SCS 3214 / IS 3113: Group Project II - 2021

Project Proposal

Proposed Project Title**: STARTUP DOOR**

Project Group Details

1. Group number: **G54**

2. Group members: **5**

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Details of Project Supervisor, Co-supervisor, Advisors and Clients

Proposed Project Supervisor (Academic Staff of UCSC):

    Name of the supervisor: Dr S.S.P Mathara Archchi

    Signature of the supervisor:

    Date: 25.05.2021

Proposed Project Co-Supervisor (Assigned by Course Coordinator):

    Name of the co-supervisor: Ms Tharushika Perera

    Signature of the co-supervisor:

    Date: 25/05/2021

The client of the Project (If applicable, otherwise supervisor will be considered as the client)

    Name of the client: Dr S.S.P Mathara Archchi

    Address of the client:
    University of Colombo School of Computing
    UCSC Building Complex,
    35, Reid Avenue, Colombo 7
    SRI LANKA

    Contact person at client: Dr S.S.P Mathara Arachchi

    The contact number of the contact person: +94773515017

    e-mail address of the contact person: ssp@ucsc.cmb.ac.lk

Project Details:

1. Project Title:
Startup Door

2. The Goal and Objectives:

Goal: - Creating a Passive income mechanism for the middle-class community to uplift their lifestyle, provide opportunities to the users in different levels of services and a platform to create new opportunities to build entrepreneurs for the society

Objectives: -

- Introduce new online social entrepreneurs to the community.
- Providing new business opportunities and jobs.
- Uplifting people's lifestyle providing necessities.
- Opportunity to expand & build inter-network in between client and service provider.
- Convenient for the people who needed Social-basis services in their endeavors.
- Obtaining an extra income without condemning huge capital from service provider's end.

3. Tentative Problem Definition

- People don't have an online enterprise approach that combines the desired social cause with the picture of creativity, ingenuity and commitment.
- Many middle-class people can't make a large investment in a business; However, the community is eager to take opportunities with minimal capital risks.
- People like to earn extra income without risking their capital and time. In such a case, there's is a lack of a legit approach to get these privileges
- People wanted to find temporary based services to do their chores for their end.
- People seeking part-time jobs in their leisure time but don't have a proper way to find a job that they want.

4. A brief introduction to the project

A platform to create a bridge between the Service provider and a service consumer. Our consideration is to give the middle-class community to earn a passive income opportunity (As a Service approach) with social entrepreneurship based discipline.

Priority is to meet the necessary parties who need service according to the location he/she is and necessary service via **Startup Door**. From this approach, **Startup Door** provides social entrepreneurship discipline to all the users of our system and gives them an adequate opportunity to build their startups and businesses.
Startup door mainly provides services under these three categories which are ,

- Technician Services
- Plant & Crop Services
- Food & Cuisine Services

Also, if a customer requests a service category besides these, can put a request to system-admin. **Startup Door** will be upgraded to provide a new service considering adequate service availability of the client's recommendations.

5. The scope of the project

IN-SCOPE:

The following features are expected to be developed in the system:

Users (possible actors) of the system:
- Service provider (Technicians, Plants & Crops, Food & Cuisine)
- Client
- Admin

Main functionalities of the system:

Login
- Two-step verification Process
- Email validation

Service provider

Service providers have to pay a monthly subscription fee according to the basic plan that **Startup Door** offers. If they provide more than one service, they should have a selection procedure and need to pay a relevant amount according to their plan.

- Divide service providers into main subcategories such as technicians, cuisine and plants & Crops.
- Location-based tracking provided to maximize the client reachings.
- Create an account and customize account preferences
- Share their current GPS locations and availability
- Manage Cancellation Process
- Price comparison process with the highest price (bidding process) and notify the vendor.
- Profit tracking Mechanism

For technician
- Service providers can provide contract basis offers to clients.
- A service provider can supervise workers via a tracker and discard if some client does not provide the necessary work.

For cuisine
- They can add a menu (breakfast, lunch, dinner) and type of meal (vegetarian, chicken etc.), with clients' preferences.

For plants & crops
- **Plants -** Plant catalogue with availability details
- **Crops -** categories along with management mechanism

Client

- Search for relevant service based on their requirement and preferences
- Search and view the Service providers profiles
- Give feedback and rating value to service providers.
- Profile customization
- After the payment, upload the bank slip.
- Cancel the ongoing business process (But consisting of limitations & regulation)
- Rating basis promotions according to clients' recommendations

Admin

- Manage service providers and clients.
- Add new service component.
- Service management (update service/ view service feedback)
- Report generation management.
- Evaluation the clients and service providers and provide discounts & promotions
- Service providers will be ranked under their rating.
- Manage archives.
- Sending Information to the customers.

OUT-SCOPE:

- Develop a mobile app
- Verify cash on delivery Process

6. Tentative Technologies

Front end: - React js, Material UI, CSS
Allows the creation of reusable UI components.
It allows the creation of large web applications that can change data, without reloading the page.
It gives fast rendering with virtual DOM

Backend: - Express.js, Node.js, socket.io
- Node.js is a server-side JavaScript run-time environment and it can be readily used anywhere in the program.
- We can reuse code on the frontend and the backend by wrapping it into modules and creating new levels of abstraction.
- Middleware support that has access to the database, client request, and the systematic organization of different functions of Express.js.
- Node and Express provide highly scalable routing mechanisms determining how an application responds to a client request to a particular endpoint, which is a URI (or path) and a specific HTTP request method.
- socket.io enables real-time bidirectional event-based communication. It works on every platform, browser or device, focusing equally on reliability and speed.

Database: MongoDB
We chose MongoDB because it can handle large unstructured data and huge databases faster and allows users to query in a different way that's sensitive to workload than MySQL.

7. Feasibility Study

Feasibility is an important phase in the software development process, it enables developers to have an assessment of the product being developed. It refers to the feasibility study of the product in terms of outcomes of the product, operational required for implementing it. A feasibility study should be performed based on various criteria and parameters.

In this section, we have identified and categorized different resources required to carry out the project. The various feasibility studies are:

- Technical Feasibility
- Economic Feasibility
- Operational Feasibility
- Ethical and Legal Feasibility
- Schedule Feasibility

7.1 Technical Feasibility

This study is focused on gaining an understanding of the present technical resources of the organization and their applicability to the expected needs of the proposed system. The project is considered technically feasible and the internal technical capability is sufficient to support the project requirements.

Technical feasibility involves whether the necessary technology exists, technical guarantees of accuracy, reliability, ease of access, data security, and aspects of future expansion/modification.

- The system mainly consists of a web application for both clients and service providers. Users
- In this system, users don't need a lot of technical knowledge regarding the operating system.
- Uses modern technology such as the MERN stack (MongoDB, Express.js, React.js and Node.js) to develop the product. Therefore, the end-users can easily use the system and get a better experience.
  - ➢ React.js and Material UI are the best, fastest and easiest frameworks capable of creating the UIs creative and responsible for user attraction.
  - ➢ MongoDB supports dynamic queries on documents using a document-based query language that's nearly as powerful as SQL and also has the power to manage big data.
  - ➢ Express.js is a web application framework for Node.js. It provides various features that make web application development fast and easy which otherwise takes more time using only Node.js.
  - ➢ Node.js open source cross-platform JavaScript that helps in the development of real-time network applications. It can also interpret JavaScript code via Google's V8 JavaScript engine.

- As the system is web-based, it can be backed up with less effort.
- The system is expected to have adequate responses regardless of the number of users.

It is available within given resource constraints. All these current technical resources are sufficient for the system. It can be easily applied to current problems and can handle this solution. We currently possess the necessary technologies.

In addition to those,

Git

● We use git for version control because we can get previous versions easily through Git.

GitHub

● We use GitHub for team collaboration. In GitHub, we can merge the codes of team members and continue the project easily.

7

Jest and Puppeteer

- A jest is a testing tool for testing React apps. It is designed with simplicity in mind. It offers powerful API to build isolated tests, snapshot comparison.

- Puppeteer is a Node.js library that provides a high-level API...

Trello

- Trello is used for managing and collaborating with team members on work project and tasks.

7.2 Economical Feasibility

It refers to the benefits or outcomes we are deriving from the product as compared to the total cost we are spending for developing the benefits are more or less the same as the common system then it is not feasible to develop the product.

There are several types of hosting to choose from, and many different variables at play. Therefore, we have selected a free domain. We are using a free host server and free web development tools.

The system is economically feasible. The system provides the following benefits to the customer.

the costs and benefits under the **STARTUP DOOR** project are as follows.

Cost

There are many types of costs related to this area, such as cost related to purchasing hardware or software, any training cost (staff training about the new system), or any cost when the new the system is implemented to the company or organization, and other operational costs related to maintaining and upgrading the system throughout its life cycle.

Development Cost

These are the costs only once and associated with the development phase of the system.

- Software cost - Uses free and open-source software to develop and implement the system.
- Hardware cost - As the system is web-based, it's unnecessary to purchase the hardware.
- Implementation cost - Doesn't require.
- Domain and Web hosting services - Uses the free domain name and hosting service.
- Payment handling - Use the sandbox payment method in **PayPal / Pay Here**.

Operating Cost

These are the recurring costs throughout the project execution and operation time.

- Maintenance and Upgrading cost - will depend on the software bugs, security issues, software updates.
- Training Cost will not happen because only one person (Admin) operates the system from inside the business.
- Other costs - assume that will not happen. because the STARTUP DOOR is built on using free and open-source software.

Benefits

The benefits of the system that add value to the organization or the users can be tangible or intangible.

Intangible Benefits

- Reduces the workload.
- Reduces the processing time
- Supports building a new customer base without effort.
- Easiness of starting a small business.
- Save the time that they spent on a business.

Tangible Benefits

- An opportunity to start a business with less investment.
- No need to meet each other to settle the payments.
- Earn extra income from a third-party source without a great commitment.
- Reduce the cost of running the business location.
- Increase the productivity of operations by being physically active.

7.3 Operational Feasibility

We have surveyed over 60 people, mainly those who live around Colombo. Over 90% of them are between the ages of 21 and 25. We let them know about our idea of our online service system and asked about their opinion on this system.

Your Age Group?
58 responses

91.4%

● Age 18 -21
● Age 21-25
● Age 25+
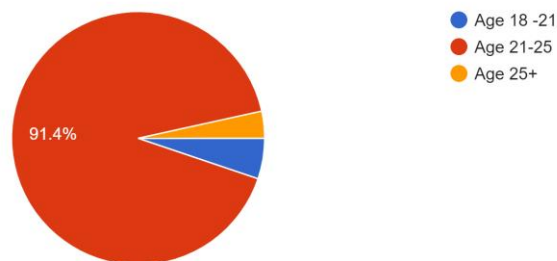
Operational feasibility studies are generally utilized to answer the following questions:

Process: How do the end-users feel about a new process that may be implemented?

As this system is web-based, it is very easy to operate who has an internet connection and a smart device. As this system has an authentication process, the login process will be protected by doubtful logins.
As per our survey, nearly 95% of responses agreed with the portal that provides location-based services.

Are you Okay with provide a web Portal that provide location based nearest services of your urgency?
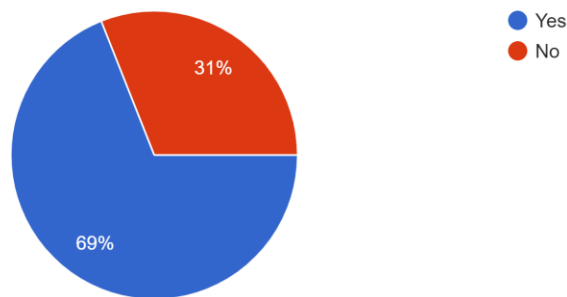58 responses

94.8%

● Yes
● No

Other Services ——————— 14 (24.1%)

0   10   20   30   40
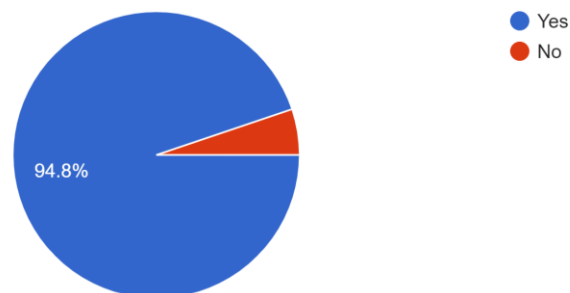
Are you interested in provide some services to get a income?
58 responses

- Yes
- No

31%

69%

Evaluation – Not only the process is active in the organization but also considered whether it can be functional.
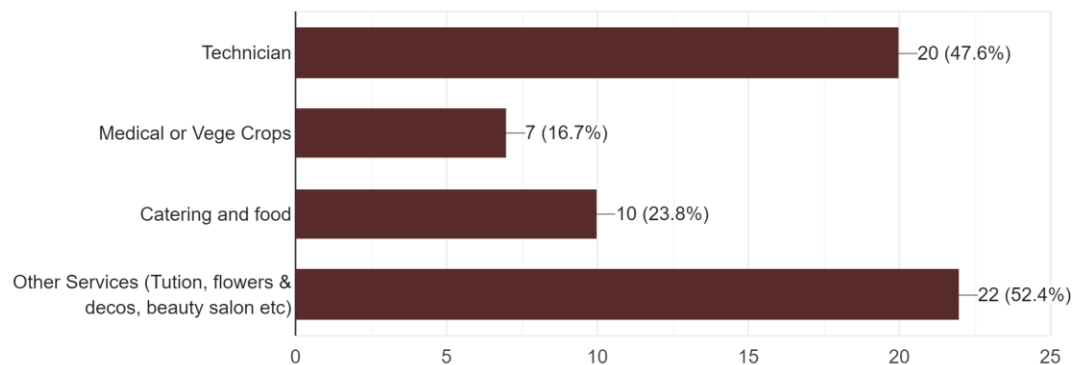
Through our survey, we found over 60% of people are facing problems with finding jobs during this lockdown period. In their area, they need urgent services like technical, food and cuisine, vegetables and medicine plants and other services as well.

And results in nearly 70% of responses were agreed to provide service to get income.

As the startup door launched, being able to aspect this website can create the path to businesses and new ideas.

If you said Yes, what kind of services that you like to give ? (In small scale services)
42 responses

Service	Count
Technician	20 (47.6%)
Medical or Vege Crops	7 (16.7%)
Catering and food	10 (23.8%)
Other Services (Tution, flowers & decos, beauty salon etc)	22 (52.4%)

Are you had a difficulty to find any service providers to cater your necessity? (Example: Finding a mechanic to do the tinkering of your vehicle)

58 responses

- Yes
- No
- Maybe

37.9%
10.3%
51.7%
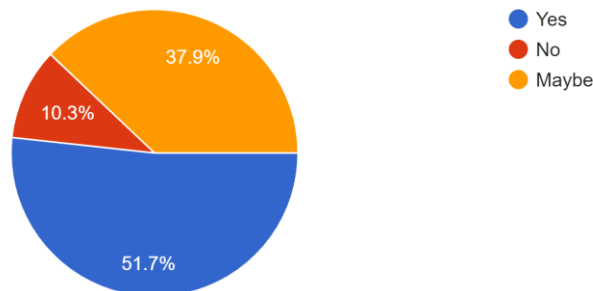
On-Demand

 Implementation – Stakeholder, manager, and end-user tasks.

  In the STARTUP DOOR all the end-users/ stakeholders are required to have a mobile phone, network facility and valid email to communicate with the system and send notifications to them. When in a business society they also have those facilities. Then it's very easy to be a part of the community of STARTUP DOOR.

 In-House Strategies – How will the work environment be affected? How much will it change?

  Considering the current situation of society there isn't any place or system to motivate the own startups without any great commitment. So, that's why the startup door address and motivate the people who want to gain more money/ who are willing to earn more money and who are willing to start their own business as small as possible.

7.4 Ethical and Legal Feasibility

The STARTUP DOOR does not break any rules and regulations under the laws in our country. As responsible web developers, responsible to our customers to inform them of practices that are questionable or illegal with their projects

When the customer pays money for ordered things, the customer can pay, using online cards (credit/master/visa) and cash on delivery. While using the online cards all the details of the cards and users are highly protected.

This system includes GDPR (General Data Protection Regulation) & CCPA (California Consumer Privacy Act). GDPR means looking at how a website records visitor information, and what it does with it. This is European Union and our website does not comply with their data laws, we could face prosecution. CCPA is designed to protect the data of customers interacting with business in California in much the same way as the European legislation. CCPA specifically focuses on companies of a

certain size or business that make money from selling customer details. So, we can concern those laws and regulations and therefore we can safely assume that this is a legally and ethically feasible project.

7.5 Schedule Feasibility

During the lack of time or the time becomes mandatory, we must finish the project within a given time period.

- Number of work hours as a team per week = 2

- Number of individual work hours per week = 14

- Man-hours per week = (2 + 14)*6 = 96

- Estimated number of weeks = 15

- Estimated total of man-hours = 96*15 = 1440

Since all of the required resources are readily available and with the study, we conducted we can conclude that our project is feasible.

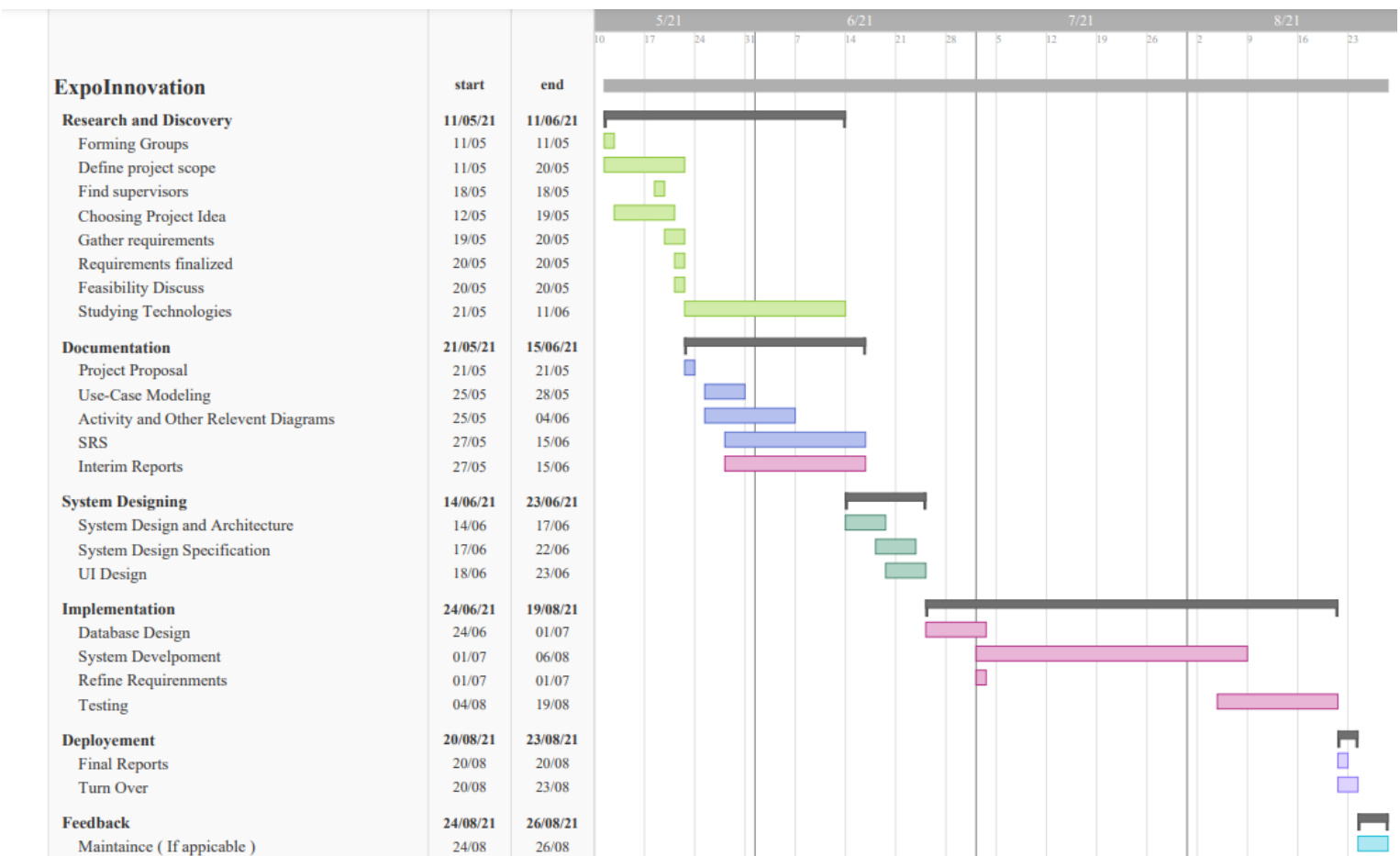## 8. Main deliverables of the system [7]

- Complete working software and source code (if the client doesn't want you to share the source code you have to produce the client's consent and non-disclosure agreement signed with the client)
- Complete Software Requirement Specification
- User manual
- Administrators manual together with deployment instructions
- The license of the software (GPL, LGPL, BSD, Proprietary, etc.)

If you have any deliverable in addition to the above, you can specify.

9. The Project Plan

This is a group project where all members are supposed to contribute equally as well as in the best possible way to make it a successful project. The project has the start time and end time within which it will be completed. There will be several milestones to be achieved st On-Demand completion of the work task within the time frame.

Develop the work breakdown structure with the timeframe and milestones. If possible, develop the Gantt Chart too, covering the system development, system documentation and project evaluation.

ExpoInnovation	start	end
Research and Discovery	**11/05/21**	**11/06/21**
Forming Groups	11/05	11/05
Define project scope	11/05	20/05
Find supervisors	18/05	18/05
Choosing Project Idea	12/05	19/05
Gather requirements	19/05	20/05
Requirements finalized	20/05	20/05
Feasibility Discuss	20/05	20/05
Studying Technologies	21/05	11/06
Documentation	**21/05/21**	**15/06/21**
Project Proposal	21/05	21/05
Use-Case Modeling	25/05	28/05
Activity and Other Relevent Diagrams	25/05	04/06
SRS	27/05	15/06
Interim Reports	27/05	15/06
System Designing	**14/06/21**	**23/06/21**
System Design and Architecture	14/06	17/06
System Design Specification	17/06	22/06
UI Design	18/06	23/06
Implementation	**24/06/21**	**19/08/21**
Database Design	24/06	01/07
System Develpoment	01/07	06/08
Refine Requirements	01/07	01/07
Testing	04/08	19/08
Deployment	**20/08/21**	**23/08/21**
Final Reports	20/08	20/08
Turn Over	20/08	23/08
Feedback	**24/08/21**	**26/08/21**
Maintaince (If appicable)	24/08	26/08

10.   References

[1]
"Browse Jobs by Location." Glassdoor. https://www.glassdoor.com/sitedirectory/city-jobs.htm (accessed: May 24, 2021).

[2]
"SimplyHired: Job Search Engine." Simply Hired. https://www.simplyhired.com/ (accessed: May 24, 2021).

[3]
"ODTap: On Demand App Development Company." odtap. https://www.odtap.com/ (accessed: May 24, 2021).

[4]

"Web Technologies used by Netflix.com." W3Techs. https://w3techs.com/sites/info/netflix.com (accessed: May 24, 2021).

[5]

"Which Backend Framework Is Right for Your Project? | Mood Up team." Moosup team. https://moodup.team/blog/which-backend-framework-is-right-for-your-project/ (accessed: May 24, 2021).

[6]

"What is the MERN Stack? Introduction & Examples | MongoDB." MongoDB. https://www.mongodb.com/mern-stack (accessed: May 24, 2021).

[7]

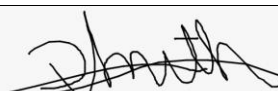"What Are Deliverables? A Guide for Project Managers." Unito. https://unito.io/blog/project-deliverables-guide-for-project-managers/ (accessed: May 24, 2021).

[8]

"Feasibility Study - Definition, How to Conduct, Contents." Corporate Finance Institute.

https://corporatefinanceinstitute.com/resources/knowledge/other/feasibility-study/ (accessed: May 24, 2021).

11.   Declaration

We as members of the project titled START-UP DOOR,
Certify that we will carry out this project according to guidelines provided by the coordinators and supervisors of the course as well as we will corporate, without acknowledgement, any material previously submitted for a degree or diploma in any university. To the best of our knowledge and belief, the project work will not contain any material previously published or written by another person or ourselves except where due reference is made in the text of appropriate places.

Name	Signature
(i) W.P Pallewatta	
(ii) R.P.P.B.Somarathna	
(iii) D.T.Athukorala	
(iv)M.N.J Rathnayaka	
(v) D. M. Samarasinghe	