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**CS 161 Project Proposal**

**Justice League**

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**Summary of Project**

The Study App is an app that offers notes and lesson for specified subjects chosen by the user. The subjects available will range from Math, Chemistry, Biology,English as well as other subjects that will later be implemented. Once users select a subject, they are able to select different tools such as Videos, Lessons Notes as well as review quizzes that will test their knowledge. Users are also able to share their lessons and notes with fellow classmates via email and through social media.

**Development Style**

For the project, we will be using GitHub as our source control and sharing our code the and communication between the team will be done on slack.

**Audience**

The Study App is a simple portal that will help students study for courses. The application will allow users to choose a subject they want to explore through the home screen. After they navigate to a study subject, they will have access to youtube videos/lesson notes on various topics in that subject. Users can share the lessons with classmates/friends/social media or flag the lectures to view for later.

**Proposal Document Contents**

Description of the Product:

* Hub for course content such as lectures, notes, procedures, and educational tips.
* Student users can share notes, discussions, and content in a discussion board/forum.
* Teacher users can share lectures, notes, assignments, and other educational content with their students.
* Students can communicate with professors/students in an educational environment.

Need for the Product:

* It will be a useful collection of resources for users.
* It will prevent wasting time finding good resources online.
* Content can be flagged for later review, so a user can see what he/she still needs help on.
* It will prevent outdated sources from popping up. EX: Source that is popular but has a solution with deprecated methods and classes.

Potential Audience:

* The potential audience is quite large, from students of various levels to professionals wanting to review certain subjects.
* This app can be useful for anyone but will be most used by students currently taking classes.
* The potential of teachers being an audience in order to expand their lecturing methodology and/or content.

What is their level of technical sophistication?

* A user using this app does not need to be technically savvy, and the purpose of this app is to make finding information and resources as easy as possible.
* The layout and associated buttons should be simple enough for anyone to understand like most other apps that appeal to a wider audience.

Discussion of Competing Products:

* Khan Academy: Similar concept but limited to one source of information. Does not allow for other content that is not produced by Khan Academy.

High-level Technical Design:

* The Application will be built using Studio Android 2.0. Languages that will be used are Java and XML. API and important components that will be used are Youtube Android Player API, Android WebView, and MySQL lite.
* Youtube Android Player API will be used to play embedded videos.
* Android Webview will be used to show webpages displaying useful content.
* MySQL lite will be used to to create backend links to resources and create user flagged content list.

Resource Requirements:

* Android Studio
* MySQL Database
* Lectures/notes content
  + Notes
  + Lectures
  + Tutorial videos

Potential Approaches:

* The approach is an approach of simplicity and efficiency.
* Will other approaches have information only from one source or require the user to dig through multiple sources to find useful data. Ours is a direct approach from user to useful content.
* Allowing user generated content serves to populate the app with information that is useful to a wider audience.
* Attempting to connect students and teachers is a method to further develop an informed audience, be appealing to the content originators.

Assessment of Risks:

* Lack of content is the most pressing issue. On launch there would be a bare bones compilation of content for core subjects like Math, Chemistry, Biology, CS, etc., but obviously only so much content can be generated in this manner. The core of the app is for students to help other students by uploading content that can be accessed by others. If there are not enough people to upload content, then the app will not be able to meet everyone’s needs.
* On the opposite side, there’s the question of what if too much content is uploaded. For disparate items like notes or problem sets, there is only so much that can be stored before more capacity for data is required. The most reasonable solution to combat this would be to restrict the uploading of large images. Ideally people could just type out their notes and upload plain text, but that is an unattractive proposition for many people.
* Possible rights issues. Professors at times request that they not be recorded, and that request is not always respected. This could cause issues if lectures are uploaded without a professor’s explicit approval, causing the removal of that content. Additionally the usage of youtube channels such as Khan Academy could potentially be infringing on free use rights. The most simplistic solution is to only allow that users generated content, but the issue of policing that is not cut and dry.
* If one of the goals is to connect professors and students to promote learning, this in essence becomes an expansion of office hours. But there is no real way to incentivize this for a professor. There will be a certain amount who are happy to help pro bono, but if this is sporadic then a major feature of the app will be unsupported.

Next Steps:

* Create Mock up for UI
* Create class structures and diagrams (Main Activity, Database Handler, etc.)
* Design database, general db and user db
* Acquire API keys
* Decide minimum Android os version (Look at what libraries and key features support)
* Find resource content and filter out bad content
* Create a list of resources and subject for V1 of the app ( first version will have a limited number of subjects)

**Project Scopes**

Mobile Wifi and Network Application

Use wifi and network applications

Mobile Social Media

Use social media to share the notes and lectures