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|  | **Sri Lanka Institute of Information Technology** |



PROJECT REGISTRATION FORM

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(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.

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| PROJECT TITLE  (As per the accepted topic assessment form) | Mobile Application to Analyzing fisheries Market, Shrimp Farming and Identifying Fish Species using Image Processing |

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| RESEARCH GROUP  **(as per the Topic assessment Form)** | ICT For Development |

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| PROJECT NUMBER | TMP-22-109 | (will be assigned by the lecture in charge) |

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

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|  | **STUDENT NAME** | **STUDENT NO.** | **CONTACT NO.** | **EMAIL ADDRESS** |
| Format | Perera C.D.D | ITxxxxxxxx | 0712345678 | itxxxxxxxx@my.sliit.lk |
| 1 | A.L.G.Sachini Sumeera | IT19101248 | 0760228801 | it19101248@my.sliit.lk |
| 2 | Nipun Pesala H.R | IT19033860 | 0771495443 | it19033860@my.sliit.lk |
| 3 | Maleesha Thilani M.A | IT19191584 | 0711789216 | it19191584@my.sliit.lk |
| 4 | Perera M.G.S | IT19517766 | 0768821726 | it19517766@my.sliit.lk |

**SUPERVISOR, CO\_ SUPERVISOR Details**

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| --- | --- |
| **SUPERVISOR Name** | **CO-SUPERVISOR Name** |
| **Mrs Anjalee Gamage** | **Mrs Pradeepa Bandara** |
| **Signature** | **Signature** |
| **Attach the email as Appendix 1** | **Attach the email as Appendix 2** |
|  |  |
| **Date** | **Date** |

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| EXTERNAL SUPERVISOR Details (if any, may be from the industry) | | | | | |
|  |  |  |  | **Attach the email as Appendix 3** |
| Name | Affiliation | Contact Address | Contact Numbers | Signature/Date |

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| ACCEPTANCE BY CDAP MEMBER (This part will be filled by the RP team) | | |
|  |  |  |
| Name | Signature | Date |

PROJECT DETAILS

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| Brief Description of your Research Problem: (extract from the topic assessment form) |
| * When buying fish from the market, it is sometimes difficult for customers to identify the fish with their names. There, the seller is often able to deceive the customer * One of the major problems faced by university studies is that it takes a long time to identify species referring a books.in this situation student or researcher need to compare images this is a difficult task. * Sri Lanka has a large number of endemic fish species. Most of these species are endangered. Due to the ignorance, these species are in great danger. * Market fish prices are not always constant. Fish prices fluctuate from time to time depending on the fish harvest. In such cases, the customer and fish sellers does not have a correct idea about the price of the new fish, so some times we have to pay more to buy the fish. * Foreigners are greatly embarrassed by the inability to find reasonable prices for local fish in Sri Lanka. * Another major problem for shrimp farmers is the fungal infection and another disease. If these diseases are not correctly identified at an early stage the entire shrimp pond will be destroyed.it is very important to identify these diseases * And also important for shrimp growers to know if shrimp have grown to the right size to reap the harvest. * One of the major problems for the ornamental fish frames is the transmission of various diseases to these ornamental fish. Another problem is that ornamental fish farmers have no idea about the disease and what medicines use to treat it. This can be a huge loss to the economically for ornamental fish farmers. |
| Description of the Solution: (extract from the topic assessment form)   * The solution we are proposing is to create a new fish recognition system that will overcome the various shortcomings of current fish recognition systems. One of the major weaknesses of the existing systems is the lack of accurate output for Sri Lankan species. This system will enhance the problems of students, researchers and farmers (Shrimp and ornamental fish). Also system will be able to identify endangered and endemic fish species in Sri Lanka. This this facilitates university academic activities. * This system quotes fish prices so that people, who are unfamiliar with the market price of the fish, especially the young generation, can buy fish at the right and fair price without being fooled by fraudsters. They can buy fish without any hassle by comparing the two prices. At reasonable Price so you can get an idea of the changes in fish prices during the season buying and selling can be done. Data on past fish prices are available year-on-year and can provide an idea about future prices of fish supply in market. * This system has the ability to determine Shrimp age. Then a shrimp grower can find the harvest in the shrimp box even before the harvest season. You can also decide when, in what month and on what day the harvest will take place. The grower can find out what the disease is that has spread to the shrimp box. If diseases infect the shrimp box, we can determine the profit and loss before selling it. * The system also has the ability to detect diseases of ornamental fish. Also System provide a chatbot to diagnose medicine for particular diseases. This will allow users to accurately diagnose diseases and determine the appropriate medications. * As explained, it is expected to consolidate all the above-mentioned functionalities under a single platform and to present an effective solution that is equipped to address difficulties. |

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| Main expected outcomes of the project: (extract from the topic assessment form) |
| A mobile application that will support to identify fish species.  The main purpose of this is to get a better understanding of the fish species.  Fish can be identified at the fish market and fish prices can be determined, so that fish can be obtained at the right price without being deceived by market fraudsters.  People can get an idea about future fish price according to the seasonal fish harvest.  Identify the shrimp disease facing shrimp farmers.  The fish disease is observed and details are given immediately through the chatbot.  **Main Objectives**  • Identify fish species according to the given input image.  • Identify the shrimp disease facing shrimp farmers.  • Predict the fish market prices in Sri Lanka.  • Identify the ornamental fish disease aquarium fish farmers.  Sub Objective 1: Identify endemic fish species in Sri Lanka.  Identify endanger fish species Sri Lanka.  Sub Objective 2: Identify shrimp age.  Predict the maximum number of shrimp in the particular aria (pond).  Sub Objective 3: Predict the fish prices are increase or decrease.  Predict the annual fish yield increase or decrease.  Sub Objective 4: Create chat bot to ask question directly. |

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)

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| MEMBER 1 | Predict the fish market prices |
| Member 1  1) Create a model for Predict to market prices and annual fish yield.   * Collect prices of market fish species in previous year.                  2) Analyse the data and predict the prices are increase or decrease for particular fish.   * Using machine learning can predict the fish market price for given fish. Estimate increase or decrease of price before they happen.   3) Analyse the data and predict the annual fish yield increase or decrease for particular fish | |

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| MEMBER 2 | Identify fish species using image processing ……………………………………………………………………………………………………………………………………………… |
| * 1. Create a model for fish species usinng tensorflow * Collect all images and all details for particular fish species and create a model and training the model.   1. Identify fishspecies using image processing.      + Object detection algorithm can be trained for fish detection.      + Generates the small segments in the input      + Predict whether the rectangle contains a valid object.      + Finally Identify the relevant class or the object.([***YOLO algorithm***](https://www.mygreatlearning.com/blog/yolo-object-detection-using-opencv/))   2. Identify endemic species in Sri Lanka. * This will Cleary identify whether the fish are endemic or not.   1. Identify endangered fish species * This will Cleary identify whether the fish are endanger or not. | |

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| MEMBER 3 | Identify the shrimp disease facing shrimp farmers. |
| 1) Create a model for shrimp disease using tensorflow   * Collect all images and all details for particular fish species and create a model and training the model.          2) Identify the shrimp disease facing shrimp farmers.   * Collect the images of infected shrimp. * Classify the images according to the type of diseases. * After trained model identify the shrimp disease.           3) Shrimp age estimation   * Identify the shrimp length. * According to the length calculate the shrimp in month.   4) Predict the amount of shrimp particular pond or area. | |

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| MEMBER 4 | Identify the ornamental fish disease aquarium fish farmers. |
| 1) Create a model for ornamental fish disease using tensorflow   * Collect all images and all details for particular fish species and create a model and training the model.                2) Identify ornamental fish diseases in Sri Lanka  3) Create chatbot to get details about the ornamental fish diseases and relevant medicine for    particular diseases   * Based on the relevant fish diseases AI- based chatbot can answer to the question related to the ornamental fish diseases and medicines for the diseases. Using (NLP, machine learning and AI). | |

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”.

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|  | STUDENT NAME | STUDENT NO. | SIGNATURE |
| 1 | A.L.G.Sachini Sumeera | IT19101248 | C:\Users\Acer.LAPTOP-CAE6OQA2\Desktop\CamScanner 01-10-2022 21.13.jpg |
| 2 | Nipun Pesala H.R | IT19033860 | C:\Users\Acer.LAPTOP-CAE6OQA2\Desktop\WhatsApp_Image_2022-01-10_at_21.49.15-removebg-preview.png |
| 3 | Maleesha Thilani M.A | IT19191584 | C:\Users\Acer.LAPTOP-CAE6OQA2\Desktop\IMG-20220110-WA0028.jpg |
| 4 | Perera M.G.S | IT19517766 | C:\Users\Acer.LAPTOP-CAE6OQA2\Downloads\IMG_7034.jpg |