Sri Lanka Institute of Information Technology

PROJECT REGISTRATION FORM

(This form should be completed and submitted on 31st January and 1st February 2019 as per the schedule)

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	+Go: Intelligent Complementary Ride-Sharing System
RESEARCH DOMAIN	E-Society
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	V.A.Wickramasinghe (GROUP LEADER)	IT16030190	0766925332	vjanuradhawick@gmail.com
2	A.E.Edirisinghe	IT16025936	0719933360	ashane.ediri08@gmail.com
3	G.L.S.R.Gunawardena	IT16011380	0774599678	surathruwan@gmail.com
4	R.M.A.N.Gunathilake	IT16033474	0779267795	athrienathasha@gmail.com

SUPERVISOR

Dr. Janaka Wijekoon		
Name	Signature	Date

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

Dr. Dharshana Kasthurirathna		
Name	Signature	Date

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

Mr.Nuwan Perera	Director Software Development	IFS RnD International (Pvt) Ltd	0777425127	
Name	Affiliation	Contact Address	Contact Numbers	Signature/Date

ACCEPTANCE BY CDAP MEMBER

Name	Signature	Date

PROJECT DETAILS

Brief Description of your Research Problem:

How can we find an effective solution to reduce traffic congestion during office hours in urban areas?

By considering some statistics collected from articles and reports, we identified that traffic is a major concern in urban areas specially during office hours. So, we thought of introducing a ride sharing app which could possibly become a **solution to the traffic congestion**. To verify our hypothesis, we conducted a survey with a sample of more than 150 office crowd and we were able to identify that majority considered ride sharing as a good solution to reduce traffic in urban areas.

Description of the Solution:

Our solution is to build a **ride-sharing app** for the working people (Office staff). In the solution proposed, we came with 4 research components to minimize traffic congestion and to provide travelling facilities to the users.

- User Profiling Management
  - User Profiling
  - Document Validation and User rating
- Optimum Path Recognition
- Cost Calculation

Significant advantages of our proposed solution are mentioned below

- Reduce the traffic congestion
- Build the network among Professionals
- Ensures security of passengers
- Reduce the cost of travelling
- Helps to reduce the stress, improve productivity while travelling as a passenger
- Reduce environment pollution
- Compensation fee on both the passenger and driver for any delay other than specified waiting time

Main expected outcomes of the project:

- Customized ride-sharing app
- Ride-Matching algorithm to filter out drivers
- Reducing the risk of fake profiles getting registered by validating the documents
- Letting the users to rate their experience
- Equation to calculate cost

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

MEMBER 1	IT16030190

User Profiling

In the User Profiling, most suitable list of drivers for the passenger is selected upon searching a trip. For that Ride-Matching algorithm is to be introduced and for that I'll make use of K-Means Clustering algorithm and rule-based machine learning to filter out the best suited list for each passenger. In selecting the most suitable list, I consider interest of the passenger, trajectory details, ratings of drivers, social status, comfortability level, vehicle type etc.

MEMBER 2	IT16025936

Document Validation and Profile Rating maintenance

The NIC and the Driving license of the users will be identified and validated using an image processing algorithm. In that process, most important components of both NIC and License are identified and compared.
Profile rating maintenance will be identified basically using the keywords selected by the users regarding their experience in the ride sharing. Further I will use sentiment analysis algorithm (Naive Bayes) to identify the reviews given by the users and will allocate a rating accordingly

MEMBER 3	IT16011380

Cost Calculation

Cost Calculation is the business Logic of this System. In here new equation is to be introduced to calculate the fare of the journey. By introducing that, total fare will be distributed across all the passengers travelling depending on their distance. For this calculation, several factors to be considered. Fuel consumption of each vehicle need to be identified. For that, we have to do a survey regarding how fuel consumed during traffic. Fuel Consumption also depends on the engine capacity, fuel type, transmission type and registered year. Cost of the ride is expected to be predicted using multiple Linear Regression in Machine Learning.

MEMBER 4	IT16033474

Optimum Path Recognition

In Order to display the route, finding the closest path with least traffic which connect starting point and destination using Haversine algorithm while tracking the position and order of intermediary locations by using crowdsourcing technology and some Python APIs. In the meantime, it will display a custom map with all the routing information and relevant estimated time arrivals.

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".

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