AUDIO STORE E-COMMERCE WEBSITE

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***Abstract*— This report is based on developing an audio store E-commerce website that includes the security components of a website. This website helps everyone to purchase audio systems easily and creates trustworthiness as we have included the security features like authentication, authorization like OTP verification, Password validation. In this report, we will discuss the methodology used for developing the website, and the results are attached.**

***Keywords*—E-commerce website, audio systems, authentication, authorization, security features, OTP verification, Password validation.**

1. INTRODUCTION

E-commerce refers to the purchasing and selling of goods over the internet. Using the internet and other tools like electronic data interchange to do business is what this entails. It is comparable to having an online store where customers may make direct purchases using their credit card, debit card, or electronic transfer. You can add products to a virtual shopping cart and make one payment for everything. E-commerce is a technique for companies and individuals to make money by marketing products online. There are various forms of e-commerce, including firms selling to other businesses or to individual clients, people selling to one another, and purchasing items using a mobile device.

In the current economic environment, e-commerce is booming. There is a paradigm shift underway that has an impact on both marketers and customers. E-commerce, however, is more than just a new instrument for growing the existing business models. It is causing the current business model to completely change. This enormous change in company strategy is flourishing all over the world, and India is no exception. E-commerce also has the potential to greatly impact the environment by reducing pollution. Customers can choose when and where to shop, as well as the opportunity to investigate the product, the seller, and any other possibilities, when making purchases of goods and services online. Shopping has changed as a result of the availability of information online. Everything that may be purchased can be bought through e-commerce.

Every facet of a business, from new product development to customer service, is already feeling the effects of e-commerce. It enables new information-based company activities that are dependent on reaching and interacting with customers, such as online order taking, online order placement, and online customer service. Nowadays, an e-commerce transaction involves using the WWW at least once. Additionally, it can save costs in areas like order management and dealing with a wide range of suppliers and trading partners, which usually add significant overheads to the cost of goods and services.

Pre-commerce opens up a wide range of options by enabling new information-based business models. Despite the fact that the business is still in its infancy, even the most gloomy projections for India show a spike. E-commerce has become more widely used by businesses in recent years. Significant Indian portal websites have also shifted their reliance from advertising to e-commerce. Numerous websites now offer a wide range of products and services, including food, electronics, computers, cards, flowers, and movie tickets (Mitra Abhijit, 2013). Due to the growth of e-commerce, cow dung patties are being sold in comparable numbers to hot cakes.



Fig 1:E-commerce platform

1. Finding a Problem

The problem that this project aims to solve is the lack of a secure and user-friendly e-commerce platform for an audio systems company that is seeking to modernize its operations and migrate from brick-and-mortar stores. The audio store company, which is currently operating as a physical store, is confronted with several obstacles that are impeding its development and profitability. One of the major issues the organization is dealing with is a lack of access to potential clients. Clients may only access the audio store from its physical location, which implies it cannot reach clients in other cities or countries. This constraint is especially troubling given how competitive the audio market has grown, with customers having a plethora of alternatives.

The company is struggling with low sales due to the lack of an online presence and the inability to effectively reach a global customer base. Traditional e-commerce platforms often lack sufficient cyber security features to protect customer data and prevent unauthorized access. The company requires a secure platform that can protect customer data while providing a user-friendly experience to enable the transition from brick-and-mortar stores to an online presence. The objective of this project is to develop a secure and user-friendly e-commerce store for an audio systems company that is modern and optimized for the digital age. The platform will be built using the latest web development technologies and will be optimized for search engines to increase the online presence of the company.

1. Method and Solution

The e-commerce platform (Audi Store) will be integrated with cyber security features such as authentication and authorization of users and customers visiting the store, as well as encryption of customer data to protect their sensitive information. The project’s frontend and backend were designed using HTML, JavaScript, tailwind, CSS, and bootstrap among other web design tools. As part of the authentication process, the project will also implement strong password controls in addition to multifactor authentication. This will ensure that only authorized users have access to sensitive information and prevent unauthorized access. Another security feature that will be implemented in the project is the integration of a secure payment process by using Stripe. This approach allows us to leave issues of security to stripe minimizing risk. The project will also explore the implementation of geolocation anti-fraud systems which would allow us to identify and assess questionable users. The project will be deployed on Azure which provides secure hosting services further strengthening security. Other features such as multilayer security will also be explored through the implementation of firewalls to protect APIs and databases.

Graphical user interface, text

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The platform was tested and evaluated for functionality to ensure its accuracy and effectiveness in protecting customer data and providing a user-friendly online shopping experience. In addition, the platform will be optimized for mobile devices to allow customers to easily access the store from their smartphones or tablets.

By developing a secure and user-friendly e-commerce platform for the audio systems company, this project provides a solution that will help the company modernize its operations and enable it to migrate from brick-and-mortar stores. The cyber security features will provide customers with the assurance that their data is protected, while the user-friendly interface will encourage more customers to interact with the brand and make purchases from the store. The platform will also help the company increase its online presence and reach a global customer base, ultimately driving sales and revenue growth.

1. ANALYSIS AND RESULT

Ecommerce is a responsive fully functional website where users can browse available audio systems, add to cart, and complete purchases by checking out.

The website contains the following files as illustrated in figure 2, and makes use of the following components:

* Html for various product pages, cart and checkout pages
* JavaScript for function integrations e.g., CAPTCHA reCAPTCHA

Graphical user interface, text

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Fig 2: Audio Store website files

* CSS for styling our pages
* The assets used which include; fonts, images (which include svg,png, and jpg formats)

**Website Structure**

**Frontend**

Graphical user interface, website

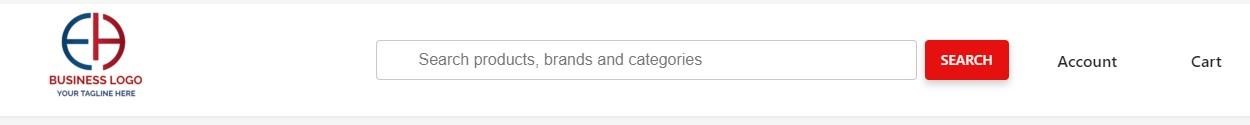
Description automatically generated

Fig 3: Audio Store homepage

The website homepage contains an AD banner at the far top. This section can be populated from time to time with relevant adverts relative t6o the sales promotions and audio products being promoted. Discounts and other hot deals occupy this section. The advert takes the format of a short video, a gif or a banner image.

The media is fetched using the “.../.../image\_ location/format” function as seen in the code line in appendix section.

The header section contains the website logo, which is a dummy sample, may be changed later with preference. The search areas (this region is automated with search filters using JavaScript) where the user can search the various products among the pool of samples available. The account and cart section. The account section has a dropdown where user can sign up or login to an account, view orders in their cart etc.

Graphical user interface

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Fig 4: The site Header section

On clicking Sign in or My Account, the user is redirected to the login and Signup pages respectively. These pages are tied to the backend of the website using MYSQL database to authenticate the login credentials in line with those created during account signup.

Graphical user interface, application, Teams

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Fig 5: Login page

On the far left we have a sidebar with more filters where the user can furthermore filter products by brands, price range, categories, and ratings as illustrated in Figure 6.

Fig 6: Products filter sidebar

Graphical user interface, application

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For the product area in the homepage, it is populated with audio products on sale. The products contain an artwork, price tag, star ratings, and discounts. There is a further product sorting provision where products can be sorted using popularity, newest, and ratings criteria. Refer to figure 7 below.

Fig 7: Products Landing page

Lastly at the bottom of our site, there is a footer with a summary of information and quick links. Accepted payment methods are also captured in this section.

Graphical user interface, application

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Timeline

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Fig 8: Website Footer

The security features implemented included, password reset through reset password provision, the OTP verification code, password validation, website cookies policies, and lastly secure payment gateways. The screenshots below illustrate these security features.

Graphical user interface, application

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Fig 9: Forgot password feature

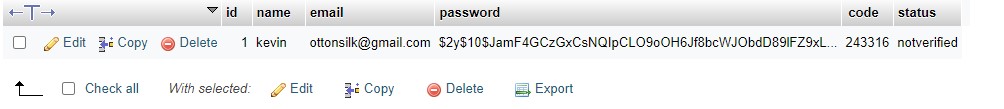


Fig : OTP code security feature

The OTP works on the backend mechanism where when a user signs up or logs in an OTP is sent to the provided email address, and the same OTP code is posted up in the code column in our database for the site.

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Fig 10: Strong Password Validation feature

We also implemented the strong password validation feature for both our signup and login pages, in addition to the backend password encryption features.

1. CONCLUSION

In this project, we successfully developed an e-commerce website for an audio company using various web development tools and programming languages. worked on a dataset related to fake Android anti-malware detection. We started by developing the front end and then lastly building up the backend from the database point of view using PhpMyAdmin. We also implemented and experimented with the different security features as earlier highlighted in our preliminary project proposal.

We discovered that using feature selection strategies can speed up calculation and considerably enhance model performance. Additionally, businesses can successfully implement e-commerce to boost output and provide it a competitive edge. Information Technology (IT) has aided international e-commerce. Today, it's easy to join a new market, and marketers can evaluate the effectiveness of their products fast. E-commerce's issues are also getting worse, which poses a serious threat to the industry's promising future.

The majority of e-commerce companies have call centers to interact with customers, but it is urgent to establish call centers that only deal with merchants as adding more sellers to a marketplace has become the next front in the e-commerce war. This is the other feature that may be adopted. The availability of dedicated call centers should be 24 hours a day. If the participants in the e-commerce industry do not also understand and address the cultural issues that are special to the target country and relate to the off-site transactional process, the large-scale proliferation and success of such initiatives will be severely limited. E-commerce companies must also figure out the most effective ways to link the online relationship with the offline relationship because the whole relationship with the client cannot be considered without taking into consideration both the online and offline worlds.

Due to its conceptual nature, our project presents the development and implementation of numerous security measures, both in terms of theory development and idea validation. In truth, more applications may be made and more thorough  research can be done in the area of e-commerce.

The project broadens the company's perspectives, particularly for individuals who are seriously interested in e-commerce. Future recommendations for the scope might include integrating machine learning models into our e-commerce website to further understand user shopping behaviors there and to make their online experience even simpler.

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