



E-COMMERCE WEBSITE **USING JAVASCRIPT /** **HTML / CSS / REACT.JS**

DECLARATION

I hereby declare that project report entitled “E-COMMERCE WEBSITE IMPLEMENTED USING JAVASCRIPT / HTML / CSS / REACT.JS “ submitted by me (Ayush Karn 2K19/CO/454) to Delhi Technological University (DTU), Delhi is a record of original work done under the guidance of Ms. Diksha Ruhela for the course of Object Oriented Programming. All the codes and implementations are completely written by me.

Name: Ayush Karn
Roll No: 2K19/CO/454
Submitted to: Ms. Diksha Ruhela

CERTIFICATE

This is to certify that Ayush Karn of A6 batch Computer Engineering Department (COE) having Roll No 2K19/CO/454 has successfully completed the project work entitled “E-COMMERCE WEBSITE IMPLEMENTED USING JAVASCRIPT / HTML / CSS / REACT.JS” on Object Oriented Programming for Third Semester which is to be evaluated as the Mid Term Component.

Signature: Ayush Karn

Date :07-11-2020

ACKNOWLEDGEMENT

I would like to express my special thanks of gratitude to my teacher Ms. Diksha Ruhela as well as our college(Delhi Technological University, Delhi)which gave me the golden opportunity to do this wonderful project on the topic “E-COMMERCE WEBSITE IMPLEMENTED USING JAVASCRIPT / HTML / CSS / REACT.JS” , which also helped me in doing a lot of Research and I came to know about so many new things I am really thankful to them.

Secondly i would also like to thank my parents and friends who helped me a lot in finalizing this project within the limited time frame.

ABSTRACT

E-commerce (electronic commerce) is the activity of electronically buying or selling of products on online services or over the Internet. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. E-commerce is in turn driven by the technological advances of the semiconductor industry, and is the largest sector of the electronics industry. In this project I have made a website using React.js Node.js and JavaScript that works like a E-Commerce site such as Amazon, Flipkart, WalMart, etc. The functionality that I have provided are listed below:

- Sign Up
- Log In and Log Out
- Product Component
- Add to Basket
- Remove From Basket
- Calculating the total amount
- Interactive Interface

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CHAPTER 1.1: PROBLEM STATEMENT

As we are in 21st century now and everything is being digitalized. From taking classes, making notes to banking transactions as well as shopping. In this project I have prepared a online E-Commerce website with an aim to digitalize buying and selling stuffs. Well, you'll say that there are already well established Online E-Commerce giants like Amazon, Flipkart, Snapdeal, etc. in India then why even create a new one that would be same as them then I would like to tell you that I am not actually from India, I am from Nepal and there are not any well established E-Commerce website in Nepal. There are just few and they are not even any good. With this project I have taken a foot ahead in the direction to make a E-Commerce website that can be the next big thing in the Online marketplace for my country. Not only this I along with few of my friends have actually started a E-Commerce site in my city but that is built upon php and I actually want to make a transition towards React.js / Node.js to make it more responsive and have a high usage and easy maintainability and handling of the site.

CHAPTER 1.2: BRIEF INTRO OF ALL THE API'S AND COMPONENTS USED



HTML5

Hypertext Markup Language is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets and scripting languages such as JavaScript



CSS3

Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language such as HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript



JavaScript

JavaScript, often abbreviated as JS, is a programming language that conforms to the ECMAScript specification. JavaScript is high-level, often just-in-time compiled, and multi-paradigm. It has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first-class functions

CHAPTER 1.2: BRIEF INTRO OF ALL THE API'S AND COMPONENTS USED



React.js

React is an open-source, front end, JavaScript library for building user interfaces or UI components. It is maintained by Facebook and a community of individual developers and companies. I have used react.js for writing my program. In react we have to write code in JSX format and later it gets converted to respective JavaScript by Babel Compiler



Node.js

Node.js is an open-source, cross-platform, back-end, JavaScript runtime environment that executes JavaScript code outside a web browser. I have used node.js for creating a runtime environment for my project



Firebase

Firebase is a platform developed by Google for creating mobile and web applications. It was originally an independent company founded in 2011. In 2014, Google acquired the platform and it is now their flagship offering for app development. I have used Firebase in this project for hosting my website and I am planning to use the database feature of Firebase in future for maintaining the database for my app

CHAPTER 1.3: GOAL OF THE PROJECT

Functionality That I have Given in this E-Commerce Website:

- Sign Up
- Log In and Log Out
- Product Component
- Add to Basket
- Remove From Basket
- Calculating the total amount
- Interactive Interface

Final Aim:

- 1) To Develop Skills of Object Oriented Programing
- 2) Making an interactive Website

CHAPTER 2.1: CONCEPTS OF OOPS USED

Abstraction

Data abstraction is one of the most essential and important features of object-oriented programming in C++. Abstraction means displaying only essential information and hiding the details. Data abstraction refers to providing only essential information about the data to the outside world, hiding the background details or implementation

Polymorphism

The word polymorphism means having many forms. In simple words, we can define polymorphism as the ability of a message to be displayed in more than one form

Inheritance

The capability of a class to derive properties and characteristics from another class is called Inheritance. Inheritance is one of the most important features of Object-Oriented Programming.

Objects

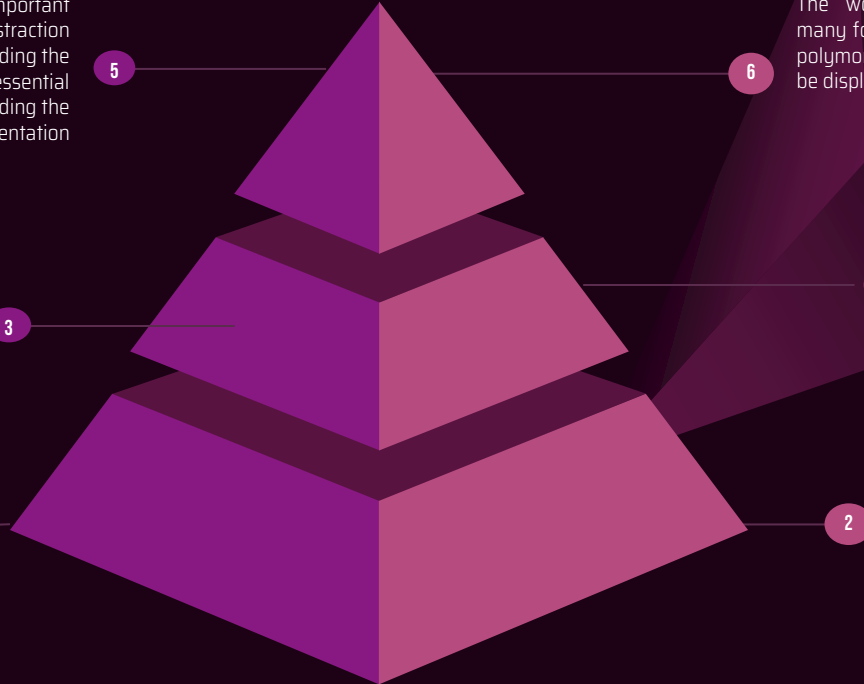
An Object is an identifiable entity with some characteristics and behavior. An Object is an instance of a Class. When a class is defined, no memory is allocated but when it is instantiated (i.e. an object is created) memory is allocated

Encapsulation

In normal terms, Encapsulation is defined as wrapping up of data and information under a single unit. In Object-Oriented Programming, Encapsulation is defined as binding together the data and the functions that manipulate them..

Class

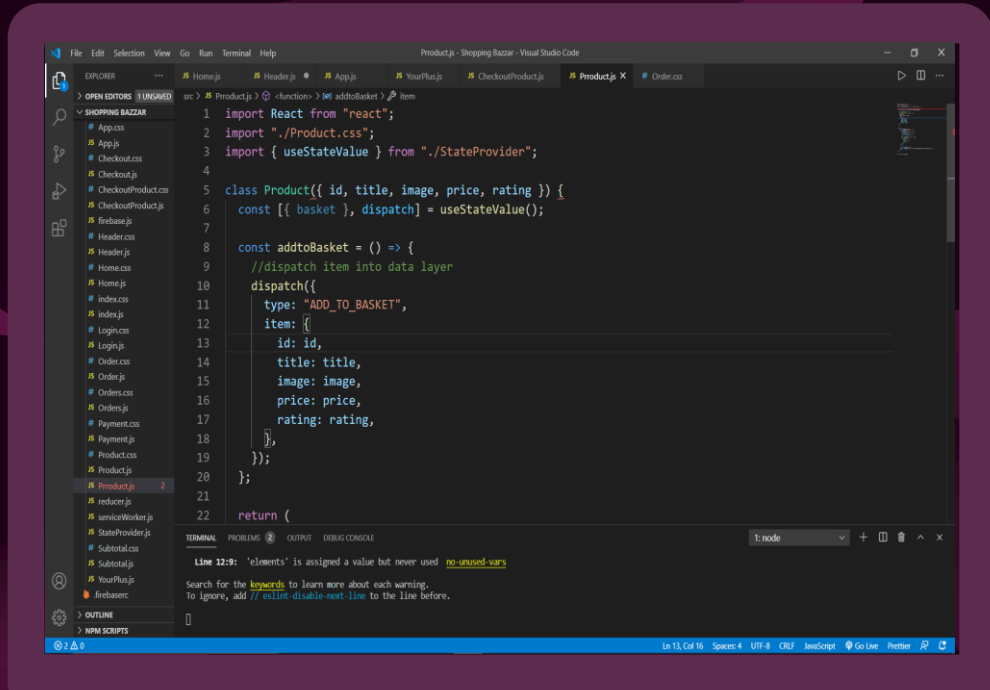
The building block of C++ that leads to Object-Oriented programming is a Class. It is a user-defined data type, which holds its own data members and member functions, which can be accessed and used by creating an instance of that class. A class is like a blueprint for an object



CHAPTER 2.2: CODE SNIPPETS FOR OOPS CONCEPT

CLASSES AND OBJECTS

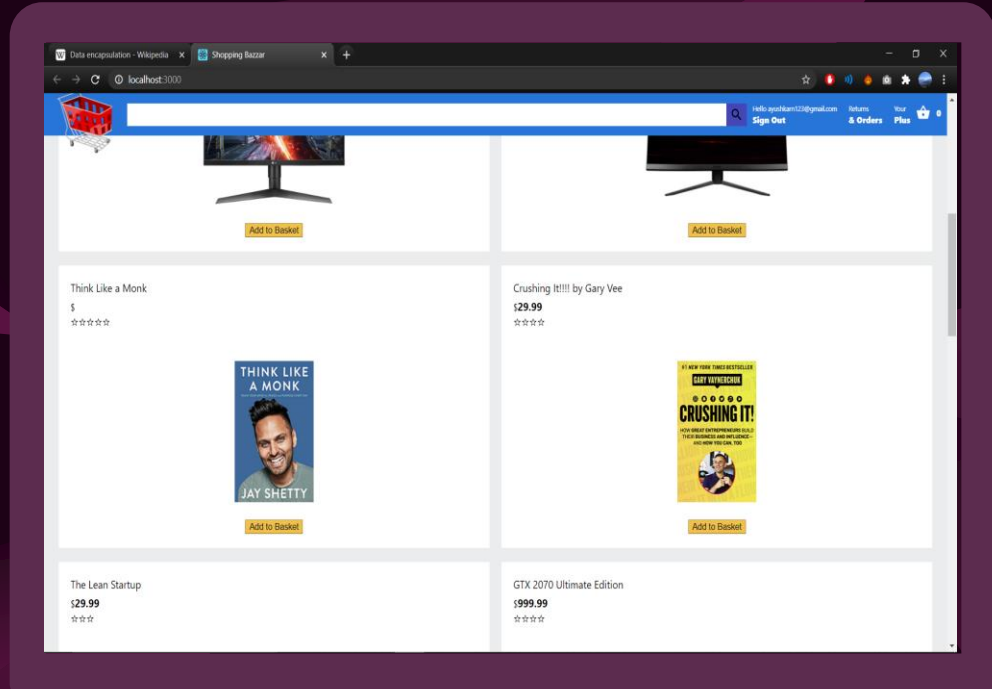
Classes in JavaScript/react.js is not exactly similarly written to the one written in C++ or other Object Oriented Programming Language. Here a class called product is created that has data-members such as product id, name rating, title, etc. This class can be easily be used and inherited whenever where-ever we want it to be used/inherited



CHAPTER 2.2: CODE SNIPPETS FOR OOPS CONCEPT

ENCAPSULATION

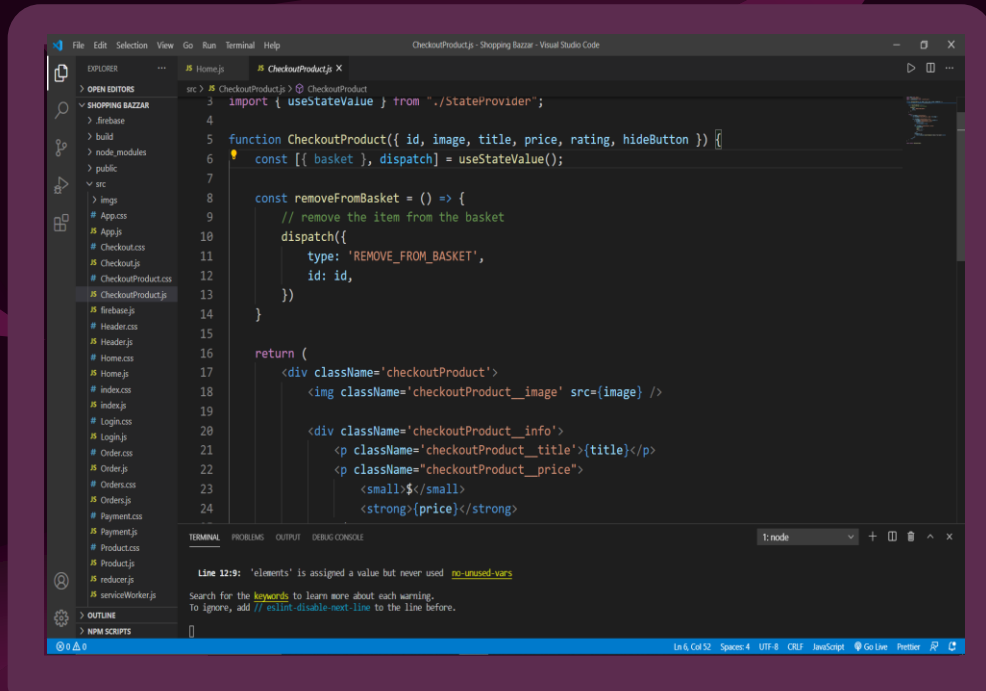
Data Encapsulation is hiding of data. In this project there are multiple instances where I have used the multiple instances of data encapsulation. There are times where I had to write the API keys for different operations which I had to hide from the user for security reasons . For example Firebase's API key is also hidden from the user. In the screenshot I have shown you one of the instance where I have actually hidden the data member for one of the product. I have hidden the price of that particular product.



CHAPTER 2.2: CODE SNIPPETS FOR OOPS CONCEPT

INHERITANCE

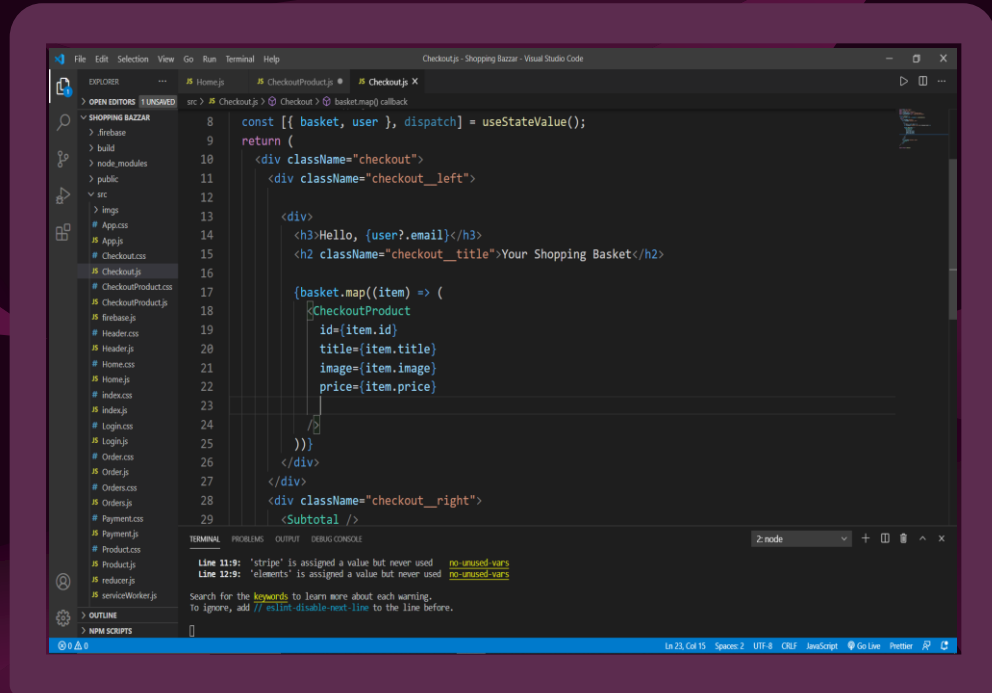
Inheritance is basically a concept of oops in which we inherit or derive some property of a class into another class. In the project I have used the concept inheritance while implementing the checkout basket. For checkout basket I have inherited only the products that a user selects and added It to the basket. Basically I have used the same product class that I created earlier with different data-members and inherited them into my checkout basket.



CHAPTER 2.2: CODE SNIPPETS FOR OOPS CONCEPT

ABSTRACTION

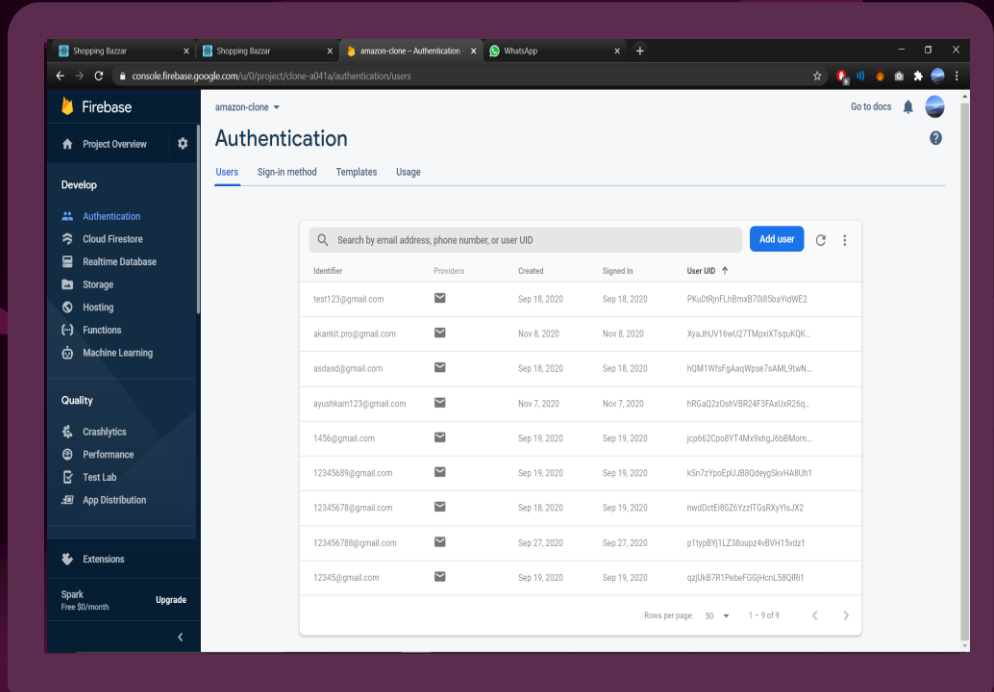
Its main goal of Abstraction is to handle complexity by hiding unnecessary details from the user. That enables the user to implement more complex logic on top of the provided abstraction without understanding or even thinking about all the hidden complexity. I have used the concept of abstraction when creating a shopping basket at checkout page. All the details about the product are not needed in shopping basket. For example product rating can be omitted when creating a shopping basket component as it doesn't play any role there



CHAPTER 2.2: CODE SNIPPETS FOR OOPS CONCEPT

FILE HANDLING

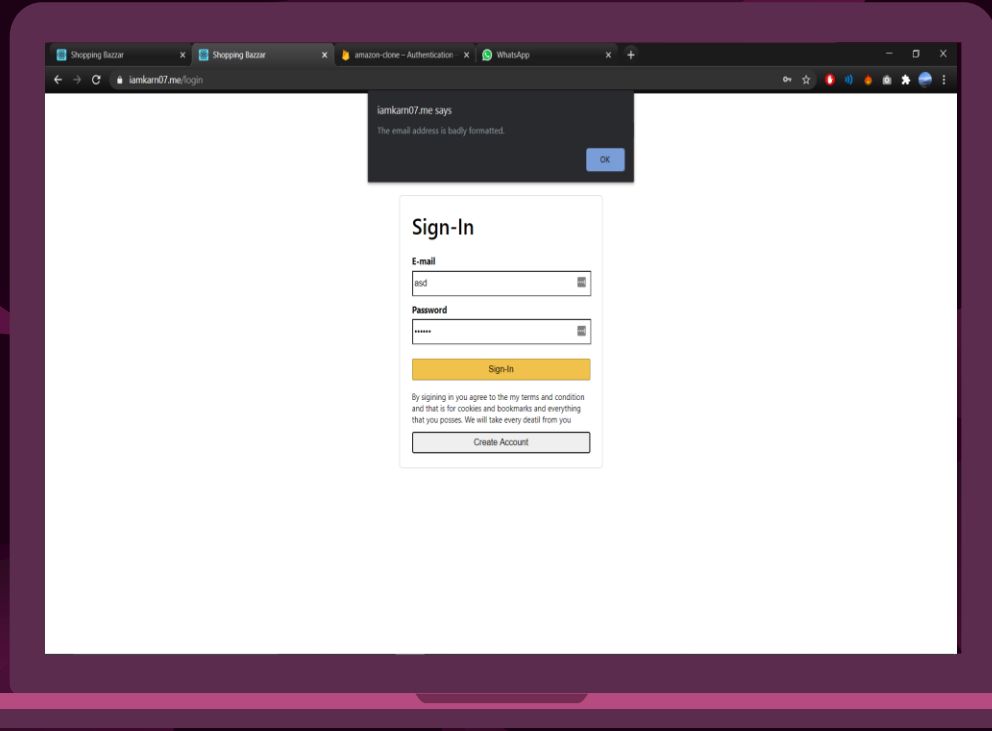
File handling provides a mechanism to store the output of a program in a file and to perform various operations on it. A stream is an abstraction that represents a device on which operations of input and output are performed. In this project I have taken the output in the database for the login page where it stores the email address and password for a user and it verifies it every time some one logs in to the website



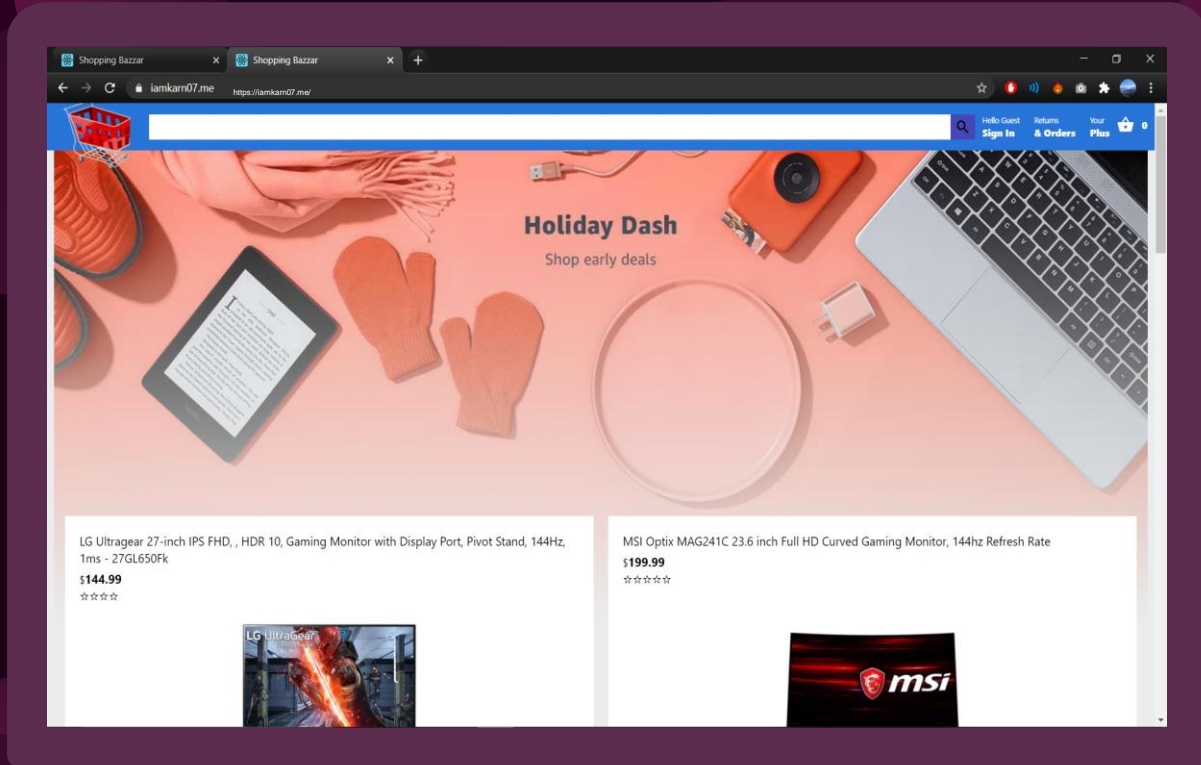
CHAPTER 2.2: CODE SNIPPETS FOR OOPS CONCEPT

EXCEPTION HANDLING

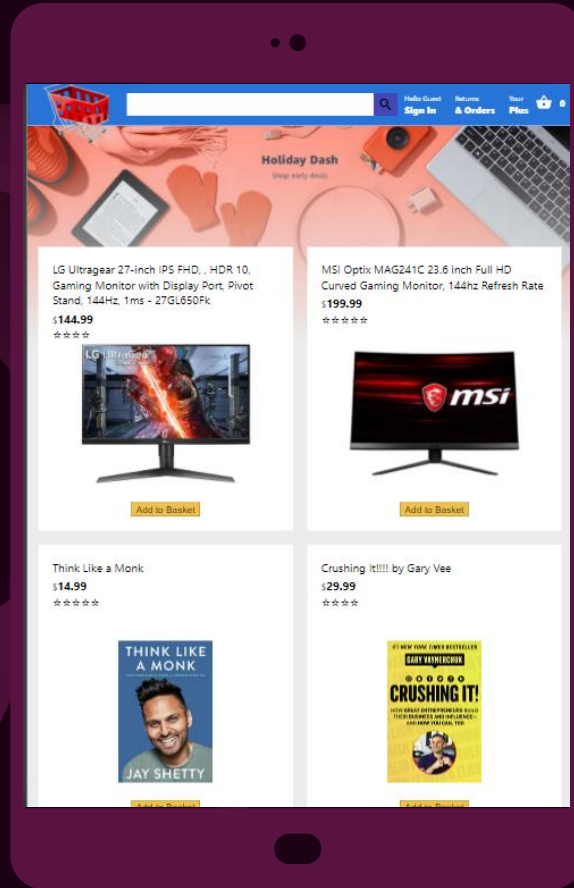
In computing and computer programming, exception handling is the process of responding to the occurrence of exceptions – anomalous or exceptional conditions requiring special processing - during the execution of a program. In this project JavaScript automatically detects some of the exceptions for example when Signing In to the website if we enter a wrong format for email then it shows an alert saying that the “The email address is badly formatted” which is an example of Exception handling.



CHAPTER 3: TECHNICAL DOCUMENTATION AND RESULTS



TABLET PROJECT



CHAPTER 4: CONCLUSION AND REFERENCES

From this project I would like to conclude that I have actually learnt a great deal about web development and a guy who was not at all interested in building web based application I have actually come to like it and I will be making a few more projects on the web development. Also not to forget having an E-Commerce website of your own business actually has so many advantages. Some of them are as follows:

- 1) Can Broaden Your Brand
- 2) It's More Convenient
- 3) Increase Your Reach
- 4) Gives You Marketing Opportunities
- 5) Scalable

CREDITS

- 1) <https://reactjs.org/tutorial/tutorial.html>
- 2) <https://www.w3schools.com/js/>
- 3) <https://www.coursera.org/>
- 4) <https://www.youtube.com/user/TechGuyWeb> (Traversy Media)
- 5) <https://www.youtube.com/channel/UClb90NQQcskPUGDIXsQEz5Q> (Dev. Ed)

THANKS!

