

MICHIGAN STATE

U N I V E R S I T Y

Project Plan

AVAST: Amazon Video and Shopping Technology

The Capstone Experience

Team Amazon

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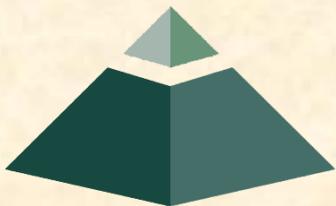
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*From Students...
...to Professionals*

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

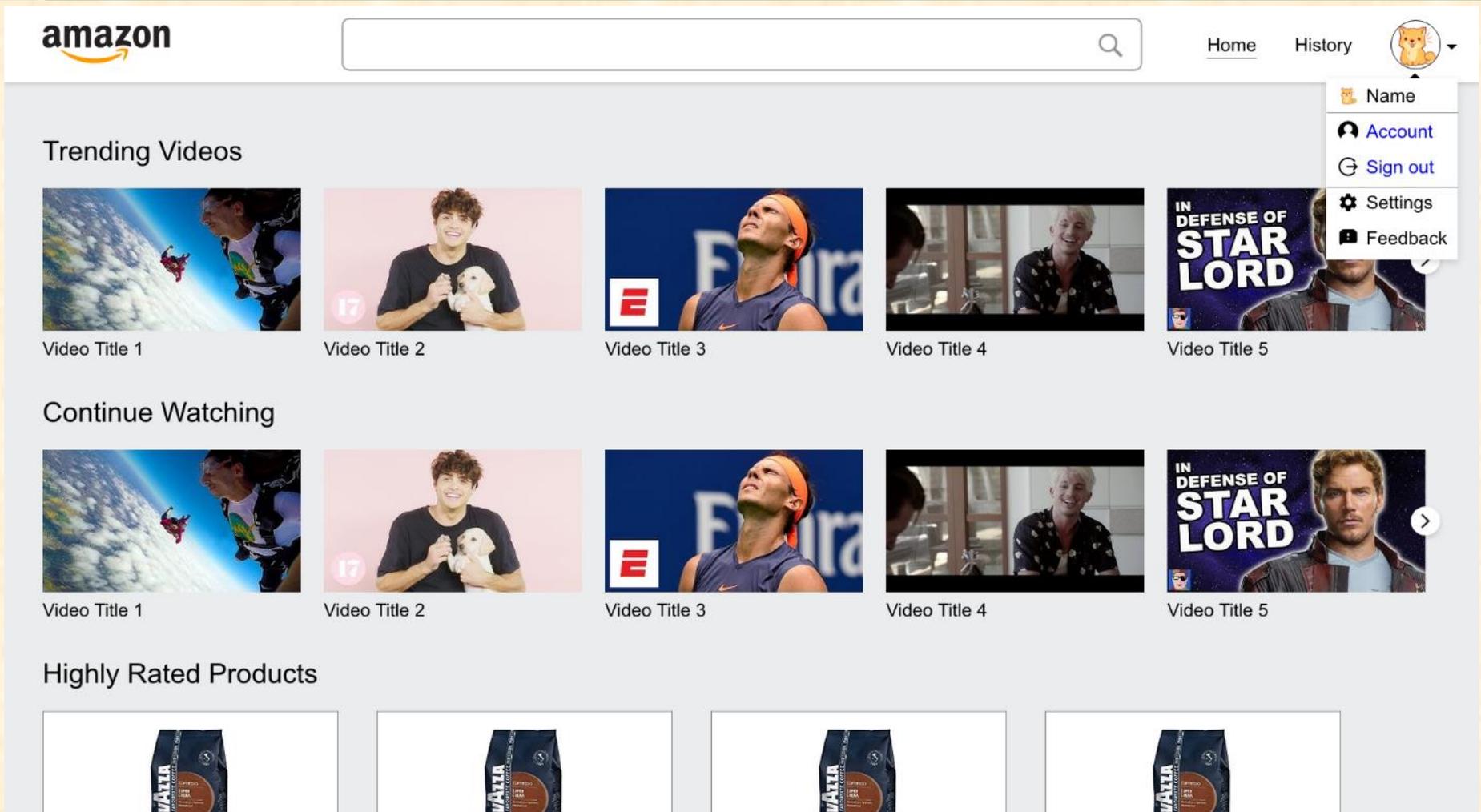


Design Specifications

- Web Application
 - Browser and screen size independent
- Uninterrupted video streaming
- Integration with multiple streaming services
 - Single search bar to search across many different 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

QHomeHistory

Account Info

Profile Picture  [Change](#)

First Name

Last Name

Video Services

 [Remove Service](#)

 [Link](#)

 [Link](#)

Password

Current Password

New Password

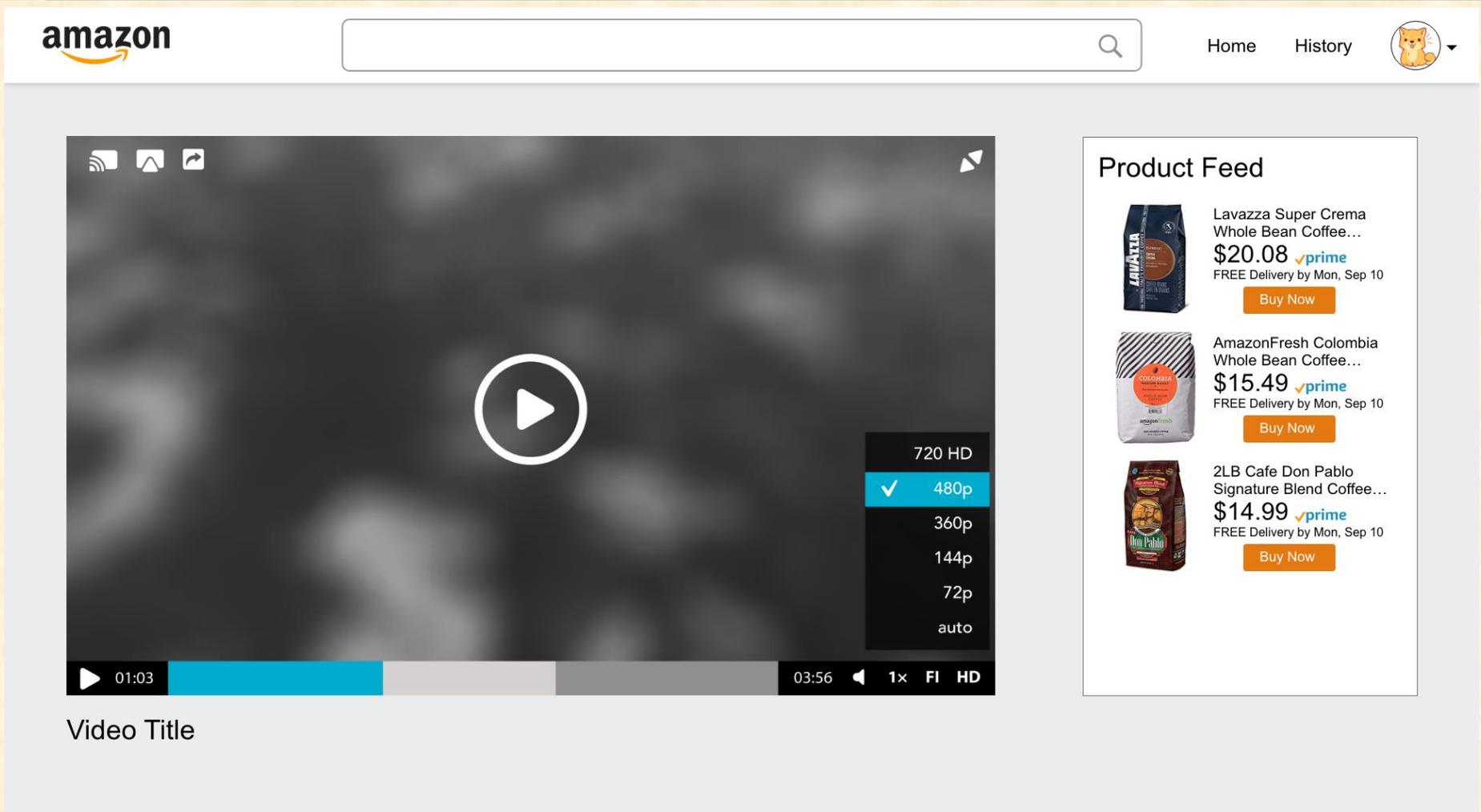
Confirm Password

History

Viewing History [See All History](#)

Clear History [Clear All History](#)

Screen Mockup: Video Page



The mockup shows an Amazon video player interface. At the top left is the Amazon logo. A search bar is located at the top center. To the right of the search bar are links for 'Home' and 'History', and a user profile icon. The main content area is a video player with a large play button in the center. The video player includes a progress bar at the bottom showing 01:03 of 03:56, and a resolution menu on the right with options: 720 HD, 480p (selected), 360p, 144p, 72p, and auto. To the right of the video player is a 'Product Feed' sidebar containing three coffee products, each with an image, title, price, Prime status, delivery information, and a 'Buy Now' button.

amazon

Home History

Product Feed

Lavazza Super Crema Whole Bean Coffee...
\$20.08 **prime**
FREE Delivery by Mon, Sep 10
Buy Now

AmazonFresh Colombia Whole Bean Coffee...
\$15.49 **prime**
FREE Delivery by Mon, Sep 10
Buy Now

2LB Cafe Don Pablo Signature Blend Coffee...
\$14.99 **prime**
FREE Delivery by Mon, Sep 10
Buy Now

720 HD
✓ 480p
360p
144p
72p
auto

01:03 03:56 1x FI HD

Video Title

Screen Mockup: History Page

amazon

Home History

Video History



When user hover over a video preview

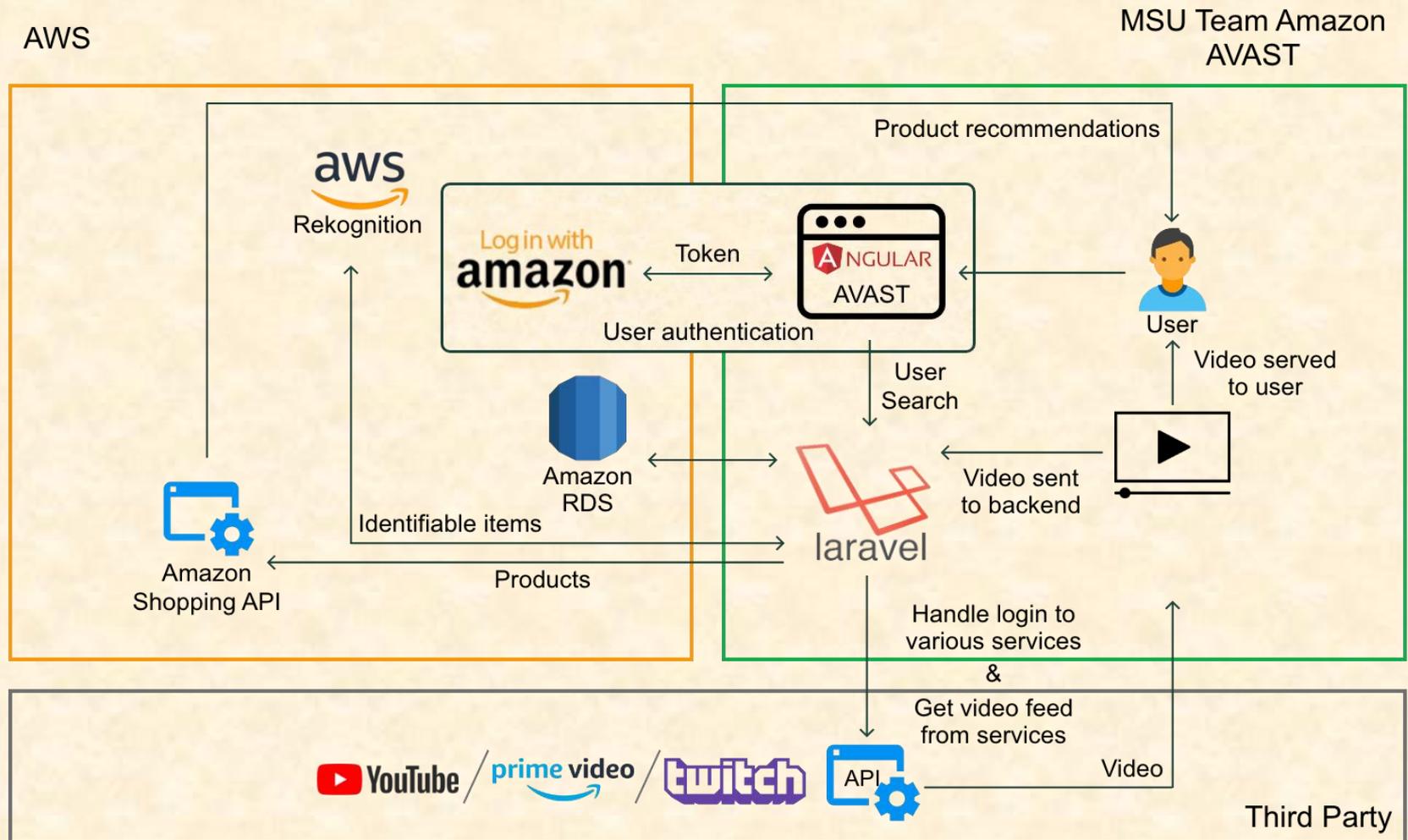
 <p>Lavazza Super Crema Whole Bean Coffee... \$20.08 ✓prime FREE Delivery by Mon, Sep 10 Buy Now</p>	 <p>Lavazza Super Crema Whole Bean Coffee... \$20.08 ✓prime FREE Delivery by Mon, Sep 10 Buy Now</p>	 <p>Lavazza Super Crema Whole Bean Coffee... \$20.08 ✓prime FREE Delivery by Mon, Sep 10 Buy Now</p>	 <p>Lavazza Super Crema Whole Bean Coffee... \$20.08 ✓prime FREE Delivery by Mon, Sep 10 Buy Now</p>
 <p>AmazonFresh Colombia Whole Bean Coffee... \$15.49</p>	 <p>AmazonFresh Colombia Whole Bean Coffee... \$15.49</p>	 <p>AmazonFresh Colombia Whole Bean Coffee... \$15.49</p>	 <p>AmazonFresh Colombia Whole Bean Coffee... \$15.49</p>

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?

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