Sri Lanka Institute of Information Technology

PROJECT REGISTRATION FORM

(This form should be completed and uploaded to the Cloud space on or before XXXXXXXXX)

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 (As per the accepted topic assessment form)	Interactive Learning System for Kids

RESEARCH GROUP **(as per the Topic assessment Form)**	Knowledge Inspired Computing (KIC)

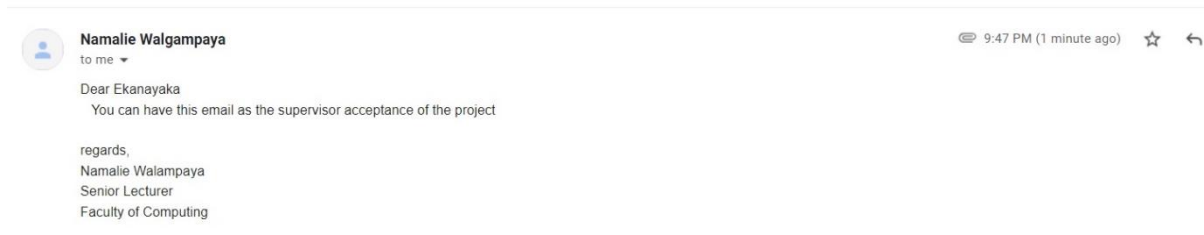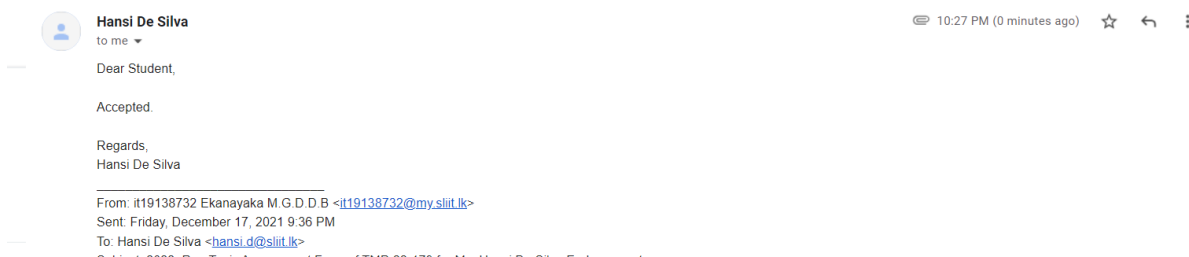| PROJECT NUMBER	TMP-22-179 (2022-254)	(will be assigned by the lecture in charge)

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

	STUDENT NAME	STUDENT NO.	CONTACT NO.	EMAIL ADDRESS
Format	Perera C.D.D	ITxxxxxxxx	0712345678	itxxxxxxxx@my.sliit.lk
1	Ekanayaka M.G.D.D.B	IT19138732	0766008258	It19138732@my.sliit.lk
2	Wijesinghe S.A.S.D	IT19167206	0765207513	it19167206@my.sliit.lk
3	Jayasundara J.T	IT19148014	0715291618	it19148014@my.sliit.lk
4	Ravindu L.H.G.N	IT19197838	0716623861	it19197838@my.sliit.lk

SUPERVISOR, CO_ SUPERVISOR Details

SUPERVISOR Name	CO-SUPERVISOR Name
Ms. Namalie Walagampaya	**Ms. Hansi De Silva**
Signature	Signature
Attach the email as Appendix 1	Attach the email as Appendix 2
2022/02/15	**2022/02/15**
Date	Date

Appendix 01:

Namalie Walgampaya
to me ▾   9:47 PM (1 minute ago)   ☆   ↩

Dear Ekanayaka
   You can have this email as the supervisor acceptance of the project

regards,
Namalie Walampaya
Senior Lecturer
Faculty of Computing

Appendix 02:

Hansi De Silva
to me ▾   10:27 PM (0 minutes ago)   ☆   ↩   ⋮

Dear Student,

Accepted.

Regards,
Hansi De Silva
_____
From: it19138732 Ekanayaka M.G.D.B <it19138732@my.sliit.lk>
Sent: Friday, December 17, 2021 9:36 PM
To: Hansi De Silva <hansi.d@sliit.lk>

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

				Attach the email as Appendix 3
Name	Affiliation	Contact Address	Contact Numbers	Signature/Date

ACCEPTANCE BY CDAP MEMBER (This part will be filled by the RP team)

Name	Signature	Date

PROJECT DETAILS

Brief Description of your Research Problem: (extract from the topic assessment form)

Due to the rapid growth of technological advancement, we are living in an era where everything takes place on a technological background. In this technological world education has become the most important thing Therefore, education has become more competitive at the present. Therefore, students need a smart and efficient method to learn. Without efficient learning methods, students cannot survive in this educational race. With the rapid rising of technology, as a researcher, we can introduce a more efficient and smart method to learn for students. Considering the education system, Authors cannot ignore primary and nursery education. Because the foundation of a human being's education is built up by this primary and nursery education, some exorbitance has happened to primary and nursery education. Even though most advanced technologies have been used in higher education, those advanced concepts have not been used for primary education. Based on this problem, we are going to highlight the lack of innovation in an e-learning system for primary and nursery students.

Specifically focusing on primary and nursery education, there are a lot of issues that can be solved using technology. Writing letters acts as an important learning tool in primary level education. Letters are the very basis of education. There are some basic applications for learning letters. But those applications are not sufficient for efficient learning. Most of the existing applications only show the letter and a picture or words related to that word. That is not the maximum usage of technology for learning letters.

Another issue is learning shapes for kids. Students increase their creativity with these shapes. If the knowledge of shapes is on the lower scale for some students, that student will face more difficulties in the future. Therefore, to learn shapes, there should be advanced learning methods. Identifying and drawing objects is also one of the major learning components of primary education. The basics of painting are taught using this object drawing. But for this learning, technology has been used very rarely. Primary students have been unable to identify and draw objects efficiently since the lack of technology in this path.

According to the author's knowledge, identifying an object in a picture is another important learning method. When an image is provided, students should be able to identify objects that consist of that image. For this learning method, there is no technological method to increase the learning efficiency of students. Without efficient learning methods, students are unable to identify objects in an image efficiently.

Most importantly in this pandemic time period, there is no proper way to teach those mentioned facts and basics to children because they are not able to attend any in-school education. According to this, the parents of the kids have a lack of knowledge about some special facts and theories in primary education. After identifying the abovementioned problems, Authors are going to introduce an advanced application to solve those problems.

Description of the Solution: (extract from the topic assessment form)

We propose to develop a smart learning application for kids. Most of the students are willing to learn with technology. Because creative things such as images, voices, videos are going through the student's mindset than the traditional education.

As we mentioned earlier writing letters, drawing shapes, drawing images, and identifying images are the main activities of primary school students. Therefore, we hope to develop a smart system targeting these factors.

Writing letters are a very important activity in the primary ages. Currently, most of the students are learning to write letters using books. But the problem is the mistakes that done by the student when writing letters can be missed from the teacher's side. If it is so, the child will continue his/her mistake continuously. But in the out system, we will give a feature to student writes on a display (tablet). Then we will identify all of the mistakes and correct those mistakes.

Drawing shapes is also key learning activity of primary school students. In our system, we will enhance the drawing shapes skills of students than the traditional method. We will introduce a feature for not only identifying shapes but also identity arts that are drawn using shapes. Within this feature, we can identify the mistakes of students in an efficient way and correct those mistakes.

Another key learning activity of primary school students is drawing images. In our system, we will introduce a feature for students to draw images on the created surface. Using this feature, we will track every line of the drawn image and we will identify mistakes done by the students. Not only that we will identify whether the used colors to paint the image are correct or not.

Identifying given images is also another very important activity of primary school students. In our system, we will introduce a feature for students to identify images in a very efficient way. When the teacher or a system gives the random image to the student, the student should identify the given image correctly and write the identified word on the created surface on a tablet or any device. Then the system will identify whether the written word is match or not with the given image. Using this feature, we can improve the knowledge of students in a very efficient way.

Main expected outcomes of the project: (extract from the topic assessment form)

The main expected outcome of this system is to create an E-Learning application for Children to enhance their learning. Under this outcome, there are 4 sub-main outcomes. Through all these outcomes we hope to enhance the learning pattern of children.

As I mention above there are 4 sub outcomes in our system. Identifying the hand-drawn letters, Predicting the letter if the student draws the letter incompletely, and identifying the mistake that was done by the student is one of the sub outcomes. From this feature, we hope to enhance the writing skills of students.

Identifying the words with provided images is one of the sub outcomes. When an image is provided student should identify the given image and he/she should write the word on the

provided surface (display). In this feature, we hope to enhance the picture identification knowledge of students.

One of the other sub-components is identifying & counting the hand-drawn shapes and identifying the arts that are drawn using shapes. In this component, we will enhance the drawing and identifying shapes skills of students. Not only that we will enhance the art skills using this component. When students draw an art using a shapes system will identify the art and provide suggest corrections if wrong.

Identify and classify drawn images and colors according to a given question. When a student draws an imaging system will check whether the drawn images are correct or not and provide suggestions if the answer is wrong. Within this component, we will enhance the drawing skills of students.

WORKLOAD ALLOCATION (**extract from the topic assessment form after the correction suggested by the topic assessment panel.**)
(Please provide a brief description about the workload allocation)

MEMBER 1

- **Identify barriers and collect the data of the drawn letters.**
- **System provides to draw the letters.**
- **Gather all resources and provide a area to draw a letter.**
- **When students draw a letter, the system should identify the drawn letter.**
- **System will compare the drawn letter and correct letter.**
- **If a student draws a letter incompletely, the system predicts the letter that the child was trying to draw.**
- **If there is any mistake in the drawn letter, that mistake will identify by the system.**
- **The solutions for those mistakes will suggest by the system.**
- **Draw a correct letter for the mistakes by the system.**

MEMBER 2

- Identify barriers and do research about identify the object and views in a mobile application
- Gather all the resources
- Find the most suitable way to solve the given scenario
- Develop the question given way
- Identify the given image or view
  - Identify the features in image
  - Generate the image object name or image description
- Identify the input handwritten words
- Compare with the generated result
- If it would be correct make appreciate child
- If not notified to instructor or teacher

MEMBER 3

- Identify barriers and do research about scanning hand-drawn shapes in a mobile application.
- Find the most efficient way to scan drawn shapes.
- Scan the drawn shapes.
- Identify drawn shapes.
- Suggest corrections if a student draws incorrectly.
- Count the number of shapes that students were drawn.
- Do correction if a student draw number of shapes incorrectly or draw shapes incorrectly.
- Scan the drawn art using shapes.
- Identify an art that is drawn by students using shapes.
- If there are any mistakes in drawn art, do corrections.

MEMBER 4	

- **Determine what pictures students drew on the surface.**
- **Pre-process the images that student's sketched picture.**
- **Track every line of the drawn image**
- **Identify mistakes done by student**
- **The algorithm will recognize the color of the student's sketched picture.**
- **Classify Using color classification method.**
- **Make a color suggestion that is appropriate.**
- **Testing and checking the accuracy.**
- **Finally, recommend a student creativity level.**

DECLARATION (Students should add the Digital Signature)

"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	Ekanayaka M.G.D.D.B (GROUP LEADER)	IT19138732	
2	Wijesinghe S.A.S.D	IT19167206	
3	Jayasundara J.T	IT19148014	
4	Ravindu L.H.G.N	IT19197838	