

# Marvel's Kart

**(Project Report)**

CPME-272 Section 49

Enterprise Software Platform

Submitted by

**Team Data Marvels**

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## **ABSTRACT**

### **Marvel's Kart**

E-commerce, also known as electronic commerce or e-business, refers to buying or selling of products over an electronic medium, mainly the internet. Online shopping gained popularity because of speed and ease of use for customers as well as for sellers. Consumers can search for products online and save a lot of time and money by finding the best deals without having to do all the legwork. Business owners or sellers can continue their business without leaving their own houses and need not worry to find a place to locate their stores. The COVID-19 pandemic has made an already exploding trend of selling online even more important.

The “Marvel'sKart” is an Online E-commerce Web Application that attempts to provide a platform for selling and buying products easily and in an efficient way. To execute an online shopping platform, a virtual shop on the internet is required with user roles such as Admin, Seller, and Customer. The main purpose of the project is to implement it with an authentication system (Single Sign-on) based on the user roles. The role of the sellers is to upload all the products with detailed descriptions; customers/buyers to buy numerous products with the options such as searching an item, viewing item details, adding and deleting item to the cart, placing an order, etc; admin has the permission to view and manage the registered users in the system, view the number of transactions/sales, etc.

## **ACKNOWLEDGEMENTS**

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I would like to acknowledge them for their cooperation. First and foremost deeply thankful to Professor Andrew Bond, for her wonderful guidance during this project work in the field of Software Engineering, at San Jose State University.

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## **Chapter 1 Introduction**

### **1.1 Project goals and objectives**

The “Marvel’sKart” is an Online E-commerce Web Application that attempts to provide a platform for selling and buying products easily and in an efficient way. To execute an online shopping platform, a virtual shop on the internet is required with user roles such as Admin, Seller, and Customer. The main purpose of the project is to implement it with an authentication system (Single Sign-on) based on the user roles. The role of the sellers is to upload all the products with detailed descriptions; customers/buyers to buy numerous products with the options such as searching an item, viewing item details, adding and deleting item to the cart, placing an order, etc; admin has the permission to view and manage the registered users in the system, view the number of transactions/sales, etc.

### **1.2 Problem and motivation**

#### Problems

- A physical setup is required.
- Strategies for Marketing are needed.
- Limited operational hours

#### Motivation

- To attract new customers.
- Make money online.
- No physical set is required.
- Customer convenience.
- Seller convenience.

### **1.3 Project features**

- A user will be able to sign up on the website.
- A user will be able to sign in.
- Roles such as admin, seller, or customer will be assigned as per authentication.
- A customer will be able to check products.
- A customer will be able to order products.
- A seller will be able to add products.
- A seller will be able to view added products.
- A seller will be able to order products.
- An admin will be able to manage users.



- An admin will be able to see all orders.

#### **1.4 Project results and deliverables**

- Our system is an e-commerce website from which;
  1. Users can buy items and check their orders from them.
  2. Seller can add items and view items on them.
  3. An admin can control it.

#### **1.5 Market Research**

The global Statistics e-commerce will grow by \$ 1.5 trillion in 2017 and growth rates between 20 and 30 percent in emerging regions such as Latin America, Africa, the Middle East, and North Africa. The number of Internet users in the Middle East is 90 million users, e-commerce sales estimated in the Middle East and North Africa by about 17 billion dollars in 2016, up from \$ 9 billion since 2013. In addition, the value of electronic commerce via smartphones in the Middle East and North Africa could reach \$ 4.9 billion by 2017 [5]. Half of the consumers in the Middle East almost 47% have paid cards, and between 70% to 80% of online purchases of physical goods in the Middle East are made through payment by those cards upon receipt, while there are only 30% payments. The Middle East, the Arab market, and Iraq collectively represent only 2.5% of the global e-commerce market, which has huge growth opportunities in the Arab region.

## **Chapter 2 Project Background and Related Work**

### **2.1 Background and used technologies**

#### Background

E-commerce has developed in the recent period in the area of trade in Iraq and there is a significant change in electronic shops. In addition, captured the new e-commerce in the field of businesspersons, and this through the market orientation of commercial sites in Iraq for continued attraction in the domain of web browsing sites. Supporting many web broker access first to find information about technology, news, tutorials, and others, so the content of web sites is the backbone of the existence of this site and its usefulness. Web content provides visitors to the site and visitor traffic to the site to be one of the two cases, the movement of a petition and the movement of narrow in terms of content. Broad movement, see the visits represent and pursue varied content on the pages of the site where the content in this layer petition targeting of an example of Arab arenas contain content Mono political and economic and religious and scientific and thus the movement of the visit.

#### Technologies Used

- For Back-end; Java (SpringBoot)
- For UI; Angular
- For Database; MS SQL
- For Authentication and SSO - AWS Cognito
- For Configuration; Jenkins
- For Deployment; AWS
- For Storage: S3

### **2.2 Literature Survey**

The Internet has a major influence on the globe because it can serve billions of users all over the world. Thousands of local and global networks including private, public, academic, business, and government networks, all contribute to the creation of the Internet (Yongrui et al. 2014). The Internet has opened the door for e-commerce. This section provides a brief overview of e-commerce, including what it is and how it differs from existing related ideas. The use of e-commerce is growing as a way to conduct business (Ngai and Wat, 2002). The initial phase of conducting research regarding e-commerce is to explain the e-commerce idea.

E-commerce, therefore, is the purchase and sale of goods and services over the Internet. Businesses have websites that allow consumers to browse products and services. Consumers then

purchase the goods and services using various methods (e.g., credit card, debit card, electronic check, PayPal) via the website. Finally, the businesses ship the orders to the consumers' doorsteps. Consumers are also able to track the status of the product or service ordered as needed. All of these activities are conducted online.

## **Chapter 3 System Requirements and Analysis**

### **3.1 Domain and business requirements**

When it comes to e-commerce websites targeting US-based buyers, it is very important to think out product refund and return policies in the E-Commerce roadmap. All because the United States is among the countries known for their “ideal conditions” for customers. Therefore, in addition to the standard functionality, you will certainly have to create a return form for unsatisfied buyers to fill out (surely, only if the product is subject to return according to the respective legislation).

### **3.2 Customer-oriented requirements**

Formally, all functional requirements can be subdivided into two broad categories: those that allow the user to enjoy the site at the stage of product selection and those that “push” them to make a purchase.

The first category includes the development of search tools, sorting, filtering, navigation, as well as the visual component of the site.

The second category includes the study of user shopping cart interactions, the application form for the return of goods, all kinds of elements of social proof, discount coupons, etc.

These are the ultimate directions you can base your requirements list on.

### **3.3 System function requirements**

Minimum steps to make a purchase

Start with the highest priority among sales requirements. Particularly, you will have to make sure that the checkout process is as quick as possible. Thus, the lack of a purchase option for unregistered users is a big mistake that some sites make.

In addition, the shopping cart icon should be distinctly visible on any page of the site - this will make it easier for the potential buyer to carry out operations with the cart (view the selected goods, delete unnecessary items, adjust the quantity of the same product unit, etc.).

Unique, recognizable design

Another feature that defines a competitive website is its unique, authentic design. Many companies prefer to abandon templated themes in favor of custom web development. Note that the idea of “creating a bicycle” is not always crowned with something successful and you get sites like Victoria’s Secret. However, if you don’t have world-famous models in your product ads, it is better to rely on the experience of expert developers and entrust all customizations to real professionals.

Relevant, useful content

Filling the site with expert articles is not only a plus in the karma of your SEO specialist but also a way to satisfy the needs of the most meticulous customers that are looking for something more than a standard product description.

#### Social proof

Don't forget to connect API of popular social networks, as well as include fields for product ratings and reviews. This will increase the degree of user confidence in your trading platform and satisfy their need for an objective assessment of a particular product position.

#### Shipping & payment systems integration

It is also worth making sure that your customers get a choice in the methods of payment and delivery of goods. Perhaps, they already have personal discounts on some services so that your proposal to choose a familiar company for transferring money/receiving goods will come in handy.

### **3.4 System Behavior Requirements**

- Users can buy items and check their orders from them.
- Seller can add items and view items on them.
- An admin can control it.

### **3.5 Technology and resource requirements**

- For Back-end; Java (SpringBoot)
- For UI; Angular
- For Database; MS SQL
- For Authentication and SSO - AWS Cognito
- For Configuration; Jenkins
- For Deployment; AWS
- For Storage: S3

## Chapter 4 System Design

### 4.1 System architecture design

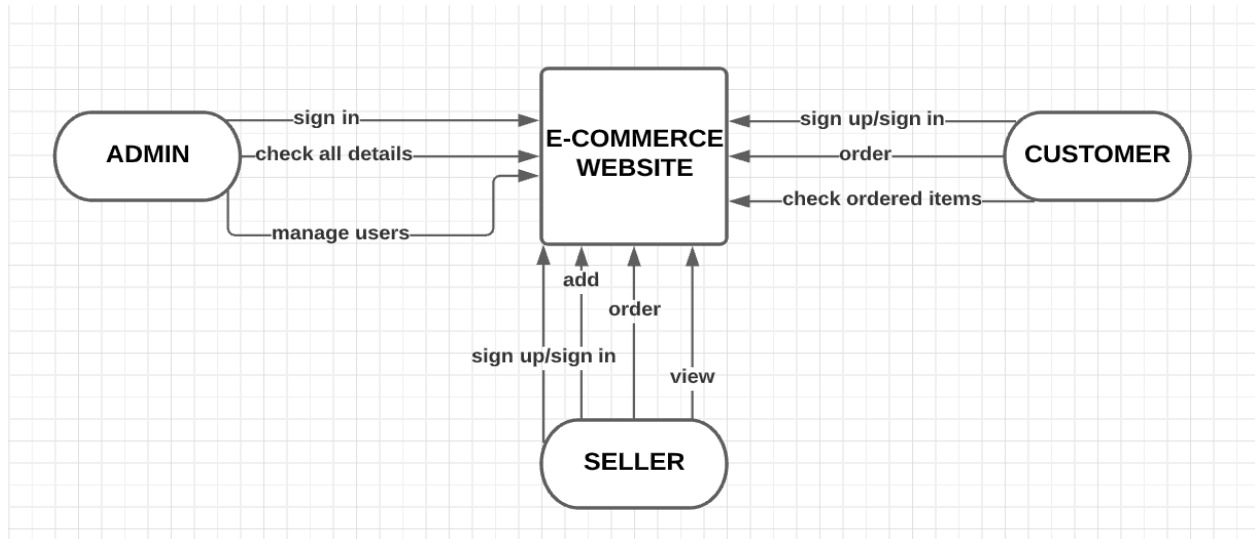


Fig 1. System Architecture

### 4.2 System data and database design

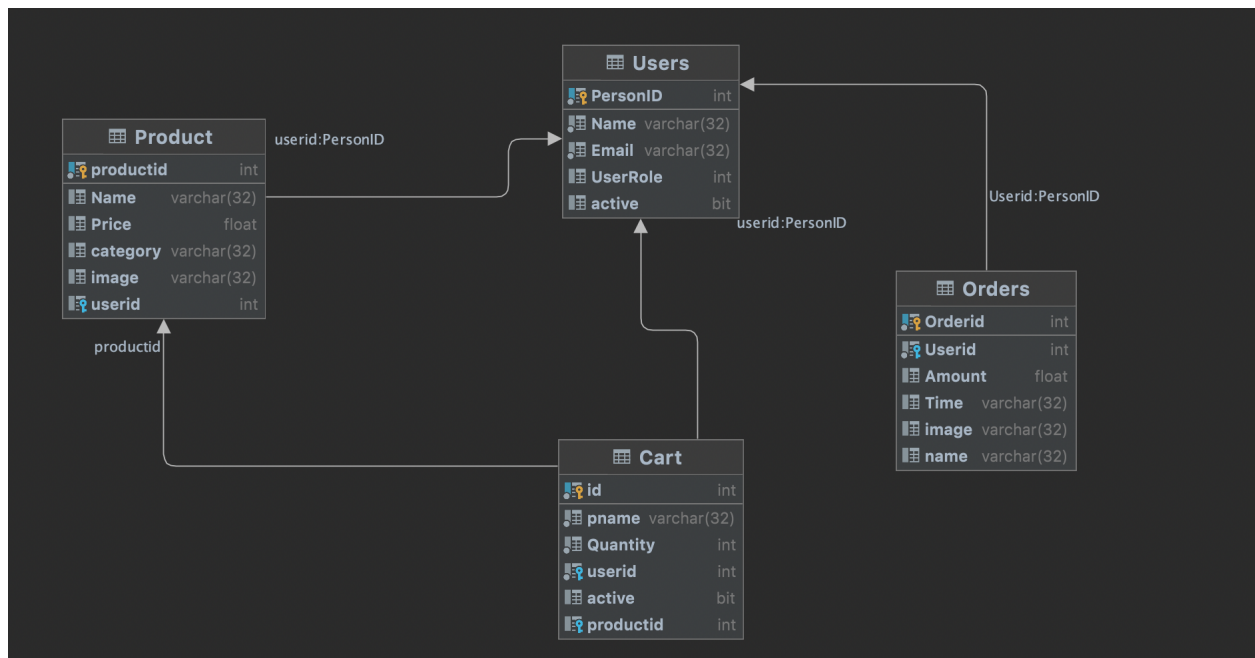


Fig 2. Database Design

### 4.3 System interface and connectivity design

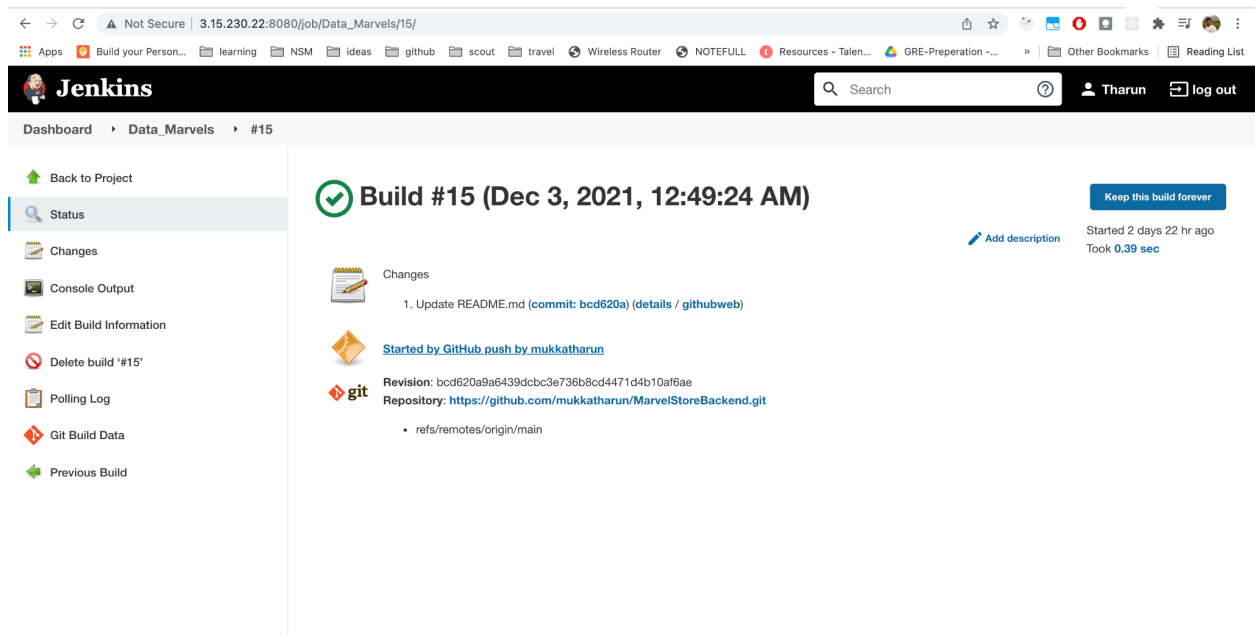


Fig 3. System Connectivity

### 4.4 System user interface design

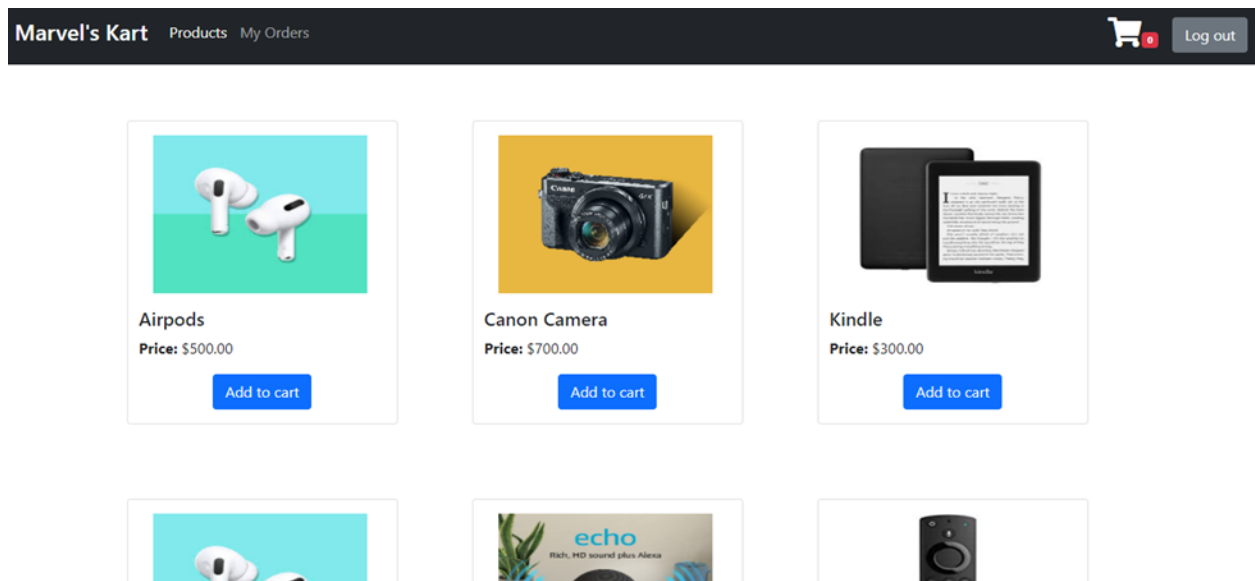


Fig 4. User Interface Design

## **Chapter 5 System Implementation**

### **5.1 System implementation summary**

The “Marvel’sKart” is an Online E-commerce Web Application that attempts to provide a platform for selling and buying products easily and in an efficient way. To execute an online shopping platform, a virtual shop on the internet is required with user roles such as Admin, Seller, and Customer. The main purpose of the project is to implement it with an authentication system (Single Sign-on) based on the user roles. The role of the sellers is to upload all the products with detailed descriptions; customers/buyers to buy numerous products with the options such as searching an item, viewing item details, adding and deleting item to the cart, placing an order, etc; admin has the permission to view and manage the registered users in the system, view the number of transactions/sales, etc.

Using Marvel’s Kart;

- Users can buy items and check their orders from them.
- The seller can add items and view items on them.
- An admin can control it.

### **5.2 System implementation issues and resolutions**

- Online Identity Verification: It was resolved with the implementation of Single Sign-On (SSO).
- Malicious/Fake Identity: Admin has options to remove any user.

### **5.3 Used technologies and tools**

- For Back-end; Java (SpringBoot)
- For UI; Angular
- For Database; MS SQL
- For Authentication and SSO - AWS Cognito
- For Configuration; Jenkins
- For Deployment; AWS
- For Storage: S3



## **Chapter 6 System Testing and Experiment**

### **6.1 System Testing**

#### **Sign Up**

**First name**

**Last name**

**Email**

**Password**

**Register**

Existing User? [Sign in](#)

## Sign in

Email address


Password


Login

New to Marvel's Kart? [Sign up](#)

## Signed in as Customer


### Products tab

**Marvel's Kart** [Products](#) [My Orders](#)  [Log out](#)




**Airpods**  
Price: \$500.00

[Add to cart](#)






**Canon Camera**  
Price: \$700.00

[Add to cart](#)




**Kindle**  
Price: \$300.00







[Add to cart](#)



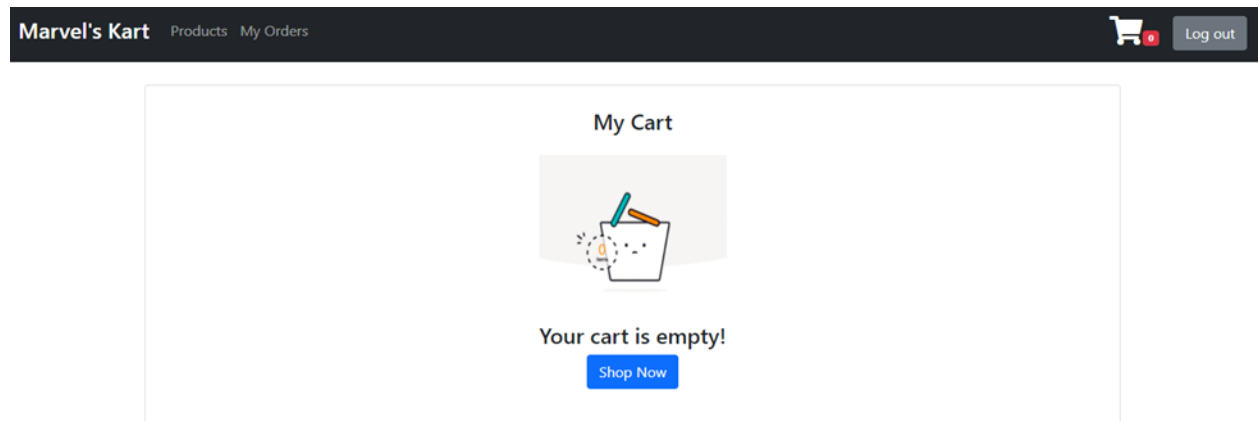
### My Orders tab

**Marvel's Kart** [Products](#) [My Orders](#)  [Log out](#)

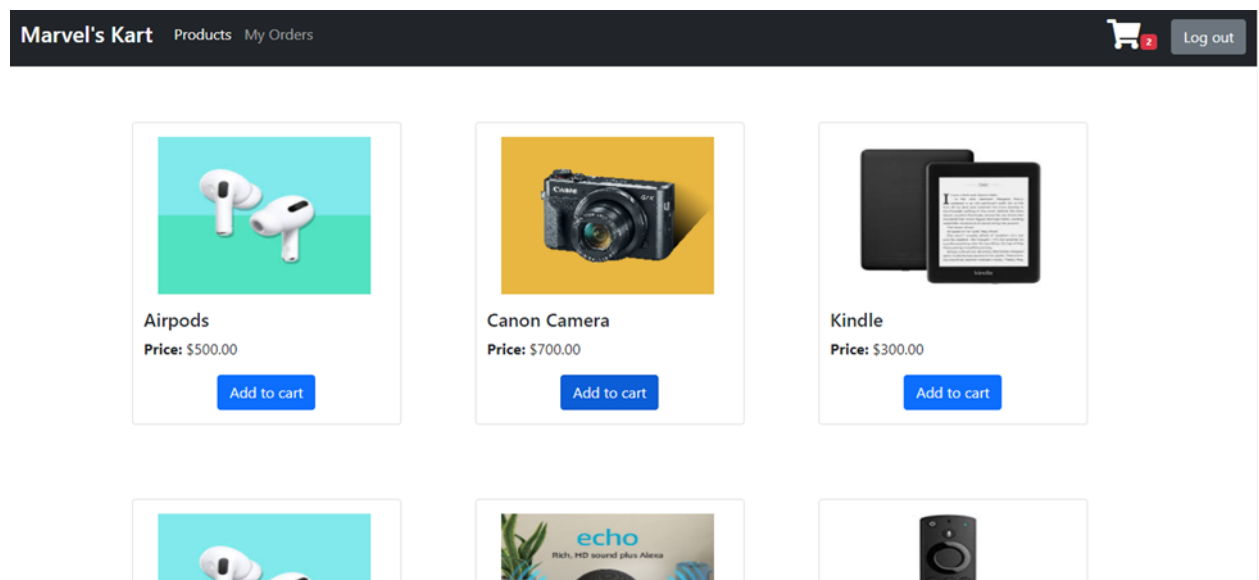
**Orders:**

Order Id	Product Image	Product	Amount
32		Kindle	300
33		Canon Camera	700
34		Canon Camera	700
35		Airpods	500
12		Air Pods	350
36		Canon Camera	700





## Cart Page



## Add To Cart flow

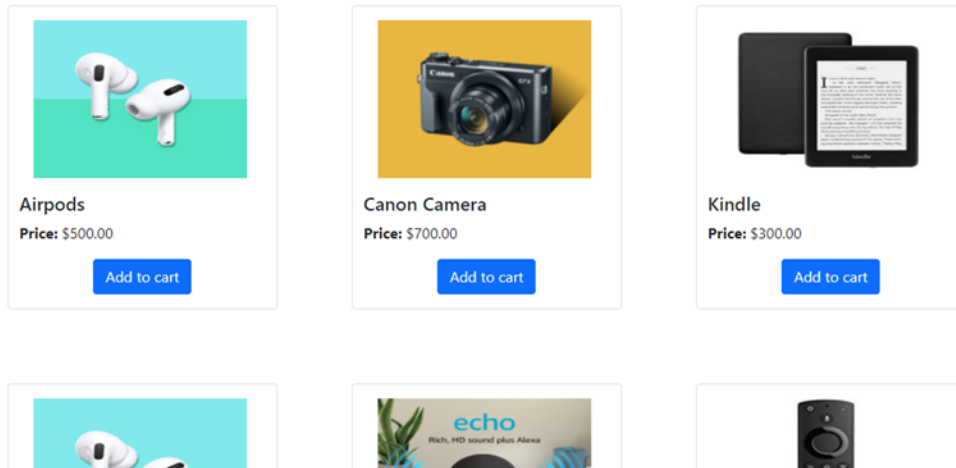




Sr. No	Product Name	Product Image	Price	Action
1	Airpods		\$500.00	
2	Canon Camera		\$700.00	
<a href="#">Shop More</a>		<a href="#">Place Order</a>		

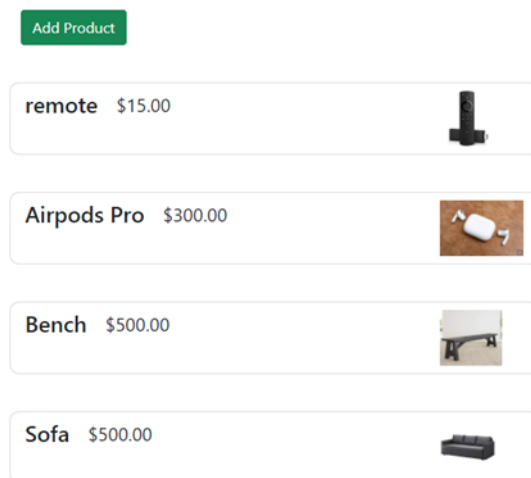
## Signed in as Seller:

1 extra tab “Seller” is available



## “Seller” tab page


Can view the list of products added by him



# Add New Product

Marvel's Kart

ProductsMy OrdersSeller

Log out

Add New Product

Product Name

Canon Camera

Price

500


Category

electronics

Choose File

canon.jpg


Add Product








# New Product added to list

Marvel's Kart

ProductsMy OrdersSeller


Log out

Add Product

remote	\$15.00	
Canon Camera	\$500.00	
Airpods Pro	\$300.00	
Bench	\$500.00	
Sofa	\$500.00	

## Signed in as Admin

Can view list of Users and can delete any user








**Marvel's Kart** [Products](#) [My Orders](#) [Seller](#) [Admin](#)  [Log out](#)

### Users:

Name	Email	Role	Operation
Tharun Mukka	tharunmukka1@gmail.com	Seller	<a href="#">Delete</a>
Priyanka	piyumath1@gmail.com	Admin	<a href="#">Delete</a>
pinky	piyumath2@gmail.com	Customer	<a href="#">Delete</a>
priyu	prium11@gmail.com	Seller	<a href="#">Delete</a>
PM	priyankamath16@gmail.com	Admin	<a href="#">Delete</a>
MP	priyanka.math@sjsu.edu	Seller	<a href="#">Delete</a>
Rajvi Shah	rajvi.shah@sjsu.edu	Customer	<a href="#">Delete</a>

Can view list of transactions/orders placed

### Orders:

Order Id	Product Image	Product	Amount	User
1		Air Pods Pro	189.99	Tharun Mukka
2		Sofa	289.49	Tharun Mukka
3		Bench	143	Jithesh K
28		Canon Camera	700	Priyanka
29		Airpods	500	Priyanka
30		one plus	350	Priyanka
31		Sofa	500	Priyanka



## Github webhook and triggered screenshot of Jenkins

The screenshot shows the GitHub interface for the repository 'mukkatharun / MarvelStoreBackend'. The left sidebar contains a list of repository settings: Options, Manage access, Security & analysis, Branches, Webhooks (highlighted), Notifications, Integrations, Deploy keys, Actions, Environments, Secrets, and Pages. The main content area is titled 'Webhooks / Manage webhook' and has two tabs: 'Settings' and 'Recent Deliveries'. The 'Settings' tab is active, displaying instructions on how webhooks work. It includes a 'Payload URL' field with the value 'http://18.219.134.217:8080/github-webhook/', a 'Content type' dropdown set to 'application/json', and a 'Secret' field. At the bottom, there are radio buttons for 'Which events would you like to trigger this webhook?': 'Just the push event.' and 'Send me everything.' (which is selected).

The screenshot shows the Jenkins dashboard for the project 'Data\_Marvels', specifically build #15. The top navigation bar includes the Jenkins logo, a search bar, and user information for 'Tharun' with a 'log out' button. The left sidebar contains a list of links: 'Back to Project', 'Status' (selected), 'Changes', 'Console Output', 'Edit Build Information', 'Delete build #15', 'Polling Log', 'Git Build Data', and 'Previous Build'. The main content area displays 'Build #15 (Dec 3, 2021, 12:49:24 AM)' with a green checkmark icon. To the right of the build title are buttons for 'Add description' and 'Keep this build forever'. Below the title, the 'Changes' section lists '1. Update README.md (commit: bcd620a) (details / githubweb)'. The 'Started by GitHub push by mukkatharun' section shows the build was triggered by a push. The 'Revision' is 'bcd620a9a6439dbc3e736b8cd4471d4b10af6ae' and the 'Repository' is 'https://github.com/mukkatharun/MarvelStoreBackend.git'. The build status is 'Success' and it took '0.39 sec' to complete.

## **Chapter 7 Future Work**

### **7.1 Scope in future**

E-commerce is an environment that's constantly changing and upgrading as technologies improve and companies battle against each other to win a greater share of the pie.

If you've been keeping up with eCommerce analytics, you know that the trends show that growth and change take place every year. Regardless of what kind of eCommerce business you are about to start, it's safe to say that the future of eCommerce looks bright and promising.

Although the future of eCommerce can't be predicted in full, there is enough evidence to predict that MCommerce will flourish, and various social media platforms like Instagram and Facebook will become even more crucial in the eCommerce world.

So, here are the most anticipated changes regarding the future of eCommerce.

#### **Ecommerce personalization predictions**

Humans crave physical contact with other people, so it's no surprise that eCommerce is deemed as slightly less intimate and slightly less about the personal experience than retail shopping. Ecommerce shops don't have someone who can help with our browsing and recommend products to us face-to-face.

This is why certain eCommerce businesses will try to imitate this experience by making websites more personal and appealing to the eye. One of the ways eCommerce shops can become more personal for customers is by keeping track of customers' preferences and tailoring their e-commerce experience based on the things they like and are interested in. You're already familiar with a similar feature, which is the 'recommended products' section in most online stores that give customers recommendations based on their search history.

#### **Ecommerce delivery drones**

Drones are essentially flying robots that can be either manually controlled or programmed to fly on their own. So how exactly do flying robots correlate to eCommerce, you might ask?

Well, some people predict that, in the future, drones will be able to replace order clerks by delivering orders to customers. As you can imagine, drones are definitely faster than humans. This will significantly cut the delivery time, so orders will be delivered faster than ever before. This will certainly help businesses and customers alike, which is why many eCommerce

businesses are excited about this development. The costs will be much lower for companies and people will get what they need in a shorter time. Next-day delivery services are already looking pale in comparison.

### **Ecommerce social media shopping**

Social media platforms play a large role in our lives today. Many brands are aware of this fact, so they shift their marketing towards social media sites in order to reach a larger number of people. In fact, the number of sponsored Instagram posts is increasing every year.

So how can these statistics influence eCommerce? Knowing that millions of people use these apps every year is an advantage for eCommerce business owners. People are buying via social media every day, so there's no better time to invest in social media marketing and selling than now.

### **Ecommerce tracking**

Since retail e-commerce sales are expected to reach \$4.8 trillion by next year, now is the time to think of ways you can transfer the face-to-face retail experience to eCommerce. We've already discussed how you can customize the customer's experience, but this step also entails perfecting your online tracking experience.

There are plenty of apps that can help you with this, like Swydo, Megalytic, and Google Sheets.

## **Chapter 8 Deployment and Source Code**

### **8.1 Source Code Link - Front End**

<https://github.com/PriyankaMath/MarvelsKart>

### **8.2 Source Code Link - Back End**

<https://github.com/mukkatharun/MarvelStoreBackend>

### **8.3 Presentation**

<https://github.com/PriyankaMath/MarvelsKart/blob/main/Presentation.pptx>

### **8.4 Demo**

[https://drive.google.com/file/d/17LGA7YzG3HwAKd-JM\\_IKPhajAiLbUXWI/view?usp=sharing](https://drive.google.com/file/d/17LGA7YzG3HwAKd-JM_IKPhajAiLbUXWI/view?usp=sharing)