ELEC3609 Deliverable 1
Proposal

LECREC

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Group Proposal

Introduction

With the increased adaptation and support of technology in education, students are able to utilise improved and more effective learning methods as technology is developed. One reinforced example is the use of lecture recordings which are provided online. Currently, the technology used for lecture recording is basic, allowing for only primitive functions such as uploading, pausing and replaying videos. While useful as an educational tool, it lacks the communication and discussion typically seen in normal lectures, reducing its effectiveness.

Due to these problems, an internet software system is proposed that will be designed as the new online lecture viewing system utilised to encourage interaction based learning and will be named "LECREC" (short for LECture RECording). It will encourage learning by allowing for video discussion threads and commenting within lecture recordings. Each student will be able to use their current university account to log on to this system which will allow them to view recorded lectures of the subjects they are enrolled in. From here a student is able to create discussion threads within the recording tied to timestamps.

These discussion threads can be questions, comments or even interesting ideas of the topic content itself. teaching staff and other students will also be able to reply to these discussions and help create an online platform in which people will be able to encourage each others learning that delves specifically to a particular aspect of a lecture. With this system in place it is anticipated that student learning and motivation will increase by providing an easy and effective way of allowing students to ask questions, receive answers and increase the availability for discussion for internal and external courses. LECREC can also help students who may be more comfortable asking questions in an online setting and even help provide a positive interaction for students who prefer an online availability of communication.

Scope and Features

The LECREC system is designed to include a multitude of specific functions to allow for the encouragement of learning throughout a lecture recording especially by utilising the section based video discussion thread feature. The project is expected to take 12 weeks, including project management, documentation and full implementation. It is expected that all features outlined in Figure 1 will be implemented and described in the project outlined below:

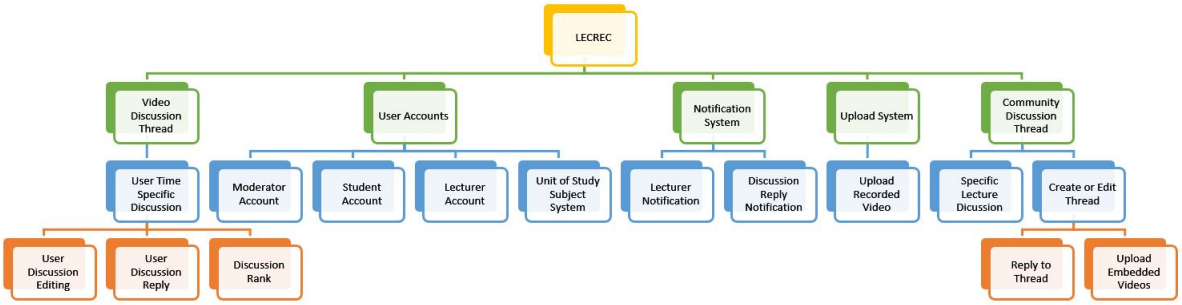

Figure 1: Features of LECREC

Typically a lecture is recorded and output as a video file depending on the university and lecturer regulations. LECREC will allow for most typical video file formats such as avi, mp4, wmv and mkv to be uploaded through the upload system by people who have access through a staff or administrator account. This lecture recording is the basis of which the main features of LECREC comes into play with the use of its video discussion thread features.

A person who has an account on LECREC will be given access to a subject by invitation of email by the subject staff. They will then be able to watch the lecture recordings made available by the lecturer account and start adding discussion threads to the video. The discussion threads will be time specific comments where a user can choose the starting and ending section of a lecture they would like to discuss. A tracker will be implemented underneath and synced to the lecture video tracker so that a user can view the discussion threads that have appeared at a particular time and what was discussed about that specific part of the lecture.

All users that were invited to the subject will also be able to see these discussion threads and can use them to answer questions, or learn from the comments made available. A student account will also be able to edit their own comment and reply to other peoples comments within the video. They will also be able to "up rank" a discussion thread by clicking on an up rank button which will help show how important the students feels about a particular thread.

A secondary feature to the discussion thread scheme will utilise notifications by adding a number based on the notification a user has been given next to their name which will be seen as a top strip in the menu interface. This will allow a user to know whether a comment has been replied to, or if staff need to reply to any discussion threads on the video.

User accounts are also a major implementation of the system with a matrix of the student, staff and administrator. Staff and administrators will both be able to create discussion threads on videos, answer comments, remove any comments and upload subject specific lecture videos. All accounts will be able to make video discussion threads on a lecture recording that they have access to and also reply to any comments within.

A community page will also be available where a student can create a thread specifically about a particular lecture on a different page. Students can then discuss the lecture as a whole utilising the implementation of the comments feature and even utilising embedded videos from outside resources. All these features are expected to be designed within the 12 week project time where a complete running system will be available.

Programming Languages and Implementation

The main implementation of LECREC will be designed utilising Ruby on Rails, because Ruby on Rails has been developed to work as an effective platform in the use of internet software platforms allowing for early development in design. It is also a free platform that allows for fast planning and testing of the LECREC system to ensure that the development is being established as defined in the specifications and it is used quite regularly with other major software platforms which help ensure appropriate conventions, quality and framework standards.

Ruby on Rails will form the graphical layout and structure of the whole system. It will also help implement the upload system and create the dynamic discussions for both the community and lecture pages. A database will also be utilised with a matrix for different account types, and these user accounts will work closely with the subject unit of study system to show the subjects a user is enrolled in.