Project Proposal for Team 20 option 3

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1 Overview

Describe your MVP. What is the purpose of this software? What problem does it solve? What is unique about your solution? What is your value proposition? Why is your solution better than others? Use these questions to guide your writing. When you submit your document, remove the bold instructions.

The software's primary objective is to provide a secure and seamless video sharing platform for individuals in a professional setting, such as between doctors and patients or real estate brokers and clients. It aims to simplify the process by eliminating the necessity of relying on third-party applications for video editing prior to sharing.

There are several popular video sharing platforms like YouTube, Vimeo, Twitch, etc. currently in use; however, these solutions are not tailored towards individuals in a professional setting and lack several critical features for use by said individuals.

Our video sharing platform will bridge these critical feature gaps by offering:

1. Enhanced Privacy and Security measures: such as blurring of facial features or personal information, restricting video access by password protection, email, and/or user account
2. All in one functionality: Video sharing process will be streamlined to encompass recording, editing, protecting, and sharing in a user friendly interface.

Our Minimal Viable Product includes the following:

- Secure login/registration
- Video recording
- Trimming video length
- Blurring Face/personal information
- Sharing video via email or user account.
- Watching video restricted to the uploader and a specified user email/password protected

By addressing the shortcomings of existing solutions and offering enhanced features, our platform will fulfill a crucial need and establish a niche in a market where secure and seamless video sharing is a part of day to day life.

1.1 Envisioned Usage

What can the user do with your software? If there are multiple user groups, explain it from each of their perspectives. These are what we called "user scenarios" back in COSC 341. Use subsections if needed to make things more clear. Make sure you tell a full story about how the user will use your software. An MVP is a minimal and viable, so don't go overboard with making things fancy (to claim you'll put in a ton of extra features and not deliver in the end), and don't focus solely on one part of your software so that the main purpose isn't achievable. Scope wisely

What can the user do with your software?
Users will be able to create their account. Record and save videos. Edit Videos (trim or put in privacy features like blurring). Share video. Users will also be able to view videos shared with them.

Scope

- Secure login/registration.
- Video recording.
- Viewing video.
- Saving and deleting videos.
- Trimming length.
- Sharing video (email notification)
- Blurring Face/personal information
- Watching video restricted to the uploader and a specified user email/password protected.

Possible user groups

- Health Care: Occupational therapists, Doctors, patients, etc..
- Realtors/Buyers
- One way interviews
- Private tutors and students who want to review materials

User groups belonging to health care may use our software to record demonstrations for their patients allowing them to address the needs of patients remotely. Realtors may use our software to record custom tours of the property they wish to sell for potential buyers. Companies may ask candidates, for a job opening, to record their responses to questions and send it to them via our platform. Private tutors may prepare custom lectures for their students and share them with them.

Example user scenario: Occupational Therapists

Occupational Therapist (OT) has a patient who lives in a different time zone in a far away location. Patient does not have the ability to travel to the OT for an in person appointment. The

OT wishes to demonstrate therapeutic movements to the person. They decided to use our video platform sharing system. First, they start by logging into their account. They use the recording feature to record their demonstration. The-n they can use the edit feature to trim the video to the desired length. At this point, they can use privacy and security features to blur any parts of the video they want (e.g. facial features, personal information etc.). They can save the final version of their video and share it with their client via email or via user account (if the client is also a user of our software). The patient will get an email notification that the OT has shared a video with them and then the patient will be able to use the link to view the video.

2 Major Milestones

Features:

0. Website design (paper prototypes, initial design)
1. Initial Setup and React web app creation:
    a. Install and Configure Amplify CLI
    b. Create a react app
    c. Add authentication
    d. Add GraphQL for DynamoDB
2. Setting up databases
    a. DynamoDB
        i. Define the Data Model for user data, and metadata
        ii. Integrate with Frontend
    b. S3
        i. Update graphQL Schema for S3
        ii. Integrate S3 storage in React app
        iii. Test and iterate
3. Record video backend
4. Record video frontend
5. Save video to db (backend)
6. Saving video frontend
7. Upload video to database
8. Display video from database
9. Downloading and Saving video with transcoding
10. Creating user authentication page
11. Deleting video from database
12. UI button and confirmation to delete video
13. User registration backend
14. User registration frontend
15. User login backend
16. User login frontend
17. (Account management) Delete profile backend
18. Delete profile front end.
19. Change email

20. User details(Name, Country, etc)
21. Trimming Video backend.
22. Trimming Video frontend
23. Separate video into frames
24. Blur individual frames (detecting faces maybe…)
25. Combine blurred frames
26. Preview blurred video
27. Blurring video frontend
28. Sharing video backend.
29. Sharing video front end
30. Restrict Video watching to specific users backend
31. Restrict Video watching to specific users frontend
32. Email notification for shared videos

Deadline	Deliverable
Term 1 week 9 (Oct 31st - Nov 02): Mini Presentation	Our first milestone will involve the initial design of the website, initial setup of the database and demonstrate recording and saving video capabilities. Abijith Ashok: 0, 2a, 2b Issa Hashim: 0, 1a, 1b,1c,1d Ryan Grant:0,7,8 Maya Ayaviri:0, 3, 4 Mohammed Al-Maskari:0,5,6
Term 1 week 13 (Nov 28 - 30): Design Milestone	Second milestone will involve setting up the general user interface design, ensuring a consistent layout and showing how the user will interact with the system. Abijith Ashok: 7,8 Issa Hashim: 11, 12 Ryan Grant:9,10 Maya Ayaviri:13, 14 Mohammed Al-Maskari:15,16
Term 2 (Jan 30 - Feb 01) Week 4: Peer Testing	Abijith Ashok: 23, 24 Issa Hashim:19, 20 Ryan Grant:25,26 Maya Ayaviri: 17, 18 Mohammed Al-Maskari:21,22
Term 2 Peer Testing (March 27 - 29) Week 8:	Abijith Ashok:28,29 Issa Hashim: 27 Ryan Grant:32 Maya Ayaviri:31

	Mohammed Al-Maskari:30
Term 2 Final Project Submission (April 09-11)	Final Report, Final Video Creation, Final video editing, Individual team reports

Table 1: Proposed Project Milestones: Provide any explanation necessary to make your milestones understandable. These milestones need to make sense of the number of people in your team and the number of weeks between each milestone

3 Technology Stack

Identify the "tech stack" you are using. This includes the technology the user is using to interact with your software (e.g., a web browser, an iPhone, any smartphone, etc.), the technology required to build the interface of your software, the technology required to handle the logic of your software (which may be part of the same framework as the technology for the interface), the technology required to handle any data storage, and the programming language(s) involved. You may also need to use an established API, in which case, say what that is. (Please don't attempt to build your API in this course as you will need years of development experience to do it right.) You can explain your choices in a paragraph, in a list of bullet points, or a table. Just make sure you identify the full tech stack. For each choice you make, provide a short justification based on the current trends in the industry. For example, don't choose an outdated technology because you learned it in a course. Also, don't choose a technology because one of the team members knows it well. You need to make choices that are good for the project and that meet the client's needs, otherwise, you will be asked to change those choices.

Technology	Use	Reason
Web browser	Styling the webpage	testing if the webpage appears as intended
AWS	AWS Amplify	Amplify provides user authentication, user analytics, database access, hosting, and frontend UI components.
DynamoDB	Store User Data, metadata, and other relevant data	minimal latency for recall of user information for login and for storing metadata on all videos file <4KB
Amazon S3	storing video files and other static assets	For streaming and downloading videos, larger files as dynamoDB fails for larger files

Javascript and Node.js API: Express.js	server-side logic and backend development	Most widely used and has a lot of documentation and tutorials to learn, follows RESTful principles
React.js API: Redux or Context	dynamic user interface	building a responsive and dynamic UI, API for managing application state
Amazon Cognito	user authentication and management	Amazon's own service for user authentication integrates well with Amplify
AWS Identity and Access Management (IAM)	managing access to AWS services	For developers, administrator, operators access control
Cloudfront	low latency content delivery	Global content delivery, scalability, security, reduces load on S3 bucket, integrates well with S3
AWS Elemental MediaConvert	For transcoding and preparing video files	Allows more customization than AWS elastic transcoder
AWS Lambda	for executing code in response to event	to trigger transcoding, video uploads or downloads
Amazon Notification Service	sending notification about new content, updates or other relevant events	Integrates very well with AWS amplify
AWS CodePipeline and AWS Codebuild	For automating the build, test and deployment phases	Integrates well with all AWS services
AWS CloudFormation	managing AWS infrastructure	enhances version-controlled, repeatable and consistent.

4 Teamwork Distribution and Anticipated Hurdles

Use the teamwork distribution survey as a conversation starter to talk about the different types of 2 work involved in a software development project. Start thinking about what you are good at as a way to get to know your teammates better. At the same time, know your limits so you can identify which areas you need to learn more about. These will be different for everyone. But in the end, you all have strengths and you all have areas where you can improve. Think about what those are, and think about how you can contribute to the team project. Nobody is expected to know everything, and you will be

expected to learn (just some things, not everything). Use the table below to help line up everyone's strengths and areas of improvement together.

Category	Ryan	Mohammed	Maya	Issa	Abijith
Experience	Software Development	Web Programming	Mobile App Development	None	Machine Learning, Distributed file systems
Good at	Troubleshooting	Back-end logic	UI/UX Design and Backend	Backend	Prototyping, Research, Protocols
Expect to learn	AWS	AWS	AWS and Web Development	AWS	DynamoDB, S3

Table 2: Team Experience, Expertise, and Areas of Learning: Give the reader some context and explanation about your table. It can be short and described in the caption, but it needs to help the reader how to interpret what's in the table

Use this opportunity to discuss with your team who will do what in the project. Make use of everyone's skill set and discuss each person's main role and responsibilities by considering how everyone will contribute. An example table is provided in Table 3. Remember to identify project work (some examples are listed below at the top of the table) and course deliverables (the bottom half of the table). You might want to change the rows depending on what suits your project and team.

Category of Work/Features	Ryan	Mohammed	Maya	Issa	Abijith
Project Management: Trello Maintenance		✔	✔	✔	✔
Technical Direction Time Estimation, Making programming Choices			✔	✔	✔
Technical Help: Finding	✔				✔

Technical Solutions					
Troubleshooting : The Go-To When Others Are Stuck	✔				✔
System Architecture Design		✔			✔
User Interface Design			✔	✔	
CSS Development			✔	✔	
Features are assigned in Major Milestones	✔	✔	✔	✔	✔
Database Setup		✔			✔
Presentation Preparation	✔	✔	✔	✔	
Design Video Creation	✔		✔		✔
Design Video Editing	✔				
Design Report			✔		✔
Final Video Creation	✔		✔	✔	✔
Final Video Editing	✔				
Final Team Report		✔	✔	✔	✔
Final Individual Reports	✔	✔	✔	✔	✔

Table 3: Expected Areas of Contributions: Mohammed excels in coding, Maya possesses exceptional design skills, Ryan boasts a comprehensive understanding of all aspects, Abhijit brings valuable experience from diverse projects, and Issa, though initially limited in knowledge,

is eager and open to learning across the board. This distribution of tasks was thoughtfully designed to leverage each individual's strengths and expertise.