

On Demand Automobile Solution

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Abstract: At first, let's talk about the project that we are working on. The name of our project is Ghorer Garage. Which is basically an on demand automobile service. Most of the people of Bangladesh are maybe not familiar with the term called on demand automobile service. In today's fast-paced world, we understand that the need for reliable and convenient automobile services is more crucial than ever but in Bangladesh this sector isn't much developed. Whether you're looking for genuine car parts, or a hassle-free appointment for your vehicle's home service Ghorer Garage has you covered. In an era where convenience is paramount, Ghorer Garage has revolutionized the way you access automobile services. We offer a comprehensive platform where you can effortlessly order genuine car parts, book home service appointments, and request emergency vehicle rescue. Our user-friendly approach ensures a seamless experience for all users, beginning with a quick registration process that leads you to our homepage. Once registered, you'll gain access to an extensive listing of genuine car parts and services. Browse through this selection to find the items you need, add them to your cart, and enjoy the convenience of home delivery. No more long drives or queuing at auto shops – we bring the parts to your doorstep. Moreover, we understand that vehicle maintenance is essential, which is why you can schedule home service appointments directly from our platform. Our team of skilled technicians will come to your location, saving you time and effort. To make the payment process as convenient as possible, and we offer multiple options. Whether you prefer the ease of online banking or the flexibility of cash on delivery, the choice is yours. At the heart of our service is the commitment to providing top-notch, genuine products and efficient, reliable solutions for your automotive needs. We've assembled a dedicated team of professionals who are passionate about ensuring your vehicle runs smoothly and that you have access to genuine car parts.

Introduction:

Now let us introduce with you with some of the insight of what were the problems before we started working on this project? What others have done to solve these problems? What were the limitations for others? How to solve those limitations and our unique contribution on this project.

At first, let's discuss about the first problem which was **what the problems were before we started working on this project:**

Limited accessibility to genuine parts: The main problem in our countries automobile sector is that this sector is full of scam. Car is a very essential thing in our life and it requires good maintenance on a regular basis. For that we need genuine parts. Locating authentic car parts was often a cumbersome task, forcing users to rely on local dealers with questionable product

authenticity. So we think that it is clearly understandable that this sector requires a lots of improvement. [1]

Unjustified pricing of products: Most people in our country don't hold very clear knowledge about car and their maintenance. So it is quite clear that the majority of the people don't have any proper knowledge about the prices of the car parts that they going to need for the maintenance of their car. So what usually happens is they buy products with double the amount of money than the actual price of the product. Often times they don't even get the parts that they actually paid for. As those are local vendors even if someone finds out after buying the products that they've been charged lot more than the actual price then if they want to go and return the product and take back their money the vendors would deny them most of the times because this is how they run this business.

In convenient service scheduling: In order to find a trusted garage a tons of googling and research is required. As there is not a lots of garage in our country who provides home services. Even after finding the right one this Locating authentic car parts was often a cumbersome task, forcing users to rely on local dealers with questionable product authenticity. This thing causes uncertainty for users. So, after this amount of hassle the consumers don't even want to take home services anymore. So, they'll opted for the same old garage service with a fear that they'll be scammed there.

Delayed product delivery: When a car breaks down or requires maintenance we need the parts as soon as possible. Though there aren't a lots of online platform that sells car products. The ones that we have in our country takes at least 2 to 3 days to deliver a product. This is unacceptable in some senses. Car is a very essential thing and we need to use it on a daily basis. If it takes 2 to 3 days just to get the product delivered then it is quite unacceptable in some senses. That why people tend to go for the local vendors with the same fear of getting scammed either with the product or pricing.

Limited payment options: Online shopping is not yet the first option of choice for the people of Bangladesh. The main reason is often the vendors take money from the users in advance but they never deliver the products. They just get disappear. So having multiple payment option can save them from this kinds of scam. So this is clearly understandable that, Limited payment options, particularly the absence of a cash-on-delivery system, hindered user accessibility, excluding those uncomfortable with online banking.

What other people have done to solve these problems:

Online market places: Some importer import the goods personally and sell them on market places like facebook, Instagram, bikroy.com, Daraz etc. That was helpful in some ways. It reduced the hassle of people by a good margin.

Home service provider: There are some company in Bangladesh who started providing online booking service. But the thing is they are solely dependent only on the home service category. Basically what they do is connecting the mechanics with the customers.

Local offline vendors went online: Though online shopping is not yet very popular in Bangladesh but it is gaining its popularity day by day. In sea of scammers there are some honest local vendors. So what they did is opened an online platform using social media besides their existing offline platform. So, what they do is basically sell their shops product in their area through online.

The limitations that the people faced while trying to solve those problems:

Quality Assurance: Maintaining the quality of the product is a big task. The reliability of the platform and the cars both depends on the quality of the product. Often time's people couldn't be able to source the authentic parts and for that reason at some point they had to stop.

Limited service integration: As we've discussed earlier that some people opened an online booking system, some opened an online version of their offline shop etc. But the problem is all of them are focusing on a single sector only. For that reason people have to go different places each time when they try to find new parts or new services. From our research point of view that's a huge drawback.

Geographic Constraints: Most of the service that other people tried to provide in past are a specific location based. Most of them don't provide country wide services. Due to this geographic limitations, leaving users in remote or underserved locations with fewer options. So basically a large portion of user couldn't be able experience what they were trying to provide.

Payment options: Payment method plays a vital role for an online based business platform. The absence of flexible payment options, such as the lack of a mobile banking payment, card payment restricted user convenience and accessibility. Cash on delivery system is what the users find really

attractive. So if an online service provider lack of cash on delivery system then the users will started to lose interest from it.

How to solve those limitations:

Genuine car parts assurance: The first rule of gaining trust in a business is ensuring that your customers are getting the genuine products from you. For this case the best thing to do is, establishing direct partnerships with trusted suppliers to guarantee the authenticity and quality of car parts.

Comprehensive Platform: Building a platform that will give the customer a solution to every problem. By that we meant that, offering a unified platform that combines genuine car parts ordering and home service appointments for a holistic user experience.

Geographic expansion: In order to solve an ongoing problem the first thing that we have to make sure is that the mass people should be able to experience the changes. In order to solve this problem they have to continuously expanding their service network to cover a broader geographical area, ensuring accessibility for users in remote locations.

Flexible payment options: In order to attract consumer from everywhere the payment option needs to be flexible. So they should provide both online banking and cash on delivery options to accommodate diverse user preferences.

Our unique contribution: We've done a proper research on the problems, what were done previously to solve those problems, what was their lacking's and how they can solve those. With those experiences we've built a something that we hope will solve all those problems by a huge margin. Some of our unique contribution are listed below:

- What we've done is we built a platform where people will find most of their automobile related solution under one platform. We've integrated genuine car parts ordering and home service

appointments on a single platform for comprehensive automotive solutions.

- For maintaining the authenticity of our products we've established direct partnerships with trusted suppliers ensure the authenticity and quality of car parts.
- We've tried to make our platform as user friendly as possible. We implemented a streamlined registration process, a seamless ordering and scheduling process for enhanced user convenience.
- We've made the payment system as flexible as possible. We will provide both online banking and cash on delivery options to cater to a wide range of user preferences and ensure accessibility.
- We will ensure a stable pricing for our customers.
- We'll have a review section from where we'll collect regular feedback and platform updates to ensure ongoing enhancements, addressing emerging issues, and keeping our services at the forefront of user satisfaction.

The What Picture:



Figure 1- People waiting in line on a car parts shop to buy parts vs A happy customer who just got delivery of the products she ordered online

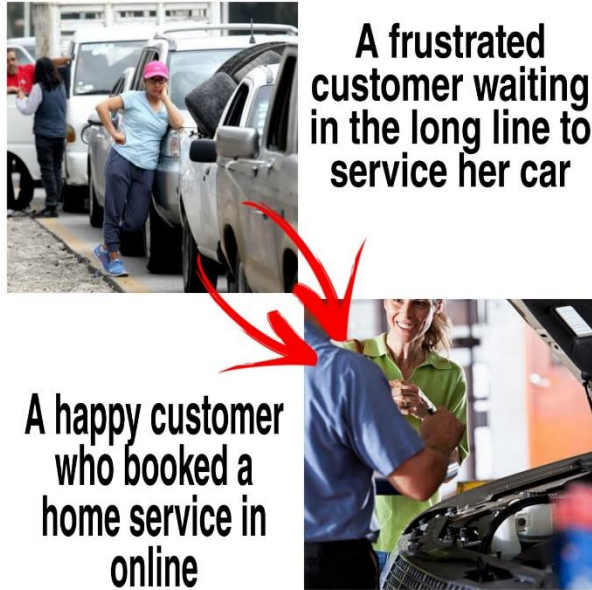


Figure 2- A frustrated customer waiting in the long line to service her car vs A happy who booked home service in online for servicing her car



Figure 3- A frustrated person who got scammed while buying parts for his car in online vs A happy guy receiving authentic products through cash on delivery

Here, in Figure 1 it shows that some people are waiting in the long line to buy parts and another just ordered those parts through online. Here the same thing can be done through our website. That will save your time and you won't have to go through the hassle of waiting in the line and finding the perfect parts for your car.

In Figure 2, we can see a frustrated lady who's been waiting in long line just to service her car and another happy customer who booked a home servicing through online. You can save your time and money by scheduling an online appointment with our website.

In Figure 3 We can see a devastated guy who got scammed in online while he was shopping and we can also see a guy who is receiving his authentic products through cash on delivery. On our website you can choose your desired payment method and you can be safe while shopping in online.

Related Work:

Although there aren't a lots of related online based platform like ours in our country. But we have listed 5 of the best websites that provides same kinds of services. These are:

1. sheba.xyz
2. oilco.com.bd
3. Wash n works
4. japanparts.com.bd
5. Facebook marketplace and bikroy.com,

Now let's give you guys some clear idea about these platforms and their services.

Sheba.xyz: This is not entirely an automobile based service platform. They provides other day to day services as well. Such as home cleaning, appliance repair, men's care and saloon services, home painting and renovation services. They don't sell any products. Providing home services for car repair is one part of their business. As the name suggests "sheba" which means help. That means they will help you to repair or do any kinds of day to day services for your everyday life. [2]

Oilco.com.bd: Oilco is a platform which is famous for selling genuine parts. As the name suggests oilco is basically more focused on selling oils and oil related parts. Such as engine oil, transmission oil, brake fluid, oil filter, ac filter etc. Mainly all the oil related products and some basic components. They don't sell any major car

components or neither do they provide any home servicing facilities. They provides home delivery and they operates through their website and their facebook page. [3]

Wash n works: Wash n work is a facebook based car home servicing platform. They have a very limited number of services which are mostly wash based such as car wash, car polish, deep interior cleaning etc. They don't work on any major components of car. They only provide services inside Dhaka and in their workshop. For now they don't sell any products on their platform other than providing wash based car services. [4]

Japanparts.com.bd: japanparts is a platform that sells almost all kinds of car parts. They are mainly more focused on selling major car components such as tyres, engine parts, ac parts, suspension parts etc. They provide home delivery services for all their products. Other than selling parts they don't provide any other services. [5]

Facebook market place and bikroy.com: Both Facebook market place and bikroy.com are two open market place. That means anyone using those platforms can post an advertisement of their used or new products. Sometimes some great deals can be found on those websites. But there are some drawbacks. While buying car parts or any other product the user have to be very careful. As it's an open platform there is always a chance of getting scammed. Here the seller and customer will have to discuss about a suitable place to meet for both of them to get their desired products. [6]

Difference between those platforms and our platform: In the above we've discussed about 5 of the best automobile service provider of our country. From that discussion their limitations can easily be understood. Some of them are not fully based on car, some specialized in selling specific parts, some provides only specific amount of services and others have geographic issues and reliability issues. On the other hand, with our website all of those problems can easily be solved. We will provide all kinds of car components, variety of car servicing facilities and everything on

a safe environment. Our service is not based on one or two cities. We'll provide our services on multiple services. So, it can be clearly understood that our platform will reduce most of the automobile related hassle of the people of our country. For these reasons we will always be one step ahead of the competition.

Methodology:

Flow Chart:

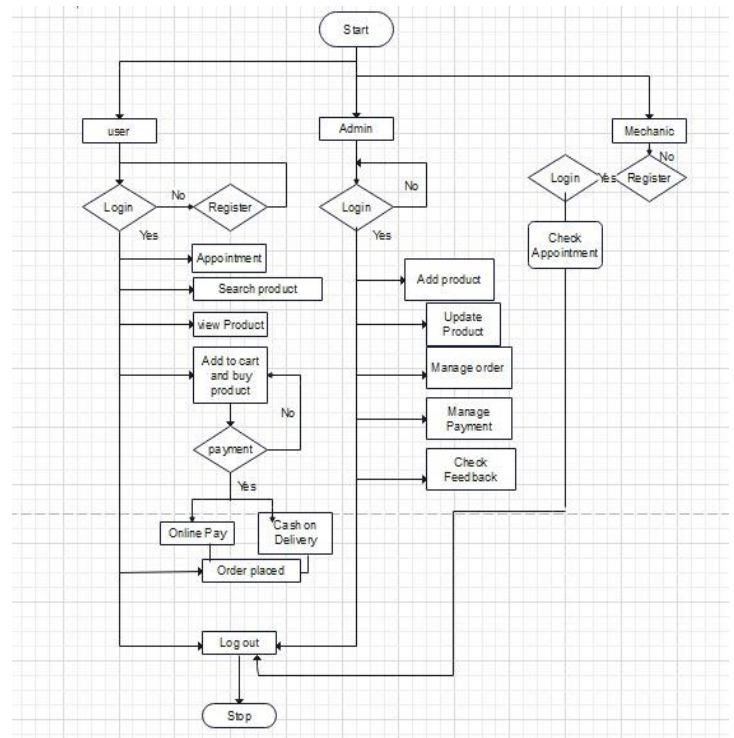


Figure 4:FlowChart of an on demand automobile service

ER Diagram:

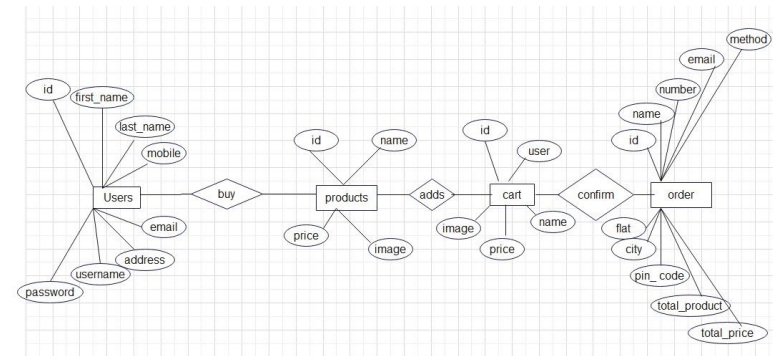


Figure 5: ER diagram

UML Diagram:

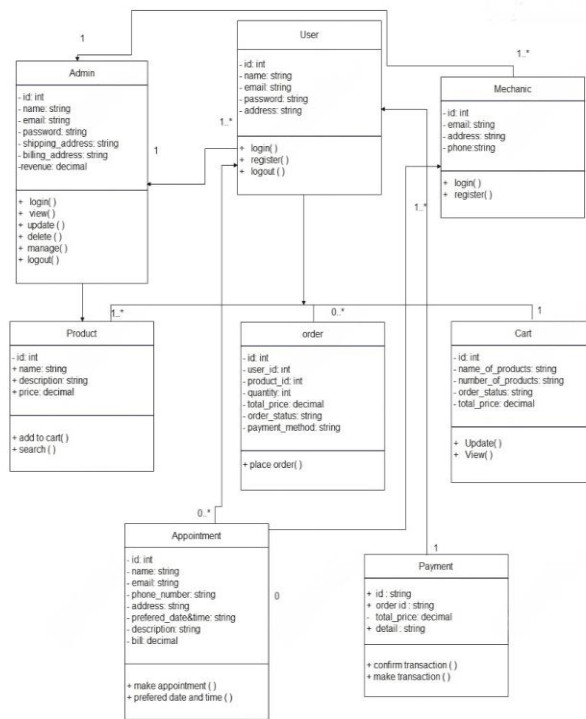


Figure 6: UML diagram

Feature list:

Feature Table	
Login and Registration	In order to access the website the user needs to log in first using username and password. If the user doesn't have an existing account then the register using his name, email, phone number, address and other information.
Listing of Parts	After login the user will be able to see a whole bunch of parts with their name, image and price.
Add to Cart	If a user feel like buying a product then the user can add products to their cart.

Choose Payment method	The users will be able choose multiple payment method as per their will. They will have the option to choose from card payment, mobile banking and cash on delivery.
Booking a scheduled service	The user will be able to book an appointment using their preferred time and location.

Table 1: Feature table of an on demand automobile service

What language we used and why?

For our project we've used multiple language. For our front end we've used Html and CSS. For our back end we've used Javascript and php. Lastly for database we've used MySQL. We've used these languages because we already have very good command over those languages and we've already done some courses on those languages as well.

Screenshots of our platform:

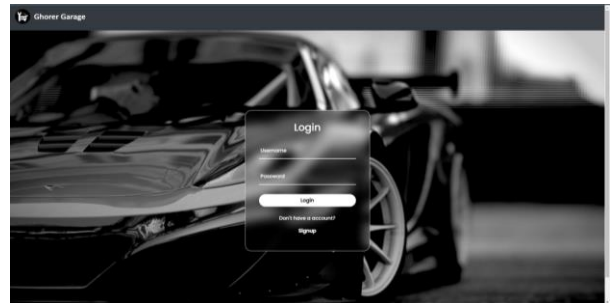


Figure 7: Login page

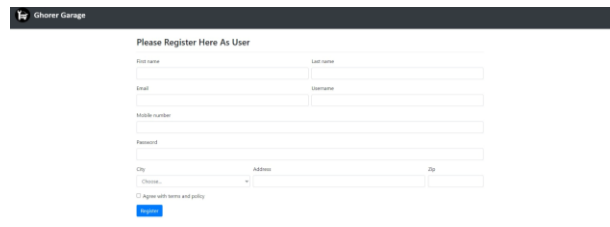


Figure 8: Registration Page

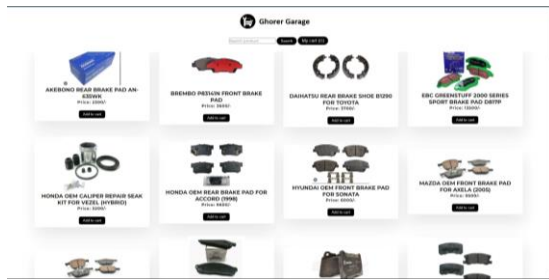


Figure 9:Buy cart

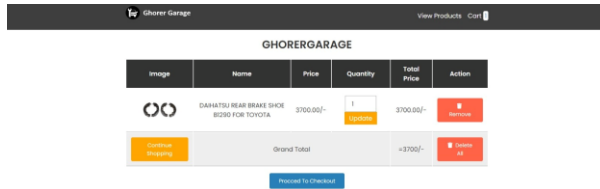


Figure 10:Cart

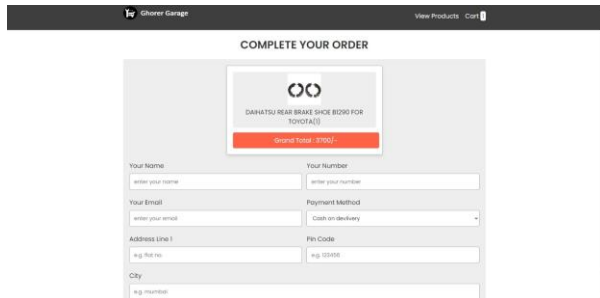


Figure 11:Payment

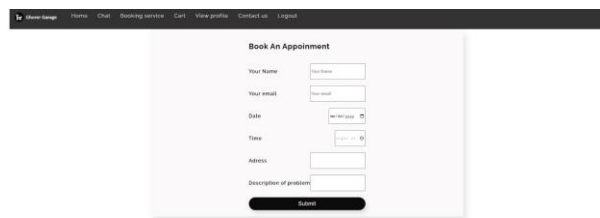


Figure 12:Booking Appointment

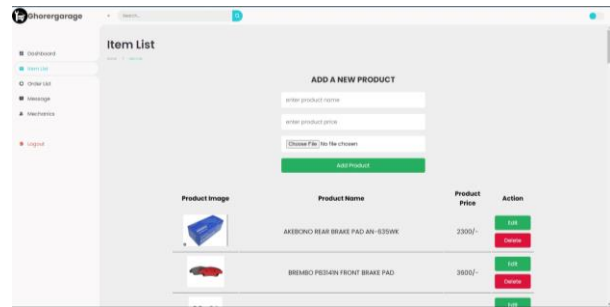


Figure 13:Item add delete edit

Feedback on our platform:

Name & age	Overall ratings	Comments
MD. Abdul Latif Age-53	★ ★★★★☆	The initiative is great. Should improve the user interface
Fuad Hasan Age-39	★ ★★★★ ★	Really loved the platform. Everything seems so good to me.
Md. Ohabul Alam Age-56	★ ★★★★☆	The idea is good for busy folks like me. Really loved the cash on delivery system.
Shafiq Alam Age-32	★ ★★★★☆	Really impressed with the home service method. Hope you guys will improve in future
Jahangir Ali Khan Age-61	★ ★★★☆☆	Everything was good. In my area product delivery available but not home servicing.

Fatiha Suraiya Age-23	★ ★★☆☆	Everything about the platform seemed great but the payment system seems a little confusing to me.
Noora Shamsi Age-33	★ ★★★ ★	Loved the idea and the whole idea and the platform. Keeps rocking.

Table 2: User review on our system

Future Plan and Conclusion:

Future plan: At first let's talk about the future plans that we have regarding this project. Firstly, we want to diversify our range of services to cover a broader spectrum of automotive needs. Secondly, extending our service network to reach more regions and cater to users in remote or underserved areas. We also want to implement features that encourage user engagement, such as loyalty programs, personalized recommendations, and community forums. Then again we want to embrace emerging technologies, such as AI and machine learning, to improve user experience, provide smarter service recommendations, and enhance the overall efficiency of the platform. Lastly, we would like to provide resources and educational materials to empower users with knowledge about car maintenance, parts, and emergency procedures.

Conclusion: The main goal behind this project was to give Bangladeshi people a hassle free automobile experience. As it's a major issue in our country. Our website is built upon the principles of trust, customer satisfaction, and quality service. We take pride in offering genuine products and dependable services to meet your automobile needs. Our dedicated team of professionals is passionate about ensuring that your vehicle runs smoothly and efficiently. We're committed to making your life more straightforward and your vehicle maintenance hassle-free. Welcome to the future of on-demand automobile services, where

your convenience is our utmost priority. Join us today and experience the difference.

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