Sri Lanka Institute of Information Technology

PROJECT REGISTRATION FORM

The purpose of this form is to allow final year students of the B.Sc. (Hon) degree program to enlist in the final year project group. Enlisting in a project entails specifying the project title and the details of four members in the group, the internal supervisor (compulsory), external supervisor (may be from the industry) and indicating a brief description of the project. The description of the project entered on this form will not be considered as the formal project proposal. It should however indicate the scope of the project and provide the main potential outcome.

PROJECT TITLE	
RESEARCH GROUP	
PROJECT NUMBER	(will be assigned by the lecture in charge)

PROJECT GROUP MEMBER DETAILS: (Please start with group leader's details)

	STUDENT NAME	STUDENT NO.	CONTACT NO.	EMAIL ADDRESS
1	Saugat Aryal (GROUP LEADER)	IT14146602	0766948707	it14146602@my.sliit.lk
2	Porawagama A.S	IT14142024	0717039769	it14142024@my.sliit.lk
3	Hasith M.G.S	IT14140280	0717484684	It14140280@my.sliit.lk
4	Thoradeniya S.D	IT14138232	0768401185	it14138232@my.sliit.lk

SUPERVISOR

Mr. Nuwan Kodagoda		
Name	Signature	Date

CO-SUPERVISOR (will be assigned by the Supervisor, if necessary)

Ms. Kushnara Suriyawansa		
Name	Signature	Date

EXTERNAL SUPERVISOR (if any, may be from the industry)

Name	Affiliation	Contact Address	Contact Numbers	Signature/Date

ACCEPTANCE BY PROJECT COORDINATOR

Mr. Jayantha Amararachchi		
Name	Signature	Date

PROJECT DETAILS

Brief Description of your Research Problem:

With the rapid advancement of world, learning resources available over the web are more distributed than ever. Specifically, MOOCs (Massive Open Online Courses) are a relatively recent learning phenomenon with different platforms available like, edX, Coursera, Udacity, Futurelearn, Khan Academy etc. which provides large number of courses in different domains. MOOCs has emerged as a popular mode of learning since its introduction. One of the major and fundamental component in MOOCs is the video lectures and its presentation style to the learner. There are standard video production styles like talking head, presentation slides with voice-over, animation, screencast etc. that are most commonly used.

Apart from being a widely researched field, we can still discover that the drop-out rate from MOOCs have been a challenging problem. Out of many reasons for leaving out the course in middle, one of the main issue can be considered as the type of video lecture style presented to the learner. It is a known and proven fact that different learners have their own preference of learning styles. Some learners might be more visual and prefer images and graphics, while others prefer more demonstration/tutorial etc. Research has been done where comparison between various styles are shown. Also, there are various MOOCs search engine available like, Class Central, MOOCSE, MOOC LIST etc. which allows the user to search and filter the courses from various platforms using different attributes like, course type, provider, start and end date and many more. However, there do not exist a system which can capture the learning interest of the user based on the video production style and recommend optimal learning resources from different platforms. At the same time, modelling the learner's profile gradually with time.

Description of the Solution:

Learning and mastering a subject becomes more effortless when the most suitable resources are presented to a learner. In the present context of e-Learning, where the presentation of similar resources varies with different platforms, a learner-based system, which allows easy access as per their preference of learning interest would bring significant improvements.

We will be mostly focusing on different MOOCs platforms for learning programming languages in the field of computer science.

How our solution works:

1. At first we gather resources (like video lectures, course description, quizzes, transcripts, reviews etc.) from different platforms like edX, Coursera, Udacity and Futurelearn specifically related to programming languages.

2. Video lectures hence collected are classified based on their production/presentation style (visual or auditory) and the analysis of the content along with other course details are indexed and stored in the database.

3. The process of gathering resources, classification and analysis of video lectures are performed in the server machine.

4. When a learner uses the system to learn any material filtering with specific attributes (learning style, preferred accent, provider, date etc.) most optimal resources are presented in hierarchical order.

5. The learner accesses the system through a standard web application where he/she can keep track of the history, progress and updates. Thereby, maintaining the learner's profile.

Main expected outcomes of the project:

After successful completion of this project, certain benefits are can be found.

- Access the distributed e-Learning resources across various MOOCs platforms within an integrated learner-based system.
- Any learner can easily access the ideal learning materials depending on his/her preference of learning style.
- Get an overview of the most preferred video lecturing style for learning programming language.
- Learner can analyse his/her profile to reflect upon the progress and history through the dashboard and take necessary actions further.

WORKLOAD ALLOCATION (Please provide a brief description about the workload allocation)

MEMBER 1	Saugat Aryal

Video Analysis and Classification

- There are standard video production styles when it comes to different MOOCs platform, like talking head, presentation with voice-over, picture-in-picture, animation, screencast/screen recording, whiteboard, conversation etc. These styles can be classified as visual or auditory approach.
- Analyze the course videos based on the above mentioned styles, index and store the details in the database. Here, only reference to the particular course will be stored along with details.

MEMBER 2	Porawagama A.S

Text and Content Analysis and Classification

- Extract, analyse and store the transcripts of the course videos along with course description, provider details, comments, rating, quizzes etc. These details are stored alongside with the video analysis details.
- Transcript analysis details can be used if the learner wants to filter with specific keywords. Also other extracted details can help to further filter the courses.

MEMBER 3	Hasith M.G.S

Web crawler/spider and Web scraping

- Develop a web crawler to systematically browse through different MOOCs platforms and extract necessary information (like videos, transcript, comments, description and other details of course).
- Modify it to run in background so that it will repeatedly crawl through the given websites for any new courses.

MEMBER 4	Thoradeniya S.D

Modeling the learner's profile

- Design and develop the front-end client application to gather information about learner's preference and filters.
- Modify and update the learner's profile based on their history, progress and hence recommending ideal learning resources.
- Generate charts and graphs based on learner's profile. Also, summarizing overall trend for different learners.

DECLARATION

"We declare that the project would involve material prepared by the Group members and that it would not fully or partially incorporate any material prepared by other persons for a fee or free of charge or that it would include material previously submitted by a candidate for a Degree or Diploma in any other University or Institute of Higher Learning and that, to the best of our knowledge and belief, it would not incorporate any material previously published or written by another person in relation to another project except with prior written approval from the supervisor and/or the coordinator of such project and that such unauthorized reproductions will construe offences punishable under the SLIIT Regulations.

We are aware, that if we are found guilty for the above mentioned offences or any project related plagiarism, the SLIIT has right to suspend the project at any time and or to suspend us from the examination and or from the Institution for minimum period of one year".

	STUDENT NAME	STUDENT NO.	SIGNATURE
1	Saugat Aryal (GROUP LEADER)	IT14146602	
2	Porawagama A.S	IT14142024	
3	Hasith M.G.S	IT14140280	
4	Thoradeniya S.D	IT14138232	