Abstract

I completed my internship at E-Rental Pvt. Ltd., Mumbai. My internship was remote that is online mode. During my internship period of eight weeks, I learnt about Reactjs, API's some part of SpringBoot. In reactjs, learnt about how to develop a interactive and optimise user interface. how to take the user input from user interface and after taking input how to send it to back-end by using APIs (fetch in reactJs).How to render pages according to authentication system of website. How to create session for user when user login to website. And how to erase the session or destroy the session when user log out from the website. I have learnt about their various components, working, implementations, etc. And during my internship learnt how to handle deadlines, how to work under pressure, how to work in team,how to make decisions and complete goals, how to take the lead on assigned projects. The following report presents my learning from my internship. After completion of my internship, i am able to develop websites or can work on full stack web development. In future this internship can help me a lot in my software engineering job. It can give me confidence in my future work, because already work on some real life project .

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List of acronyms

1. HTML - Hypertext Markup Language
2. JS - JavaScript
3. API - Application programming interface
4. UI - User Interface
5. DB - Data Base
6. OOPs - Object Oriented Programming
7. JSX - stands for JavaScript XML
8. RDBMS - Relational Database Management System

1 Chapter

1.1 Introduction

Full stack web developer is consists of front-end development, back-end development and data base.
Front-end web development is the act of converting information into a graphical interface for clients to view and interact with data through computerized collaboration using HTML, CSS, ReactJS.Front-end web development, otherwise called client side enhancement, is the act of creating HTML, CSS, and JavaScript(REACT) for a site or web application so that the customer can view and interact with them directly. Testing related to front end improvement is that the tools and methods used to alter the front finish of a site are always changing, so the engineer needs to be constantly aware of how the field is building.
Back-end developers are the experts who build and maintain the mechanisms that process data and perform actions on websites. Unlike front-end developers, who control everything you can see on a website, back-end developers are involved in data storage, security, and other server-side functions that you cannot see.[3]

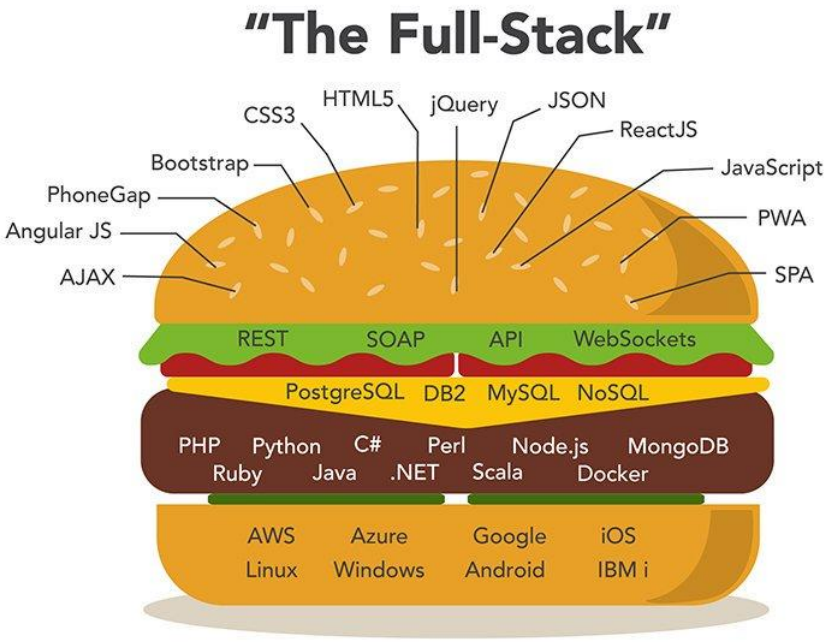

Figure 1: Full stack developer [4]

1.2 Application or Problem Statement

In this internship we have to developed a website for rental items. so the project idea is that we have many product and we want to provide these product on rent, for making this process online we want to develop a website. so in this internship, i worked on fronted and some part of back-end to develop the website.

1.3 Importance Of The Work

A full stack developer intern is responsible for web development at the client end and server end. Completing a full stack development internship is a great way to learn new skills and start your journey as a professional full stack developer.Utilizing internships is a great way to build your resume and develop skills that can be emphasized in your resume for future jobs. When you are applying for a Training Internship, make sure to highlight any special skills or talents that can make you stand apart from the rest of the applicants so that you have an improved chance of landing the position.

1.4 Motivation

Experience the direct process of making a business sector focused on design to learn joint effort based planning with co-promoters. Finally picking out a website specialist in your market. Towards the beginning, I build as a step to work in the full stack developer structure.

1.5 Internship Objective

1) Internships are generally thought of to be reserved for college students looking to gain experience in a particular field. However, a wide array of people can benefit from Training Internships in order to receive real world experience and develop their skills.

2) An objective for this position should emphasize the skills you already possess in the area and your interest in learning more.

3) Some internship is used to allow individuals to perform scientific research while others are specifically designed to allow people to gain first-hand experience working.

4) Learning the related dialects in subtleties.

5) Completing the undertaking in time.

6) Gaining consumer loyalties with expert work.

7) Experience advanced patterns and necessities of website composition.

8) Recognize and unravel configuration issues.

9) Utilizing internships is a great way to build your resume and develop skills that can be emphasized in your resume for future jobs. When you are applying for a Training Internship, make sure to highlight any special skills or talents that can make you stand apart from the rest of the applicants so that you have an improved chance of landing the position.

1.6 Contribution

In this internship, my contribution mainly in front-end part and some part of back-end. I mainly involve in UI flow where i need to develop the attractive and efficient UI for the users.And some time i use to fetch the data from the back-end by using API, just take the example of cart, if user want to see items in his cart so the items in his cart is fetched by using API from the back-end and back-end fetch the data from data base.

1.7 Introduction To The Company

A digital marketplace for rental items named as Erentals which is startup
Website: `http://erentals.in`
LinkedIn: `https://www.linkedin.com/company/erentals/`
Industry: Equipment Rental Services
Company size: 2-10 employees Includes members with current employer listed as eRentals, including part-time roles.
Headquarters: Mumbai, Maharashtra

2 Chapter

2.1 Background

React js

The React. js is an open source JavaScript framework and library developed by Facebook's engineers. It is used to quickly and efficiently develop interactive user interfaces and web applications with significantly less code than vanilla JavaScript [1]. Most Fortune 500 companies use Reactjs.

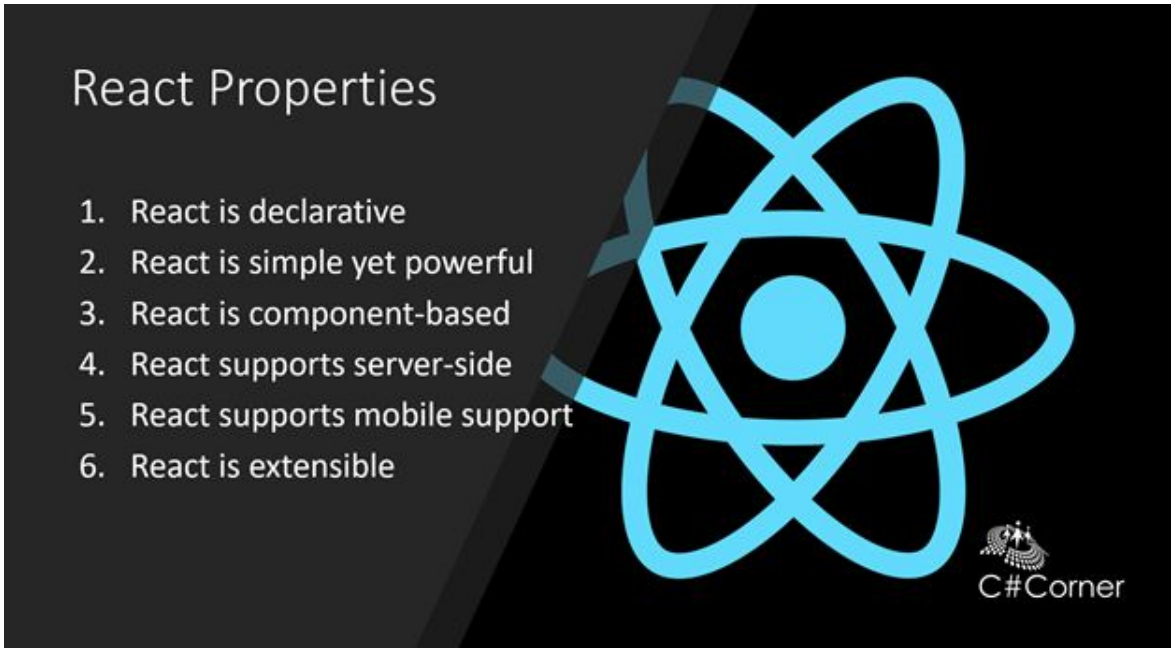

Figure 2: React properties [2]

It is used to handle the view layer for web and mobile apps. React also allows us to create reusable UI components. React was first created by Jordan Walke, a software engineer working for Facebook. React was first deployed on Facebook's Newsfeed in 2011 and on Instagram.com in 2012.
React allows developers to build large web applications that can change data without having to reload the page. The main aim of React is to be fast, scalable and simple. It only works on the user interface in the application. It is analogous to the view in the MVC template. It can be used in conjunction with other JavaScript libraries or frameworks, such as AngularJS in MVC.

JSX

In React, instead of using regular JavaScript for templating, it uses JSX. JSX is a simple JavaScript that allows to quote HTML and use these HTML tag syntax to render subcomponents. HTML syntax is processed in JavaScript calls to the React framework. We can also write in pure old JavaScript.
In other words JSX allows us to write HTML elements in JavaScript and place them in the DOM without any createElement() and/or appendChild() methods.

React Components

Components are independent and reusable bits of code. They serve the same purpose as JavaScript functions, but operate in isolation and return HTML.
There are two types of components,
1) class components and
2) function components.

React Props

1) Props are arguments passed into React components.
2) Props are passed to components via HTML attributes.
3) React props are like function arguments in JavaScript and attributes in HTML.
4) To send props to a component, use the same syntax as HTML attributes.

React Hooks

Hooks were added to React in version (16.8). Hooks allow function components to access state and other React features. Because of this, class components are usually no longer needed. Hooks allow us to "hook" into React features such as state and lifecycle methods.
1) useState
2) useEffect
3) useRef
4) useContext
5) useCallback
6) useReducer
7) useMemo
8) Custom Hooks

Application Programming Interface (API)

APIs are mechanisms that enable two software components to communicate with each other using a set of definitions and protocols. For example, the weather bureau's software system contains daily weather data. The weather app on your phone "talks" to this system via APIs and shows you daily weather updates on your phone.

How an API works

An API is a set of defined rules that explain how computers or applications communicate with one another. APIs sit between an application and the web server, acting as an intermediary layer that processes data transfer between systems.

Here's how an API works:
1. A client application initiates an API call to retrieve information—also known as a request. This request is processed from an application to the web server via the API's Uniform Resource Identifier (URI) and includes a request verb, headers, and sometimes, a request body.

2. After receiving a valid request, the API makes a call to the external program or web server.

3. The server sends a response to the API with the requested information.

4. The API transfers the data to the initial requesting application.

While the data transfer will differ depending on the web service being used, this process of requests and response all happens through an API. Whereas a user interface is designed for use by humans, APIs are designed for use by a computer or application. APIs offer security by design because their position as middleman facilitates the abstraction of functionality between two systems—the API endpoint decouples the consuming application from the infrastructure providing the service. API calls usually include authorization credentials to reduce the risk of attacks on the server, and an API gateway can limit access to minimize security threats. Also, during the exchange, HTTP headers, cookies, or query string parameters provide additional security layers to the data. For example, consider an API offered by a payment processing service. Customers can enter their card details on the frontend of an application for an ecommerce store. The payment processor doesn't require access to the user's bank account; the API creates a unique token for this transaction

and includes it in the API call to the server. This ensures a higher level of security against potential hacking threats.

Why we need APIs

Whether you're managing existing tools or designing new ones, you can use an application programming interface to simplify the process. Some of the main benefits of APIs include the following:
1) Improved collaboration: The average enterprise uses almost 1,200 cloud applications (link resides outside of IBM), many of which are disconnected. APIs enable integration so that these platforms and apps can seamlessly communicate with one another. Through this integration, companies can automate workflows and improve workplace collaboration. Without APIs, many enterprises would lack connectivity and would suffer from informational silos that compromise productivity and performance.

2) Easier innovation: APIs offer flexibility, allowing companies to make connections with new business partners, offer new services to their existing market, and, ultimately, access new markets that can generate massive returns and drive digital transformation. For example, the company Stripe began as an API with just seven lines of code. The company has since partnered with many of the biggest enterprises in the world, diversified to offer loans and corporate cards, and was recently valued at USD 36 billion (link resides outside of IBM).

3) Data monetization: Many companies choose to offer APIs for free, at least initially, so that they can build an audience of developers around their brand and forge relationships with potential business partners. However, if the API grants access to valuable digital assets, you can monetize it by selling access (this is referred to as the API economy). When AccuWeather (link resides outside of IBM) launched its self-service developer portal to sell a wide range of API packages, it took just 10 months to attract 24,000 developers, selling 11,000 API keys and building a thriving community in the process.

4) Added security: As noted above, APIs create an added layer of protection between your data and a server. Developers can further strengthen API security by using tokens, signatures, and Transport Layer Security (TLS) encryption; by implementing API gateways to manage and authenticate traffic; and by practicing effective API

management.

3 Chapter

3.1 Work Done

Most of the work have done in my internship is in front-end development using HTML, CSS, ReactJS. After creating the static website we have to connect it with back-end. So that we can make our website dynamic. That mean we have to take the data from back-end and so it in front-end. So for connecting the front-end to back-end we used APIs. In react we use fetch API to get the data from back-end.

Some time there may be errors while fetching the data so these errors are tested by me in front-end part by using chrome inspect.errors comes due to formate miss match at the both end front-end and back-end and there may be errors of different data type at both the ends

Folder structure:

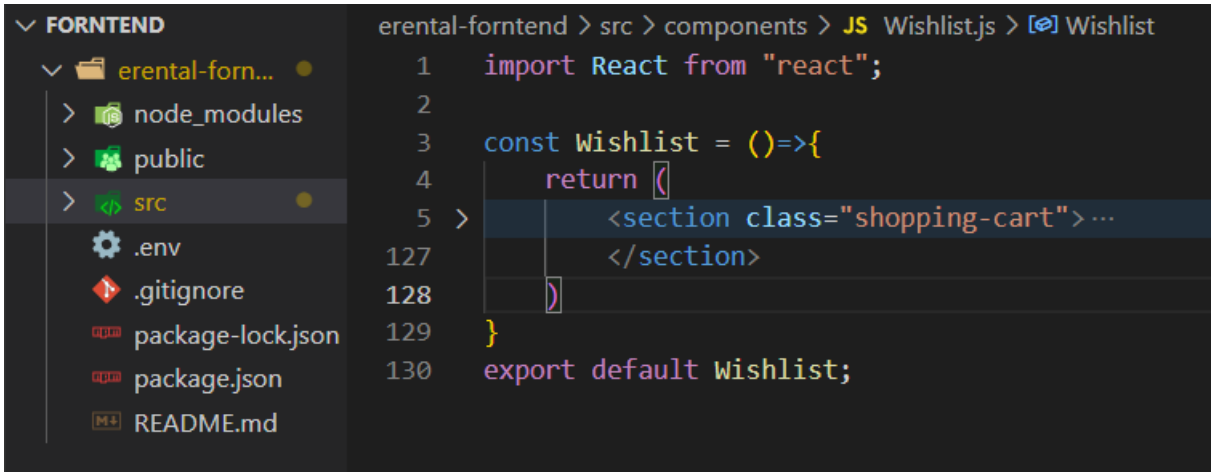

Figure 3: Folder structure

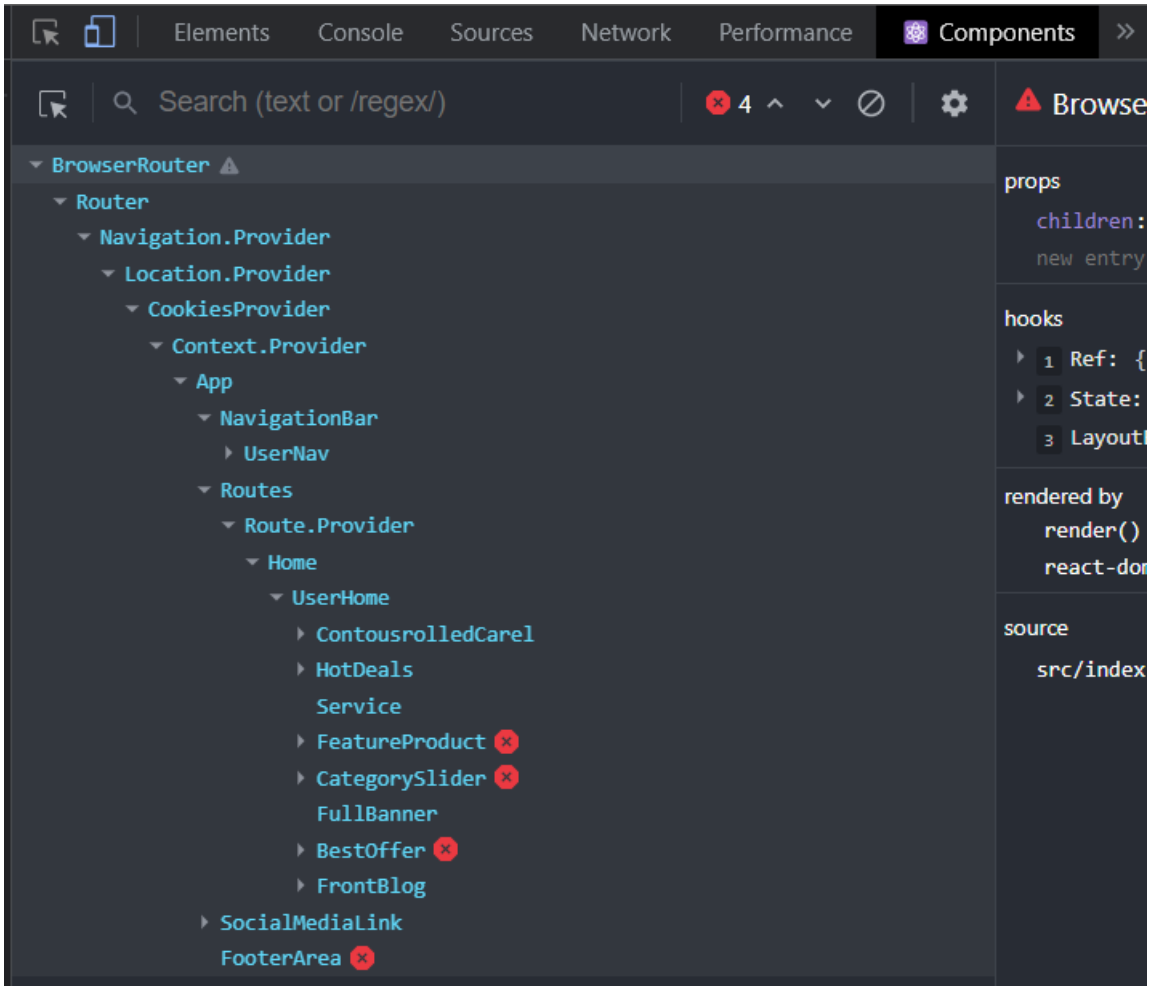

Figure 4: Components structure

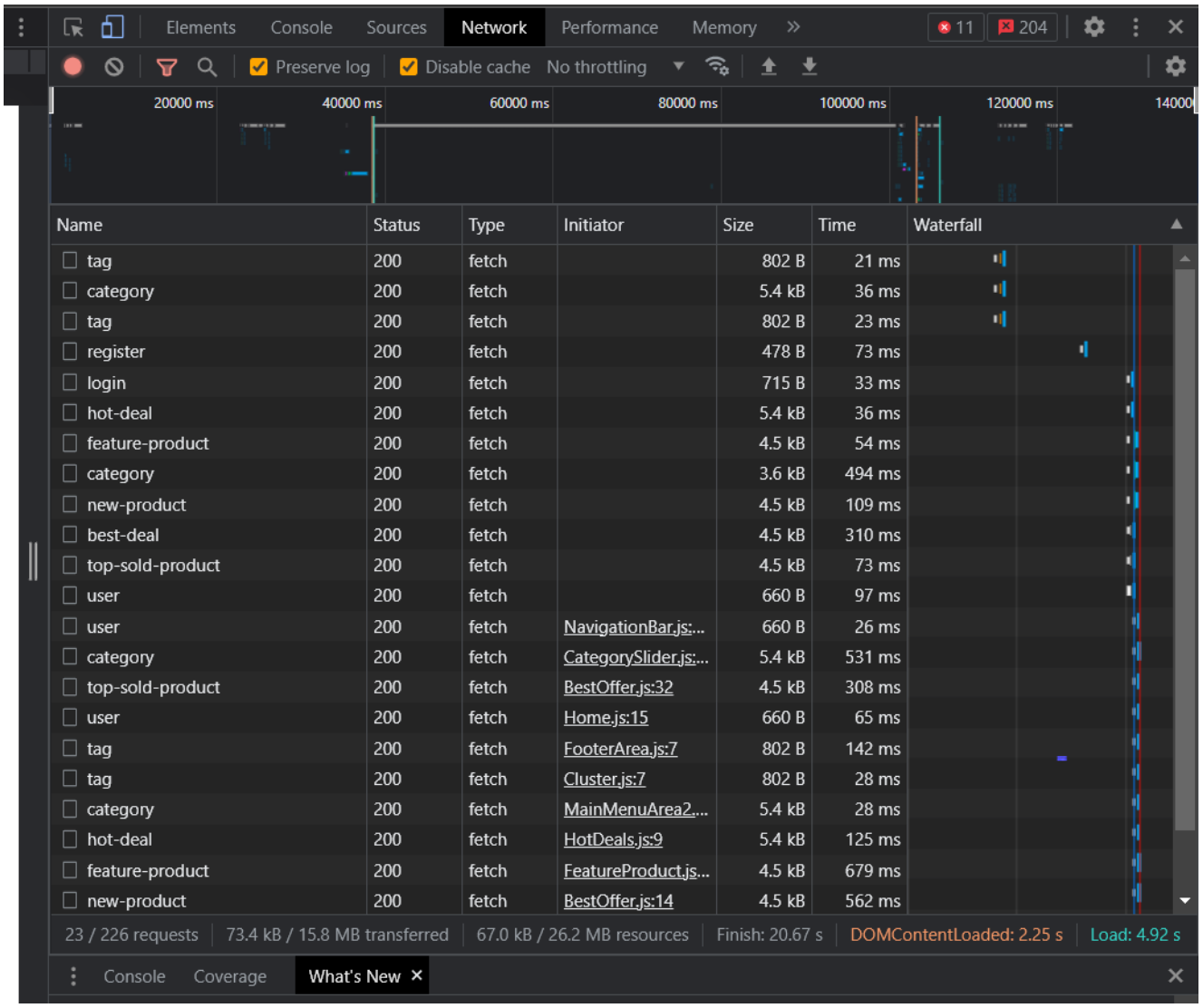

Figure 5: API testing

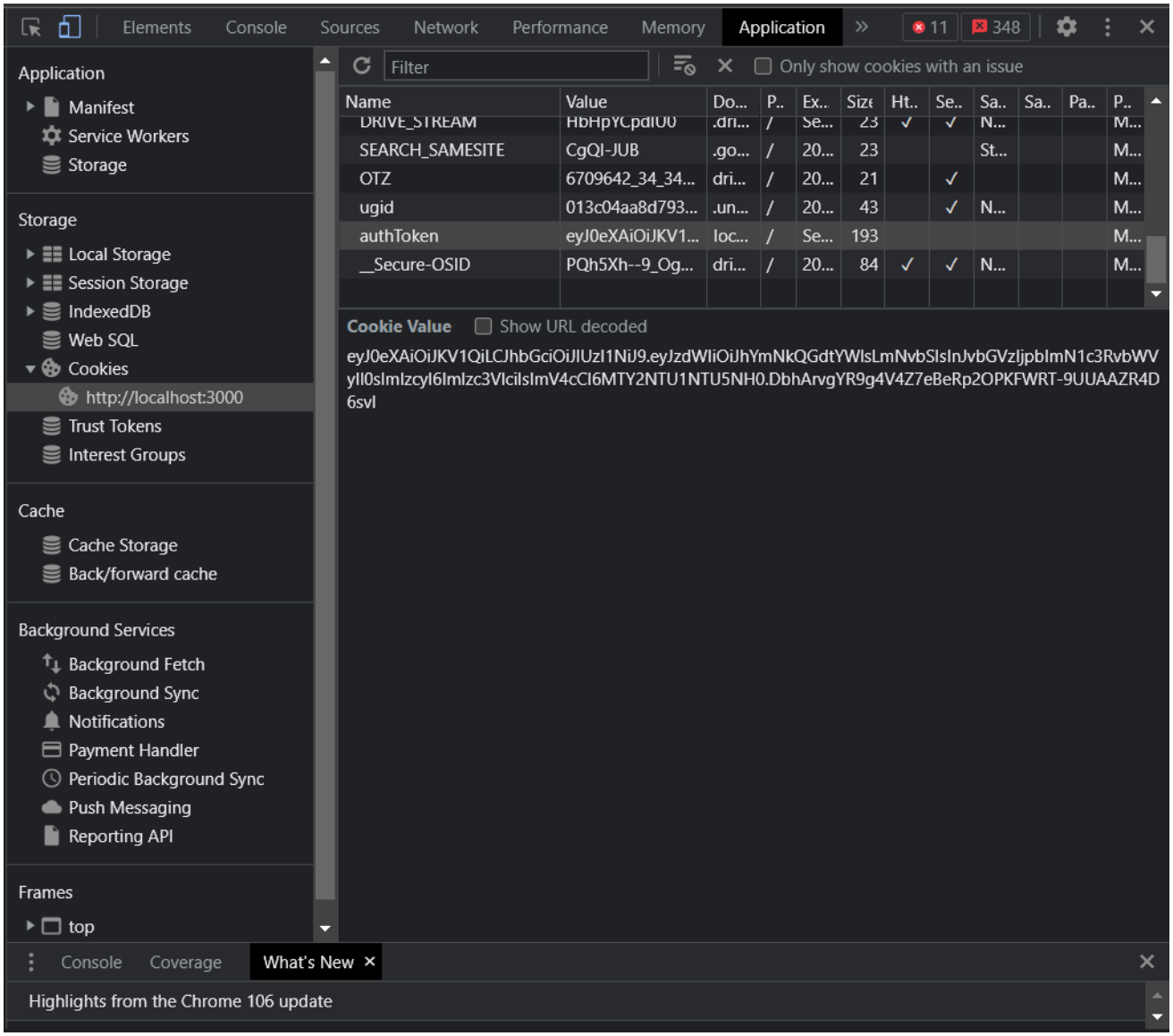

Figure 6: Cookie

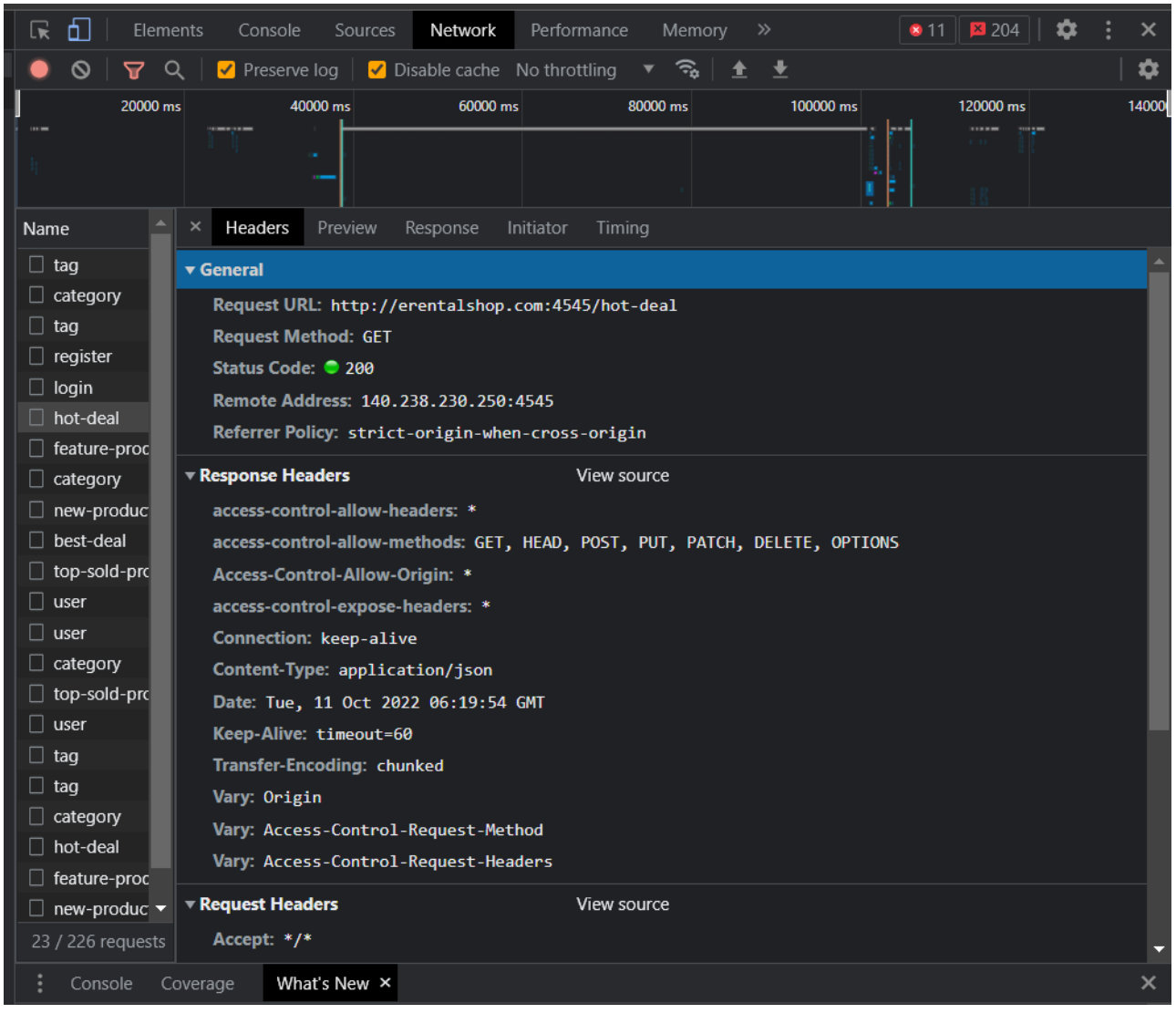

Figure 7: API headers

4 Chapter

4.1 Results and Analysis

On completion of this internship we have developed a website using ReactJS and Spring Boot. Website is similar to e-commerce websites like Amazon and flipkart. Which provides the products on rent for specific periods of time instead of selling the product.

User can't add products into cart without login and user trying to open Cart then it will redirect to login page and if user is not already registered then user can go registration who's link is available below the login Page. after login user redirect to home page and now user can add items to cart and after adding items to cart user can place the order but if cart is empty then user cant place order.

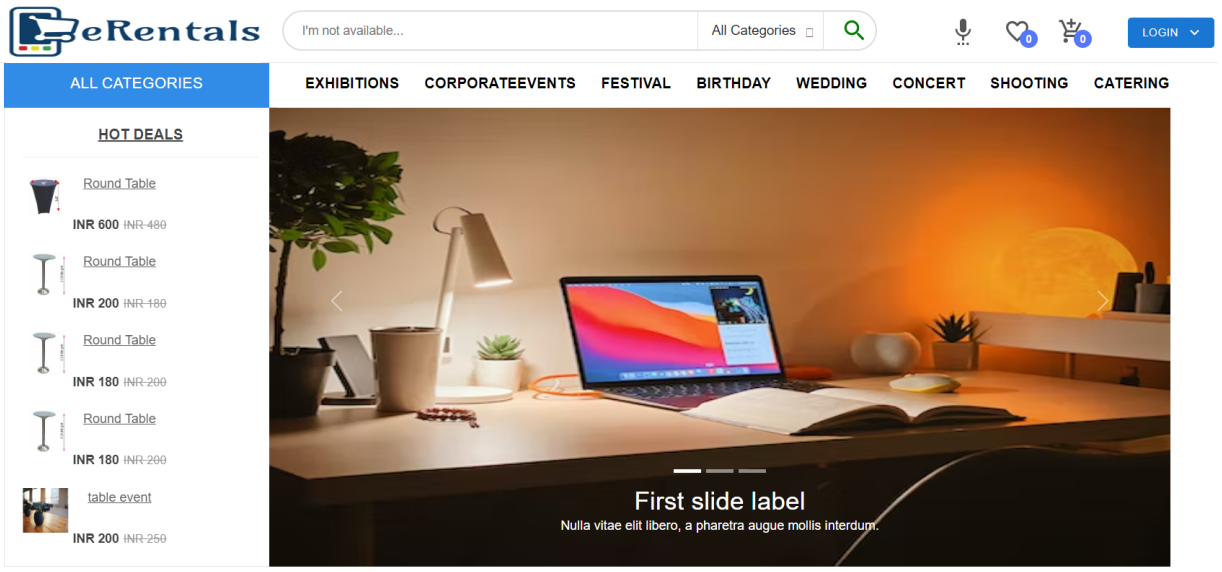

Figure 8: Home page[5]

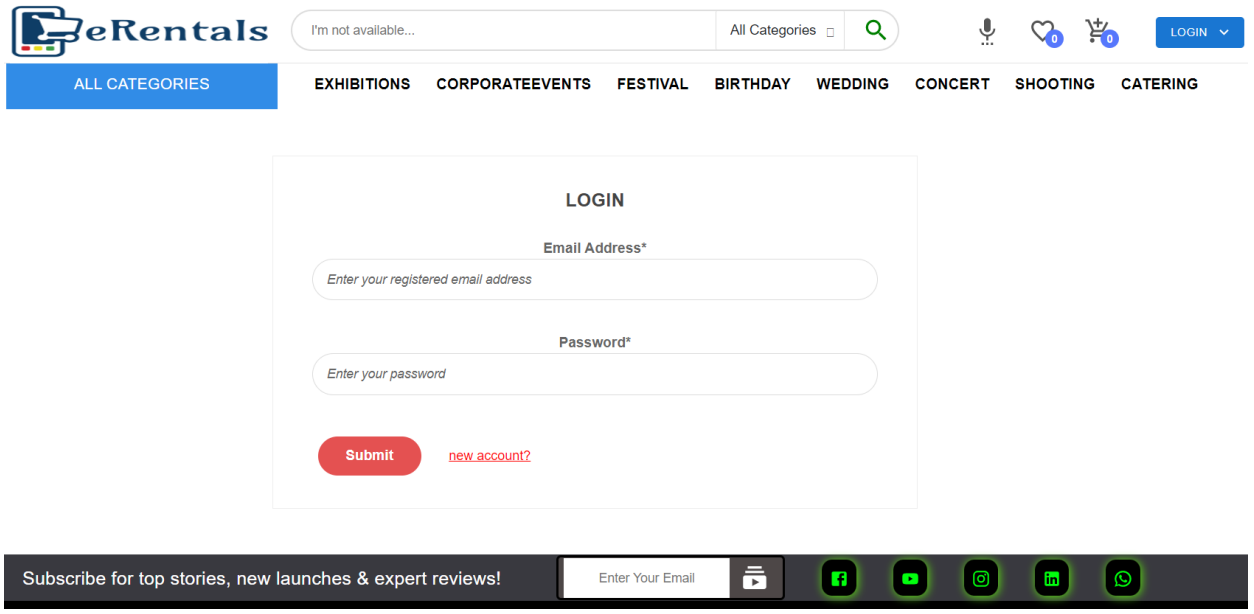

Figure 9: Login page[5]

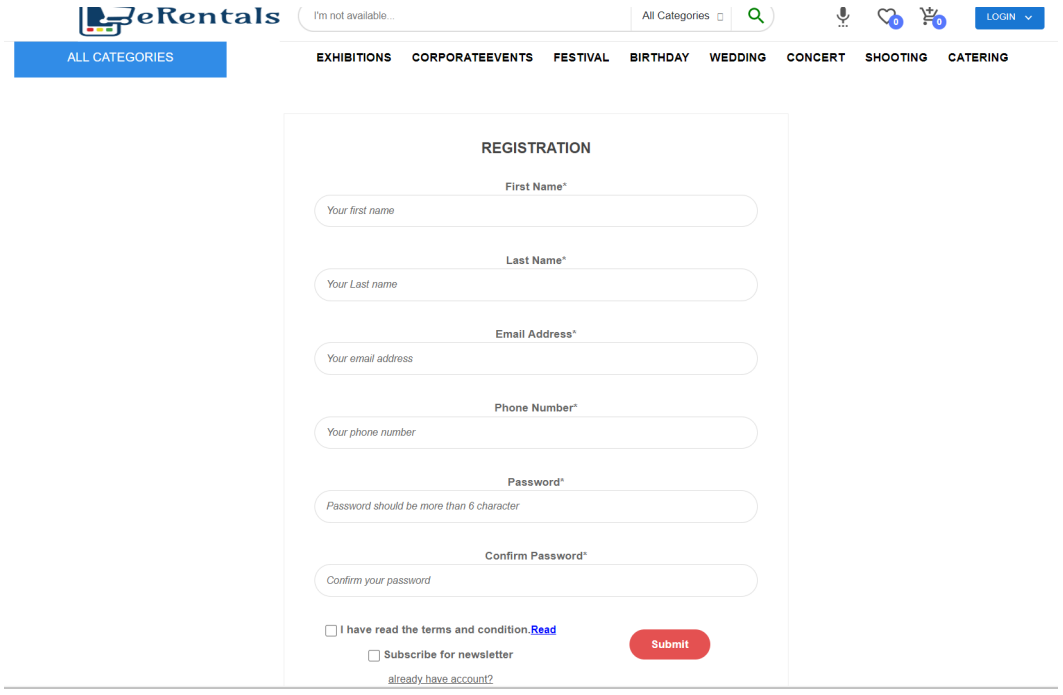

Figure 10: Register page[5]

5 Chapter

5.1 Conclusion

On completion of summer inteship, learnt about Reactjs, API's some part of Spring-Boot. In reactjs, learnt about how to develop a interactive and optimise user interface. how to take the user input from user interface and after taking input how to send it to back-end by using APIs (fetch in reactJs).How to render pages according to authentication system of website. How to create session for user when user login to website. And how to erase the session or destroy the session when user log out from the website. I have learnt about their various components, working, implementations, etc. And during my internship learnt how to handle deadlines, how to work under pressure, how to work in team,how to make decisions and complete goals, how to take the lead on assigned projects. The following report presents my learning from my internship. After completion of my internship, i am able to develop websites or can work on full stack web development. In future this internship can help me a lot in my software engineering job. It can give me confidence in my future work, because already work on some real life project .

I can say that this training was a great experience. Thanks to the project. I acquired deeper knowledge concerning my technical skills. At present every website have front-end design which mostly we interact also called as UI/UX but functionality in website (like Sign-In/Sign-Out) which is done by Backend Developer. In my summer Internship we designed E-Commerce for renting product and I worked as Full stack developer worked on Reactjs And some part of Spring boot Framework, also used OOPs and readable code.

Learning Outcome

1) JavaScript Language
2) Reactjs Framework
3) Java Programming Language
4) REST API
5) Oops Concept implementation in real project

At present website is a common part of web applications, and Reactjs is one of the most popular framework for web designing used by professionals worldwide. If we surf internet. we can see millions of websites designed with Frontend and Backend. This training taught me how big and interactive websites are developed and what

all features make websites more appealing and easier to use to the user. Creating a web page also gave me hands on learning and made my concepts that I learnt more clear and strong.
There are huge opportunities available for the students who want to work in this field. Many private and public organizations hire web designer for their online work and website development. With the rapid advent of online industry. the demand of web development professionals is increasing. and this has created a huge job opportunity for the aspirants in the upcoming days.

5.2 Future Work

We can make this website more responsive to all different type of devices. We can do some optimisation and add some more functionalities in the website. Currently it is not authenticated with google login and other login authentication. Currently the admin part of website is not so much good we can work on that part also. Currently the server of website is to slow we can make some optimisation on the server also.

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