MICHIGAN STATE UNIVERSITY

Project Plan

Video Sentiment Analysis

The Capstone Experience

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From Students…
…to Professionals

Functional Specifications

- Creates a way for a video author to see and analyze a viewer's response without viewer action

- Customizable list of viewers for each video

Functional Specifications

- Allows users to see emotional responses at various points of a video
- Supports rewinding, fast-forwarding, and stopping by the user.

Design Specifications

- Videos are uploaded and assigned to specified viewers through the web application by the video author.

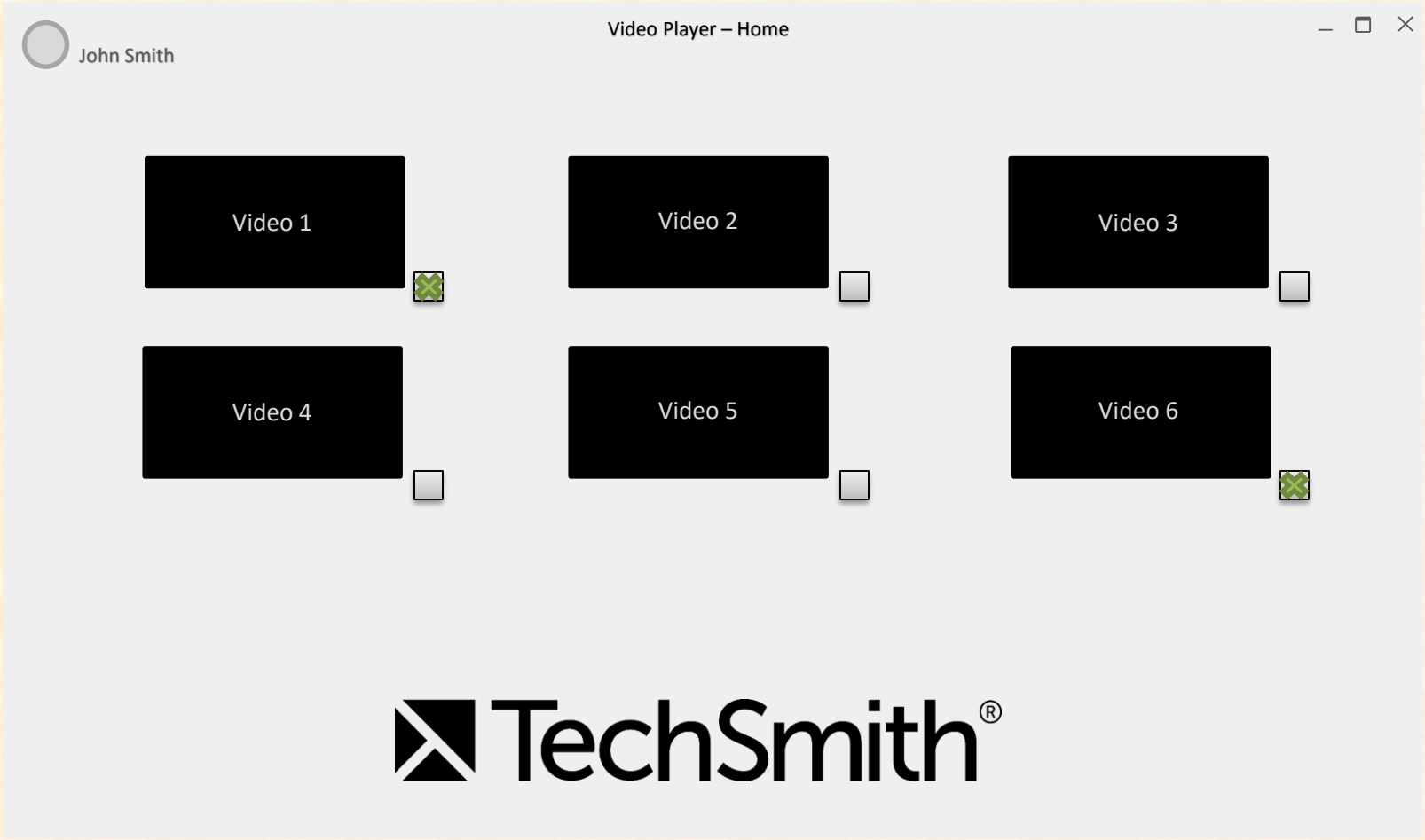
- Viewers will open the desktop app which serves as a custom video player to view videos that are assigned to them.

Design Specifications

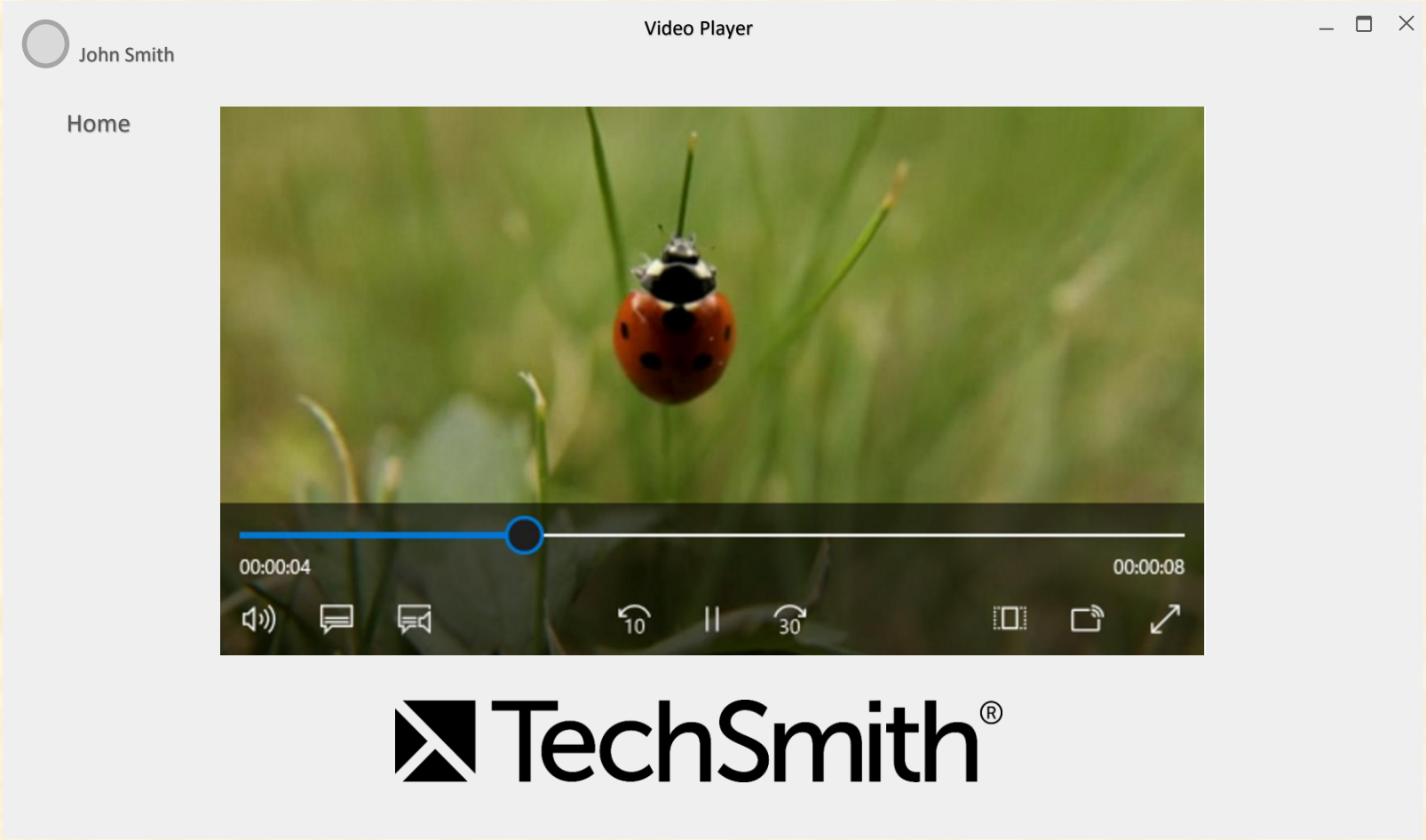
- The uploaded video and the webcam recording of the viewer are shown side-by-side with the original video.

- Results from the emotional analysis are displayed below the webcam recording.

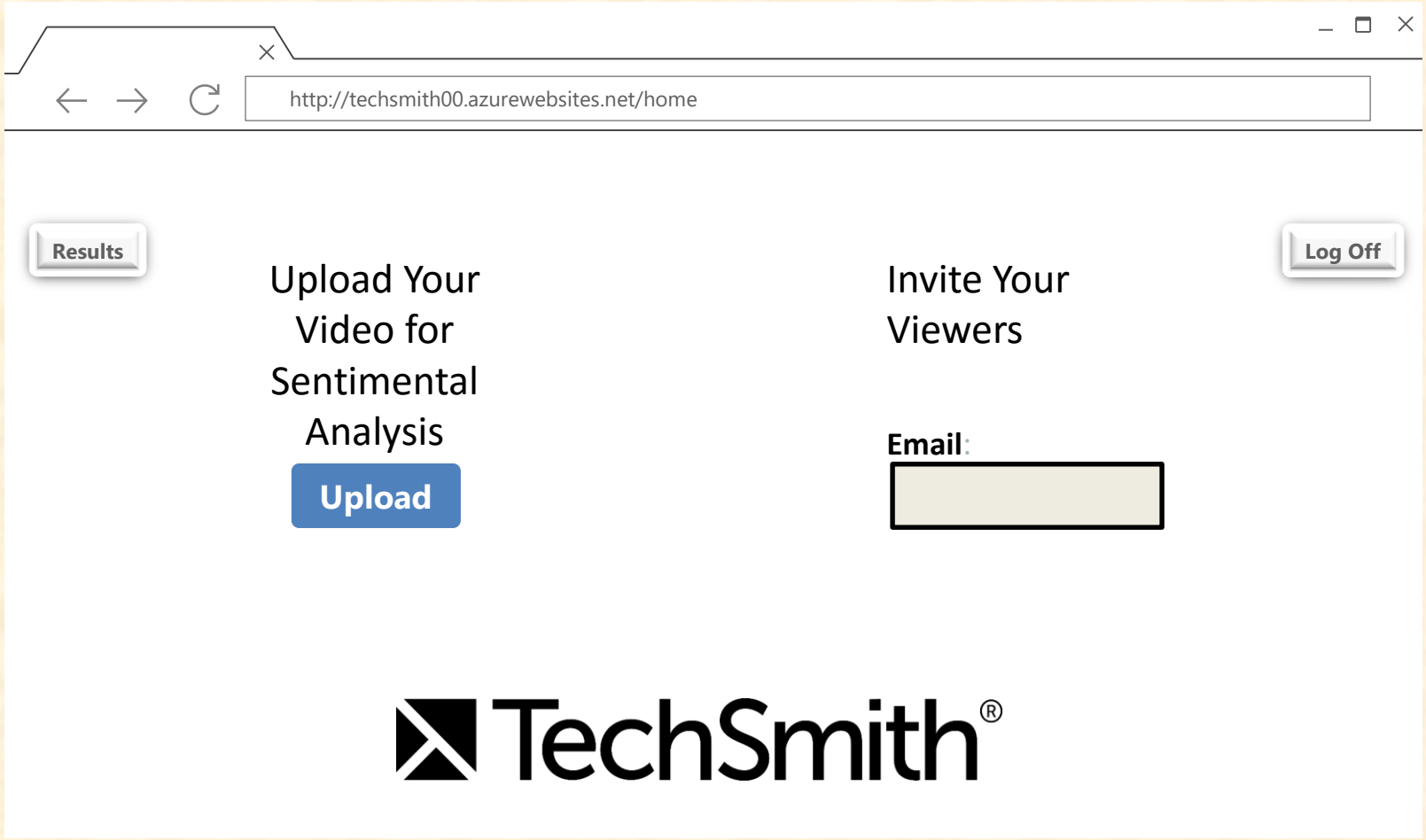
Screen Mockup: Custom Video Player



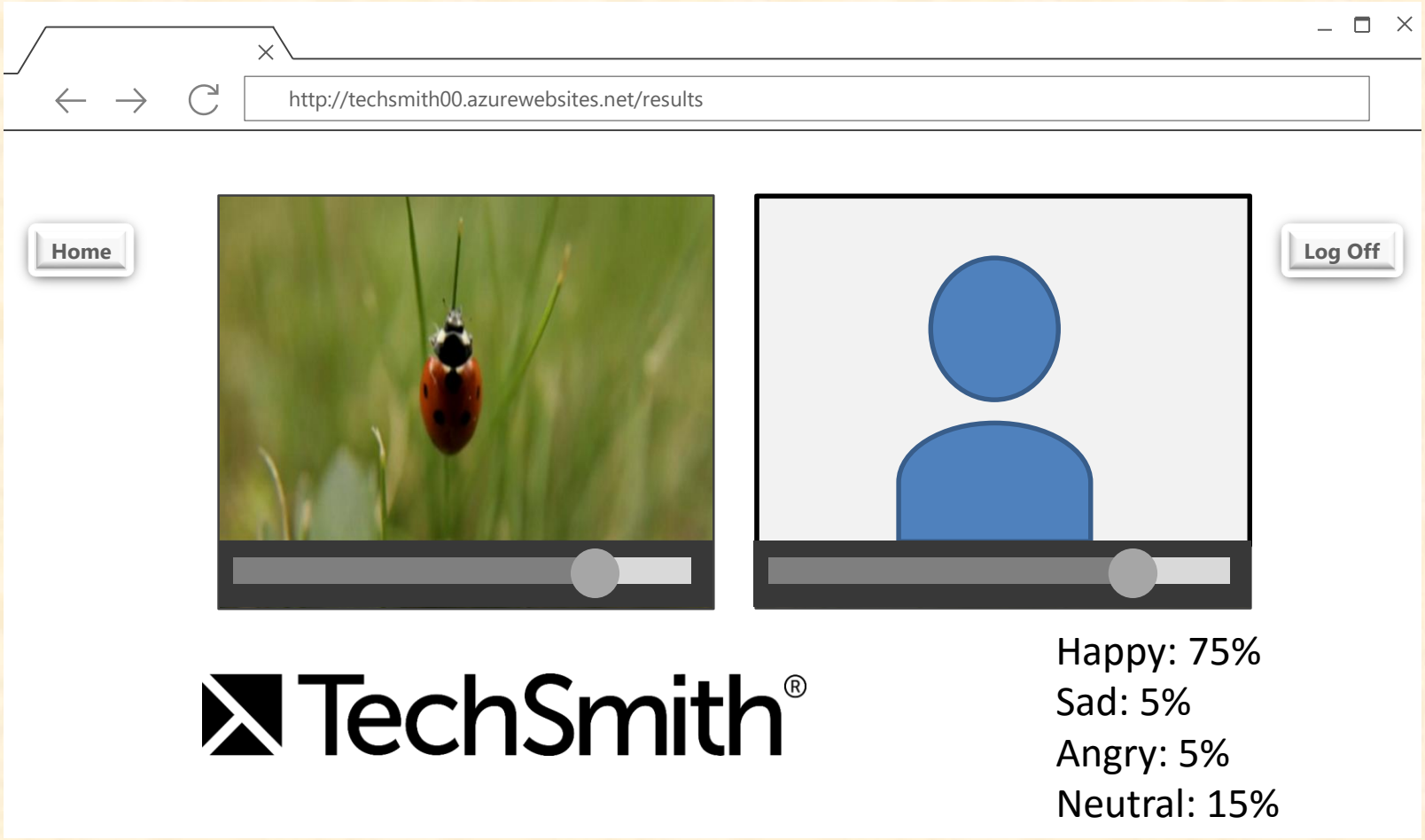
Screen Mockup: Custom Video Player



Screen Mockup: Website



Screen Mockup: Website



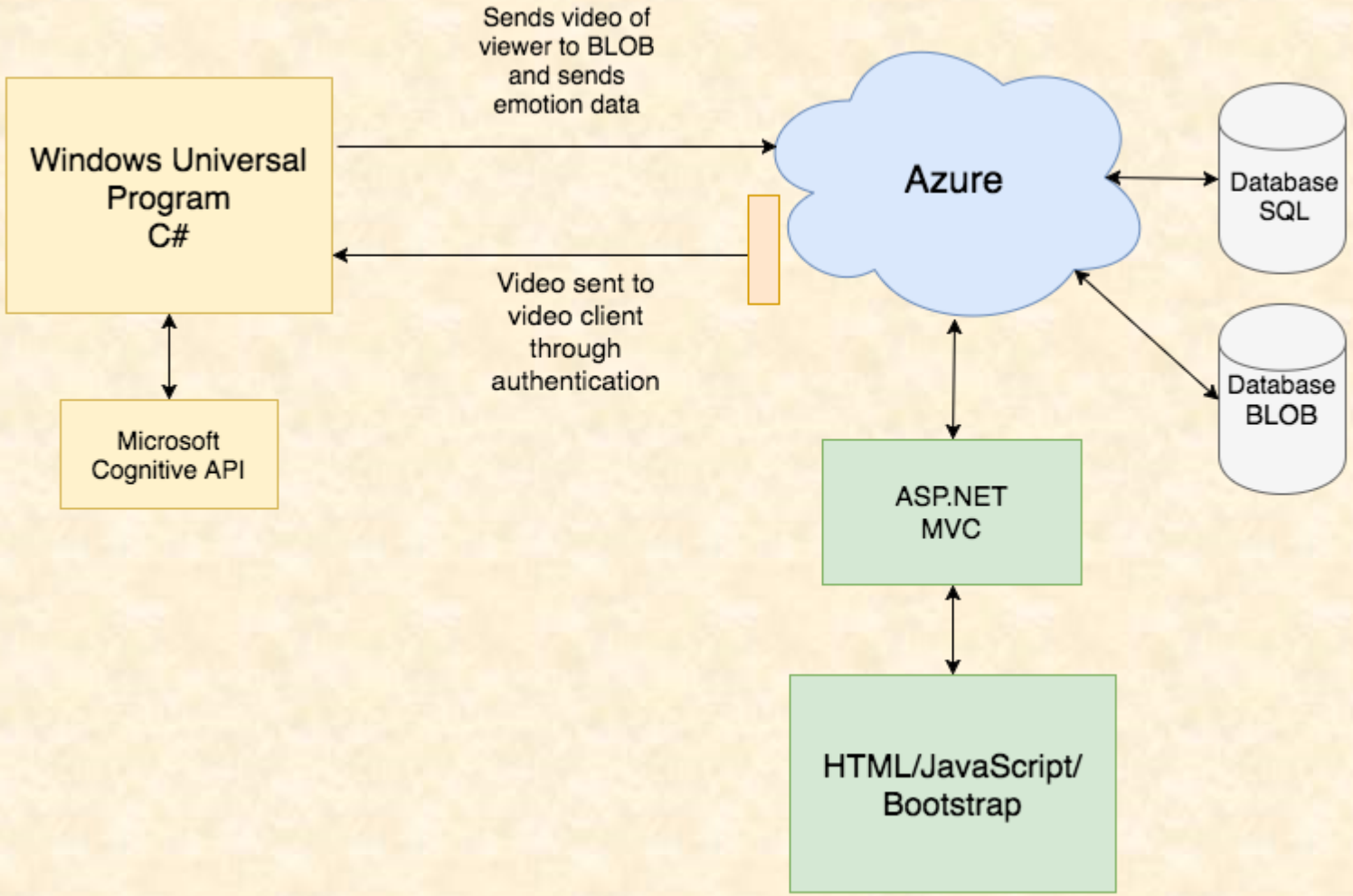
Technical Specifications

- Databases
  - Videos stored in Azure BLOB
  - Users and Emotions stored in Azure SQL database
- Authentication
  - Windows Authentication

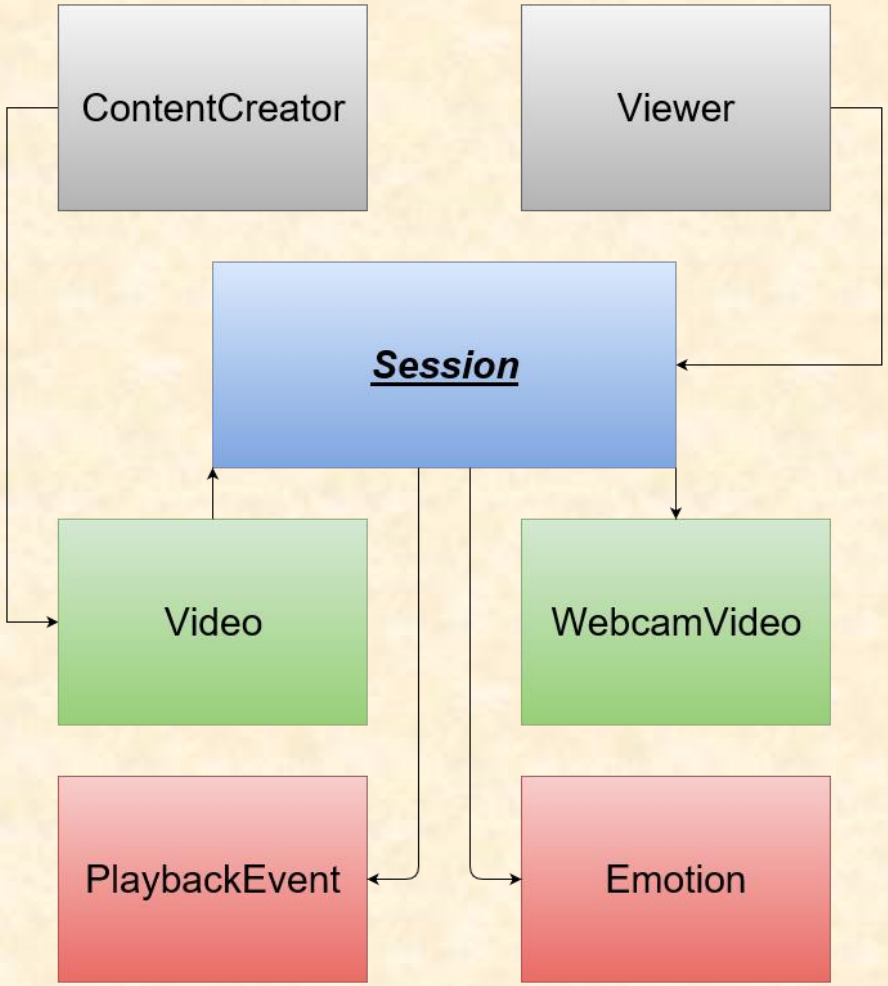
Technical Specifications

- The Viewer Client
  - Universal Windows Program
  - Designed with C#/XAML
- Video Uploader Client
  - ASP.NET
  - Designed with Bootstrap

System Architecture



System Architecture



System Components

- Hardware Platforms
  - iMacs running Windows 10 in VMware
  - Windows computers
  - Built in webcams

System Components

- Software Platforms / Technologies
  - ASP.NET MVC with an Azure cloud server
  - C# Universal Windows App
  - CSS/HTML/JavaScript/Bootstrap
  - Azure SQL database
  - Azure BLOB storage
  - Visual Studio 2015
  - Microsoft Cognitive Services

Testing

- Unit Test App (Universal Windows)
- Visual Studio Test Suite for .NET
- Database testing using XML
- Functional and iterative testing for all around bug fixing

Risks

- Risk 1
  - Extracting emotions for a webcam video with limited API calls
  - Process webcam footage after video has concluded and make API calls in the C# Desktop App.
- Risk 2
  - Connect the uploaded video on the web server to the viewer client
  - Invite people based on Microsoft Email and have user authenticate in the C# Desktop App.

Risks

- Risk 3
  - Dealing with webcam video after pausing and rewinding
  - Store the entire footage and modify playback of the original video to fit the tempo of the webcam