Guitar Shop

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Table of Contents

Guitar Shop....4
Introduction....5
Feature Included in Website....6
Authorization....6
Register/Signup....7
Make a purchase.....8
Update Profile....9
Add Item....10
Update Item....11
View User List:....12
Delete User:....12
Total Order:....12
Forgot Password....13
Generates Bills....15
Nav Bar....15
Footer....15
Aim....16
Objectives:....17
Learning Outcomes....18
Front End....19
Prototype....19
Some of the Front-end technologies that were used are:....19
Advance Framework and Libraries....19
Screenshot....20
Responsive Design and its needs....21
Checking the Responsive Design....22
Database....25
Postgres SQL....25

ERD Diagram 27
Back End 28
Spring Boot 28
Thymeleaf ..... **Error! Bookmark not defined.**
Architecture 28
Controller 29
Repo 30
Service 31
Testing 32
Unit Testing 32
Promocode 32
Rating and review 32
Comment 33
Upcoming Features in the coming days 33
Chatting with the Admin 33
Notification 33
Conclusion 35

Table of Figures

Figure 1 6
Figure 2 7
Figure 3 8
Figure 4 9
Figure 5 10
Figure 6 11
Figure 7 12
Figure 8 13
Figure 9 14
Figure 10 15
Figure 11 15
Figure 12 20
Figure 13 22
Figure 14 23
Figure 15 24
Figure 16 27
Figure 17 29
Figure 18 30
Figure 19 31

Guitar Shop

Introduction

"Strum into a World of Melody: Welcome to Our Online Guitar Haven!

Embark on a musical journey like no other with Guitar Shop, your ultimate destination for all things guitar related. As passionate guitar enthusiasts ourselves, we have curated an exquisite collection of guitars, accessories, and gear that cater to both budding strummers and seasoned virtuosos.

With just a click, you'll step into a realm where strings hum, chords resonate, and creativity knows no bounds. Explore our carefully selected range of acoustic and electric guitars, each instrument a masterpiece waiting to ignite your musical passion. Whether you're drawn to the rustic warmth of an acoustic melody or the electrifying energy of rock 'n' roll, we have the perfect guitar to bring your music to life.

But we're more than just a shop; we're a community of musicians united by our love for the six-string wonder. Our team of experienced guitarists is here to guide and inspire you, whether you're searching for your first guitar, seeking an upgrade, or chasing that elusive tone. Dive into our wealth of informative articles, video tutorials, and expert insights to refine your skills and expand your musical horizons.

Your dream guitar is just a few clicks away, and we're thrilled to be a part of your musical expedition. Join us at Guitar Shop and let's strum, pluck, and riff our way to sonic brilliance together!"

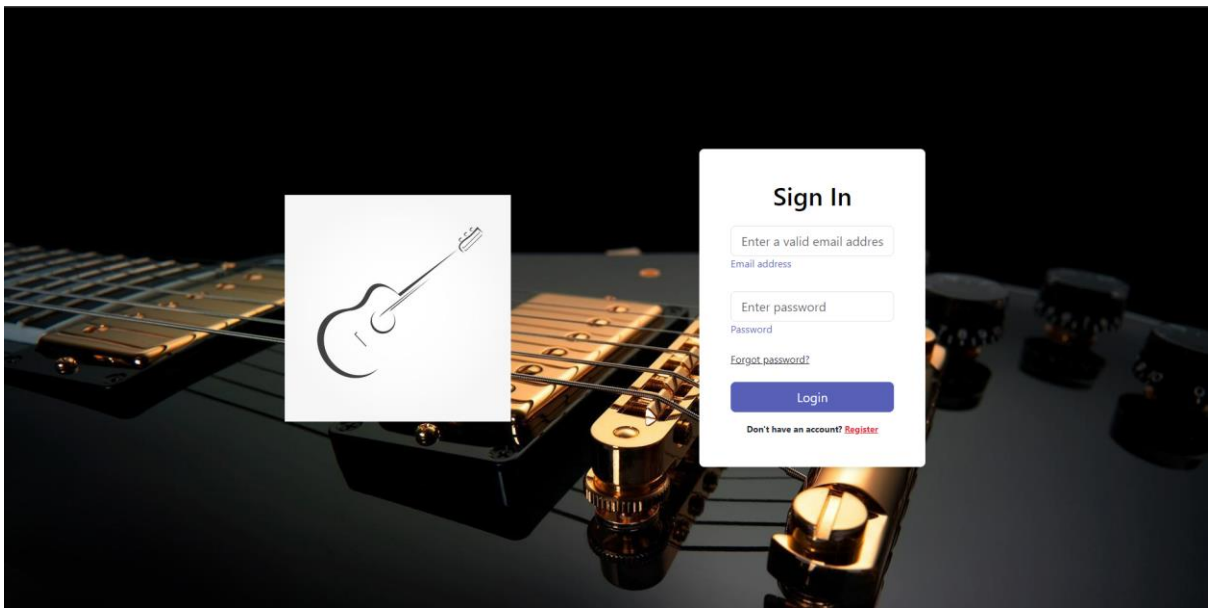
Feature Included in Website

The following are the main features of this website.

Authorization

Figure 1

Login Page

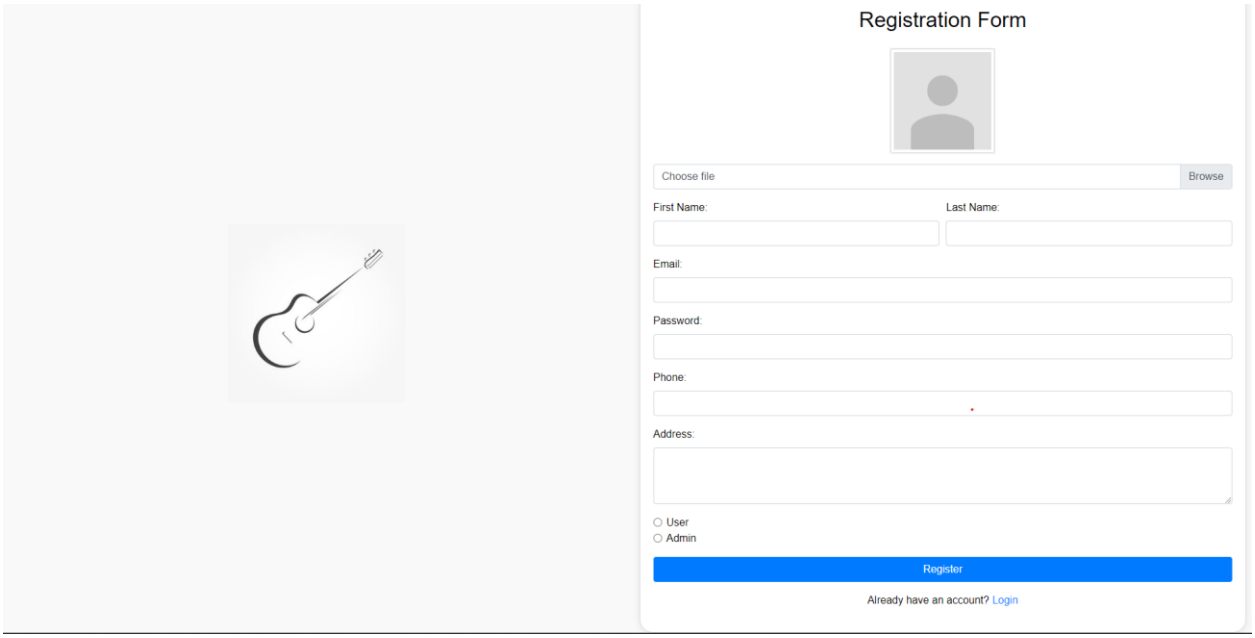


A key element of the Guitar shop, the "Authenticate Users" feature guarantees secure access and customised user experiences. The feature requires users to log in using specific login information, such as usernames and passwords, in order to verify their identities and grant access to the site.

Register/Signup

Figure 2

Register Page

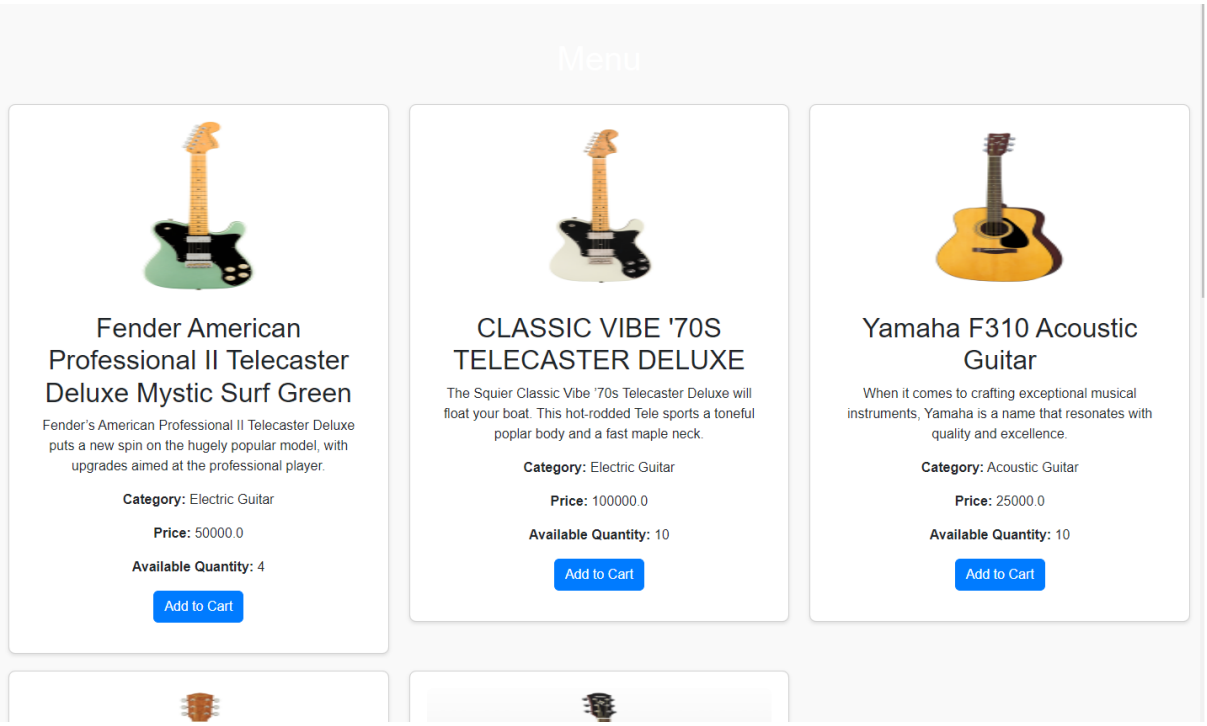


The Register/Signup feature allows new users to set up accounts and register as members of the Guitar Shop. Users must submit their name, email address, phone number, and a secure password, among other details. After successfully enrolling, users have access to personalised accounts where they may view order histories, follow delivery, and modify account information. By enabling registered users to save their preferences, addresses, and payment information for subsequent orders, the service streamlines the ordering process. By offering enrolled consumers special discounts and incentives, enhancing their entire experience, and promoting repeat business, this promotes user loyalty.

Make a purchase.

Figure 3

Inventory

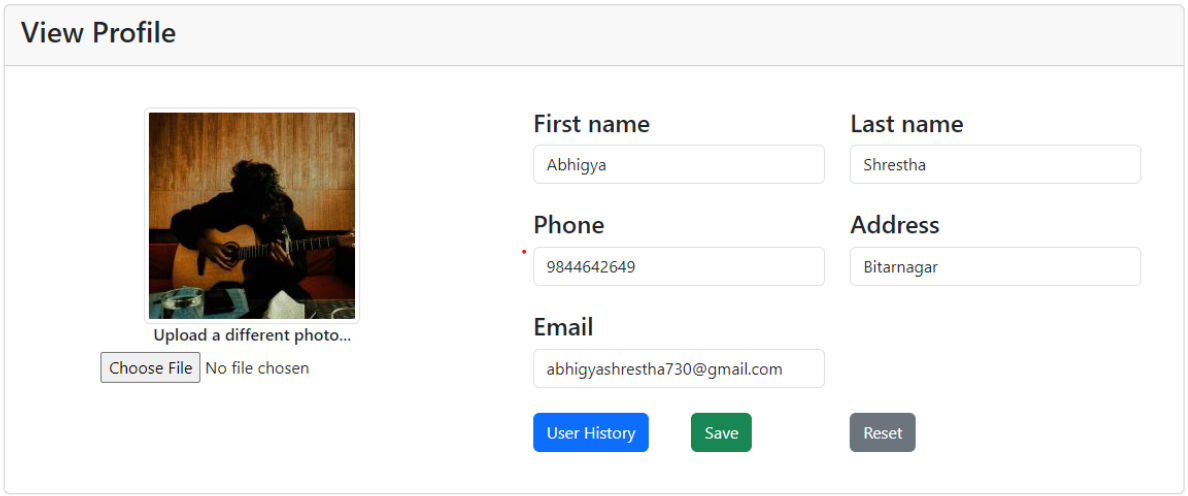


Customers can browse Guitar with their accessories and securely order delivery or pickup of those items. With this streamlined process, buyers may have a convenient and seamless experience while playing their preferred guitar.

Update Profile

Figure 4

Update Profile/View Profile

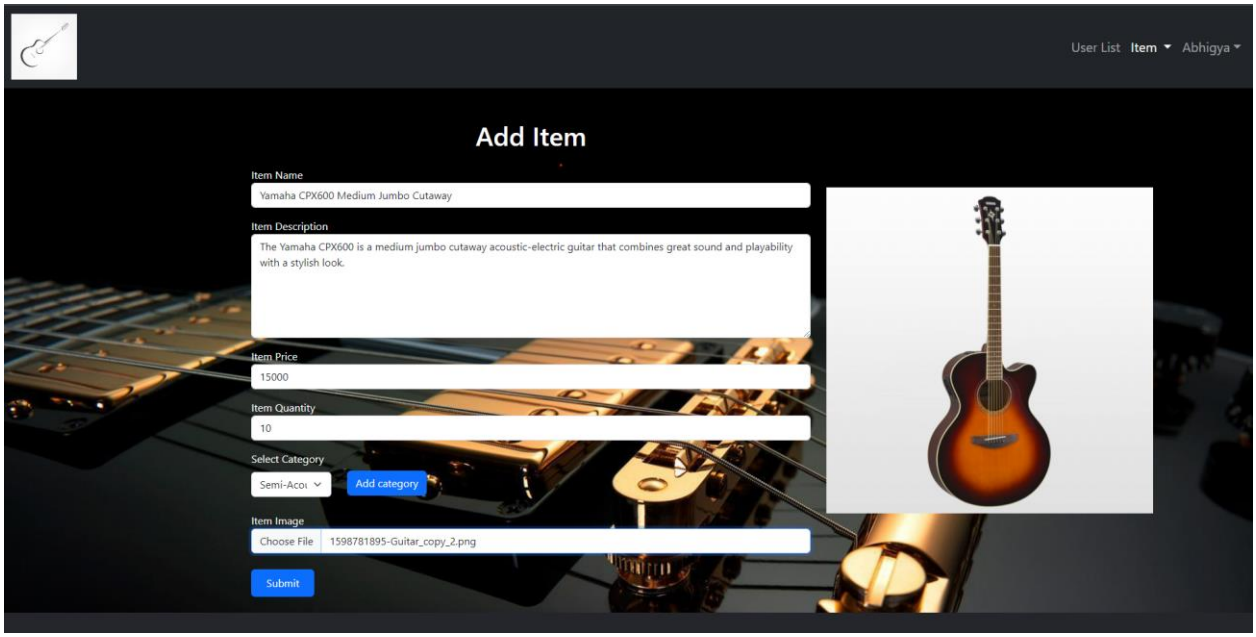


Users can maintain and update their private data, such as contact details, delivery addresses, and payment preferences. This gives users more control and provides a more gratifying and enjoyable platform experience.

Add Item

Figure 5

Add Item

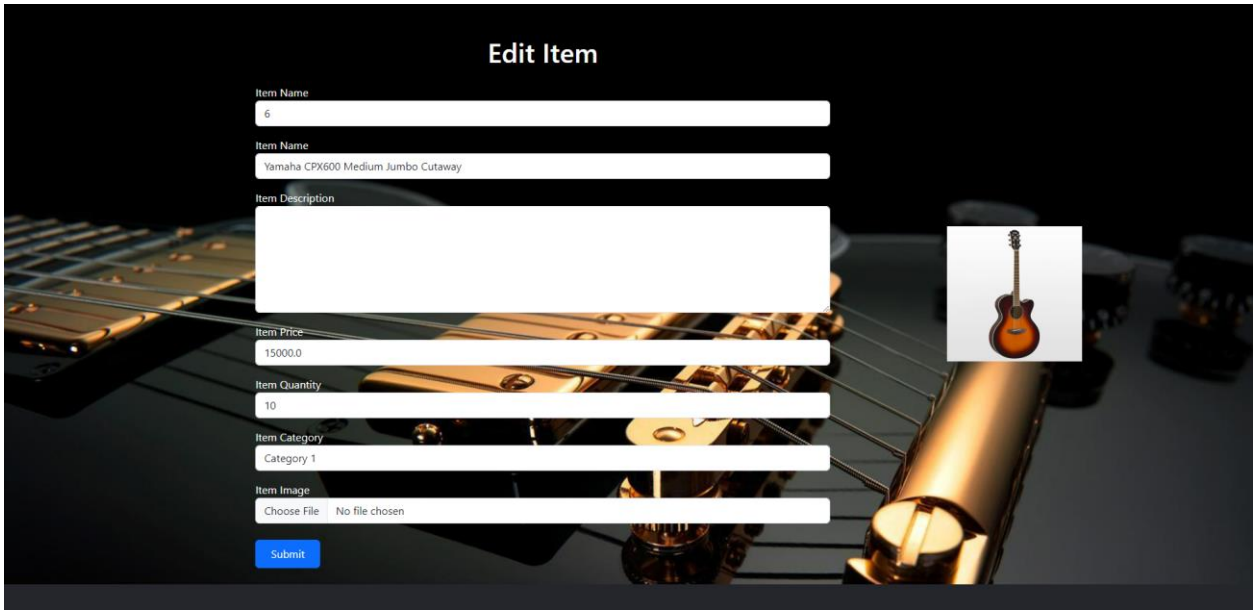


Authorised employees may swiftly update the stock and provide users with a broad and current range of magnificent guitar to choose from by adding new guitar and items to the system.

Update Item

Figure 6

Update Item

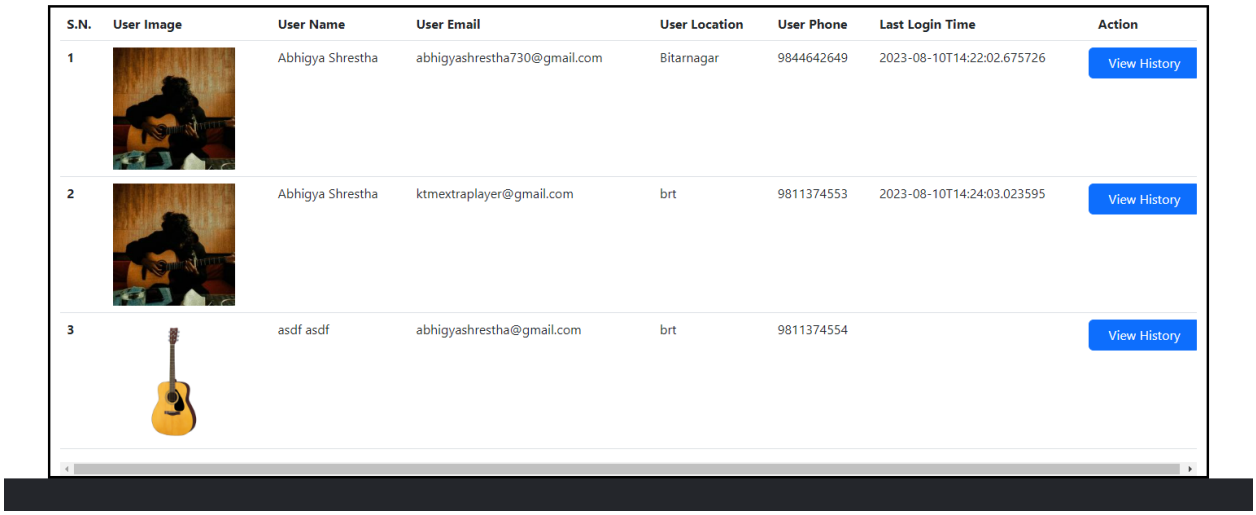


To maintain accurate and current stock, authorised employees may alter and edit the current guitar in the system. To make sure that customers receive the most recent and accurate information, administrators can alter item specifics like prices, descriptions, and availability.

View User List:

Figure 7

User View List



The tool offers crucial details like login history, contact information for registered users of the Guitar Shop, including names, addresses, phone numbers, and email addresses. In order to provide better customer service and engagement, it enables administrators to manage user accounts more effectively, monitor login activities, and access user details.

Delete User:

This feature allows users and administrators to delete user accounts. Since users have the option to delete their accounts if they no longer wish to utilise the platform, administrators can use this functionality to manage user data and handle account-related issues.

Total Order:

Customers can use the feature to view a graphic representation of their monthly food orders. Customers can go through their order history, monitor their eating patterns, and gain insights into their spending patterns at the Guitar Shop by using this graph.

Forgot Password

Figure 8

Forgot Password

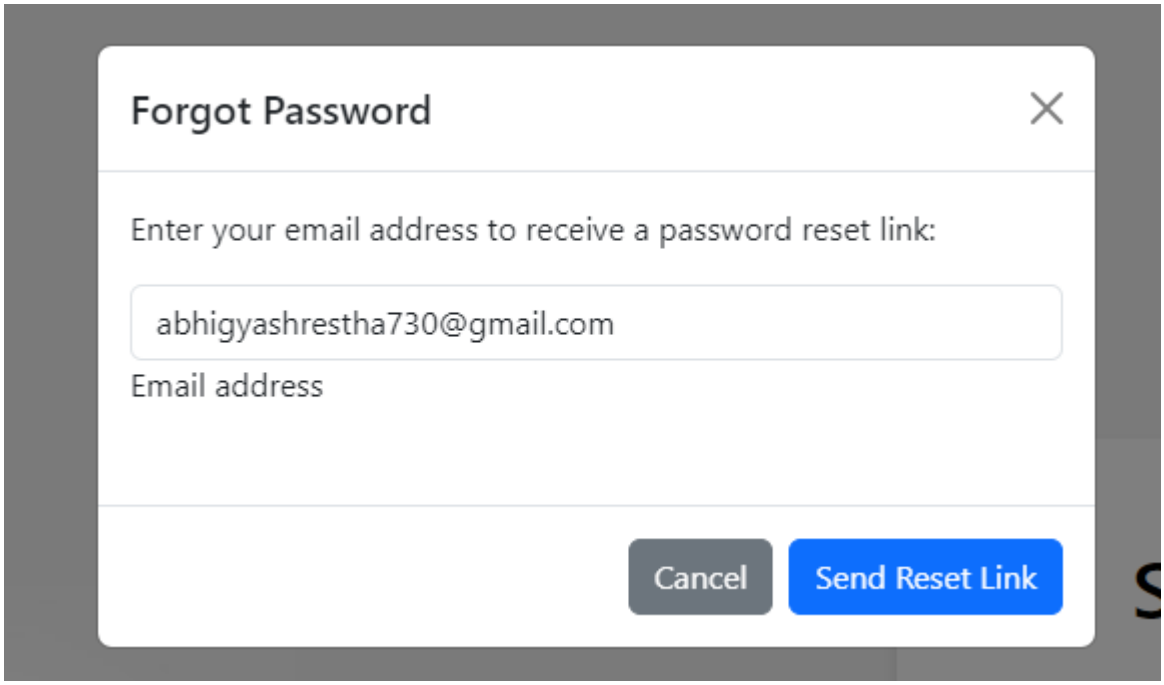
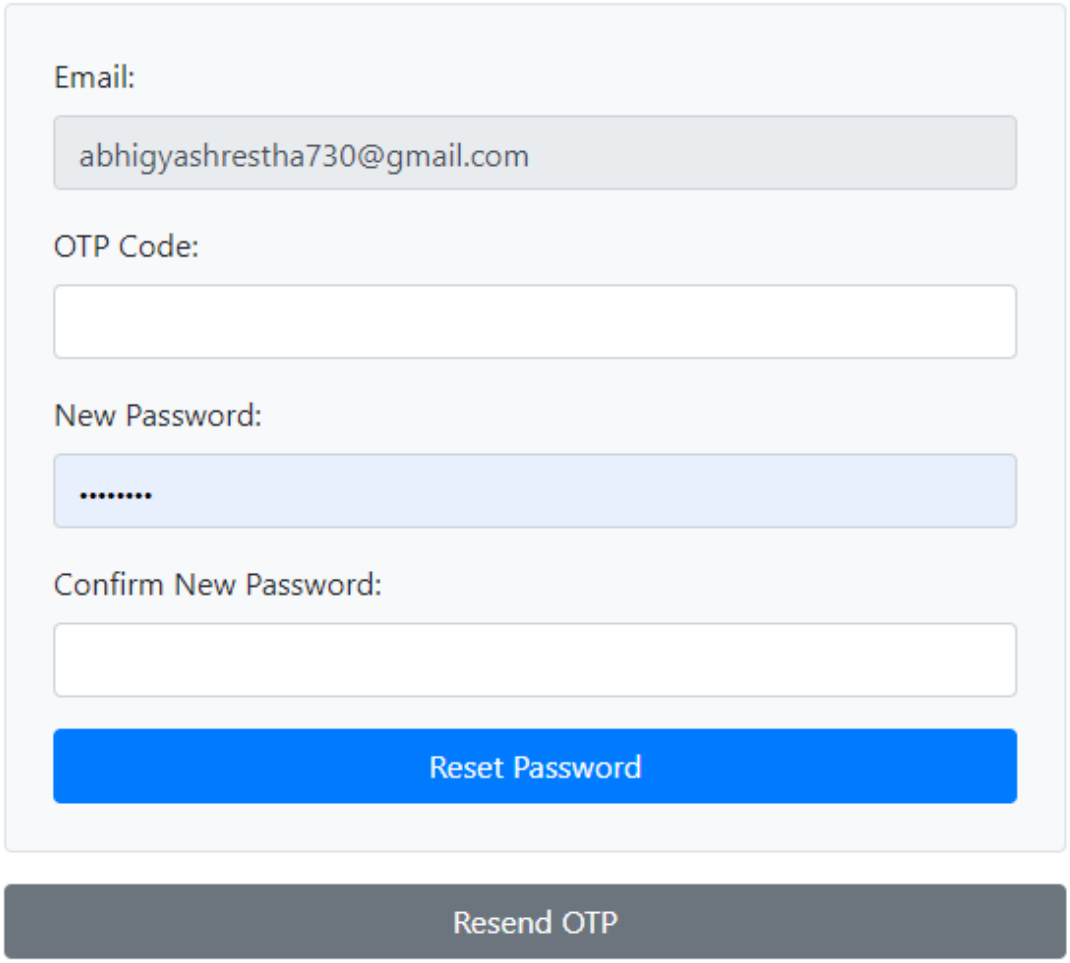


Figure 9

Verification for Forgot Password



The Forget Password feature in the Guitar Shop enables users to securely change their forgotten passwords. Users who choose "Forgot Password" will get a special link or code in an email or SMS to start the password reset process. By verifying the user's identity and guarding user accounts from unauthorised access, this feature provides an additional layer of security. After being verified, users can create a new password, regaining access to their accounts, and maintaining a seamless and secure website experience. The website's dedication to data security and user privacy is strengthened by the Forget Password feature, which increases customer convenience.

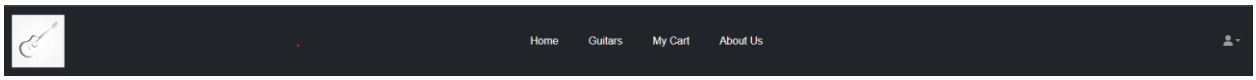
Generates Bills

This function creates a complete bill for each customer's order automatically. When customers complete their orders, the system computes the total cost, which takes into account the item prices, any applicable taxes, and any supplemental fees. The generated bill provides clients with a clear and transparent breakdown of the various meal ingredients, quantities, pricing, and the overall amount owed. By enabling customers to review their order details before making payments, this feature streamlines the payment process and creates a quick and simple checkout procedure. Additionally, by streamlining accounting and assisting the restaurant in maintaining accurate financial records, the Generates Bill feature enhances order management and revenue tracking.

Nav Bar

Figure 10

NavBar

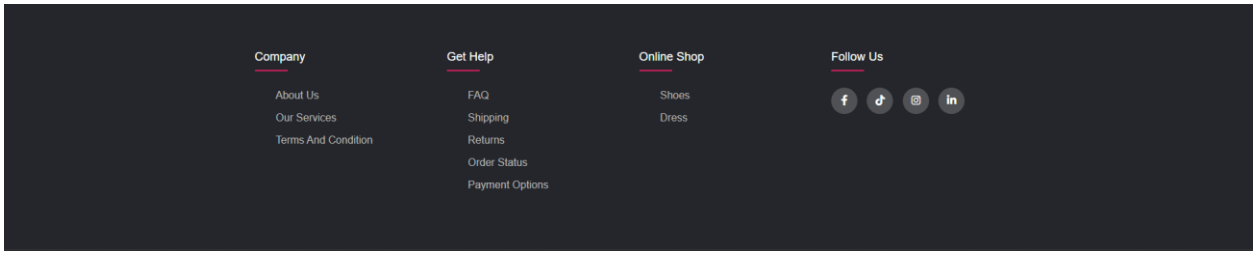


The navigation bar on the website provides customers with a simple and user-friendly interface that enables them to quickly explore the different parts and features of the Guitar Shop.

Footer

Figure 11

Footer



The header of the website, which is located at the top and features the logo, brand identity, and navigation options, guarantees that customers will experience a unified and instantly recognisable interface when interacting with the Guitar Shop. It includes crucial pages like "About Us" and "Contact Us," giving visitors the chance to learn more about the company and simply get in contact with us if they have any questions or need support. Users may visit the brand's social media profiles and stay up to date on the most recent news and promotions thanks to the inclusion of social media icons in the header for Facebook, Twitter, and Instagram.

Aim

Create a reliable, secure network that connects people with guitars and offers a simple, enjoyable online purchase process.

Objectives:

The following are the objectives of Guitar Shop:

1. Create a guitar shop using PostgreSQL, HTML, CSS, JavaScript, and Spring Boot.
2. Make a user-friendly interface so that clients can easily browse Guitars, alter orders, and order guitars.
3. Find essential features that enhance the user experience overall and deploy them through use-case analysis.
4. Real-time order tracking for customers will increase transparency and boost customer satisfaction.
5. Work together with a well-known guitar retailer to offer consumers a wide selection of high-quality instrument options, thereby boosting the system's credibility.
6. To guarantee that orders are delivered effectively, optimize delivery routes and give delivery personnel real-time updates.
7. Insights into user behavior and order trends can be gained using analytical tools, enabling data-driven decisions for system improvements.
8. System features should be regularly updated and modified based on user feedback, market trends, and technological advancements in order to stay competitive.
9. For maximum speed and to support increasing user traffic, the system should be designed with scalability in mind.
10. Apply knowledge of use case analysis and other relevant methodologies to provide a well-designed and efficient Guitar Shop.

Learning Outcomes

Creating clear and effective learning outcomes for a guitar shop website involves defining what you want users to achieve or understand when interacting with the site. Here are some potential learning outcomes tailored to a guitar shop website:

1. Product Familiarity and Selection: By exploring our website, users will be able to confidently identify and select the appropriate types of guitars, accessories, and related products based on their skill level, musical preferences, and budget.

2. Technical Knowledge: Users will acquire a foundational understanding of guitar components, including strings, pickups, body styles, and tone woods, enabling them to make informed decisions about customizing or upgrading their instruments.

3. Playing Techniques: Through our instructional videos and guides, users will learn essential guitar playing techniques, such as basic chords, fingerpicking patterns, and strumming techniques, helping them kick-start their musical journey.

4. Maintenance and Care: Users will gain practical knowledge about guitar maintenance and care, including tuning, string changing, cleaning, and storage, ensuring the longevity and optimal performance of their instruments.

5. Amplification and Effects: After engaging with our resources, users will have a solid grasp of amplifier types, effects pedals, and signal chains, allowing them to achieve diverse and desirable sounds for various musical genres.

Front End

The Guitar Shop was created as a website, and it was made using a variety of technologies.

Prototype

To create the prototype, Figma was used.

Figma

Figma is a collaborative design tool used by designers and teams to create, prototype, and collaborate on web and mobile app designs in real-time. It offers a cloud-based platform that allows multiple users to work together simultaneously, making it easy to share and receive feedback on design projects.

Some of the Front-end technologies that were used are:

Html

A popular markup language for producing and organizing web information is HTML (Hypertext Markup Language). The structure of a webpage is defined by several elements and tags, including headings, paragraphs, images, links, and so forth. This sets the stage for aesthetically appealing and dynamic webpages by allowing web browsers to properly understand and display content.

CSS

CSS is a stylesheet language that is used to control how HTML content is presented and organized. It gives web designers the ability to manage how elements like colors, fonts, spacing, and positioning look, leading in consistent and aesthetically pleasing designs throughout websites.

Advance Framework and Libraries

Bootstrap

A popular open-source CSS framework called Bootstrap provides a selection of pre-made templates, styles, and components to aid with web creation. It makes it possible for

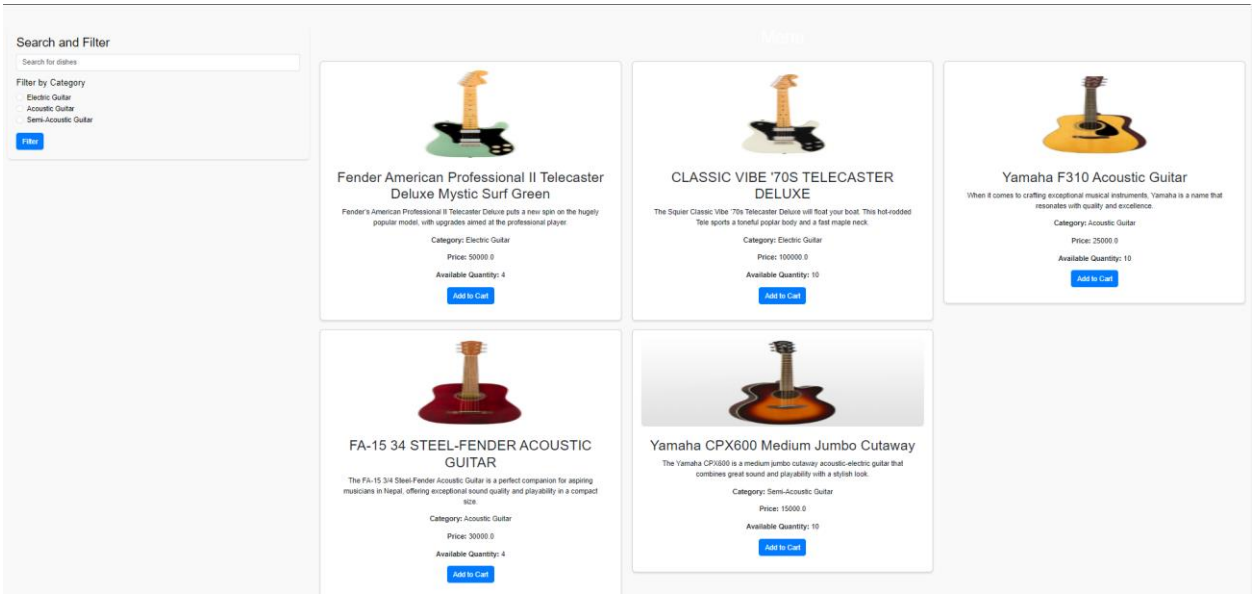
developers to quickly create visually beautiful and responsive websites and applications, reducing the need for complex CSS coding and ensuring cross-device compatibility.

Screenshot

Here are some screenshots showing the Guitar Shop front end.

Figure 12

Screenshot of FrontEnd



Responsive Design and its needs

A crucial method of web development is responsive design, which makes sure that websites and applications adapt easily to different screen sizes and devices. In order to provide the greatest user experience possible, responsive design has become crucial with the rise of devices including smartphones, tablets, laptops, and desktops. By utilising fluid imagery, adaptable layouts, and media queries, responsive design eliminates the need for separate versions of a site for various devices, cutting down on development and maintenance tasks. This strategy enables higher user happiness, better search engine results, and enhanced economic success by delivering consistent and user-friendly experiences across all platforms, engaging a larger audience, and reacting to the rising expectations of modern internet users. Responsive designs need to be thoroughly tested across a range of devices and screen sizes in order to provide a seamless user experience. User feedback and testing help to identify potential problems and improve the responsive website's or application's overall usability and performance.

In conclusion, responsive design is a fundamental idea in modern web development, responding to users' different needs across a variety of devices. By adopting this approach, businesses may stay relevant in a mobile-driven market, draw in more customers, boost engagement, and improve search engine exposure, which will eventually boost success and growth in the digital sphere.

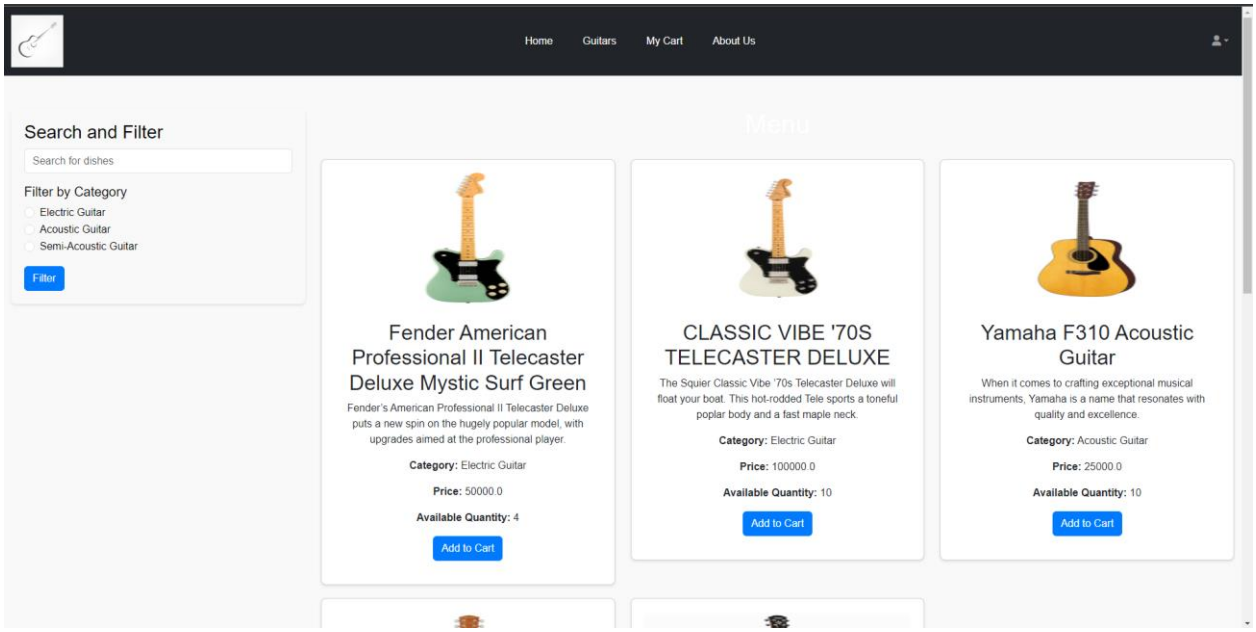
Checking the Responsive Design

To retain the usability of the website, The Guitar Shop was made to be responsive. Here are some screenshots that show how responsive the website is.

Large Screen

Figure 13

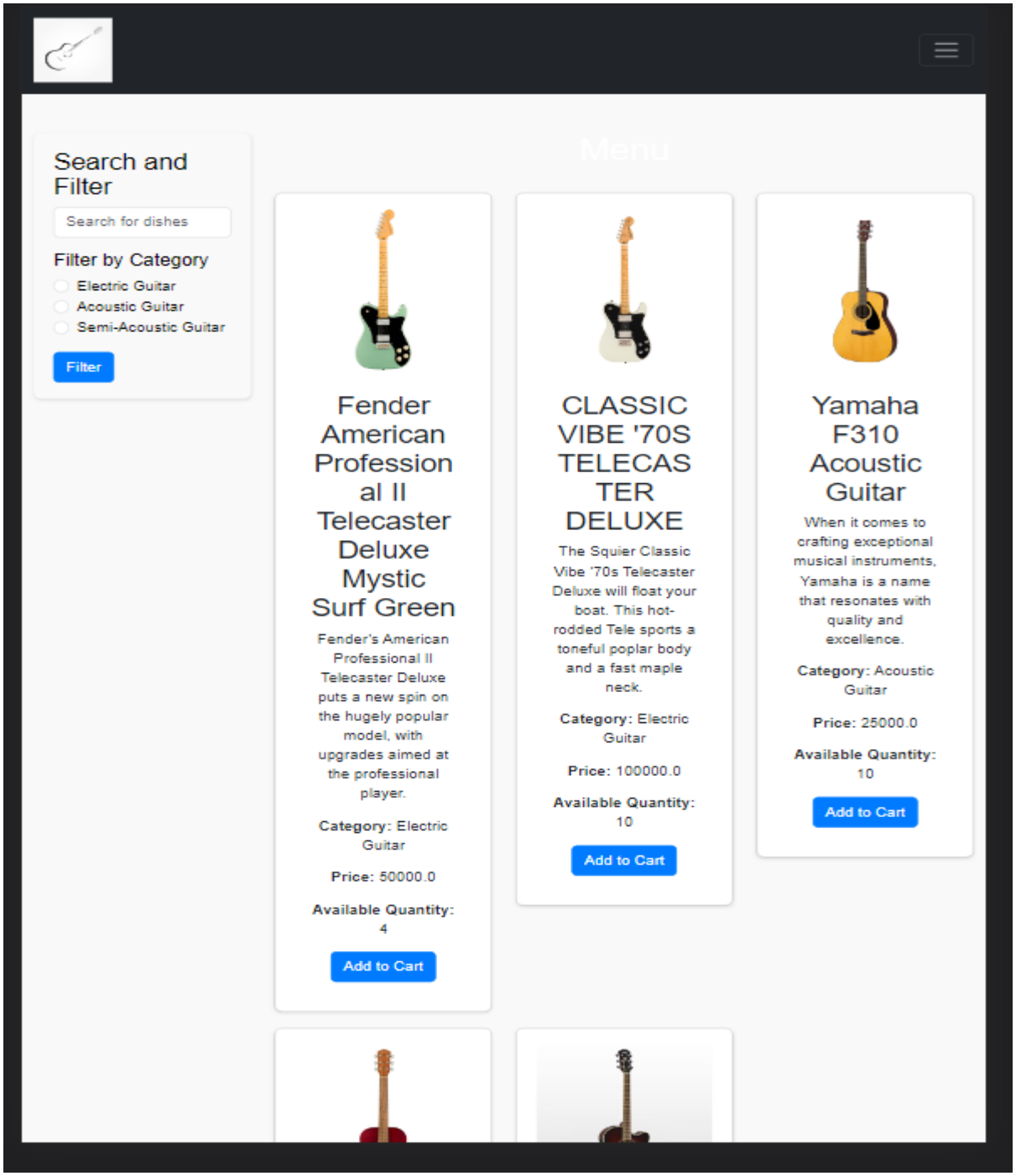
Large Responsive Screen



Medium Screen

Figure 14

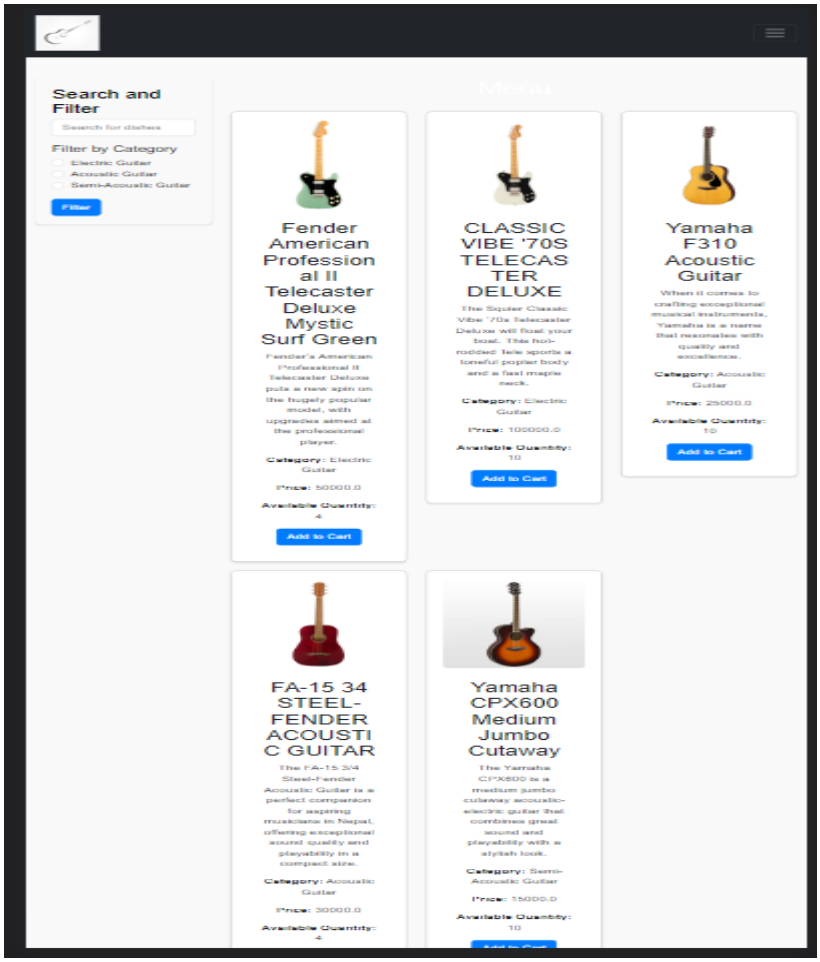
Medium Responsive Screen



Small Screen

Figure 15

Small Screen



Database

A database system is a well-organized and structured collection of data that is stored and handled on a computer. Massive volumes of data can be stored, retrieved, and transformed in a safe and effective manner. From small-scale personal initiatives to large-scale enterprise systems, database systems are essential tools that enable businesses and individuals to organise and retrieve data in an organised and reliable way.

Postgres SQL

A powerful open-source relational database management system (RDBMS), PostgreSQL, formerly known as Postgres. While also providing advanced features like extensibility and support for custom data types and methods, it excels at handling challenging and large datasets. Due to its reputation for durability, scalability, and performance, PostgreSQL is a popular choice for a wide range of applications, from small projects to mission-critical enterprise systems.

Advantages and Disadvantages of PostgreSQL

The advantages are:

1. Open Source: PostgreSQL is a free and open-source database. Because of this, it is affordable and available to a variety of users and organizations.
2. Postgres has sophisticated features like as support for the JSON and JSONB data formats, full-text search functionality, and support for geospatial data.
3. Extensibility: PostgreSQL supports a wide range of programming languages, which makes it possible for programmers to write custom functions, operators, and data types.
4. Scalability: Although Postgres has historically been known for its capacity to handle moderate workloads, its scalability has been advancing with to features like table partitioning and increased support for parallel processing.
5. Postgres is suitable with a wide range of applications and use cases since it supports a few programming languages, tools, and frameworks.

The Disadvantages are:

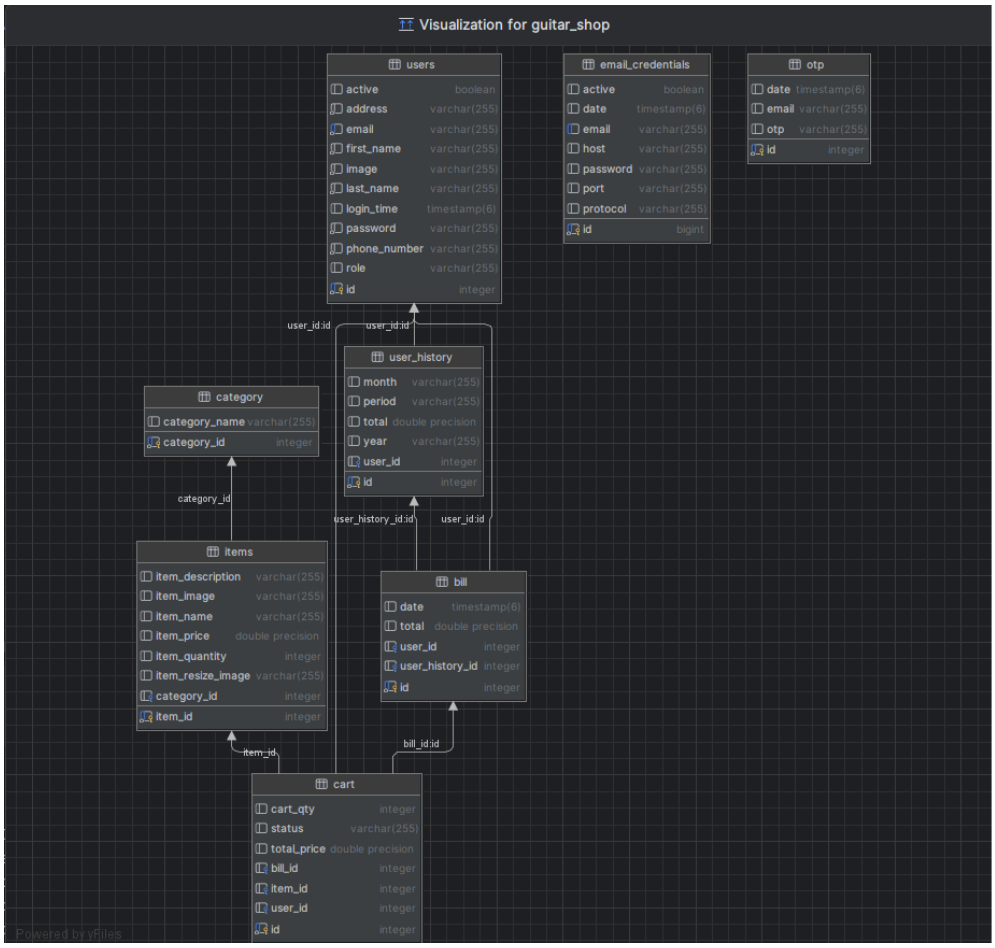
1. Complexity: PostgreSQL can be difficult to maintain, especially for newcomers, due to its comprehensive features and flexibility. To set up and optimise properly, you might need a greater understanding of the numerous setup options and settings.
2. Postgres can use a lot of memory, especially when working with huge databases or intricate queries. To achieve best performance, memory settings must be properly tuned.
3. Limitations on Scale-Out: Although Postgres has made progress in terms of scalability, it might not be as well suited for large-scale applications as certain other NoSQL databases or distributed systems.
4. Lack of Built-in Caching: PostgreSQL relies more on external caching solutions like Redis to improve read performance than other databases that include built-in caching techniques.
5. Postgres is capable of handling analytical workloads; however, it may not be as well-suited to real-time analytics as some specialized analytical databases.

ERD Diagram

An entity-relationship diagram (ERD) shows the connections between entities (i.e., things, ideas, or things) in a database. A database system's structure and organisation can be modelled using this effective tool, which is utilised by stakeholders, developers, and designers of databases. ERDs assist in clearly and understandably illustrating the connections between distinct entities and the logical structure of the data.

Figure 16

ER Diagram



Back End

Spring Boot

A powerful and well-liked Java framework called Spring Boot greatly simplifies the creation of web applications. It offers an opinionated approach to building Java-based apps, doing away with the need for extensive configuration and cutting down on boilerplate code. On top of the Spring Framework, it is constructed. By utilising logical defaults and auto-configuration, Spring Boot's "convention over configuration" philosophy enables developers to swiftly construct production-ready applications with the least amount of effort. This approach enables developers to concentrate on producing business logic and functionality rather than managing intricate infrastructure. Additionally, Spring Boot has a number of features like embedded servers and thorough security that make it suitable for both small-scale projects and large-scale systems. Additionally, due to its modular architecture, it is easy to communicate with other Spring applications, which promotes maintainability and code reuse.

Thyme leaf

Thyme Leaf is a server-side Java template engine that enables developers to create dynamic, interactive web pages. It provides an easy approach to render data from the server to client-side HTML through seamless integration with Spring Boot and other Java-based frameworks. Thyme leaf is a wonderful option for Java developers wishing to effectively create server-rendered web applications because its syntax is straightforward to understand and learn.

Architecture

The website was built using the Spring boot microservices architecture. The following components make up the structure: the template, the controller, the entity, the service, the security, the POJO, and the repository. The controller requested the service interface after receiving the data from the website's templates. The imply class, also known as the repository designed for that particular task, was used to construct the service logic. The

entity that saved, removed, or accessed its data used POJO as the validation layer for the data that was or was going to be saved in the entity.

Controller

Figure 17

Controller of Item

```
@Controller
@RequiredArgsConstructor
@RequestMapping("/item")
public class ItemController {
    private final CategoryService categoryService;

    private final ItemService itemService;

    private final UserService userService;
    AbhigyaShrestha2060
    @GetMapping("/add")
    public String addItem(Model model){
        User activeUser = userService.getActiveUser().get();
        model.addAttribute( attributeName: "user",activeUser);
        model.addAttribute( attributeName: "categories",categoryService.getAllCategories());
        return "Item/addItem";
    }

    AbhigyaShrestha2060
    @PostMapping("/add")
    public String addItemPost(@Valid ItemDto itemDto) throws Exception {

        itemService.addItem(itemDto);
        return "redirect:/item/list";
    }
```

Repo

Figure 18

Repo of Item

```
1 usage  AbhigyaShrestha2060
@Query(value="select * from items where item_id = ?1", nativeQuery = true)
Optional<Item> findByIdNoOpt(int id);
    // Other methods...
1 usage  AbhigyaShrestha2060
@Query(value="select item_image from items", nativeQuery = true)
List<String> findAllImages();

1 usage  AbhigyaShrestha2060
@Query(value="select item_resize_image from items", nativeQuery = true)
List<String> findAllResizeImages();

1 usage  AbhigyaShrestha2060
@Query(value = "select * from items order by item_name offset ?1 limit 3", nativeQuery = true)
List<Item> findThreeItemsByNameAsc(int offset);

1 usage  AbhigyaShrestha2060
@Query(value = "select * from items order by item_name desc offset ?1 limit 3", nativeQuery = true)
List<Item> findThreeItemsByNameDesc(int offset);

1 usage  AbhigyaShrestha2060
@Query(value = "select * from items order by item_price offset ?1 limit 3", nativeQuery = true)
List<Item> findThreeItemsByPriceAsc(int offset);

1 usage  AbhigyaShrestha2060
@Query(value = "select * from items order by item_price desc offset ?1 limit 3", nativeQuery = true)
List<Item> findThreeItemsByPriceDesc(int offset);
```

Service

Figure 19

Service of Item

```
package com.system.online_ordering_system.service;

import ...

1 usages  1 implementation  AbhigyaShrestha2060
public interface ItemService {
    2 usages  1 implementation  AbhigyaShrestha2060
    void addItem(ItemDto itemDto) throws IOException;

    2 usages  1 implementation  AbhigyaShrestha2060
    Optional<Item> getItemById(int id);

    1 usage  1 implementation  AbhigyaShrestha2060
    List<Item> getAllItems() throws IOException;

    1 usage  1 implementation  AbhigyaShrestha2060
    List<Item> getThreeItems(int page,String sort,String order);

    1 usage  1 implementation  AbhigyaShrestha2060
    void deleteItem(int id);

    1 usage  1 implementation  AbhigyaShrestha2060
    List<Item> getSixItemsByCategoryId(int id, int page, String partialName);

    1 usage  1 implementation  AbhigyaShrestha2060
    List<Item> getSixItems(int page, String partialName);

    1 usage  1 implementation  AbhigyaShrestha2060
    int countAllItems(String partialName);

    1 usage  1 implementation  AbhigyaShrestha2060
    int countAllItemsByCategoryId(int id, String partialName);
}
```

Testing

Unit Testing

A software program's individual modules or components are tested separately to make sure its functionality works as planned. To find any errors or issues at an early stage of development, each unit is independently tested through unit testing, simulating inputs, and verifying outputs. It helps to improve the quality of the code, gives developers assurance that their code is stable and correct, and makes maintenance and issue resolution simpler.

Promocode

Customers can utilise special promotional codes throughout the checkout process using The Guitar Shop's Promo Code function to receive discounts or other advantages on their purchases. The system calculates and subtracts the corresponding discount amount from the total order value when a working promo code is input. Users have access to special deals and discounts, which promotes consumer loyalty and repeat business. A website can run targeted deals, attract new consumers, boost overall sales, and boost platform engagement with the aid of the Promocode tool.

Rating and review

Users are able to contribute their opinions and experiences with the delivered guitar and overall service through The Guitar Shop's review and rating feature. After placing an order, customers can assess their overall satisfaction and provide written reviews, giving other prospective customers important details. By enabling users to read other people's ideas, this feature helps them make informed judgements and promotes accountability and openness inside the system. Additionally, it enables the business to gather beneficial client feedback to identify areas for improvement, enhance service quality, and increase customer trust and credibility. The Review and Rating Feature aids in the formation of an online music community and fosters a sense of brand loyalty through open and positive interactions.

Comment

Users can post comments and take part in conversations regarding various features of the platform using The Guitar Shop's comment feature. Users can interact with one other's comments and post their own on food items, restaurant services, and delivery experiences. This feature boosts user involvement provides a sense of neighbourhood and encourages significant consumer engagements. By giving users the opportunity to share their thoughts and experiences in public, the Comment Feature fosters transparency, builds trust, and provides crucial insights for continual improvement. Additionally, it fosters a lively and engaging environment, which raises the website's appeal and entices visitors to return for more fulfilling interactions and experiences.

Upcoming Features in the coming days

Chatting with the Admin

Real-time chatting would enable customers and admin to converse with one another in the Guitar Shop. By including real-time chat tools, enhancing the whole customer experience, and promoting effective interactions with customers and the business, users may quickly inquire about equipment, order status, or request assistance from the support service. Real-time communication would promote real-time interaction, speed up response times, and give users a more engaging and personalised experience, all of which would improve customer loyalty and service.

Notification

The Guitar Shop would benefit from the addition of a notification feature to keep users informed about updates and events and boost user engagement. Email, SMS, or in-app alerts may be used to convey order confirmations, order status updates, delivery tracking data, and promotional offers. By providing timely and pertinent notifications, the system may make sure users are informed about their orders and receive personalised updates, increasing customer happiness and retention. Additionally, notifications can be effective

marketing tools that promote new menu items, sales, or other noteworthy occasions and persuade customers to visit the website again and place more purchases.

Version Control

GitHub link: https://github.com/AbhigyaShrestha2060/GuitarShop

Conclusion

In conclusion, our online guitar store provides all guitar fans with a seamless blend of convenience, variety, and professional advice. We want to be your go-to spot for all things guitar-related with a user-friendly interface, a fluid browsing experience, and a huge selection of guitars to suit every skill level and musical preference. Our dedication to providing outstanding customer service guarantees that you will receive individualised support at every turn, from helping you choose the ideal instrument to responding to your technical questions. Our online guitar store is here to provide you top-notch instruments and an unmatched purchasing experience, whether you're a novice starting out on a musical adventure or an experienced guitarist looking for your next masterpiece. With us, you can tune into the future of guitar buying, where you may access any note with a single click.