Project Plan Presentation
TARA

The Capstone Experience

Team TechSmith

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From Students…
…to Professionals

Project Sponsor Overview

- TechSmith is a software company founded in Okemos, Michigan in 1987. With over 73-million users worldwide, including 100% of Fortune 500 companies, they are considered a global leader in screen capture and screen recording software.

- TechSmith's mission is to help people make remarkable videos and images that ultimately share knowledge and information. Their software is ideal for creating better videos for training, tutorials, teaching, or everyday communication.

Functional Specifications

- With over 700,000 hours of video content being uploading to YouTube daily, video can be considered a preferred medium for sharing information.

- There is a demand for video content and competition for increasing viewership. To create engaging content, additional video clips, audio, or images are often needed.

- TechSmith provides users with software that can be used to make great videos but not everyone is great at the editing process.

- TARA will take a video or audio file upload, analyze, and return recommendations on material from the asset store that users should use to enhance their content.

- Use Case: Consider a team of software engineers who need to record a video presentation explaining the project they have been working on and the key features implemented. To make the video entertaining, they must find additional images and music clips. However, searching through thousands of assets is time consuming.
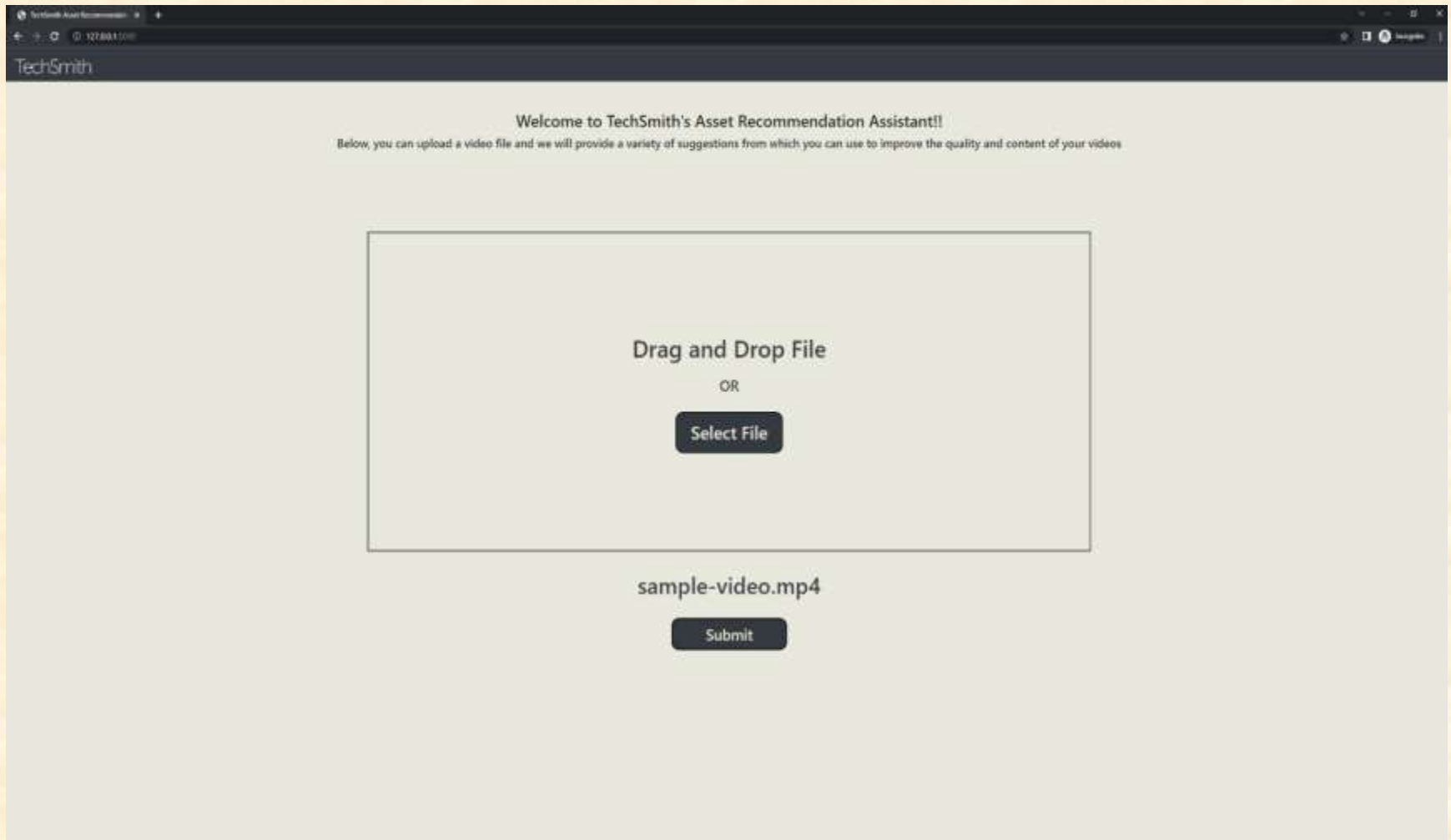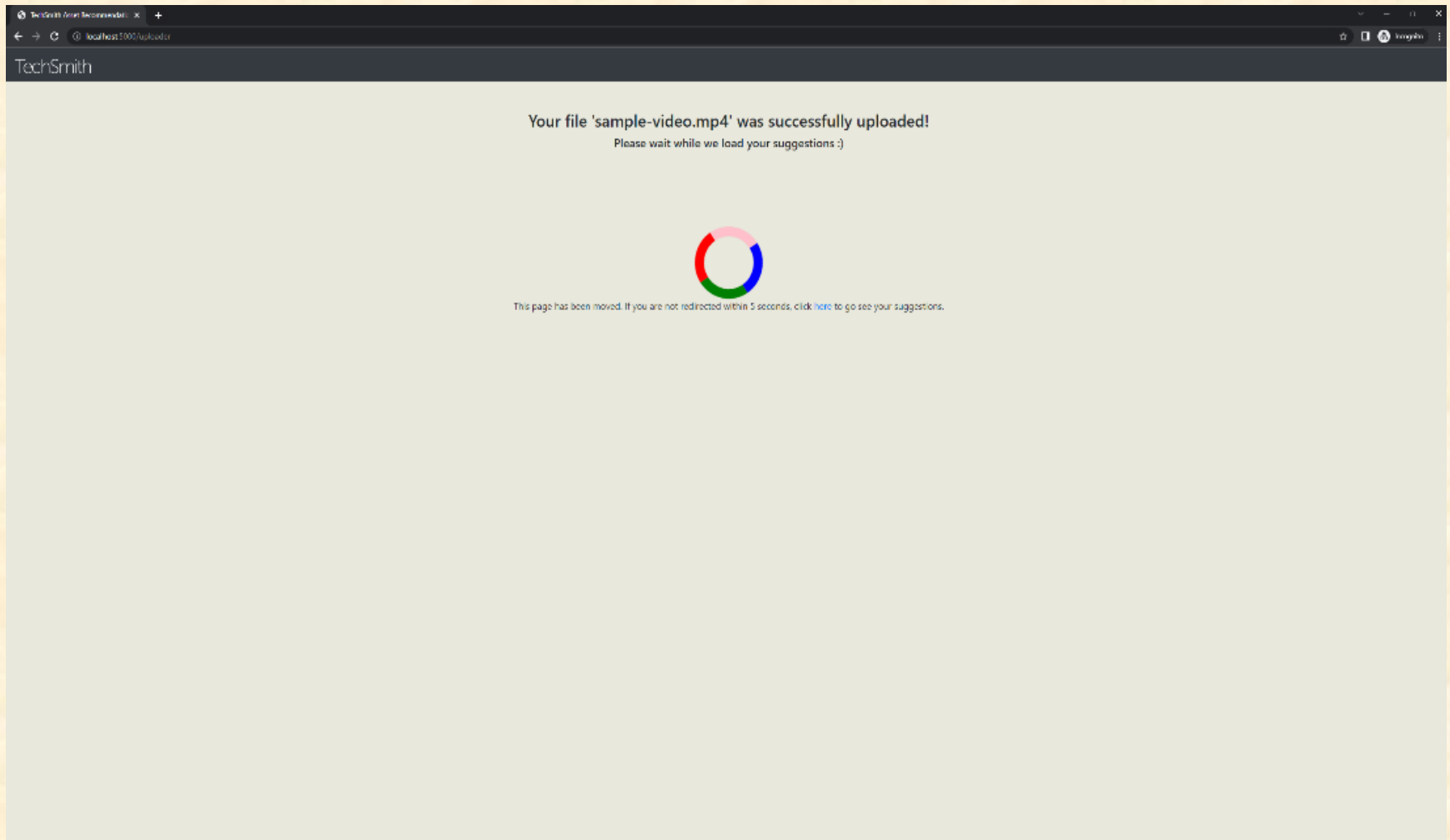
Design Specifications

- Application presents the user with a file upload screen where users can either drag and drop a file or select a file from their own device – provided it is a video or audio file - to be processed.

- While our software processes and configures the best suggestions and assets for improving the file's content, a spinner page will be displayed.

- Once our algorithm is completed and the suggestions are formulated, they will be displayed on the screen in a panel to the right of the video and the user can either navigate through the suggestions or scroll through the video to see which recommended assets can be implemented at specific timeframes to improve the quality of their content.
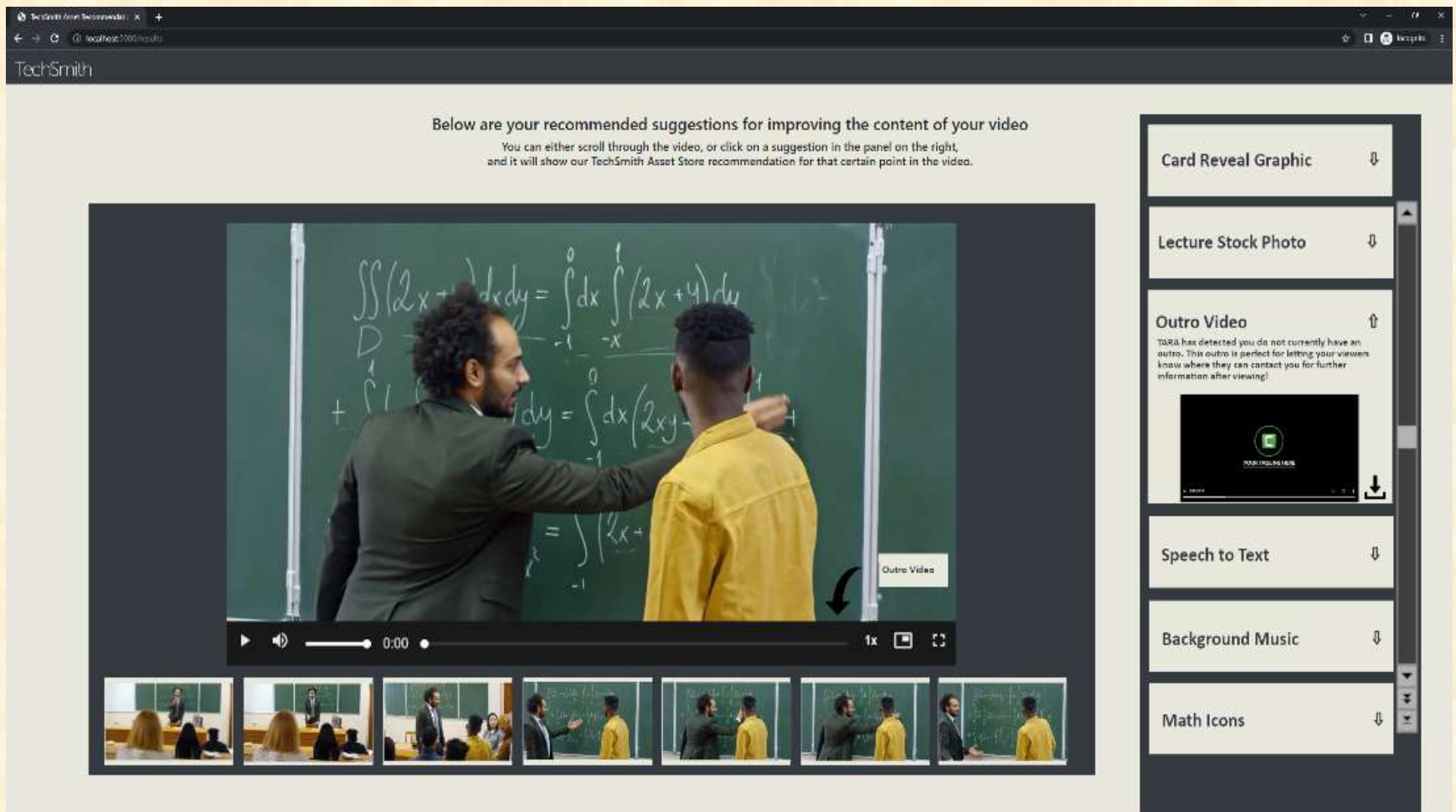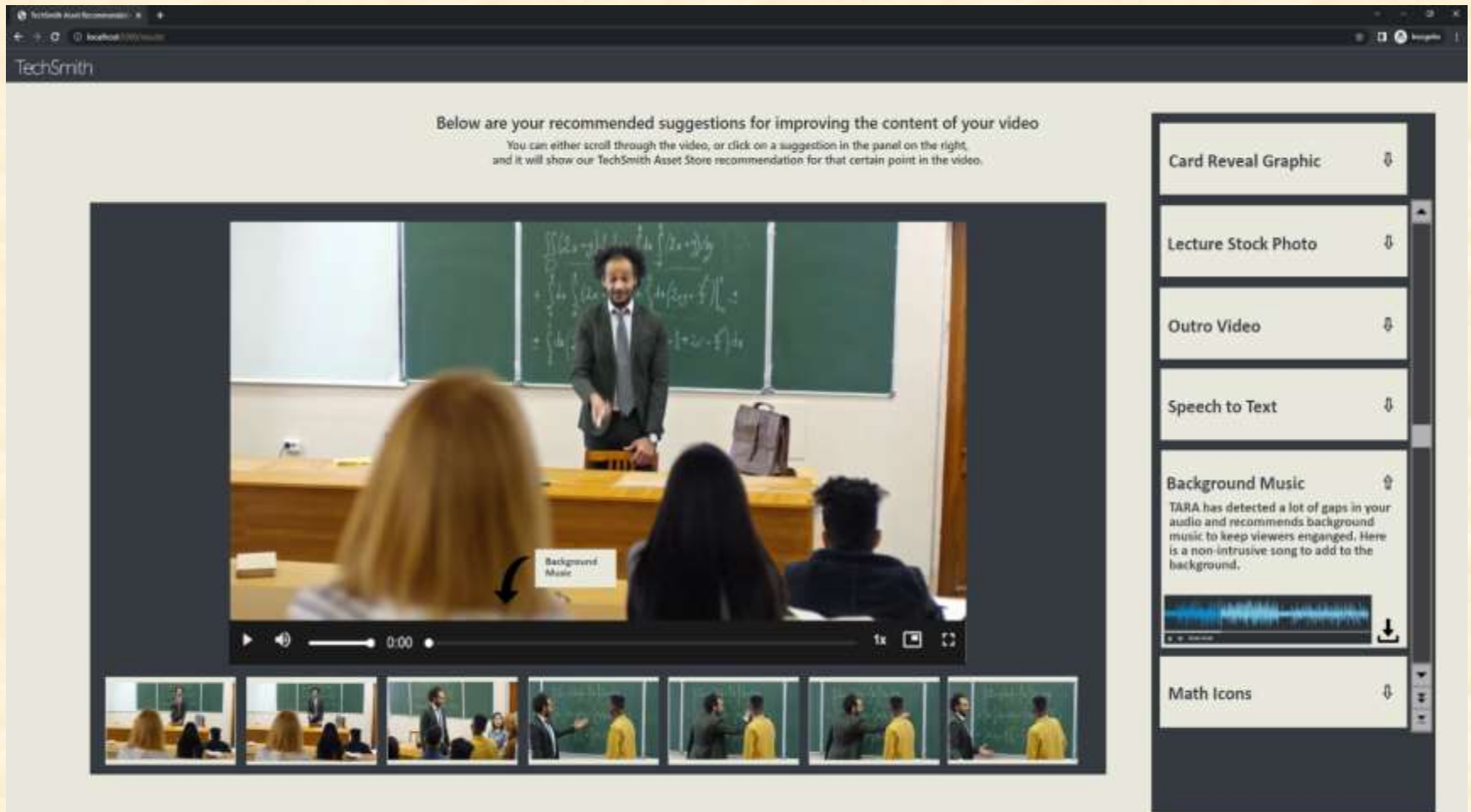
Screen Mockup: File Upload Screen

Screen Mockup: Loading Page

Screen Mockup: Suggestions/Assets for Video Content

# Screen Mockup: Suggestions/Assets for Audio Content

Technical Specifications

- User accesses the application through a website.

- The website will be built on HTML, CSS, and JavaScript.

- Python is the backend logic and flask is used to connect the frontend to the backend.

- Video or audio is uploaded, and data is collected.

- Azure converts speech to text (filtered with NLP) and YOLO does object detection.

- Data is used to search TechSmith store and return editing suggestions to the user.

System Architecture
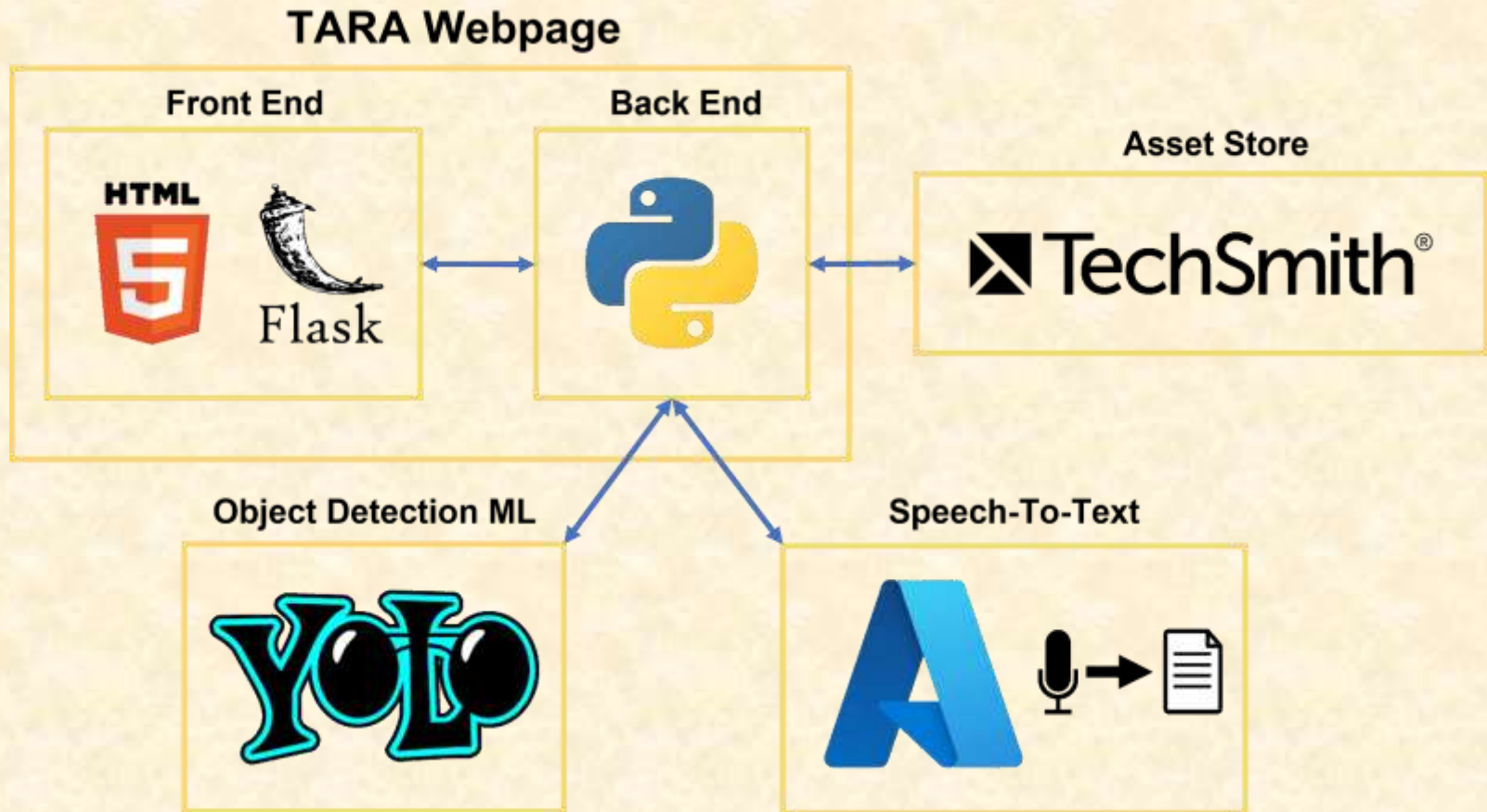
System Components

- Hardware Platforms
  - iMac VM
- Software Platforms / Technologies
  - TechSmith Asset Store
  - Microsoft Azure
  - HTML
  - CSS
  - JavaScript
  - Flask (web Design tool in Python)
  - YOLO Algorithm
- Development Environments
  - Visual Studio Code
  - PyCharm
  - GitHub

Risks

- Creation of Data
  - No data was provided for performing video analysis. Video content can vary wildly, and it can be difficult to train machine learning algorithms since they can work differently on different genres of videos.
  - Generate our own data set by recording videos of ourselves speaking from pre-decided scripts to find the resources from the Asset Store.
- Easy to use UI/UX Application
  - The application must be easy to use for users who have not necessarily had a lot of video editing exposure. Also, there needs to be easy UI for users to upload videos and add the recommendations.
  - Field testing and working with the client to ensure the application is easy to use and is what was expected.
- Utilizing Azure Server
  - Team members are not very knowledgeable about how to use Azure Server. We would need to be careful after edits have been made to the video and then pushed to the same data base with a relevant connection. The speech to text also needs to be linked to the video at hand and be able to connect to the resulting output video as well.
  - Constantly researching ways to utilize Microsoft Azure to the best of our projects use case. Staying in touch with the client to ensure connections are appropriate and do what is required.
- Information on the TechSmith Asset Store and integration
  - This is essential to the functioning of our project. The Asset Store will give us access to the resources that can be utilized using the recommendations that are generated after analyzing the video. We will need to utilize the API of the Asset Store to integrate the resources into the video at hand, which can be tricky since we haven't been exposed to the Asset Store.
  - Staying in constant touch with the client to learn more about how the Asset Store works and what are the underlying technologies involved. In terms of integration, learning how to utilize the API to generate useful output videos with resources suggested by our application.

Questions?