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), the 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)	Train Tracking and Detection System for Citizens
RESEARCH GROUP (As per the Topic Assessment Form)	TMP-23-302
PROJECT NUMBER	302 (Will be assigned by the RP Team)

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

	STUDENT NAME	STUDENT NO.	CONTACT NO.	EMAIL ADDRESS
1	B.D.V.J. Biyanwila	IT20212490	0775575282	IT20212490@my.sliit.lk
2	B.M.C. Jayanga	IT20188672	0703528230	IT20188672@my.sliit.lk
3	C.D. Amarasinghe	IT20187064	0714039015	IT20187064@my.sliit.lk
4	L.L.Wijewardene	IT20101824	0702341316	IT20101824@my.sliit.lk

SUPERVISOR, CO_ SUPERVISOR Details

SUPERVISOR Name	CO-SUPERVISOR Name
Dr. Shanta Yapa	Ms. Lochana Rajamanthri

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

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)
The train tracking and detection system is an important component of railway transportation that helps to ensure the safety and efficiency of rail traffic. However, despite the advanced technology and sophisticated systems in place, citizens who cross railway crossings often face a number of problems that can impact their safety and well-being. Some of the most common problems faced by citizens Poor Visibility: In some cases, poor visibility at railway crossings, such as due to heavy rain or fog, can make it difficult for citizens to see approaching trains and make safe decisions. Railway crossings can be dangerous due to trespassing, faulty equipment, poor visibility, human error, lack of awareness, and lack of safety procedures. To address these problems, railway authorities, transportation departments, and local governments can work together to improve the safety of railway crossings through increased enforcement, education and outreach efforts, and infrastructure improvements. Additionally, citizens can play a role in ensuring their own safety by being aware of the dangers and following all warning signs and instructions.

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

1. Increased safety: The system can help prevent accidents by detecting and tracking trains in real-time. This can improve safety for citizens who use trains to commute or travel.
2. Improved transportation efficiency: By providing accurate and real-time information about train schedules and locations, the system can help reduce delays and improve the efficiency of the transportation system.
3. Enhanced passenger experience: Citizens can benefit from the system's ability to provide up-to-date information on train schedules, delays, and cancellations. This information can help them plan their journeys better and avoid inconvenience.
4. Reduced costs: The system can help reduce the costs associated with train accidents, delays, and cancellations. This can result in significant savings for train operators and governments.
5. Increased transparency: The system can help increase transparency in the transportation system by providing citizens with real-time information on train schedules, locations, and delays. This can help build trust between citizens and the transportation system.
6. Improved data collection: The system can collect data on train schedules, locations, and delays, which can be used to improve transportation planning and infrastructure development.
7. Potential for further development: The Train Tracking and Detection System can serve as a foundation for further technological advancements in the transportation sector, such as the integration of artificial intelligence and machine learning to optimize transportation schedules and routes.

WORKLOAD ALLOCATION (**extract from the topic assessment form after correcting the suggestions given by the topic assessment panel.**)

(Please provide a brief description of the workload allocation)

MEMBER 1	B.D.V.J. Biyanwila

Predict when to send the alert to the phone. (It is important to send the message in a timely manner to ensure that the people at the railway crossing can safely move out of the way of the train

The tasks involved in getting parameters like train speed, alert delivery time, and other parameters, and predicting the time to send the alert to the mobile app.
Data Collection: The first task is to collect data on the train speed, location, and other relevant parameters
Data Processing: The collected data must be processed in real-time to extract relevant information
Predictive Modelling: The processed data can then be used to develop predictive models.
Alert Delivery Time Prediction: The predictive models can be used to estimate the time required to deliver alerts to the mobile app.

MEMBER 2	B.M.C. Jayanga

Train location prediction using the information.
Analyse the real-time data of train journey started time.
Analyse the real-time data of train journey ending time.
Predict the train location from the analyzed data of train journey began time and end time and the information given by the sims.

MEMBER 3	C.D. Amarasinghe

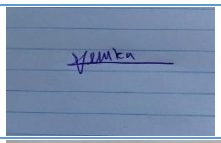
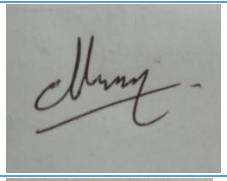
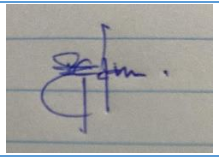
Security analysis for the app
Data protection: The app will likely handle sensitive information, such as real-time train tracking data and the location of individuals near railway bridges
User authentication: To ensure that only authorized individuals can access the app
Data encryption: To further protect sensitive information.
Access control: The app may have different levels of access for different users, with certain users having more privileges than others.

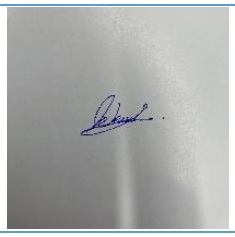
MEMBER 4	L.L.Wijewardene
Making the mobile application to the user's for getting the relevant alerts, tracking the train and the detection system. Gather the requirement of what are function's that need to address by mobile app. Analyzing the requirement and make the app the user-friendly. Building the app with corrective method getting relevant data at relevant time with fine working alert method	

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	B.D.V.J. Biyanwila	IT20212490	
2	B.M.C. Jayanga	IT20188672	
3	C.D. Amarasinghe	T20187064	

4	L.L.Wijewardene	IT20101824	

Appendix 1 :

Use Case: A Train Tracking and Detection System for Citizens is a system designed to provide real-time information about the location and status of trains to the public. This system enables citizens to track the position and estimated arrival times of trains, as well as receive alerts about delays or disruptions.

Activity: The Train Tracking and Detection System for Citizens would require the following activities:

1. Train Positioning: The system should be able to track the real-time location of trains and update the same in the system.
2. Data Collection: Collect and store relevant data about the trains such as route, schedules, status updates, etc.
3. Citizen Notifications: Notify citizens through SMS or push notifications about the arrival and departure times, delays, and cancellations of trains.
4. User Interface: Provide a user-friendly interface for the public to access train information and track the location of trains.
5. Analytics and Reporting: Generate reports on the performance of the trains and monitor the system for any anomalies.

High-Level Diagram: The Train Tracking and Detection System for Citizens would have the following high-level components:

1. Train Positioning and Detection System: This system is responsible for collecting and updating the location of the trains in real-time.
2. Data Management System: This system is responsible for storing and managing the data related to trains such as schedules, routes, and other important information.
3. Notification System: This system is responsible for sending notifications to citizens about train arrival and departure times, delays, and cancellations.
4. User Interface System: This system is responsible for providing a user-friendly interface to the public to access train information and track the location of trains.
5. Analytics and Reporting System: This system is responsible for generating reports on the performance of the trains and monitoring the system for any anomalies.

The diagram below illustrates the high-level components of the Train Tracking and Detection System for Citizens:


Train Positioning and Detection
Data Management
Notification
User Interface
Analytics

Appendix 2 :