StudyShare

A space to share!

Who are we?

We are:

- Zac Seales: Experience with time-limited release dates after doing COSC 360. Also has programming experience, mainly UI creation, and data processing experience. Will be largely focused on these elements for the app.

- Matthew Jennings: Experience in prototyping and design cycle. Will be focussing on front end and developing prototypes and designs as the project progresses. Will build functionality if required but will primarily work on continuous integration.

- Francesca Totty: Most of her programming experience has been with Java and Python within the University. She has experience with project management as well as some backend and a little bit of frontend experience. She will mainly be working on the backend for this app.

- Christian Gray: Have some programming experience. Do more microcontroller and FPGA stuff in my spare time. Will deliver the code needed to achieve the more in depth backend functionality.

What will we build?

It is our intention to build an iOS application in the Swift programming language. The purpose of this app is to provide a simple and intuitive way for students within the same course to share resources related to that course.

The functions we intend to include are note sharing, video recording sharing and audio transcriptions of the lecturer's speech. We would also like to include a system of “metaversification”, whereby utilising a combination of the camera and the lidar sensors present in some iPhones we recreate a 3D representation of the lecture which could be viewed in AR, or used to overlay models rather than directly use the video. The benefits of a system such as this would be reduced file sizes over video and privacy protection for the participants in the lecture. Realistically this is likely outside of the time constraints provided for the project but is noted here as an ambitious goal if progress is exceedingly fast.

With the exception of note sharing all of these will require lecturer approval for the user to do, so a message telling the user that acquiring this permission is necessary will be included as part of the login process. Streamlining of this process is possible, whereby the end user types in the lecturer’s email, and the app will send relevant terms and conditions to the lecturer and will not function until consent is granted.

How does this relate to diversity?

We plan to include translation to other languages for text notes and transcriptions, this will help students for whom English is not their primary language to get content from lectures. This is especially relevant if these students are unable to attend lectures for whatever reason; they can get the notes in their native language.
We believe the transcription functionality will be very useful to students with various types of impairment. Deaf students can get a transcription of what the lecturer has said during the lectures, students with other learning disabilities which may make focusing for a full hour challenging such as ADHD will likely find the ability to refer back to what was said very useful.

How will we build it?

In terms of the mechanics of how we will build this there are numerous challenges to overcome.

In the first stage, we will start with the basic functionality of note sharing. Notes will be in the form of images and text, this is significantly easier to work with than video simply due to file sizes and the resulting bandwidth. We think a client/server model is most appropriate here, rather than a peer-to-peer network. There must be a centralised storage of the content uploaded by students, it cannot be pulled from their phones every time it's needed as that is unreliable and an unacceptable waste of users' bandwidth. The plan at this early stage for how to manage this issue is to use third party services for hosting, for images we plan to use imgur. By providing storage for the user, we can ensure the longevity of the content, with our hope to preserve useful notes for years to come.

The second stage will be to enable the app to create audio transcripts. This will require a fairly complicated speech to text system but has the benefit that in terms of storing information we are guaranteed to only be dealing with raw text, relatively small. Due to the short timeframe, developing a speech to text system from scratch is unlikely, but finding and adapting or simply deploying a well established piece of software may be the trick.

The third stage will be full video recording with the primary challenge being the hosting and delivery of video. The current plan for dealing with this issue is to use an unlisted youtube account and to embed these into the app. This is not an ideal solution and will result in youtube ads playing to the users however the alternative of self hosting a video delivery service is not viable.

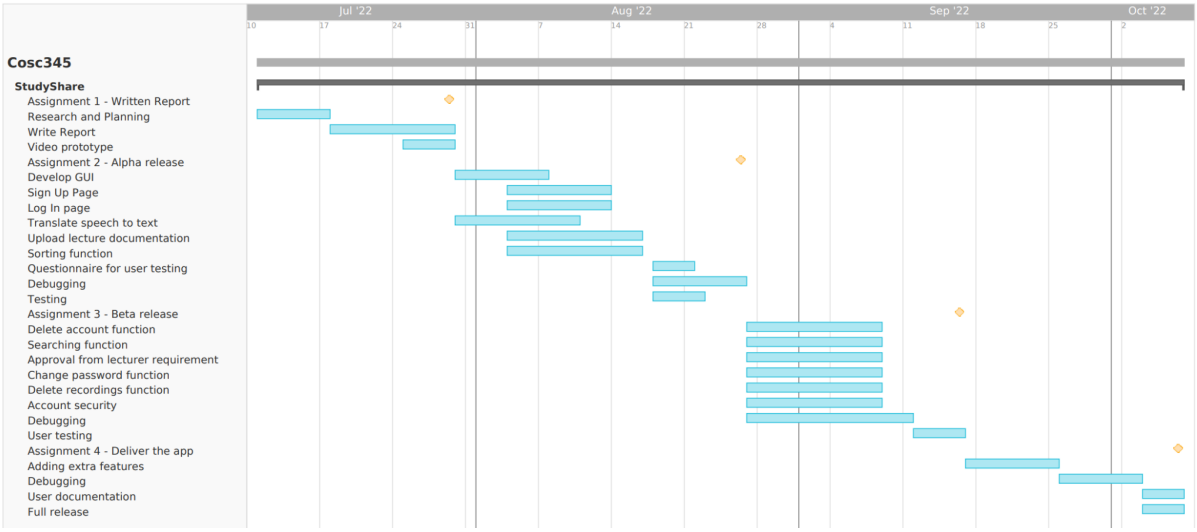
Once these features are implemented we will have an alpha and will move onto testing, bug-fixing, and polishing the app on its way to beta.

Functional requirements

Users should be able to login into the application.
Users should be able to enter lecture content.
Users should be able to translate speech-to-text.
Users should be able to upload lecture documentation to a server.
Users should be able to search for lecture documentation
Users should be able to search for lecture documentation from other users.
Users need to have approval from the lecturer for recording/transcribing. (extra confirm requirement)
Users should be able to delete their account.
Users should be able to delete their recordings.
Admins should be able to delete recordings. (if required)
Admins should be able to delete user accounts.
Admins should be able to run reports.

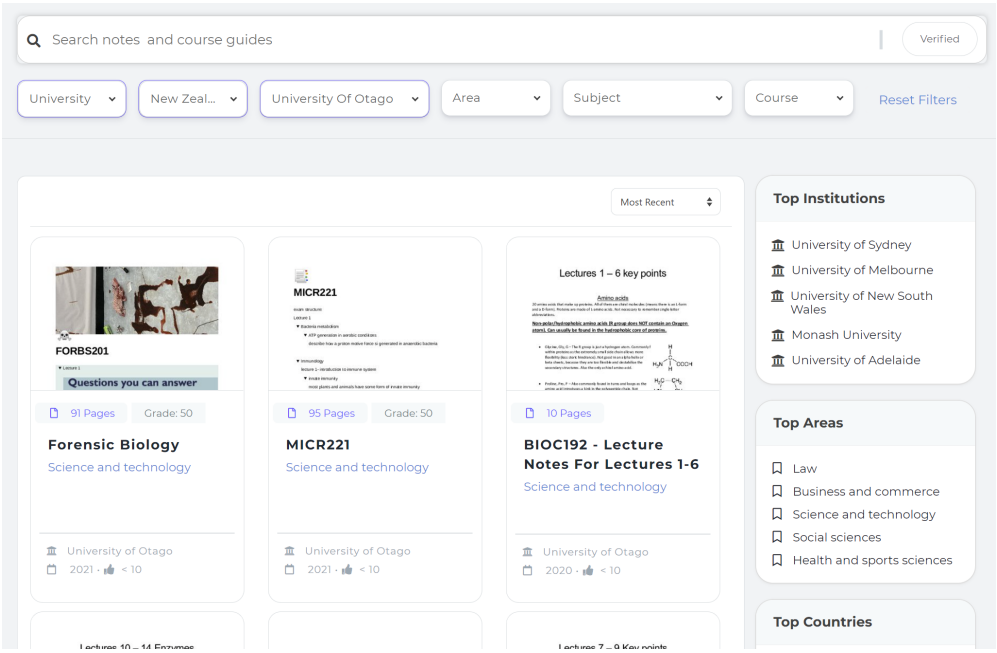
Non-functional requirements

Database connections must be encrypted.
User credentials like passwords need to be at least higher encrypted not just md5…
The uploaded content should be indexed by the database for other users to search and download.
Application needs to load within 5 seconds.
Search content needs to show up within 5 seconds.
No app functionality should require more than 5 screen transitions.



Pre-Existing Solutions

- Nexus Notes



Nexus notes is the closest pre-existing solution we could find, although it is a website not an app. It allows for the uploading of notes created by students which can then be purchased by other students.

Based on a subscription model

- OneClass

Still active
In addition to note sharing, OneClass also is a way of finding a tutor for a certain paper
Based on a subscription model

- NoteWagon

Unlike the previous two pre-existing solutions, NoteWagon was a startup that has since stopped since its founding
NoteWagon was a canadian based startup company who featured in Season 6 of Dragons den
Founded sep 10 2010
Founder, Said Altimimi, university of whatever, felt that he got more out of certain classes than his classmates, and to help others, he felt that he could share his notes with them.
Acquired by NoteLog in Apr 2012

Was based on a reward scheme after someone clicks download on your submitted material

Altimimi went on to co-found Coursemodo, in 2012, which is apparently still active, however no website is currently available

How will we differ?

Universities have made recent progress to facilitate all learning, but we believe it can still be better. Our app will encourage students to attend classes in order to help students that can not attend in-person. We intend to create a symbiotic relationship which benefits all students. Students which contribute content to the app will be given incentive to upload helpful resources. We would like this incentive to be a payment but it will likely end up being a rating system - payment management will complicate development and likely compromise the university copyright rules and licences.

Once students have uploaded content, our app will then provide the original content to all students within the same class, and also give the option to translate into the students preferred language. We will also provide transcribed text, from lecture or audio recordings in order to cater to hearing-impaired students.

Other apps exist for translation, speech-to-text, or communications and resource sharing, but these apps are all separate and often involve students having to set up their own groups and softwares. There is no single online platform (that we know of) which considers diverse students within the same class to collaborate, as a whole class.

Our Target Market

The target market for our app is students. We intend to create an inclusive environment for all students to collaborate no matter their current situation.

We hope to revolutionise remote learning for students who are:

- Visually impaired
- Hearing impaired
- Sick/disabled (including mental health)

This is just a very small group that our app will benefit. There are many other vulnerable students that may require, or prefer, remote learning.

Does The Target Market Care?

Remote learning is becoming increasingly popular and many students' even prefer it.
https://www.soocial.com/remote-learning-statistics/

Online learning is a method of making content more accessible to students. Recently, our lecturer told the class that they had received more emails in the last 48 hours than they would normally receive throughout an entire semester, because the students prefer online content and remote learning.
The target market cares and they are passionate. There will never be a shortage of students wanting extra, easy-to-access resources.
We just have to ensure that we are not leaving vulnerable students behind.
https://evidenceforlearning.org.au/news/global-evidence-review-shows-remote-learning-can-work-but-big-risks-for-vulnerable-students
Working from home can be extremely difficult when you require extra resources, especially for students that require specialist teachers and/or one-on-one interaction.
Our app will provide some assistance to these students and reduce the number of people that get overlooked when learning remotely.

Monetization

Translation, authentication, database and file hosting are all provided by Google for free up to a point but beyond a threshold of use will start to cost money. In addition to this the app should probably make money in some way. There are many different models and figuring out which is most appropriate for our app is challenging.

An up front purchase could work, but would require enough new users coming in to offset the costs incurred by the services used by the current users.

We would like our model to also encourage users to create and upload content to the service, the best way to do this is to pay them, so a model where an uploader could set a cost to purchase the right to view or to set content as free with donations. This runs into an issue where in the case of recordings and transcriptions neither we nor the uploader actually owns the content and whether an argument could be made that they are being paid for the service of creating the facsimile of the content rather than the content itself would take a legal team we do not possess.

Another potential monetization model would be to make the app completely free with ad support.

With this in mind the most appropriate solution is a subscription model with an ad supported free tier, services such as translation and unlimited content hosting could also be limited to paying customers.

Risk Management

Possible Risk	Solution
Specifications taking longer than expected. This has a high chance of occurring as it is very easy to underestimate how long milestone requirements will take.	Need to set realistic goals for each specification and delegate roles to each member. To help keep us on schedule we should increase the number of weekly team meetings, create a quality plan and define the project objectives. The cost of recovery will be catastrophic as our project could risk not being completed by the release date.
Team sickness is a very relevant health and safety risk affecting our project. Throughout our project there is a very high likelihood that one of our team members will get sick.	Use detailed planning methods so we can see if we are on schedule, if we are falling behind we can then divide the remaining tasks between the other members. We also need to ensure that we have a database that can be accessed from all devices, this means the affected worker can work from home when they are feeling up to it. The cost of recovery will be tolerable if we follow our planned response.
The experience and skills of our team in the programming language is a significant risk factor.	Only assign tasks to members with the necessary skill set. There will be weekly meetings and discussion boards so if members decide a task is beyond their skill level they can swap tasks or get guidance. To create fewer errors we also need to create a safe work environment so that the team feels comfortable when asking for help.

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