

A Project Report
On
Servicio Automotriz Lozano



Higher Diploma in Science in Computing

Submitted by

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Under the Guidance of
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<https://github.com/diegoloza94/ServicioAutomotrizLozano>



Admin Login:

admin@gmail.com

Admin Password Login:

admin12345



https://youtu.be/1BZOA_AxrKo (Video Official)

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ACKNOWLEDGEMENT

I have been working in this project long time ago, I wanted to try to develop for my father this website system but I had another's competitions in my life working for different companies in areas totally different as Business Intelligence Developer and now doing this Higher Diploma in Science in Computing now is possible this challenge including the kind support and help of my lectures giving me the chance to contribute in this project.

Thank you, **Ken Healy**, **Aldana Louzan** and **Greg South**, for your guidance and constant supervision as well as for providing information regarding project and other information.

ABSTRACT

Nowadays, my father's business is getting popularity and he is working in that business a long time and he has been using paper long time to collect information from the customers and he would like to have one web application system to cover those areas because for him now is impossible to do a lot of things. This Web Application System offer for him the possibility to the customer sees when their need to do maintenance of their cars, motorbikes, small vans or small buses.

SCENARIO

H. Dip. in Computing

Guided Technology Project

SCENARIO ONE – Ger's Garage

Ger is a mechanic who runs a small garage. He carries out maintenance checks for all kinds of small to medium vehicles (i.e., motorbikes, cars, small vans and small buses). He has a small number of staff who work with him.

In most cases, a maintenance check will require parts or other supplies (e.g., brake fluid; engine oil). He keeps a stock of common supplies at his garage and sells them to customers if/when needed. He needs an online service to allow customers to book their vehicles in for a check-up or service. He has asked you to build a WEB-BASED [OR MOBILE] application to fulfil his requirements.

MINIMUM REQUIREMENTS

A new website for Ger's Garage is created that advertises his garage and his services. [OPTION – YOU COULD CREATE THIS AS A MOBILE APPLICATION INSTEAD] Customers can register on the website and book their vehicle in for a service OR a repair. There must be AT LEAST 4 types of booking: 1) Annual Service, 2) Major Service, 3) Repair / Fault and 4) Major Repair.

Registered customers should be able to login on future occasions and the system should remember their details. This would include details of the vehicle they LAST booked in to the garage.

Customers need to be able to select a DATE for their service. The website should limit the number of bookings allowed per day (you can decide the limit, but this should be realistic for a small garage). If there is no available space for a day, then the customer should not be able to book a service on that day.

Ger's garage is closed on Sundays for service bookings. DO not allow customers to select a Sunday. Customers will need to be able to provide some basic information about themselves and their vehicles:

- Customer name & contact details (mob phone essential)
- Vehicle type & make
- Vehicle licence details
- Vehicle engine type (diesel; petrol; hybrid; electric)
- Booking Required (i.e., Annual Service; Major Service; Repair / Fault or Major Repair)
- Customer Comments (to allow customer add any notes they want to add, such as a description of the problem)

Ger needs to have an admin access to the site to view bookings for any particular day OR week, so that he can plan his work & staff rostering. You can assume Ger has at least 4 mechanics available on any one particular day (you can change this, but be realistic – this is a small garage!)

He needs to be able to allocate a mechanic to each vehicle. You can assume that all of his staff are able to carry out any type of service / repair and that each mechanic could carry out AT MOST 4 services/repairs in one day. If the booking is a Major Repair, then this would count double. He needs to be able to print the schedule for any particular date. He needs to be able to allocate costs to each booking. You can assume a basic fixed cost (e.g., an Annual Service might cost €200 minimum). Ger needs to be able to add to this the cost of any item/parts that were needed to fix/service the vehicle.

For example, if a tyre needed to be replaced then the cost of the tyre would be added and the cost of carrying out a “wheel balancing” would be added.

You can decide the cost of each item/part and what types of items/parts you include, but you should be realistic. You do not have to provide an exhaustive list of parts, but the more you provide the more realistic your final product will be. AT A MINIMUM you should provide 40 different parts/items for the garage.

Note that the customer has to provide details of the type and make of car (e.g., Car - Ford Fiesta).

The site MUST allow for motorbikes, cars, small vans and small buses. You can decide how many different makes to provide as default, but you MUST provide at least 30 in total. Make sure to allow the user chooses “other” if their vehicle is not in the list.

Ger needs to be able to set each booking to one of 5 possible statuses:

- 1) Booked – this is the default status when a booking is made
- 2) In Service – when the vehicle arrives at the garage
- 3) Fixed / Completed – when the vehicle is ready for collection
- 4) Collected – When the customer has taken the vehicle away and paid their bill
- 5) Unrepairable / Scrapped – when the fault cannot be fixed; in this case the car has either been taken away by the customer or has been sent for scrap. (You could add additional settings here, but be realistic)

Ger needs to be able to print an “invoice” or bill for each customer when the service/repair is complete. This should provide an itemised bill for the customer.

For example:

CUSTOMER: Joe Bloke

Mob No: 085 02140201

Vehicle: Peugeot 406

Licence: 12 G 123456

Annual Service €189

Mini Valet €39

Car mat €17

TOTAL DUE €245

Payment due on collection.

You can assume that the actual payment is handled by Ger at his checkout / on another system. You do not need to process payments or issue a receipt. To achieve a distinction grade, you should aim to include additional functionality that has not been specified here but which would make sense within the project brief.

REPORT GUIDANCE DESIGN (CHP 3)

For the design section of your report, you should aim to include the following

ESSENTIAL

- Wireframe designs for the website. Include key pages – you may not need to include every single page.
- Functional Requirements – set out the various requirements in a structured manner and specify a level of priority (e.g., Must have, etc.)
- Data Requirements – set out the data you will need to store using a ‘data dictionary’ or similar structured layout. Make sure you specify data types, restrictions and any other important details
- Database tables – should be normalized to 3NF minimum

DIAGRAMS

- Include design diagrams to detail your design. Examples would include: a class diagram, and E-R Diagram, Use-cases.

JUSTIFICATION

Why did you choose this wireframe design? How did you determine your data requirements? How did you construct your class diagram and/or use-cases?

CHAPTER 1

INTRODUCTION

1.1 Project Context

This project is developed for a web site application system named 'Servicio Automotriz Lozano' to make it easy for my father business getting the possibility to get more customers and trying to create reports about when the customer knows when they need to book one service or various services like Annual Service, Major Service, Repair / Fault or Major Repair.

This project makes the facility to know the location and another important information about the business. All the data in project is store in secure database, so user can get access to them anywhere and anytime on the web application. This project eliminates for my father the need to write everything in paper and get more free time for my father to call to the customer to remember them about the services that the car, motorbike, small buses, small vans need.

1.2 Why is it a good project?

Well, this Web Site Application will use for my father business and he will try to be focus on his job without the necessity to write in paper all the time and waste time about all the specifications of the car, small buses, small vans and motorbikes, also he will have the opportunity to know and the customer as well when they need to have the service of his car.

The essential of this project is the reference of the business to get more customers giving them the transparency of the service.

1.3 Goal

Develop and Web Site System to help the business of my father in Mexico named 'Servicio Automotriz Lozano'.

1.4 Objectives

- Research which technologies are more popular in the market and easy to work on it during this project
- Create and Definition of the DB
- Web Development
- Final project and Drafts during the sessions

1.5 Methodology

I think the best methodology for me during this project will be the Waterfall because in this case I need to research properly everything by myself and need to be done every step for consequence I need to be clear with the project and check constantly what I did and what I need to complete.

ID	Task Mode	Task Name	Duration	Start	Finish	Baseline Work	% Complete
1		Servicio Automotriz Lozano	50 days?	Mon 14/06/21	Sat 14/08/21	0 hrs	2%
2		Planning	5 days?	Mon 14/06/21	Fri 18/06/21	0 hrs	20%
3	✓	Read Project Hanbook	1 day?	Mon 14/06/21	Mon 14/06/21	0 hrs	100%
4	✓	Read Project Requirements	1 day?	Mon 14/06/21	Mon 14/06/21	0 hrs	100%
5		Choice of Database	2 days	Mon 14/06/21	Tue 15/06/21	0 hrs	0%
6		Choice of Web Framework	2 days	Tue 15/06/21	Wed 16/06/21	0 hrs	0%
7		Choice of Front End	2 days	Wed 16/06/21	Thu 17/06/21	0 hrs	0%
8		Choice of Libraries	2 days?	Thu 17/06/21	Fri 18/06/21	0 hrs	0%
9		Analysis	27 days?	Tue 29/06/21	Tue 03/08/21	0 hrs	0%
10		Create Report	26 days?	Tue 29/06/21	Mon 02/08/21	0 hrs	0%
11		Introduction	1 day?	Tue 29/06/21	Tue 29/06/21	0 hrs	0%
12		Project Context	1 day	Tue 29/06/21	Tue 29/06/21	0 hrs	0%
13		Why is a good project?	1 day	Tue 29/06/21	Tue 29/06/21	0 hrs	0%
14		Goal	1 day?	Tue 29/06/21	Tue 29/06/21	0 hrs	0%
15		Objectives	1 day?	Tue 29/06/21	Tue 29/06/21	0 hrs	0%
16		Methodology	1 day?	Tue 29/06/21	Tue 29/06/21	0 hrs	0%
17		Literature Review	8 days	Tue 29/06/21	Thu 08/07/21	0 hrs	0%
18		Design	8 days	Fri 09/07/21	Mon 19/07/21	0 hrs	0%
19		Development	5 days	Tue 20/07/21	Mon 26/07/21	0 hrs	0%
20		Testing & Conclusion	5 days	Tue 27/07/21	Mon 02/08/21	0 hrs	0%
21		Design	10 days?	Mon 21/06/21	Fri 02/07/21	0 hrs	0%
22		Database Design	4 days	Mon 21/06/21	Thu 24/06/21	0 hrs	0%

ID	Task Mode	Task Name	Duration	Start	Finish	Baseline Work	% Complete
23		Conceptual Design	1 day	Mon 21/06/21	Mon 21/06/21	0 hrs	0%
24		Define Relations	1 day	Tue 22/06/21	Tue 22/06/21	0 hrs	0%
25		Logical Design	2 days	Wed 23/06/21	Thu 24/06/21	0 hrs	0%
26		Software Design	3 days	Fri 25/06/21	Tue 29/06/21	0 hrs	0%
27		Interface Design	3 days	Wed 30/06/21	Fri 02/07/21	0 hrs	0%
28		Development	16 days?	Mon 05/07/21	Fri 23/07/21	0 hrs	0%
29		Tables Database	6 days	Mon 05/07/21	Mon 12/07/21	0 hrs	0%
30		Pages Website	10 days	Tue 13/07/21	Fri 23/07/21	0 hrs	0%
31		Testing	5 days?	Mon 26/07/21	Fri 30/07/21	0 hrs	0%
32		Document Testing	3 days	Mon 26/07/21	Wed 28/07/21	0 hrs	0%
33		Correct Issues Found	3 days	Wed 28/07/21	Fri 30/07/21	0 hrs	0%
34		Deliverable	50 days?	Mon 14/06/21	Sat 14/08/21	0 hrs	1%
35		Draft Plan Submission	6 days	Mon 14/06/21	Sat 19/06/21	0 hrs	35%
36		Draft Chapter 1 Submission	6 days	Mon 21/06/21	Sun 27/06/21	0 hrs	0%
37		Interim Project Presentation	5 days?	Tue 13/07/21	Sun 18/07/21	0 hrs	0%
38		Project Report Submission	48 days	Mon 14/06/21	Thu 12/08/21	0 hrs	0%
39		Project Prototype	48 days	Mon 14/06/21	Thu 12/08/21	0 hrs	0%
40		Project Presentation	48 days	Mon 14/06/21	Thu 12/08/21	0 hrs	0%
41						0 hrs	0%

CHAPTER 2

LITERATURE REVIEW

2.1 Apache NetBeans



Apache NetBeans is much more than a text editor. It highlights source code syntactically and semantically, lets you easily refactor code, with a range of handy and powerful tools.

Apache NetBeans provides editors, wizards, and templates to help you create applications in Java, PHP and many other languages.

Apache NetBeans can be installed on all operating systems that support Java, Windows, Linux, Mac OSX and BSD. Write Once, Run Anywhere, applies to NetBeans too.

I used Apache NetBeans for run all the application to the php server and was easy to request that in the application.

2.2 Visual Studio Code

Is a distribution of the code repository with Microsoft specific customizations released under a traditional Microsoft product license.



Visual Studio Code combines the simplicity of a code editor with what developers need for their core edit-build-debug cycle. It provides comprehensive code editing, navigation, and understanding support along with lightweight debugging, a rich extensibility model, and lightweight integration with existing tools.

Visual Studio Code is updated monthly with new features and bug fixes. You can download it for Windows, macOS, and Linux on Visual Studio Code's website. To get the latest releases every day, install the Insiders build.

I used this application because I wanted to try to do the format and, in the beginning, I used to install all the sources from React Native but in the end, I decide to choose PHP and MySQL but I was completely fine with this application forever.

2.3 MySQL Database



MySQL Database Service is a fully managed database service to deploy cloud-native applications. MySQL Database Service is the only MySQL cloud service with an integrated, high-performance, in-memory query accelerator Heatwave that enables customers to run sophisticated analytics directly against their operational MySQL databases, eliminating the need

for complex, time-consuming, and expensive data movement and integration with a separate analytics database.

I choose this technology of database because is the most common and simple to use. I tried to used other technologies but when I had my revision with one of my lectures Aldana in one session from Tuesday's and I said to her I was thinking to use Firebase to develop my database I started to watch videos about MySQL and I understood better.

2.4 PHP

Is a popular general-purpose scripting language that is especially suited to web development.

Fast, flexible and pragmatic, PHP powers everything from your blog to the most popular websites in the world.

I choose this language of programming because during the course I learned and I was viewing this source is very important in the actuality and for me is easy because you can find tutorials as well on the web.



CHAPTER 3

DESIGN

3.1 Data Dictionary

TABLE			
admin	NAME	TYPE	
	id_admin	int	primary key
	email_admin	varchar(30)	
	name_admin	varchar(45)	
	surname_admin	varchar(45)	
	password_admin	varchar(45)	
booking	NAME	TYPE	
	id_booking	int	primary key
	id_staff	int	secondary key
	email_customer	varchar(30)	secondary key
	service_type_booking	varchar(45)	
	comment_booking	varchar(150)	
	date_booking	date	
	license_vehicle	varchar(15)	secondary key
	status	varchar(45)	

invoice	NAME	TYPE	
	id_invoice	int	primary key
	id_booking	int	
	total_price_service	double	
	date_invoice	date	
	license_vehicle	varchar(15)	secondary key
	email_customer	varchar(30)	secondary key
service	NAME	TYPE	
	id_service	int	primary key
	name_service	varchar(45)	
	price_service	double	
	id_invoice	int	secondary key
service cost	NAME	TYPE	
	id_service	int	primary key
	name_service	varchar(45)	
	cost_service	double	

staff	NAME	TYPE	
	id_staff	int	primary key
	name_staff	varchar(45)	
	surname_staff	varchar(45)	
	phone_staff	int	
vehicle	NAME	TYPE	
	license_vehicle	varchar(15)	primary key
	email_customer	varchar(30)	secondary key
	type_vehicle	varchar(45)	
	make_vehicle	varchar(45)	
	engine_type_vehicle	varchar(45)	
customer	NAME	TYPE	
	email_customer	varchar(30)	primary key
	name_customer	varchar(45)	
	surname_customer	varchar(45)	
	password	varchar(45)	
	phone_customer	int	

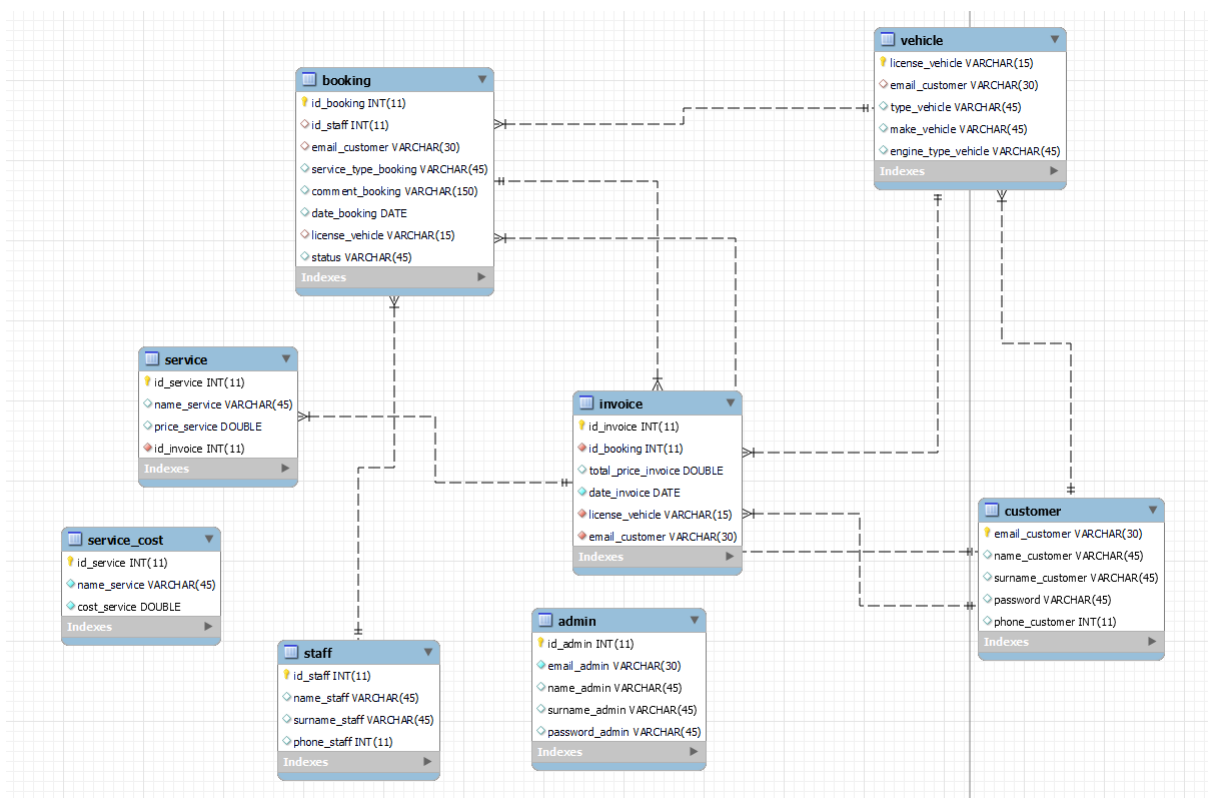
3.2 ER Diagram

What is ER Diagram?

ER Diagram stands for Entity Relationship Diagram, also known as ERD is a diagram that displays the relationship of entity sets stored in a database. In other words, ER diagrams help to explain the logical structure of databases. ER diagrams are created based on three basic concepts: entities, attributes and relationships.

ER Diagrams contain different symbols that use rectangles to represent entities, ovals to define attributes and diamond shapes to represent relationships.

At first look, an ER diagram looks very similar to the flowchart. However, ER Diagram includes many specialized symbols, and its meanings make this model unique. The purpose of ER Diagram is to represent the entity framework infrastructure.



- Table Booking: is using to collect the information from the booking like which staff, the email from the customer, the comment about what happened with her/his car, date of booking and the license from the vehicle.
- Table Customer: is using to collect the information from the customer like name, email, surname, password and phone.
- Table Admin: is using to collect the information from the admin like email, name, surname and password and this table can access to the information to add or delete staff or get the information from the day booking.
- Table Invoice: is using to collect the information from the invoice like number of invoices, booking, total price, date, license and email.
- Table Service: is using to collect the name of service and price.
- Table Service Cost: is using to collect the information the cost of the service and name of the service.
- Table Staff: is using to collect the information from the staff about their name, surname and the phone.
- Table Vehicle: is using to collect the information like license, email from the customer, engine type, type and make.

3.3 PhpMyAdmin

The screenshot shows the PhpMyAdmin interface for a MySQL database named 'db'. The left sidebar displays a tree view of the database structure, including tables like 'admin', 'booking', 'customer', 'invoice', 'service', 'service_cost', 'staff', and 'vehicle'. The main panel shows the 'Estructura' (Structure) tab for the 'db' database. It lists 8 tables with their respective actions (Examinar, Estructura, Buscar, Insertar, Vaciar, Eliminar). The table 'vehicle' is selected, and its details are shown below the table list.

Tabla	Acción	Filas	Tipo	Cotejamiento	Tamaño	Residuo a depurar
admin	Examinar Estructura Buscar Insertar Vaciar Eliminar	1	InnoDB	utf8mb4_general_ci	16.0 KB	-
booking	Examinar Estructura Buscar Insertar Vaciar Eliminar	7	InnoDB	utf8mb4_general_ci	64.0 KB	-
customer	Examinar Estructura Buscar Insertar Vaciar Eliminar	1	InnoDB	utf8mb4_general_ci	16.0 KB	-
invoice	Examinar Estructura Buscar Insertar Vaciar Eliminar	5	InnoDB	utf8mb4_general_ci	64.0 KB	-
service	Examinar Estructura Buscar Insertar Vaciar Eliminar	1	InnoDB	utf8mb4_general_ci	32.0 KB	-
service_cost	Examinar Estructura Buscar Insertar Vaciar Eliminar	40	InnoDB	utf8mb4_general_ci	16.0 KB	-
staff	Examinar Estructura Buscar Insertar Vaciar Eliminar	2	InnoDB	utf8mb4_general_ci	16.0 KB	-
vehicle	Examinar Estructura Buscar Insertar Vaciar Eliminar	3	InnoDB	utf8mb4_general_ci	32.0 KB	-
8 tablas	Número de filas	60	InnoDB	utf8mb4_general_ci	256.0 KB	0 B

Below the table list, there is a section for the selected table 'vehicle' with options to 'Imprimir' (Print) and 'Diccionario de datos' (Data Dictionary). A 'Crear tabla' (Create table) button is also visible.

Document SQL download from PhpMyAdmin:



db.sql

3.4 Bootstrap



Quickly design and customize responsive mobile-first sites with Bootstrap, the world's most popular front-end open-source toolkit, featuring Sass variables and mixins, responsive grid system, extensive prebuilt components, and powerful JavaScript plugins.

Is a free front-end framework for faster and easier web development, includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins and also gives you the ability to easily create responsive designs.

Every page in the website Servicio Automotriz Lozano is using this framework.

```
<!-- CSS only -->
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.0/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-KyZXEAg3QhqLpMg8r+8fhAXLRk2vvoC2f3B09zVXn8CA5QIVfZ0J3BCsw2P0p/We" crossorigin="anonymous">
```

```
<!-- JavaScript Bundle with Popper -->
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.0/dist/js/bootstrap.bundle.min.js" integrity="sha384-U1DAWAznBHeqEIIVScgq+c9gqGAJn5c/t99JyeKa9xxaYpSvHU5awsuZVVFIhvj" crossorigin="anonymous"></script>
```

3.5 jQuery

jQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers. With a combination of versatility and extensibility, jQuery has changed the way that millions of people write JavaScript.



```
<!-- jQuery -->
<script src="https://code.jquery.com/jquery-3.6.0.js" integrity="sha256-H+K7U5CnX11h5ywQfKtSj8PCmoN9aaq30gDh27Xc0jk" crossorigin="anonymous"></script>
```

CHAPTER 4

IMPLEMENTATION

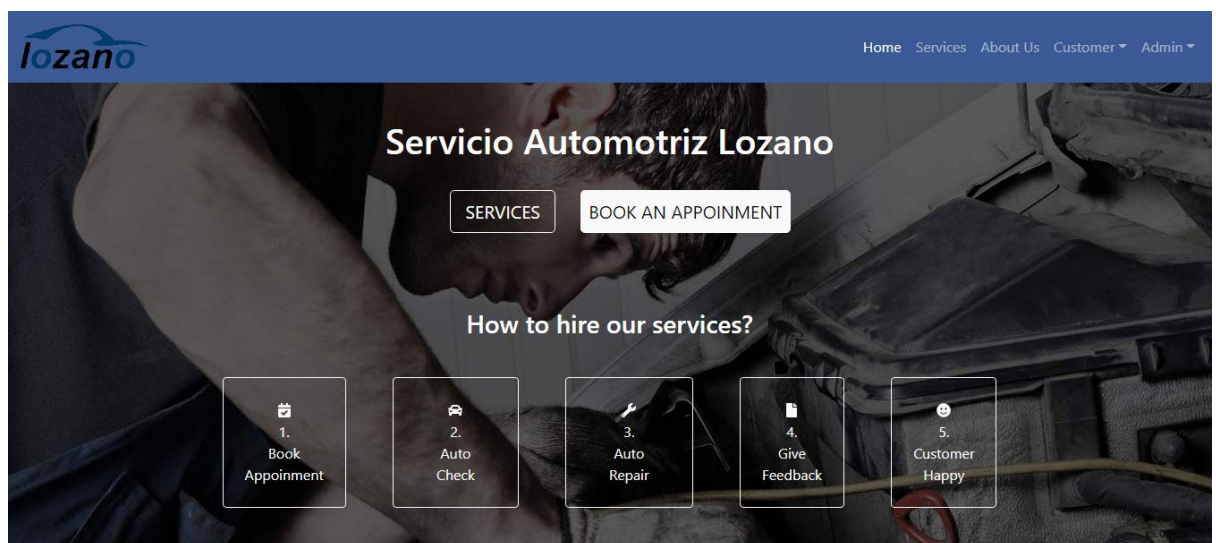
4.1 Implementation Environment

- PHP
- MySQL Online
- MySQL Workbench

4.2 Modules

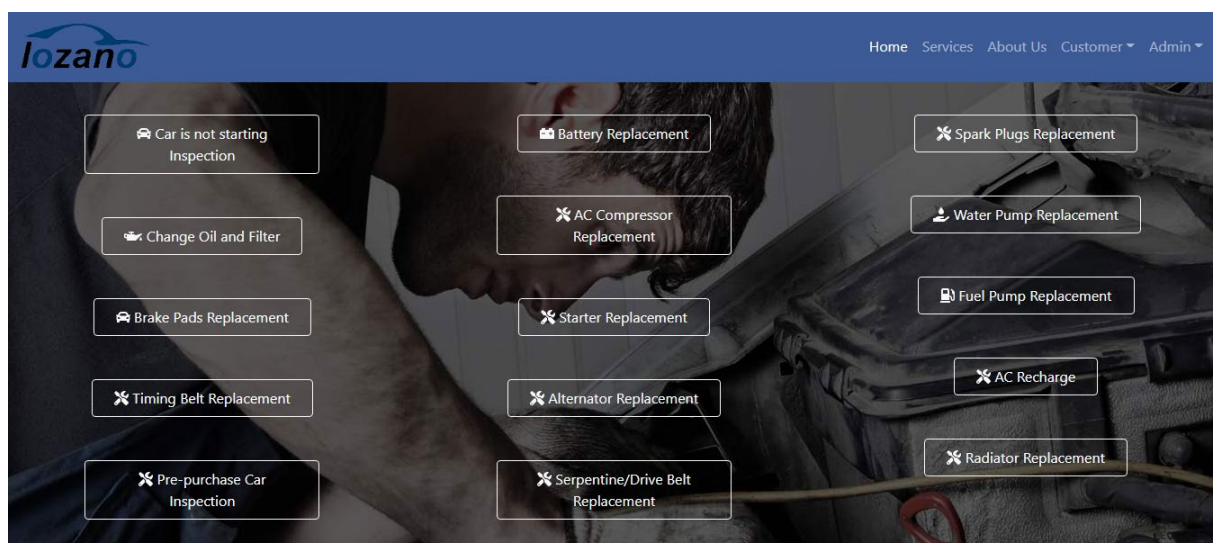
- Home

User can see all the functionality around the website and trying to see all the service that Servicio Automotriz Lozano offer for the customer.



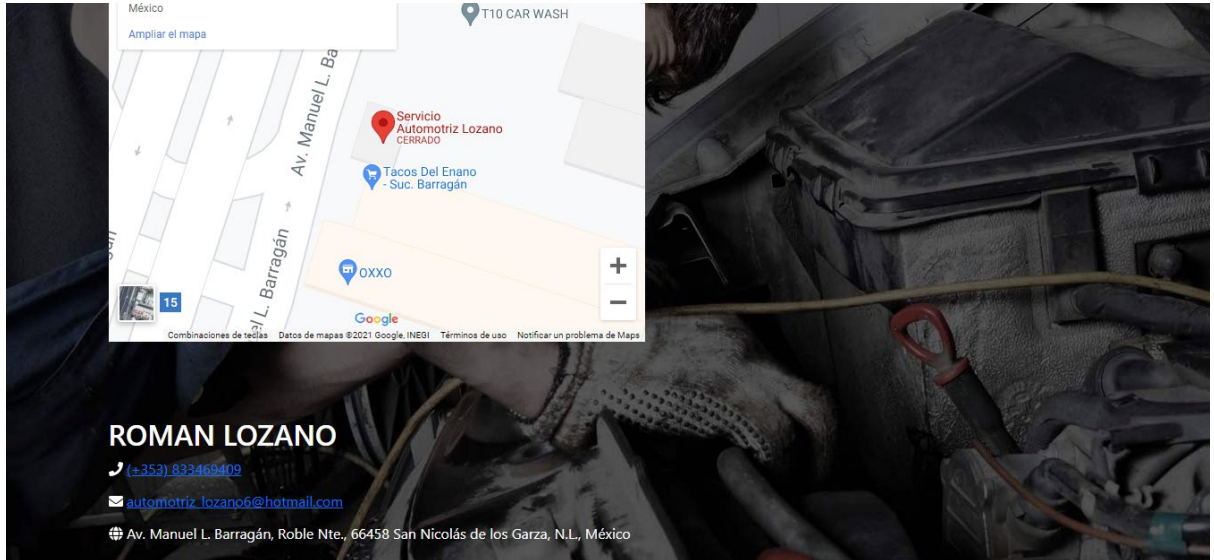
- Services

User can see all the services that Servicio Automotriz Lozano offer in his garage and prices.



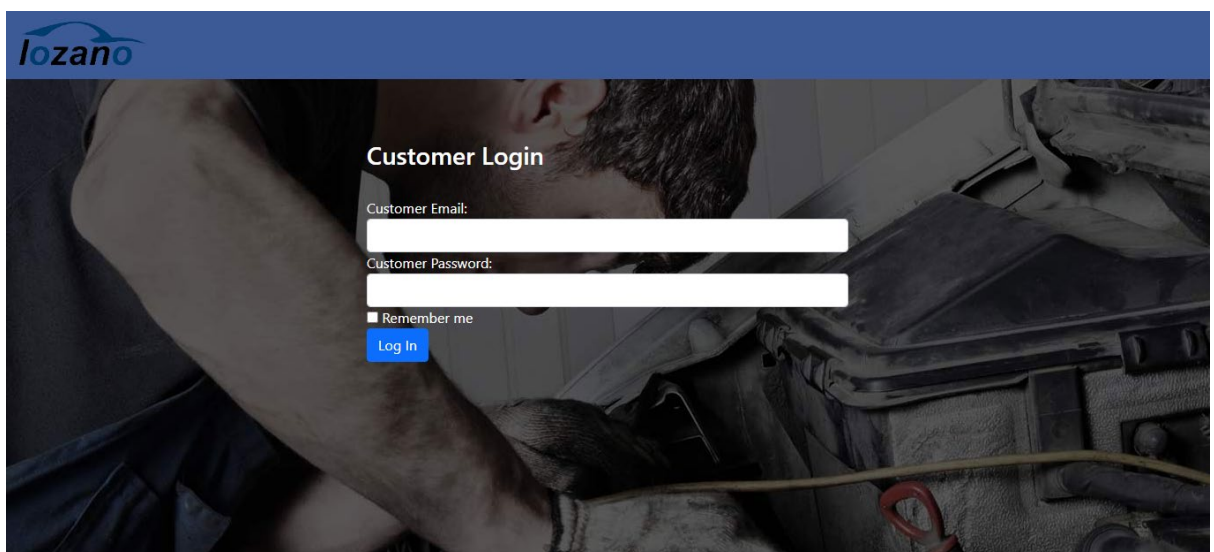
- About Us

User can see where is the location of the branch store in google maps.



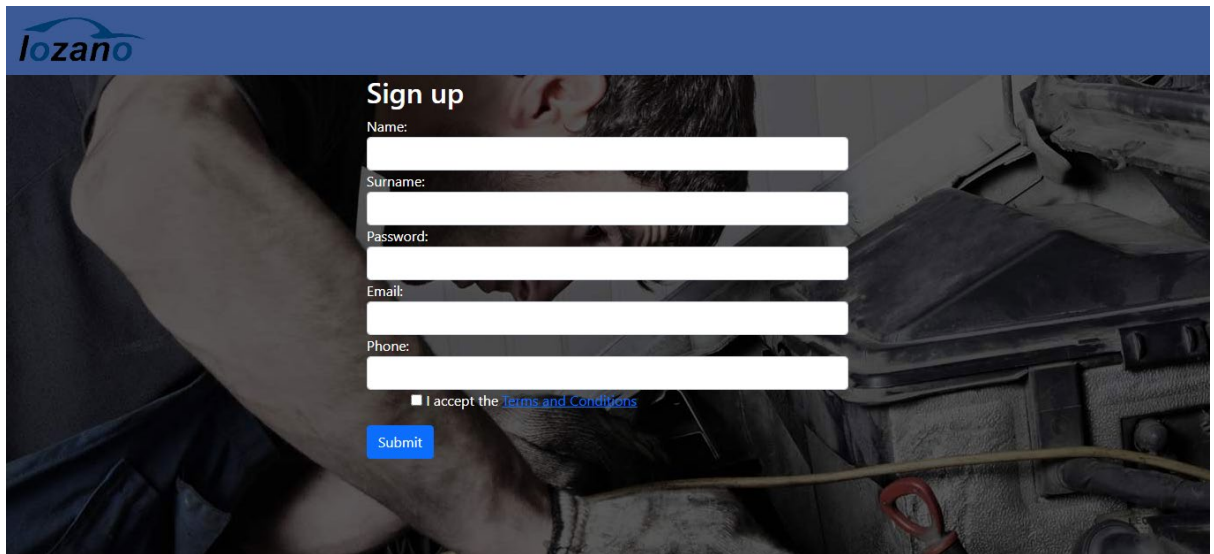
- Log In Customer

User provides his/her login details Email and Password. The login module passes credentials to PHP and MySQL which checks for user validation. If the user credentials match, then user will be provided successfully login otherwise the error message will be displayed.



- Sign Up Customer

User provides registration details including Name, Surname, Password, Email and Phone. Then Sign-Up module passes Email and Password to MySQL database authentication which registers user. After successful registration Login Customer will be provided.



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Sign up

Name:

Surname:

Password:

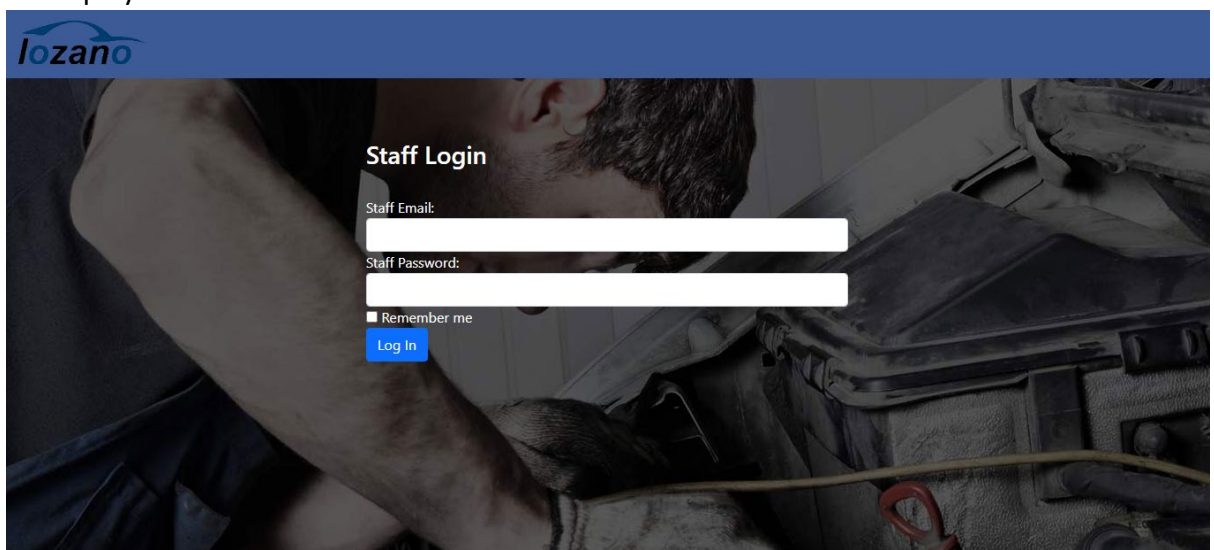
Email:

Phone:

☐ I accept the [Terms and Conditions](#)

- Log In Admin

Admin provides his/her login details Email and Password. The login module passes credentials to PHP and MySQL which checks for user validation. If the user credentials match, then user will be provided successfully login otherwise the error message will be displayed.



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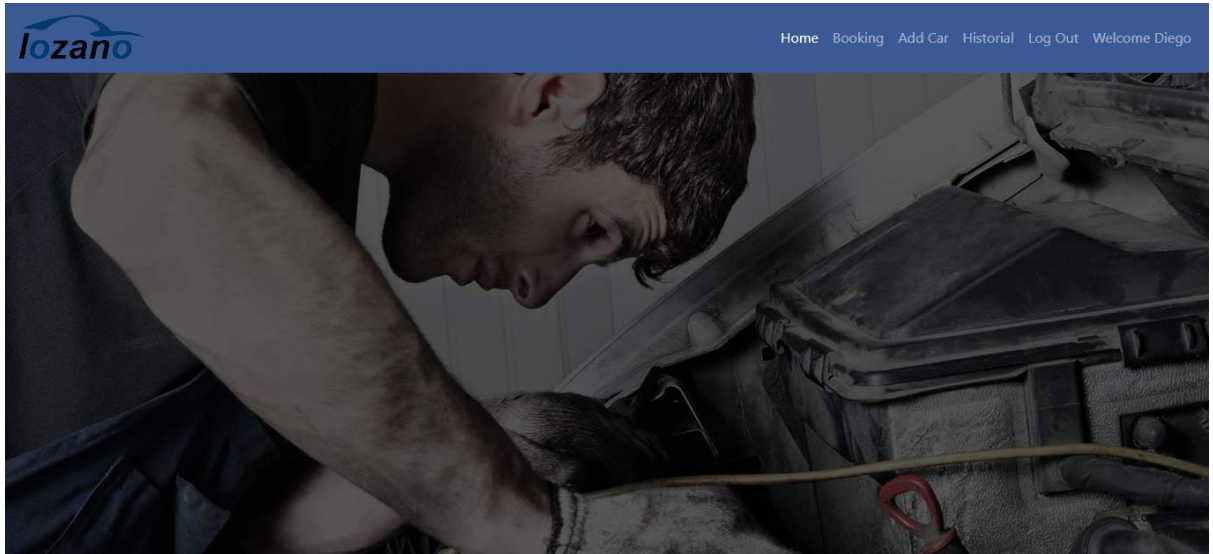
Staff Login

Staff Email:

Staff Password:

☐ Remember me

- Home (Customer)



- Booking (Customer)

User can select the vehicle before adding from Add Car section and offer to select which kind of Type of Service need his/her car. Then the customer can describe his/her problem in the comment box and which day would like to have the appointment.

A screenshot of the Lozano website's Booking form. The header is identical to the Home page. The form is overlaid on the same dark background image. It contains the following fields: 'Select Your Vehicle:' with a text input, 'Service Type Booking:' with a text input, 'Comment:' with a larger text area, and 'Date' with a date picker showing 'YYYY-MM-DD'. A blue 'Booking' button is at the bottom of the form.

- Add Car (Customer)

User can select which kind of make of his/her car and then the type of the vehicle, after that need to select if the car has diesel, petrol, hybrid or electric; Then when you finish you can write their license of their car.

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Home Booking Add Car Historial Log Out Welcome Diego

Make:
-- Vehicle --

Type Vehicle:

Engine Type Vehicle:
Diesel

License Vehicle:

Register

Make Vehicle	Type Vehicle	Engine Vehicle	License Vehicle
Audi	A1	Diesel	1as2
Audi	A1	Diesel	3123132
BMW	M6	Diesel	123421312

- History (Customer)

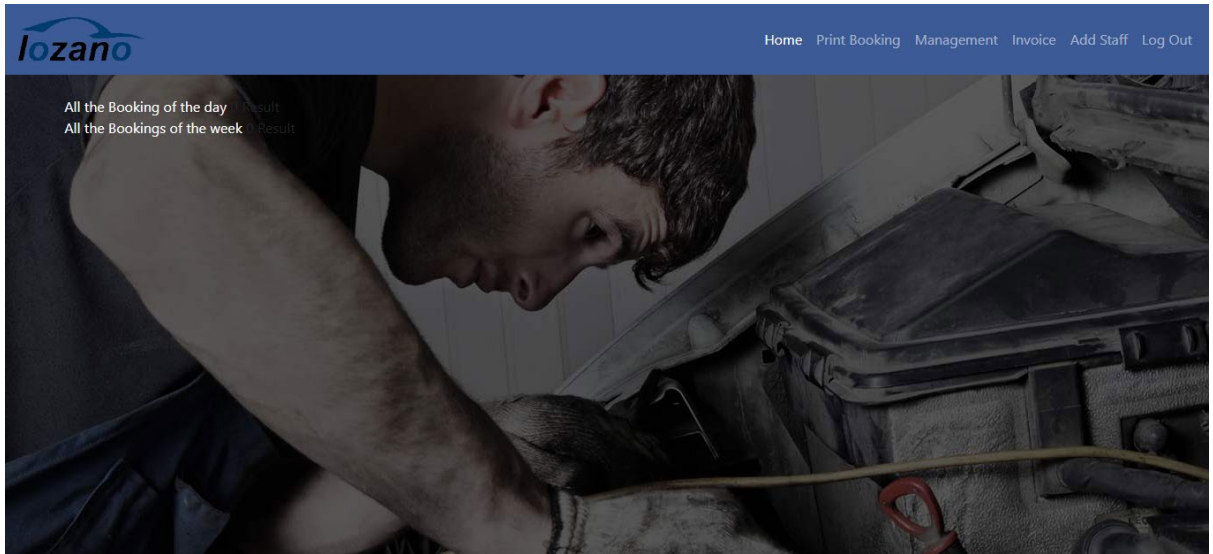
User can show in this page all the history and with this user can realise when they did the last service checking by date of the service.

lozano

Home Booking Add Car Historial Log Out Welcome Diego

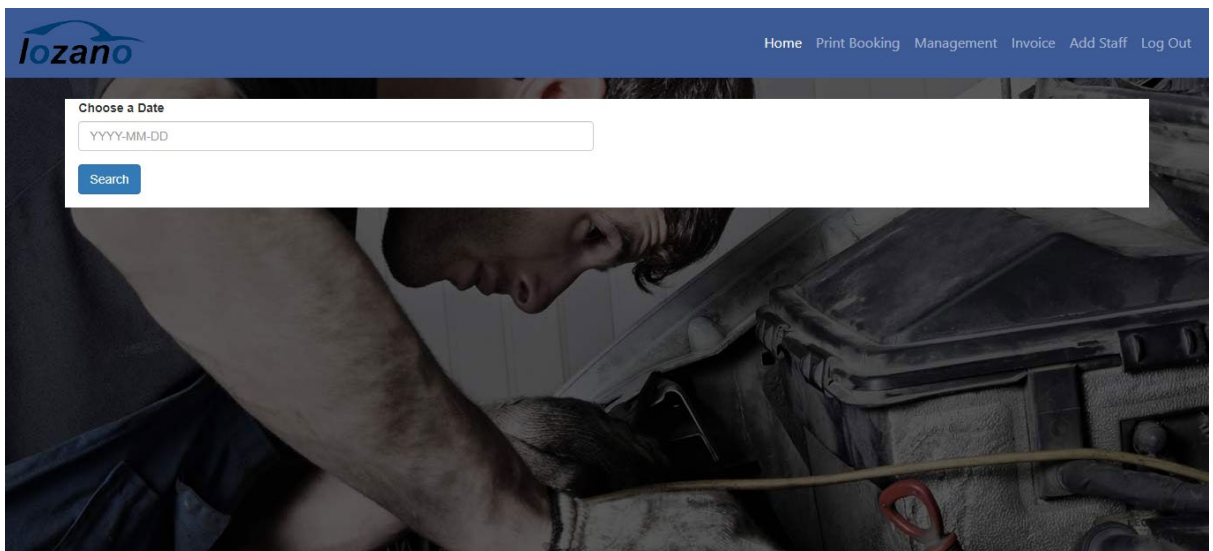
Date	Id Booking	Make Vehivle	Type Vehicle	Engine Vehicle	Service Type Booking	License Vehicle	Status
2021-08-02	9	Audi	A1	Diesel	Major Repair	1as2	Fixed / Completed
2021-08-02	10	Audi	A1	Diesel	Annual Service	1as2	Booked
2021-08-02	7	BMW	M6	Diesel	Major Service	123421312	Booked
2021-08-02	8	Audi	A1	Diesel	Major Service	1as2	Fixed / Completed
2021-08-31	6	BMW	M6	Diesel	Major Service	123421312	Booked
2021-09-02	5	BMW	M6	Diesel	Repair / Fault	123421312	Booked
2021-09-03	4	BMW	M6	Diesel	Annual Service	123421312	Collected

- Home (Admin)



- Print Booking (Admin)

User admin can pick a date of his/her preference and see all the bookings that had or will have in the specific date, then user admin can print the page.



- Management (Admin)

User admin can check specific Id Booking and can change the status or assign for specific member of his/her staff.

- Invoice (Admin)

User admin can print the invoice for the customer giving the Id Invoice and if the customer adds another service or the admin added a service in the invoice will add automatically. Then the User admin can print the invoice.

Name Customer	Surname Customer	Phone Customer	Email Customer
Diego	Lozano	833469409	diegoloza94@gmail.com

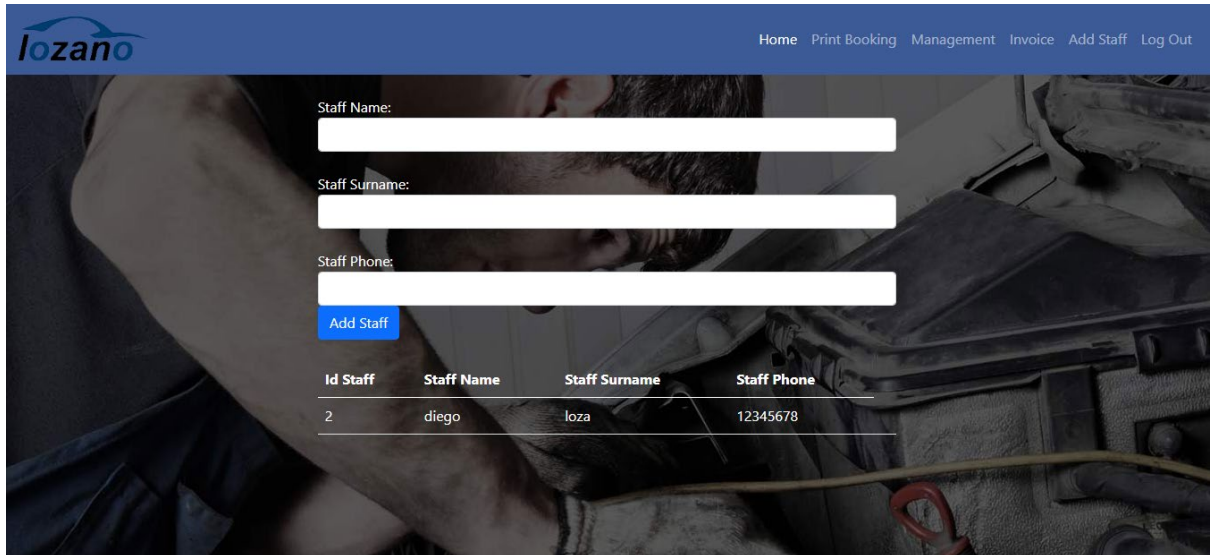
Make Vehicle	Type Vehicle	Engine Vehicle	License Vehicle
BMW	M6	Diesel	123421312

Service	Price
Annual Service	160

Total Amount €: 160

- Add Staff (Admin)

User admin can add or delete member of staff for his/her garage Servicio Automotriz Lozano.



The screenshot shows a web application interface for 'Servicio Automotriz Lozano'. The header features the company logo and navigation links: Home, Print Booking, Management, Invoice, Add Staff, and Log Out. The main content area is a form for adding staff, overlaid on a background image of a mechanic working on a car. The form contains three input fields: 'Staff Name:', 'Staff Surname:', and 'Staff Phone:'. Below these fields is a blue 'Add Staff' button. At the bottom of the form is a table with the following data:

Id Staff	Staff Name	Staff Surname	Staff Phone
2	diego	loza	12345678

CHAPTER 5

TESTING

5.1 Testing

Black Box Testing is a software testing method in which the functionalities of software applications are tested without having knowledge of internal code structure, implementation details and internal paths. Black Box Testing mainly focuses on input and output of software applications and it is entirely basing on software requirements and specifications. It is also known as Behavioural testing.

I applied this method with my website Servicio Automotriz Lozano.

ID	SCENARIO	DATA	RESULT
1	customer login	correct customer email and password	successful
2	customer sign up	correct customer registration	successful
3	customer login	incorrect customer email and password	successful
4	customer sign up	incorrect customer registration	successful
5	admin login	correct admin email and password	successful
6	admin login	incorrect admin email and password	successful
7	customer booking	correct filled all the labels	successful
8	customer booking	incorrect filled all the labels	successful
9	customer adding car	correct filled all the labels	successful
10	customer adding car	incorrect filled all the labels	successful
11	admin print booking	correct filled all the labels	successful
12	admin print booking	incorrect filled all the labels	successful
13	admin management	correct filled all the labels	successful
14	admin management	incorrect filled all the labels	successful
15	admin invoice	correct filled all the labels	successful
16	admin invoice	incorrect filled all the labels	successful
17	admin adding staff	correct filled all the labels	successful
18	admin adding staff	incorrect filled all the labels	successful

CHAPTER 6

TROUBLESHOOTING

6.1 Troubleshooting

During this project I had to manage with a lot of things, specially with my computer from when I started the project, in the beginning my computer wasn't working properly because the fan was so dirty and my computer was restarting constantly by the way I tried to put a fan beside to me but that's was happening frequently. I needed to go to leave my computer for the whole day for clean everything.

Another trouble that I had was about I started to develop with React Native and I was looking for on YouTube experience with firebase but during the ways I talked with Aldana and she was telling me to do in the simple and easy way because was not enough time to have the knowledge about that technology and for that reason I decided to start again with php and MySQL.

Why I wanted to do with React Native and Firebase? The simple answer is because I wanted to do something different and with that I wanted as well to show that we can use other technologies but, in the end, I was thinking about the times and I didn't realise the deadline was for 1 month later.

How I Fixed?

First, I went to Ilac Shopping Centre to fix my problem with the fan from the computer and they gave to me in one day, secondly, Aldana explained to me was the best option to do something with knowledge and with functionality and then I started to watch a lot of videos and the classes previous had during the year about PHP and MySQL.

CHAPTER 7

CONCLUSION

7.1 Conclusion

I wanted to create a Web Application for my father for 4 years ago and I was talking with my brother who told me about that project in that moment, but I didn't have knowledge about coding only database and during this year I learned a lot of stuffs about coding html, php and database and I developed this website by myself and now I have to give to my father this website.

I was testing and develop the code in the same time watching videos and websites who helped me a lot being autodidact. Now I can feel the result and now I can apply without afraid for any company not only for database, even for developing websites.

CHAPTER 7

REFERENCES

- JavaScript, 2016. [Online] Available at: <https://www.javascript.com/about> [Accessed 23 June 2021].
- React, 2017. [Online] Available at: <https://reactjs.org> [Accessed 23 June 2021].
- React, 2017. [Online] Available at: <https://github.com/facebook/react> [Accessed 23 June 2021].
- React Router, 2020. [Online] Available at: <https://github.com/ReactTraining/react-router> [Accessed 23 June 2021].
- Joe Morga, React Router, 29 October 2020. [Online] Available at: <https://www.digitalocean.com/community/tutorials/how-to-handle-routing-in-react-apps-with-react-router> [Accessed 23 June 2021].
- PHP, 2021. [Online] Available at: <https://www.php.net/> [Accessed 21 July 2021].
- MySQL, 2021. [Online] Available at: <https://www.oracle.com/ie/mysql/> [Accessed 21 July 2021].
- How to create ER Diagram on MySQL Workbench. [Online] Available at: <https://www.youtube.com/watch?v=dJSiGeziZJo> [Accessed 24 July 2021].
- Apache NetBeans, 12.4. [Online] Available at: <https://netbeans.apache.org/> [Accessed 21 June 2021].
- Visual Studio Code, 1.59. [Online] Available at: <https://code.visualstudio.com/> [Accessed 21 June 2021].
- Visual Studio Code. [Online] Available at: <https://github.com/microsoft/vscode> [Accessed 07 August 2021].
- Bootstrap. [Online] Available at: <https://getbootstrap.com/> [Accessed 26 July 2021].
- Bootstrap. [Online] Available at: https://www.w3schools.com/bootstrap4/bootstrap_get_started.asp [Accessed 07 August 2021].
- jQuery. [Online] Available at: <https://jquery.com/> [Accessed 26 July 2021].

- jQuery. [Online] Available at: https://www.w3schools.com/jquERy/jquery_ref_html.asp [Accessed 07 August 2021].
- Testing. [Online] Available at: <https://www.codeproject.com/Articles/291343/Website-Testing-Techniques> [Accessed 08 August 2021].
- Testing v1. [Online] Available at: <https://www.guru99.com/web-application-testing.html> [Accessed 08 August 2021].
- Testing Black-Box. <https://www.guru99.com/black-box-testing.html> [Online] Available at: [Accessed 08 August 2021].
- Font Awesome. <https://fontawesome.com/v5.15/how-to-use/javascript-api/setup/configuration> [Online] Available at: [Accessed 08 August 2021].
- Footer Bootstrap. <https://mdbootstrap.com/docs/standard/navigation/footer/> [Online] Available at: [Accessed 08 August 2021].
- Website Design. <https://www.yourmechanic.com/> [Online] Available at: [Accessed 01 July 2021].