



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)	MediSafe- Stay away and defeat Diseases
RESEARCH GROUP (as per the Topic assessment Form)	Autonomous Intelligent Machines and Systems (AIMS)
PROJECT NUMBER	TMP-22-054 (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	Thennakoon T.M.B.C.K (GROUP LEADER)	IT18077698	0717644169	it18077698@my.sliit.lk
2	Perera B.A.A.W.S	IT19015422	0702884329	it19015422@my.sliit.lk
3	Rasuni Wageesha H.A	IT19015040	0756781300	it19015040@my.sliit.lk
4	Senanayaka S.A.M.A.B.M	IT19011608	0712751694	it19011608@my.sliit.lk

SUPERVISOR, CO_ SUPERVISOR Details

SUPERVISOR Name	CO-SUPERVISOR Name
Mr. Ravi Supunya	Mr. Samantha Rajapaksha
Signature	Signature
Attach the email as Appendix 1	Attach the email as Appendix 2
27th of January 2022	27th of January 2022
Date	Date

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

Dr. L.S Chathuranga	Medical officer	No 5, Trinity Gardens, Pallekele, Kundasale.		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)

1. With regard to electronic accuracy, there are many reasons to doubt it. However, during the plague it became famous all over the world. As the Covid 19 epidemic spread, the number of Covid victims increased day by day and doctors became extremely busy. Users should also have a hardware device to check their blood pressure, pulse rate, temperature and ECG pattern, and if they do not have one, they should purchase one. Although there was expensive hardware to test such conditions, many people could not afford to buy these hardware at the time of the collapse of the economy with the Covid 19 epidemic and did not even have the opportunity to leave home.
2. As the epidemic spreads around the world, face-to-face conversations do not take place and physicians do not have the opportunity to make accurate diagnoses based on patient information. There are also users who are unaware of the latest technology. However, they have to keep up with the technology. By 2020, it was obvious that the corona virus's original and alpha versions had caused three common symptoms: cough, fever, and odor loss, as well as at least 20 more, as were abnormalities including skin rashes, sore throat, and Red eye. The disease can be spread from touching so the symptoms such as skin rash, sore throat and Red eye cannot be identified without contact with the patient directly.
3. People are hesitant to use chatbots because they can currently only use one word and because there's no better connection between people and chatbots.
4. Nowadays, countless people do not watch television or read newspapers instead, they rely on mobile phones and web applications and also they did not receive clear information about the covid.

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

1. To read the blood pressure, pulse rate, temperature and ECG pattern there should be a hardware device that can measure multiple values. Patient or the user needs to keep their finger in order to read the parameters. Once that been done, the data should be passed to the cloud and analyzed.
2. If patients wants to clarify the symptoms furthermore they can upload an infected area photograph to the system. According to the automated symptomatic extraction to classify sore throat, Red eye and skin rash, Corona-infected pictures are evaluated using an in-depth learning technology called Convolutional Neural Network (CNN). Image processing techniques will be used to pre-process pictures and train the model with the maximum accuracy. Then system will provide the current statue regarding the symptoms.
3. People who are not COVID will also be able to obtain the information they require, and people who have developed COVID will also be able to gather relevant information. Patients can use chatbots to acquire the medicine they need, medical advice they need, exercises they need to undertake, daily routines they require, and information they need in their own language. It establishes a link between man and Chabot.
4. As a result, we developed a web-based application and a mobile app to showcase the present situation of covid, as well as the current spread rate and other information about covid.

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

Provide the user with the opportunity to monitor the results of monitoring blood pressure, pulse rate, temperature and ECG pattern and external symptoms and to obtain the necessary guidance from home using the health care system to maintain a healthy lifestyle and make accurate diagnoses of the disease.

Sub Objective 1:

Develop a device that a simple, low-cost, painless, and non-invasive computer-aided system will detect blood pressure, pulse rate, temperature and ECG pattern. Analyzing the measured data using expert system then the gathered data will upload to the cloud to make solutions.

Sub Objective 2:

External symptoms of Covid-19 include sore throat, discoloration of the eye and skin infections. This is done by analyzing the pictures of these symptoms to give an accurate, early diagnosis and giving the patients the appropriate course of action regarding the disease. This allows patients to confirm the symptoms to some extent.

Sub Objective 3:

Being able to find out what exercises a person with Covid needs to conduct on a daily basis fast and easily. Allow the patient to send extensive messages as well as provide information in the language that individuals of all ranks demand. It also creates a communication channel between humans and chatbots.

Sub Objective 4:

Using the mobile and web application, the user can identify the covid spread rate and gain a better understanding of it, as well as recommend some tips to protect the user's covid

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	Thennakoon T.M.B.C.K
	<p>Patients infected with the Covid 19 epidemic avoid going to hospitals, and some decisions became extremely important, since the patients died as a result of those actions. As a result, it is vital to determine the patient's risk of disease and then choose if he or she can stay at home and get medication or whether traveling to the hospital can save the patient's life. We can only use one finger to read the blood pressure, pulse rate, temperature and ECG pattern because the three sensors are separated (temperature -MAX 30205, pulse rate - Pulse Sensor SEN-11574, ECG – AD8232 , Blood pressure – pressure sensor). Once the hardware device can offer real-time blood pressure, pulse rate, and ECG pattern rate, the data will be uploaded to the system to be analyzed in order to diagnose the patient's condition and provide treatment. These sensors are connected to our device through Bluetooth using the Arduino Uno microcontroller. According to the working principles of each sensor the measured values should be analyze using expert system (MATLAB) and send those data to the cloud database.</p> <ul style="list-style-type: none"> Novelty: At present there are expensive instruments on the market for measuring the above mentioned parameters and if these tests are done externally, some money has to be spent. So the novelty here is that it allows one device to measure several parameters.

MEMBER 2

Perera B.A.A.W.S

In order to accurately diagnose the symptoms of Covid-19, we will contact a doctor to obtain relevant pictures and gather the necessary information. Here the doctor deals with corona patients so he has a great deal of knowledge about the disease. Corona-infected photographs are analyzed using in-depth learning technique that is Convolutional Neural Network (CNN) for automated symptomatic extraction to classify sore throat, Red eye and skin rash. To pre-process photos and train the model with the greatest accuracy, image processing techniques will be utilized. The goal is to determine the most accurate and appropriate architecture for training datasets in order to produce a set of guidelines for the disease. After providing guidelines the system will notify after 7 or 14 days as an alert to re-examine those symptoms by continuing previous process. One of the key reasons that we cater from the system with the expertise we gained during the lockdown is to make it easier for the patient or family member to locate the nearest medical centers based on the symptoms level.

- **Novelty:** According to the research papers used and the queries of the doctor, X-ray examination of the lungs performance of Covid-19 infected patients was found to provide a solution for the printed X-ray. But there was no mechanism to detect external symptoms such as sore throat, skin infections and changes in the eye. Therefore intend to use image processing to identify those external features.

MEMBER 3

Rasuni Wageesha H.A

Many people become lonely as COVID matures. If a person returns home, he may be taken to a quarantine facility. Then he discovers that he is the only one in the room. He was thinking about his family at that point. It's getting better. As a result, A This technique is applicable. Some people also quarantine themselves at home in order To receive information from chatbots. A few people are afraid, and as a result, they are unable to obtain the necessary activities. Unnecessary troubles increase stress Levels. These chat bots can provide you with the assistance you require. Artificial Intelligence (AI) can be used to ask questions.

Ex:

User: Hi

Chat bot: Welcome

User: I have...

Chabot: Please select...

The goal of this study was to compare human-to-human and human-to-Chabot conversations. One hypothesis was that when communicating with chatbots, the average human would send fewer messages and write fewer words per message than when communicating with other humans. While messages sent to chatbots did contain fewer words per message than messages sent to other people, as predicted, people were actually inclined to send more than twice as many. A messages to chatbots as compared to other people, contradicting our expectations and refuting the idea that humans are less confident or comfortable communicating with chatbots. If the replies are relevant

To COVID, they will be delivered to the Chabot via AI. The patient is subsequently dealt with by the Chabot. Recommend some videos and games for those suffering from COVID using the AI Chabot. Recommend some meditation articles and music. This Chabot also informs you of the patient's requirements. In addition, this Chabot is designed to chat in multi-lingual English as well as Sinhala. Because some patients are using the Sinhala language.

Ex: You can learn about his daily routine, which prescriptions he has been prescribed, and his daily challenges. If user is not Covid infected he can provided some Covid protection tips/folk medicine otherwise.

- **Novelty:** These chatbots usually just use one word or two words. So we are trying to develop long sentences with conversational fluency to better interact with humans and chatbots and have designed it to be multi-lingual.

MEMBER 4

Senanayaka S.A.M.A.B.M

We first created the COVID spread prediction model for our research purposes. Then this model can identify the number of vaccinated people on one day, death count, number of fully vaccinated people in one day, number of one-dose vaccinated people, COVID infected people in each area, etc., so then we can easily identify how the spread is working in the country.

1. **Novelty:** when it comes to countries, the COVID has a variety of variants, such as omicron and delta. Using prediction model, we are attempting to identify each variety. Then we'll have a better idea of the spread rate in each area, and the death count in each districts and provincial and also identify low risk and high risk areas in the country. finally We send this data to the mobile application, which is using the Google Map API to show the user which areas have more and low infected people living , nearby vaccination centers where they can get the vaccine, and if the user enters the most

infected areas, To keep the user safe, the mobile application sends text message with reminders like "always use hand sanitizers" Also, using a mobile phone, you can check that your mask is properly worn by using image processing and sending a notification to the user that "you need to wear a mask properly. "To get the dataset we use ourworldindata.org website.

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 constitute 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	Thennakoon T.M.B.C.K (GROUP LEADER)	IT18077698	
2	Perera B.A.A.W.S	IT19015422	
3	Rasuni Wageesha H.A	IT19015040	
4	Senanayaka S.A.M.A.B.M	IT19011608	

Appendixes

1. Supervisor approval

Regarding the charter submission approval Inbox x

it18077698@my.sliit.lk Wed, Jan 26, 9:43 PM (12 hours ago) ☆

Dear Sir, This is the finalized Charter submission document. Please find the attachment below and kind enough to provide your approval to submit the docum...

Ravi Supunya 7:26 AM (3 hours ago) ☆ ↩ ⋮

to Thennakoon, me, Rasuni, Senanayaka ▾

Now its OK. Attach supervisor and co supervisor approvals.

2. Co- Supervisor approval

Regarding the charter submission approval Inbox x

it18077698@my.sliit.lk Wed, Jan 26, 9:41 PM (12 hours ago) ☆

Dear Sir, This is the finalized Charter submission document. Please find the attachment below and kind enough to provide your approval to submit the docum...

Samantha Rajapaksha 9:08 AM (1 hour ago) ☆ ↩ ⋮

to Thennakoon, Rasuni, me, Senanayaka ▾

Dear Students

This is ok

U.U.Samantha Rajapaksha
M.Sc.(SLIIT), B.Sc.(Engineering)
Senior Lecturer/Coordinator [M.Sc.in IT](#)
Sri Lanka Institute of Information Technology
Tel:0117544802| Mob:0714121097
Email: samantha.r@sliit.lk
www.sliit.lk

3. External supervisor approval