

Developing a mobile application to facilitate online shopping

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Abstract

Shopping is a popular pastime for many individuals and the same is true with online buying. However, when it comes to online shopping, people are often restricted since most online shopping websites and apps lack certain features that facilitate the process. The goal of this initiative is to develop a web-based user-friendly interface for online consumers with system simplicity that would increase consumers' enjoyment of shopping. This online shopping web application is to address this problem by enabling users to experiment with the search tool, create various combinatorial search criteria to conduct a thorough search and provide an interactive interface that enables users to quickly interact with different application features. Based on the search term, the search engine would present a list of items, which the user could then filter based on several criteria.

Keywords: Mobile application, online, privacy, shopping, shopping guide;

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1. Introduction

Shopping is a popular pastime for many individuals. The same is true with online buying. There is a plethora of commercial online shopping websites that offer a diverse range of products geared to the shopping preferences of a diverse range of customers. Thousands of products are offered under numerous categories on these internet marketplaces (Kanbul & Güldal, 2019; Ozcan & Kert, 2020; Tarute et al., 2017).

One of the main issues with existing systems is that they give users a non-interactive environment. Traditional user interfaces employ continuous server post-backs; each post-back makes a call to the server, receives the response and then refreshes the entire web form to display the result (Akula, 2021; Awais et al., 2022; Kay, 2020). This scenario introduces a new trade-off, resulting in a delay in the outcome presentation. A search engine that shows results without allowing users to refine them further using various criteria. Traditional and non-user-friendly interfaces are difficult to use.

This particular project focuses on affordability and economic feasibility, to show the adaptability and versatility of react native since it can be used for both Android and iOS apps, to streamline and automate the entire shopping experience, to eliminate the drawbacks and issues associated with paper-based processes and to raise sales volume by making new web page design technology more appealing and to attract a large number of customers and businesses to their location. We may advertise and send procure to a large number of customers using this approach (Afrin et al., 2021; Al Dmour et al., 2014; Tseng et al., 2021). Many people would benefit from this scheme when purchasing and selling used goods including electronics, cars, clothing and home décor. Get the greatest deals on the things you need while also selling the things you do not.

1.1. Purpose of the study

The goal of this initiative is to develop a web-based user interface for online consumers. The system's simplicity would increase consumers' enjoyment of shopping. The purpose of this online shopping web application is to allow users to play around with the search tool and come up with numerous combinatorial search criteria to conduct a thorough search and provide an interactive interface that allows users to interact with many components of the application quickly and effortlessly. A search engine makes it easy for customers to identify products that fit their specific requirements. The search engine would provide a list of products based on the search term, which the user could then sort by a variety of criteria.

2. Application features

This study aims to develop an app with features that are not present in existing apps. The following are the features offered by the online shopping system (Fauzi, 2018; Ku & Chen, 2020; Magrath & McCormick, 2013; Mahatanankoon et al., 2005; Zhao & Balagué, 2015):

- Provides search capabilities based on a variety of criteria. Shopping on the internet, for example, customer and payment.
- Payment details, customer info and shopping are all managed through the online shopping system.
- It keeps track of all product delivery, payment and other details.
- Product information is managed.
- Displays the data.

- Organise your shopping information.
- The ability to edit, add and update records has been increased.
- Data management of shopping resources.
- An overview of the online shopping system.
- Manage your payment information.
- All of C's records have been combined.

Also, the study aims to (Al Dmour et al., 2014; Musa et al., 2016; Singh et al., 2016; Yang & Kim, 2012):

- Create an easy-to-use web-based interface that allows users to search for products, browse detailed descriptions and place orders.
- A search engine that makes it simple and convenient for users to find products that meet their individual needs. The search engine will provide a list of products based on the search word, which the user can then filter using various factors.
- A drag-and-drop function that allows users to add or remove products from their shopping carts by dragging them into or out of the cart.
- A user can read the product's comprehensive specifications, as well as multiple photos and customer reviews. They have the option of writing their reviews as well.
- This project is entirely built at the administrative level, only the administrator has access to it. It will keep track of all payments, bills and customer information.

2.1. Added benefits for the user

2.1.1. The added benefit of choosing second-hand clothing

To be honest, what we have is not necessarily what we need. We cannot afford to give anything in case we need it someday. Forget that true happiness should come from having the right things, not having a lot of things. Importantly, gaining experience is just a tool to help us live the life we want. We want to make Let It Go a second property by making second-hand clothing store shopping faster, easier and more enjoyable. We want to create a sustainable future where nothing is used. Listing unwanted things in photos and finding what you want in your neighbourhood will not only help you buy and sell more but will also help you live more. Plus, it is free. Free is good.

2.1.2. Everyone gets to sell stuff easy

Listing what you do not need helps you get the most out of your things and your life, make money to get what you need and achieve your dreams helps to do. They also contribute to the economy. It is a smarter move than hiding or throwing away items that are still available.

2.1.3. Shop for less

Here you can find a variety of used cars, electronics, furniture, household items, sporting goods and books. That is all you can want. Start exploring Let It Go to meet all your needs. With the diverse products and sellers available, one can select and buy the most affordable product.

2.1.4. Fast and cutting-edge

- List gadgets in seconds, as effects as taking a photo. Let It Go is the one app obtainable in this superior era, that robotically titles and categorises your listing, whether or not you are promoting a used iPhone or a used car! Find excellent offers at Let It Go today.
- Make cash promoting your 'like-new' gadgets. It's secure and easy.

2.1.5. Finding the best local deals

With location-based browsing, Let It Go makes it easier than ever to find deals and reach nearby shoppers. You can instantly negotiate prices with sellers and buyers with the app.

2.2. Application development

Writing clean code is one of the most important things in software development in general. Most big companies always try to ensure that the code written for their software is cleaner and performant so that they can easily manage it later. Clean code is very important even if you are an independent developer because most of the time you will need to refactor that code or add new features to it.

If you are using React as a JavaScript library to build user interfaces, you should know that it has rules which you can follow to make your code cleaner and easy to read. Writing clean code will always make you a valuable React developer. That is why in this article, I wanted to share with you some useful tips to write clean code in React. So, let us get right into it.

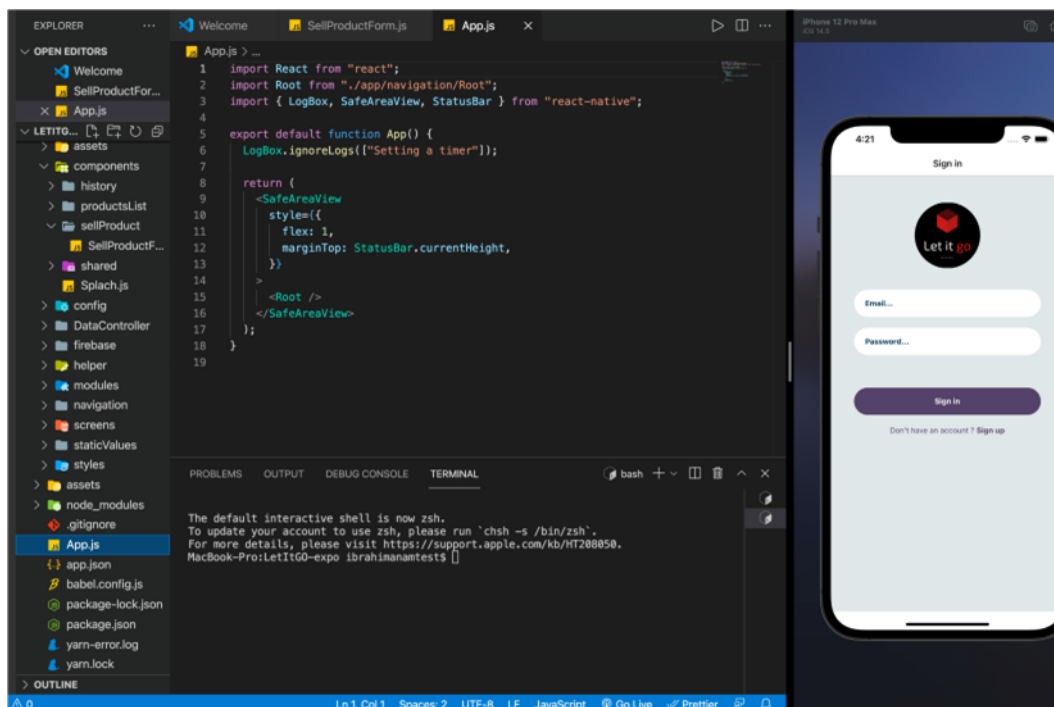


Figure 1
App.js

2.3. Create a separate file for each component

As an example, I have seen a lot of developers write several components just in the App component. This is a bad practice because each component has its UI and functionality. Handling all that for each component in one file will make your code difficult to read. That is why you need to create separate files for each component in your application and render them in the App component. For example, if you want to create a simple landing page using React, make sure to create a separate file for each component in the landing page. A file for the navbar component, a file for the about section component, a file for the footer component and so on.

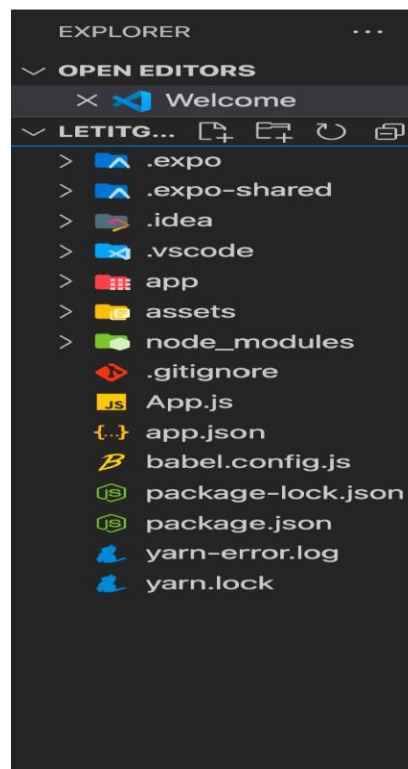


Figure 2
Folders

As a result, this will make your application's code much more readable and easier to manage. In addition to that, this will also help you to reuse the components across your entire application.

2.4. Reduce JavaScript in JSX

We can write as much JavaScript as we want inside JSX code in React. But this can make our code difficult to read because there will be a mix of JavaScript and JSX. That is why it is recommended that you always reduce the amount of JavaScript code inside JSX.

Here is an example:

```
import React, { useState } from 'react';

export default function Form() {
  const [firstName, setFirstName] = useState('');

  return (
    <form>
      <input value={firstName} onChange={event => {
        setFirstName(event.target.value);
        console.log(event.target.value, 'changed!');
      }}/>
    </form>
  );
}
```

Here is another example:

```
import React, { useState } from 'react';

export default function Form() {
  const [firstName, setFirstName] = useState('');

  const handleSubmit = (e) => {
    setFirstName(e.target.value);
    console.log(e.target.value, 'changed!');
  }

  return (
    <form>
      <input value={firstName} onChange={handleSubmit}/>
    </form>
  );
}
```

The second example looks much cleaner and more readable compared to the first one. So always reduce JavaScript in JSX by creating separate JavaScript functions, especially when it comes to DOM events handlers.

2.4.1. Always use restructuring

DE structuring is one of the important JavaScript ES6 features. It allows us to restructure objects and arrays as a way to reduce code syntax. As a result, this feature makes the code cleaner and easy to read. Sometimes you could even pass objects as props. That object can also be difficult to access, especially if it contains many nested properties.

2.4.2. Conditional rendering

When it comes to conditional rendering in React there are different options. You can use the ternary operator, IF statements and short-circuiting. But you should know when to use each one of them. For example, when it comes to one condition, it is always better to use short-circuiting. On the other hand, it is much cleaner to use the ternary operator if you want to render things based on different conditions (two conditions).

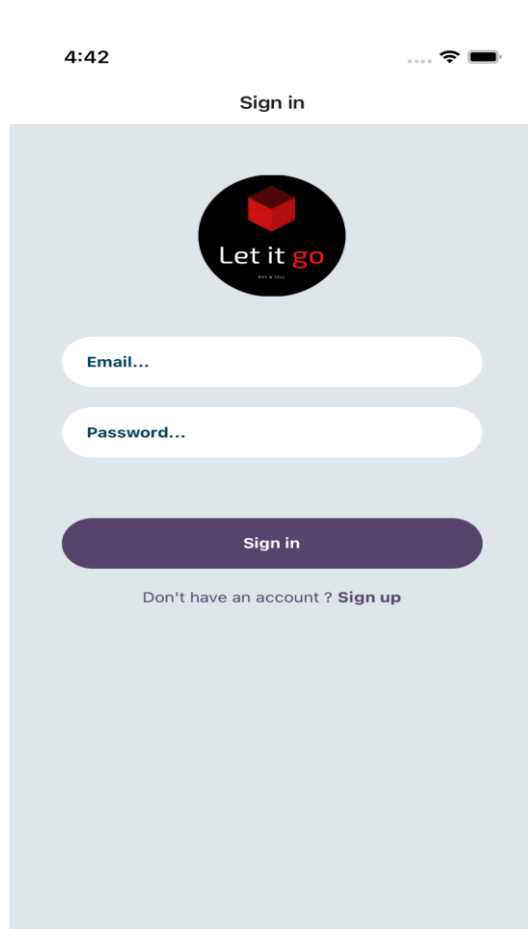


Figure 3
Sign in Page

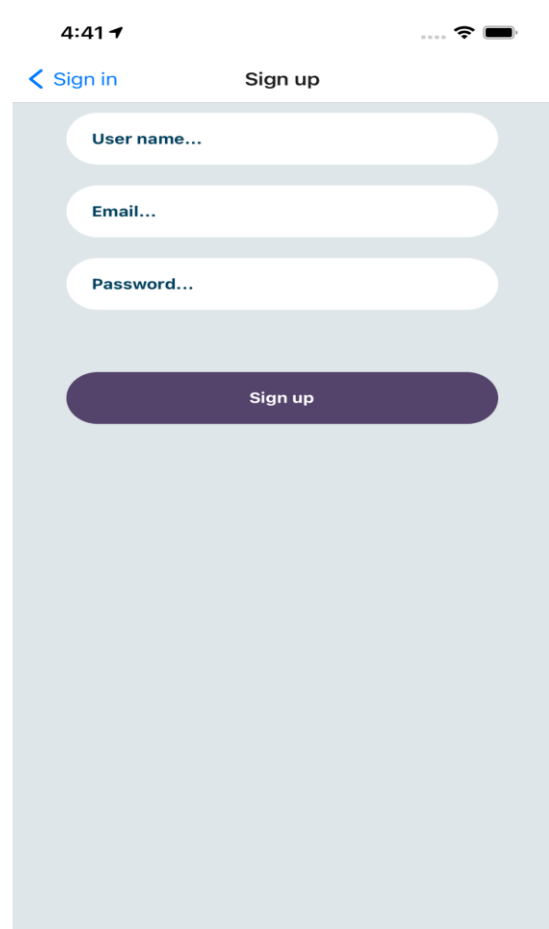


Figure 4

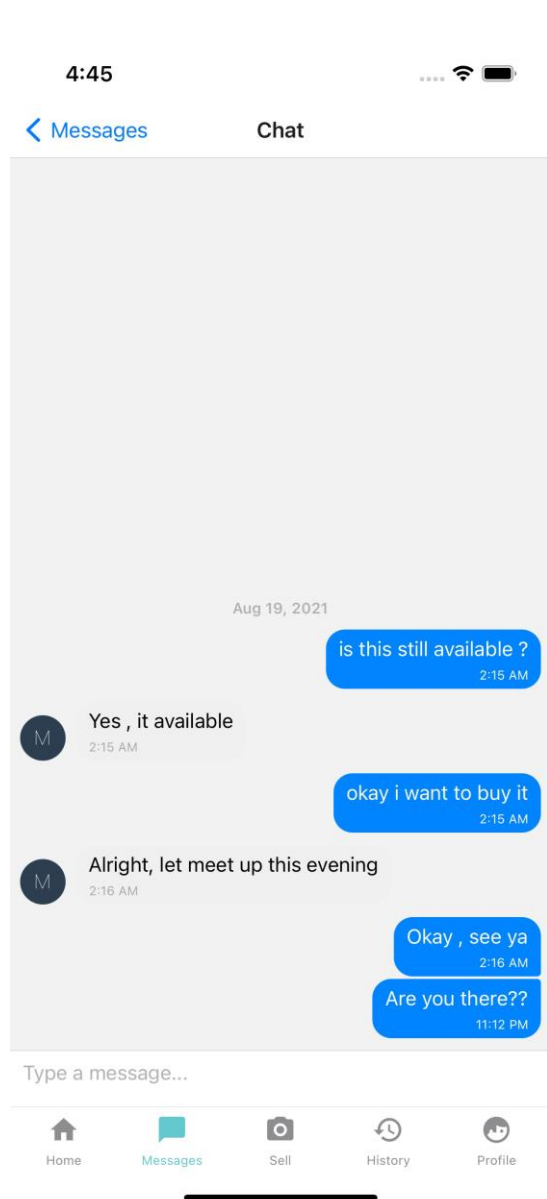


Figure 5
Chatting Page

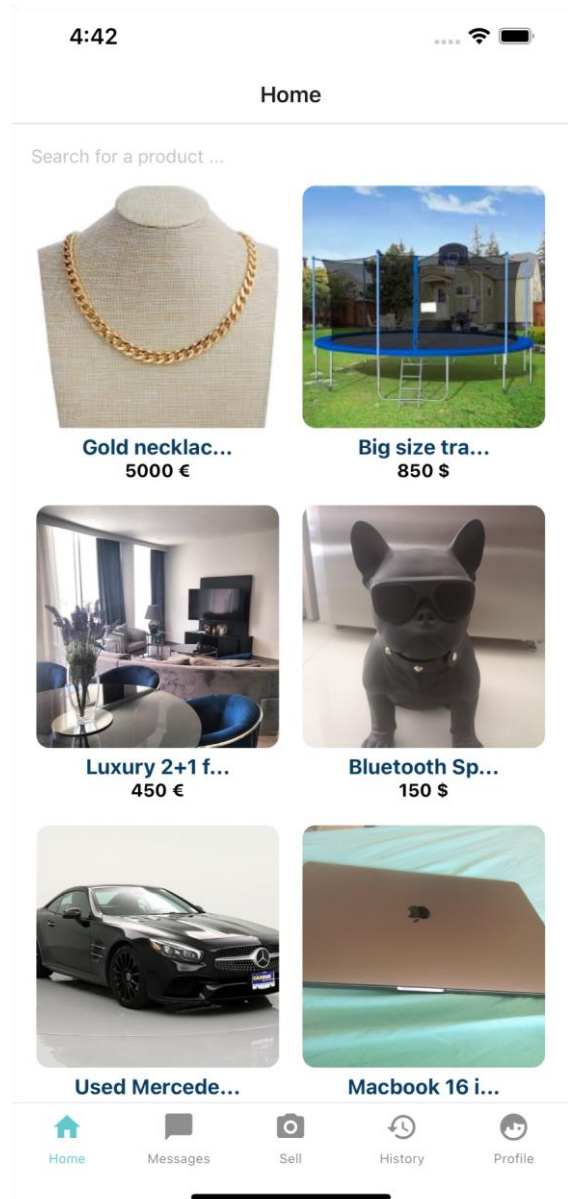


Figure 6
Surfing Page

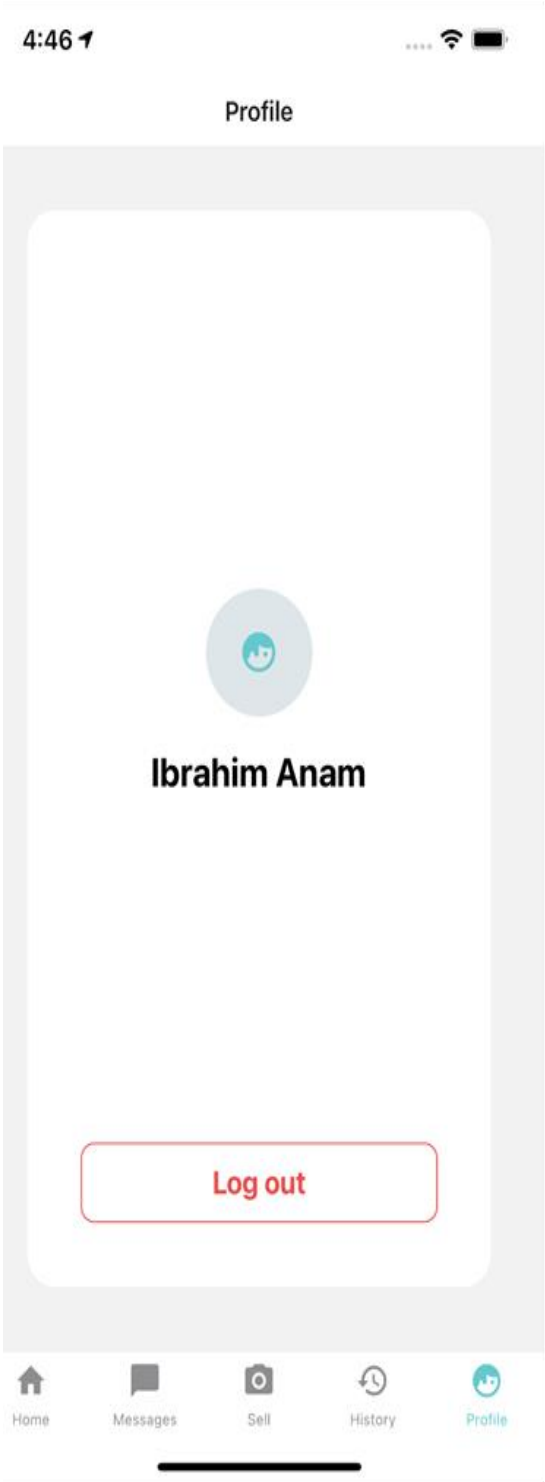


Figure 7
Logout Page

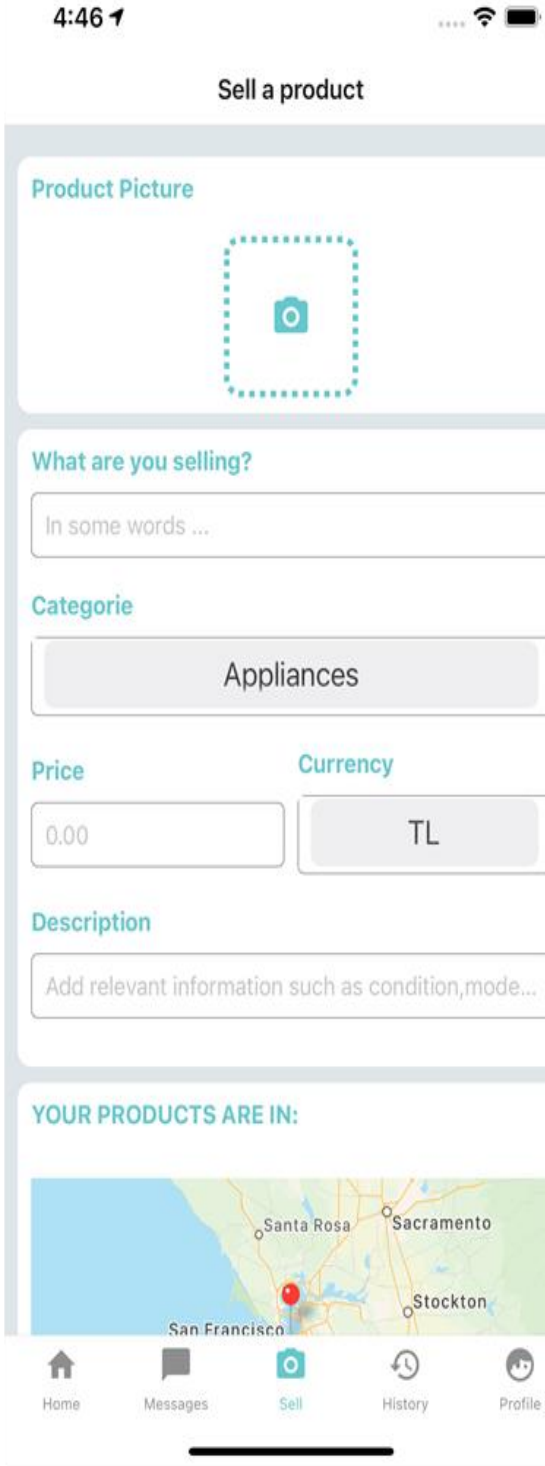


Figure 8
Product Upload Page

3. Discussion

One of the primary problems with current systems is that they employ traditional user interfaces and continuous server post-backs, which provide users with a non-interactive environment. Each post-back makes a call to the server, gets the answer and then refreshes the entire web form to show the outcome. In this circumstance, a further trade-off is introduced, delaying the publication of the result. A search engine only shows results, preventing users from further filtering them using different criteria, and usage of archaic, inefficient and unfriendly interfaces (Salama et al., 2020).

The purpose of this online shopping web application is to address this problem by enabling users to experiment with the search tool, create various combinatorial search criteria to conduct a thorough search and provide an interactive interface that enables users to quickly interact with different application features (Zhao & Balagué, 2015). Additionally, a search engine enables customers to easily and quickly locate items that satisfy their particular requirements. Based on the search term, the search engine would present a list of items, which the user could then filter based on several criteria.

The open-source mobile application framework React Native was developed by Facebook, Inc. by allowing developers to leverage the Reacts framework in addition to native platform features. It is used to create applications for Android, Android TV, iOS, macOS, Web, Windows and UWP. Expo is a platform and framework for all types of React apps. You can create, build, deploy and iterate fast on iOS, Android and web apps using the same JavaScript/TypeScript codebase thanks to a collection of tools and services developed around React Native and native platforms. After understanding the requirement for thorough documentation, all operations are implemented using a software engineering technique (Karakaya, 2022). You can better grasp the challenges of the System Development Life Cycle by working in a real-world environment.

4. Conclusion

The main objective of the proposed system was to develop an extensive computerised system that can capture, assemble and analyse data while also assessing the effectiveness of the program. To manage product records and other customer data, the shopping project calls for the development of a shopping system. How users may make purchases through the website depends on their login information and password. The techniques used were coding, input design and database design (Firebase).

This capstone project's objective is to develop a user-friendly web-based interface that enables users to search for items, peruse in-depth descriptions and submit orders, a search engine that enables consumers to easily and quickly identify things that are suitable for their particular requirements. Depending on the search term, the search engine will present a list of items, which the user may further filter based on several criteria.

The virtual items that sellers have uploaded can be seen at any time or deleted at their discretion. The product's detailed specification is available for reading by the user. In this circumstance, a further trade-off is introduced, delaying the publication of the result, a search engine that only shows results, preventing users from further filtering them using different criteria, and usage of archaic, inefficient and unfriendly interfaces.

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