

Ecommerce Web Application

by

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A thesis submitted to the Department of Computer Science and Engineering
in partial fulfillment of the requirements for the degree of
B.Sc. in Computer Science

Department of Computer Science and Engineering
Brac University
September 2022

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Declaration

It is hereby declared that

1. The thesis submitted is my/our own original work while completing degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. We have acknowledged all main sources of help.

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Abstract

ECommerce is the term used to describe the selling of products and services online. It's one of the most dynamic industries in the world, and it's growing faster than ever in the past few years. In 2016, ecommerce sales reached \$521.6 billion worldwide. Many people believe that ecommerce will soon surpass traditional banking as the number one way for businesses to make money. That's because ecommerce sites can offer a lot of advantages over traditional methods of selling products. The COVID-19 issue is accelerating the growth of e-commerce towards new industries, customers, and product categories. This might mean that over time, e-commerce transactions will change from being for luxuries to being for necessities [2].

Since I had the option to work on any project for my internship final, I decided to choose ecommerce website development for the aforementioned reasons. I developed my python development skills while working in the industry, therefore I decided to complete the project using Django, a python-based web development framework. And because the back-end programming was my main area of focus, I largely used HTML and CSS for front-end development.

Since I had not yet developed a website, the process was undoubtedly tough. As a result, I had to master a range of new technologies, including DRY (Don't Repeat Yourself)[1], creating website structures, and learning new languages like HTML and CSS.

I have acquired a variety of different skills throughout the course of my career, including team leadership, communication, and appropriate research techniques for problem-solving. The use of a templating language like Jinja2 and knowing which functions to use with what is an example of a hurdle I encountered while developing. Additionally, installing libraries and dependencies presented many difficulties. I had to manually install many libraries or store them in my project folder in order for it to work because I couldn't install them using the command prompt. However, when I encountered more difficulties, it took me less time to find a solution. As a result, from my perspective, I would strongly advise students like me to take part in these kinds of real-world projects rather than solely depending on textual or academic knowledge. He or she will be able to learn a lot during this procedure.

Keywords: DRY, Jinja2, Django

Dedication

I want to devote all of my efforts and tribulations in my academic life to my wonderful parents since I am nothing without them.

Additionally, I want to thank my respected supervisor Farhan Isteaq Akhanda for helping me create my professional identity and for teaching me and supporting me during the writing of my internship report.

Acknowledgement

First and foremost, glory be to the Great Allah, with whose help I was able to finish writing my internship without too many setbacks.

Second, I would like to thank my co-advisor, Dr. Md. Golam Rabiul Alam, for his thoughtful assistance and guidance. He came to my aid anytime I needed it.

Thirdly, throughout the duration of my internship, Farhan Isteaq Akhanda Sir mentored me.

And ultimately, without my parents' ongoing support, it might not be feasible. I am currently preparing to graduate thanks to their kind prayers and support.

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Chapter 1

Introduction

1.1 Preamble

For those in particular professions, internships are a way to gain job experience. In contrast to the usual textbook method they study in school, internships give students the chance to learn through more practical means. This is crucial for learning new skills, assisting with the comprehension of organizational systems and processes, and fostering teamwork. The skills you gain from internships are priceless!

When I accepted at CNS Limited at Farhan Isteaq Akhanda's offer, I also had the chance to advance my talents. As one of the best IT businesses in Bangladesh, I'm thrilled to formally accept the offer and am looking forward to joining the CNS Limited team. I spoke with my supervisor, Dr. Md. Golam Rabiul Alam sir, after the internship program had been accepted, and he approved it after hearing about the project and the organization.

1.2 Aims and Objectives

The document was created as a requirement of an internship program under the Computer Science and Engineering department of BRAC University after I spent six months working for CNS Limited and is based on my experiences there. Therefore, the overall goal of this document is to finish the internship program. In addition, I created this article to highlight CNS Limited's products and to provide a general overview of the company.

This report will also highlight my achievements during my internship as well as my project work and professional growth. Additionally, the material in this report would be helpful for anyone looking for a brief summary of CNS Limited.

1.3 Information Sources

The majority of the data I included in this report was gathered by me while I was employed for CNS Limited. I gathered that information while working there and engaging with coworkers. In addition, I used secondary sources in this study, such as data from CNS Limited's websites, blog posts, and other online content.

1.4 Document Overview

In addition to talking about my time working with CNS Limited, I also touched on my growth and accomplishments while collaborating with the team. I gave a brief overview of the project I had to complete for the internship, some of the difficulties I encountered, and how I overcome them. In a nutshell, this essay will provide an in-depth account of my development throughout this internship and a clear overview of CNS Limited.

Chapter 2

Company Profile

2.1 Company Overview

With its headquarters in Asia, Computer Network Systems Limited is a multinational software development company that uses cutting-edge technology and creative methods to produce affordable goods, solutions, and services. In the past three decades, CNS has risen quickly to become the top software supplier in Bangladesh and a regional leader. Over 1,000 team members from various businesses and sectors make up the CNS team, which is active in over 150 projects. Due to its excellent working environment, CNS Limited is among the best IT businesses in Bangladesh. The business creates a variety of software products for businesses around the world. One of the largest projects in Bangladesh is the development of "Motor Vehicle Tax and Fees Collection System," "Motor Vehicle Registration and Management System," and "Mass-Transit Computerized Ticketing Systems." The company's major objective is to offer the finest solutions to contemporary issues with a focus on the best user experience.

Being employed by the company is a lot of fun. The business ran its whole operation online during the Covid-19 epidemic, and after I started working once things had stabilized, I was able to do all of my duties in the office. The company provides a flexible work schedule because I was still a student when I started working after finishing my university classes, and they never objected to any of my demands. Because everyone at this organization is kind and helpful, the workplace exhibits a good attitude.

The organization offers a variety of amenities during working hours, including limitless tea and coffee for every employee. Additionally, the business offers a 30-minute lunch break at precisely 2 o'clock, during which all employees gather on the ground floor in the cafeteria area. There are various indoor gaming options, including chess, carrom pool, and table tennis.

The organization has departments specifically designed to handle all types of development work for various industries. For many programming languages, including PHP, Java, Python, Javascript, Ruby, etc., it has separate sections. Additionally, it includes specific divisions for marketing and designing.

The business prioritizes its employees and works to make their lives better in order to improve the firm as a whole. It holds that if an employee improves every day, the business will advance more quickly. In daily meetings, everyone is free to express their thoughts on how the business may improve.

2.2 First Month At CNS Limited

I and the other two interns were initially detained in a waiting area before being instructed, one by one, to meet with Farhan, the executive director of CNS Limited. He treated me with such kindness and respect. I was questioned regarding my academic career, the languages I had acquired, and my employment at the university. Though we first used Java, I told him that over time, my proficiency with Python had grown.

Then, he informed me that they have various sectors for various programming languages because Python piqued my curiosity. Later on, he appointed me to work directly under Mr. Rana, the leader of the Python department, after introducing us. I was given a tour of the entire department, including every employee. Some of the employees were brand-new, while others had been there for a very long time, including Sayem Bhaia, who worked there for more than 5 years. After the entire welcoming period, I was given a desk at where I will spend the remainder of my internship working. A fresh set of computers were delivered to me, and they only showed me how to access some crucial internal systems. For the first week or so I wasn't assigned to any task. but just observed what the rest of the employees did in their time. How they communicated with each other in completing the task.

I was required to remain in the office from 9 AM to 6 PM and see how they planned,



Figure 2.1: Conference About Project

divided up tasks, and worked. After the observation part, they presented me with numerous frameworks to look at, including Flask, Django, Web2py, FastApi, etc. They also gave me courses to finish by a certain date, and after I did, they would assign me to work that was connected to my learning. That is how I advanced.

2.3 Products and Customer Overview

In order to provide market-leading solutions for a global audience, our team at CNS combines cutting edge technology with years of experience. We have more than 1000 employees operating in 64 regions, and they have successfully finished more than 150 projects. BRAC Bank, BTCL, City Bank, Software Engineering Institute, Dutch-

Bangla Bank, Rocket, Eastern Bank, First Security Islami Bank, Midland Bank, Microsoft Partner Network, Modhumoti Bank, NRBC Bank, One Bank, City Bank, Robi, Shahjalal Islami Bank, Standard Bank, Grameenphone, Banglalink, PWC, and bKash are among the most dynamic companies in the country and serve as our partners and clients. Our offerings include modern computerized toll management systems, point of sale systems, human resource management systems, and RFID smart card systems. Customers appreciate CMS's professionalism and reactivity throughout the working process.

Chapter 3

Office Workplace Details

3.1 My Work Structure

I was not given any specific responsibilities to complete during my first few days at work, so I instead roamed the office and got to know the other workers. After a few days, Mr. Rana gave me a task that required me to comprehend one of the previous projects the company had completed in order for me to work on the next one. After completing my portion of the Employee Management System project, which I was given the assignment to complete, I learnt many new skills, like OOP, Python asynchronous actions, git, shell script, basic web design, etc.

I was able to flawlessly match my employment and academic obligations because to the flexible working hours. Additionally, my supervisor helped me to complete my studies without any problems. He used to provide me time off for days when I had exams or had to attend presentations.

3.2 Communication

Discord is the main means of communication among team members in the Python department. The company posts all kinds of announcements on Discord, where everyone may respond and share their emotions. Additionally, Python may be used to create Discord bots, allowing users to design their own bespoke bots and apply various commands to them. Additionally, because the office has variable hours, the company uses Discord for daily check-in and check-out to determine whether everyone arrived at the office or not. Through discord, every employee can talk to another employee. The company employed Zoho, a very well-liked time management service, to measure the number of hours that employees put in.

3.3 Flexibility Of Working Hours

I had to have a hectic schedule because I was still a student. After my lessons were over, I began working at the office. The company offered a remote working option. If someone experienced any symptoms, they were urged to stay at home and carry out all tasks from their own homes as Covid-19 was still spreading.

3.4 Company Overview

3.4.1 WiFi

For employees to complete their work efficiently and without experiencing loading issues or difficulties during time-sensitive tasks, a strong internet connection is required throughout working hours. To help our staff stay on top of their job and connected to clients and coworkers, we offer fiber optic broadband.

3.4.2 Meetings and Discussion

All the employees in CNS have to undergo a meeting before starting on a new project. As meetings are crucial to plan because they give staff members the chance to express their opinions, ideas, and concerns in a relaxed and cooperative setting.



Figure 3.1: Meeting

3.4.3 Hot Beverages and Snacks

The office has a machine that prepares coffee and tea continuously. There is also a break-out space where employees can get food. They feel appreciated, it helps us focus, it gives us the energy we need to work hard the remainder of the day, and it provides a brief break while we are at work.

3.4.4 Indoor Playground

Our office has a variety of indoor gaming options, such as table tennis, 8-ball pool, chess, and more. Everyday, playtime normally starts at 4 o'clock, and everyone is invited to participate and have fun. A competition for chess is also attempted to be organized almost monthly by the government, who also attempt to host tournaments every year.



Figure 3.2: Conference



Figure 3.3: Leisure Time

3.4.5 Birthday Celebration

The environment here improves workers' attitudes and motivation. To make their employees feel special, CNS always celebrates their birthdays and annually provides thoughtful gifts from company finances.



Figure 3.4: Birthday Celebration

3.4.6 Secure Access

This facility takes into account secure access while supplying ID smart technology to track client activities. As is common knowledge, a strong security system boosts profits from a business perspective by reducing liabilities and insurance expenses.



Figure 3.5: Secure Access

Chapter 4

My Contribution

4.1 Project Selection

E-commerce is currently booming. Online sales increased as a result of the global pandemic as well as the fact that customers have been shifting more of their spending to digital channels since e-commerce has been rising consistently for years. So, given the freedom to select any kind of project for my internship, I went with creating an e-commerce website utilizing the Django Framework.

E-commerce sites are a fantastic method to expand your consumer base and diversify your customer channels. In 2021, more than 2.14 billion people will, according to Statista, make online purchases. E-commerce businesses are also a terrific way to boost income because they allow you to reach a wider audience than you can with conventional retail strategies.

Benefits of Having an E-commerce Store

1. 24/7/365 accessibility: Customers can view products whenever they want, regardless of their time zone.
2. No regional restrictions: Customers may shop from any location in the world.
3. Product variety: Compared to conventional retail locations, e-commerce sites frequently have a significantly wider assortment of goods.
4. Customized buying experience: Shoppers can tailor their purchases to their particular requirements and tastes.
5. Direct to consumer sales channels: By cutting out the intermediaries, e-commerce lowers costs for both you and your customers.
6. Quicker market response: Since e-commerce storefronts are digital, customer wants and expectations may be updated and adjusted considerably more quickly as a result.

4.2 Project Overview

I worked on the Ecommerce website and used Django as a back-end to create the website.

1. User will be able to browse through the items.

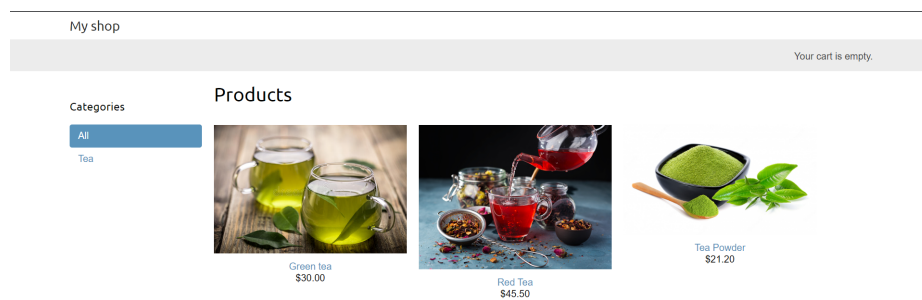


Figure 4.1: Browsing Product

2. User will be able to click on a product to get more information about the product.

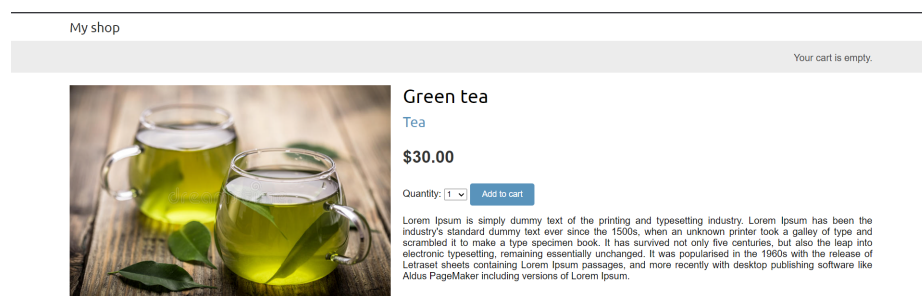


Figure 4.2: Individual Product

3. After selecting a product the user will be able redirected to the checkout page.
4. If the user clicks on the checkout page then he will be redirected to the stripe payment page. Where given the payment card detail the user will be able to make the payment.
5. After the Payment a payment success page will be shown.

My shop

Your cart: 2 items, \$75.50

Checkout

First name:

Last name:

Email:

Address:

Postal code:

City:

Place order

Your order

- 1x Green tea \$30.00
- 1x Red Tea \$45.50

Total: \$75.50

Figure 4.3: Checkout Page

Tea Shop **TEST MODE**

Pay Tea Shop
\$75.50

Green tea	\$30.00
Red Tea	\$45.50

Powered by stripe | Terms Privacy

Pay with card

Email
pantha@gmail.com

Card information
4242 4242 4242 4242 visa
03 / 29 469

Name on card
Khaled Mahmud Pantha

Country or region
Bangladesh

☐ Save my info for secure 1-click checkout
Pay faster on Tea Shop and thousands of sites.

Pay

Figure 4.4: Stripe Integration

- The admin will be able to check the order status and track the orders.

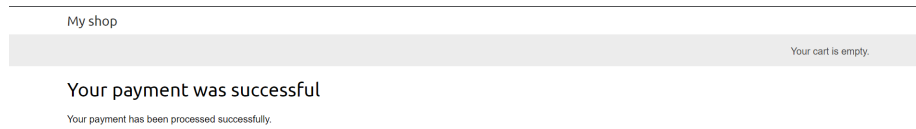


Figure 4.5: Successful Payment

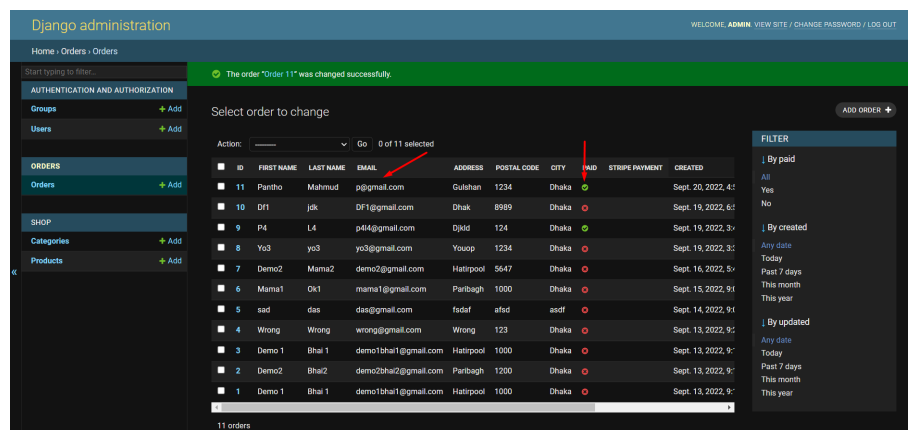


Figure 4.6: Admin Tracking Order

Chapter 5

Growth

5.1 Professional Growth

5.1.1 Collaboration

One of the most crucial success factors I discovered while working at CNS Limited was collaboration. Every choice is made with the team's permission, and during a team debate, the best method to solving the problem is identified. Time management is another important factor, and I've learnt that it's crucial to accomplish everything on time if you want to finish everything by the deadline.

5.1.2 Future Growth

I've learned from the internship that I have what it takes to be successful in a particular career or industry. This is due to the ideal learning conditions that internships offer for aspiring professionals. After finishing an internship, employers feel sure that the candidates they are training will be able to handle their duties. This is due to the fact that towards the end of their internships, I was able to pick up new skills and assume leadership roles. In addition, I now have additional abilities that improve my performance at work.

Chapter 6

Conclusion

6.1 Conclusion

Learning theory is uninteresting because there isn't any practical application taught in the text. This internship has allowed me to put the knowledge I've gained so far into practice over the previous six months, which has been a truly exciting opportunity for me. It's a lot of fun to learn while creating something fascinating. My ability to learn something new every day was greatly aided by this internship opportunity. I had fresh experiences every day while I was working, which pushed me to use my critical thinking skills and try new things. My experience has definitely increased as a result of this assignment. Here, I actually obtained software development experience. After the project was made public, we received excellent user feedback. The activities I completed inspired me to be trustworthy and self-assured.

6.2 Recommendation

A excellent location to develop your career is CNS Limited. For someone who is driven and wants to create something wonderful, this may be their ideal place of employment. In a nutshell, everything about this organization is fantastic, including the workplace setting, amenities, and work ethics. I would love to suggest this office to anyone seeking to do an internship in a magnificent mansion while studying under renowned amazing leaders.

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