# Feasibility Study

By carefully discussing among team members, taking a look at existing solutions and conversing with People who work in this field, We managed to gain a clear look at the feasibility of our proposed system in technical, economic, legal, ethical, operational and scheduling aspects.

## Social Feasibility

To gain insights into people’s opinion on a system like this where they can easily order spare parts/accessories and service/repairing of their vehicles straightforwardly, we conducted a survey and got 141 responses. Given below is each question we asked and the response to it.

* Question number 1: - Do you or your family own a vehicle?
* Question number 2: - When you service/repair your vehicle, do you go to the same vehicle service center usually?
* Question number 3: - If you do, would you like if you could easily see past service records of your vehicle(s)?
* Question number 4: - Would you like to get progress updates on long-term repairs through a web application?
* Question number 5: - Would you like it if you could easily see available timeslots and make an appointment according to your preferences through the website?
* Question number 6: - Have you ever ordered a vehicle spare part/accessory online?
* Question number 7: - If the answer to the previous question is “No”, would you ever order an accessory or spare part for a vehicle online?
* Question number 8: - Are you comfortable using a digital system like this?

Since the majority of responses are positive, we believe that this project is socially feasible.

## Technical Feasibility

The system will consist of several web-based user interfaces, all connected to a central backend. Those are the customer-facing website and dashboards for employees of the company.

Since we are not allowed to use pre-built frameworks for the project, we mainly use the following technologies for our implementation,

* As frontend technologies,
  + HTML5
  + CSS3
  + JavaScript
* As backend technologies
  + PHP (Web-server)
  + MySQL (Database)

To help with the project structure, these tools will be used additionally, - Composer (to help with creating a better PHP project structure) - a Javascript build tool like webpack or Rollup (to setup JS and CSS minimization and bundling)

The team will use the following tools and software when developing the system,

* XAMPP as the development server
* Visual Studio Code and PHPStorm
* MS Word and Draw.io
* Github and Trello

Almost all the software mentioned here is free to use except for a few like MS Word and PHPStorm.But all the members have licenses to those products as well. 1Gaining knowledge about the required technologies is straightforward and all the members have Laptops/PCs and technical knowledge enough to carry out development.

So it’s technically feasible for us to develop the project.

## Economic feasibility

Tools used for the development of the system are mostly free, only MS Office and PHPStorm aren’t free but all the team members have licenses for those two.

* All the technology used for the actual implementation is free except for google maps API, but even that comes with a generous free trial. Since we are developing this system targeting a large-scale automobile servicing company there won’t be issues regarding the google maps API.
* During development, we’ll be using XAMPP, a development environment for PHP projects.
* In production, the web system will require a domain when launched, and it can be purchased by the company for approximately 10$ from any domain registrar.
* for hosting the web application, a shared hosting plan will be sufficient initially and we assume the cost for that is manageable by the company.
* The system’s customer-facing website can be accessed by any device. But we recommend employee accounts be accessed by a PC/Laptop or tab due to the amount of data that will be presented in those UIs.Technicians can use their mobile devices to access the technician app. We assume that PCs are already available for Admin, Office Staff and Stock manager. Foremen will have to use a Tab or mobile device to access their application since they aren’t usually in an office. All in all, we believe that the company that will use this system is financially able to provide those required devices if they aren’t already available.
* while our system requires a payment getaway, we’ll be using a sandbox account to simulate payments, so we won’t have to spend money for an actual account.
* Team collaboration will be done through mainly GitHub and Trello and occasional online meetings done via Zoom/MS Teams. Data charges to access these services are manageable for the team.

Considering all of the above, we can assure you that our project is economically feasible.

## Operational Feasibility

The proposed system aims to provide a streamlined way for the automobile service company to handle its process while providing their client a way to interact with their system in a useful way.  
       The system is planned to be user-friendly and straightforward as possible to make sure it’s easy to use by both the employees of the company and vehicle owners. It will include easy navigation to improve usability. We plan to implement a dark mode to ensure accessibility to users who are uncomfortable with viewing bright displays. And it will support all kinds of devices so no users are left out. We assume that all users have fundamental technical skills to use the system.  
Hence this project is operationally feasible.

## Legal and Ethical Feasibility

### Legal and Ethical Issues

1. Our system connects customers of this automobile company with the company itself. And these customers can order products online. To ensure customers’ safety we have to be careful when handling orders.
2. The system will contain large amounts of sensitive user data and there’s a responsibility to protect them and inform them about how we use our data.

### Solutions to them

1. To make sure that customers can prove their purchases, we display their purchase history and also send an email with order details
2. We are indicating our privacy policies in our user agreement and making our system as secure as possible to prevent data breaches. We don’t dave any user details if they don’t agree to the user’s agreement.

### Things not to worry about,

1. Our system only uses open source technologies, hence we don’t have to worry about licensing issues. While we use google maps, we will be paying customers so there are no issues in that regard.

So the proposed system is legally and ethically feasible.