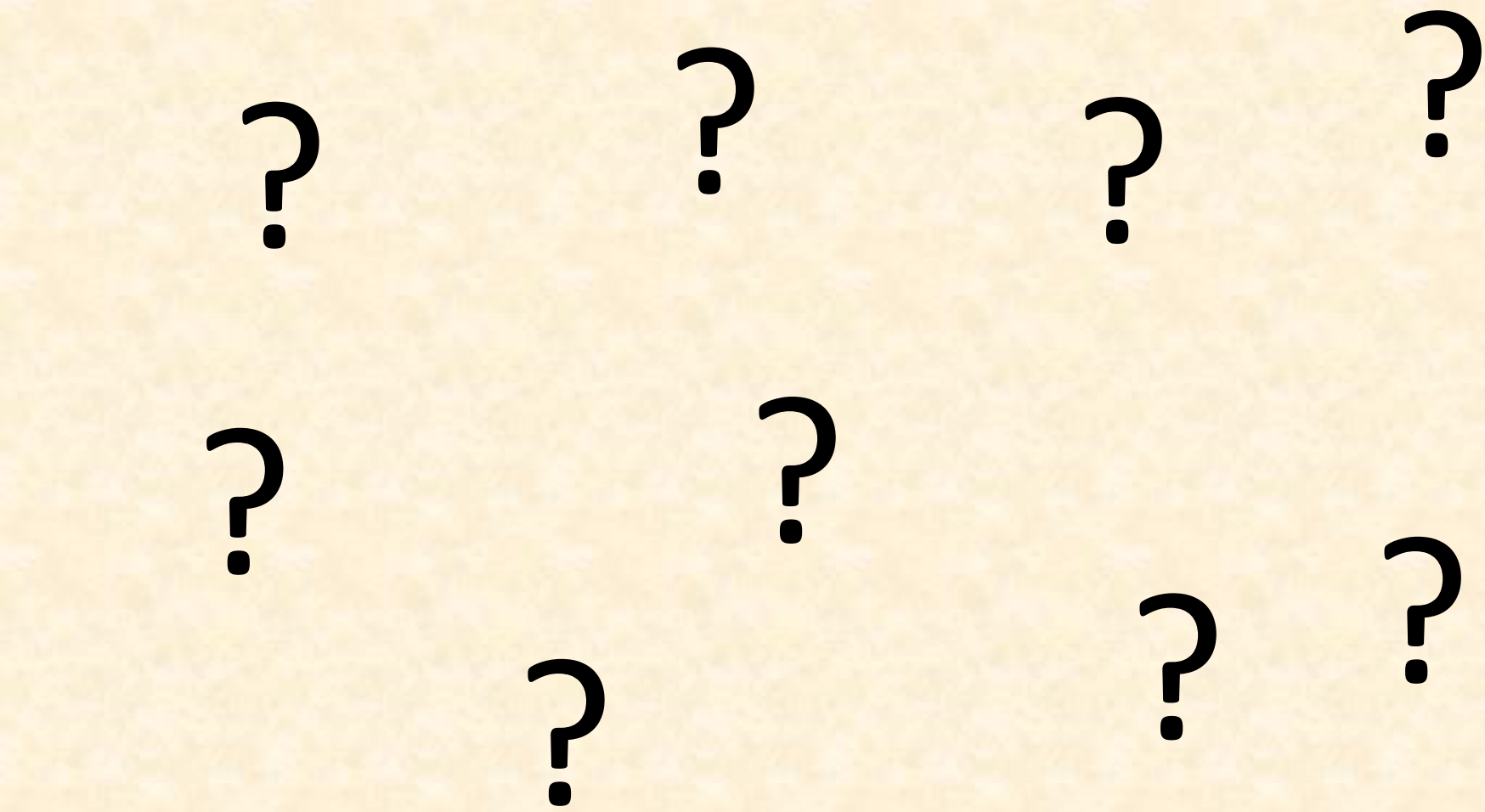
System Architecture



System Components

- Hardware Platforms
  - AWS Linux EC2
  - AWS S3
- Software Platforms / Technologies
  - AWS Rekognition, RDS, CodePipeline, Kinesis Video Stream
  - Jenkins
  - PHP (Laravel 5.7) backend
  - JavaScript (Angular 6) frontend
  - Various video streaming services' APIs

Risks

- **Video Platform Integration**
  - **Description**: Integrating with various platforms allows users to watch videos from different video services. Currently, video API's for Hulu and Netflix are not available.
  - **Mitigation:** Video API's like YouTube, Twitch, and Dailymotion are publicly available making their integration feasible.
- **Backend and Frontend Integration**
  - **Description:** Coordination between backend and frontend services are needed to enable our application to stream videos properly.
  - **Mitigation:** There is active communication between the frontend and backend team. We have daily standups to keep every team member updated on each part of the project.
- **Site Security**
  - **Description:** Keeping user account information safe and secure like login credentials
  - **Mitigation:** Use Login with Amazon to provide secure authentication for our users.
- **Acquiring an HTTPS certificate**
  - **Description:** Acquiring an HTTPS certificate to encrypt all communication across the network.
  - **Mitigation:** AWS Certificate Manager and Let's Encrypt provide an easy way to acquire and maintain public certificates to be used for our domain.

Questions?