Over The Top (OTT) Platform using Reactjs

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Abstract: Televisions used to be a household necessity. It's now little more than a fixture taking up space. TV viewing has become far too common. We have to pay for a slew of channels, just to get repeat episodes, stale content, and obnoxious advertising in between. By 2023, 34.9 million American households are predicted to terminate their cable contracts. The desire for content is voracious during the lockdown. Binge-watching was a weekend activity before the coronavirus took over the country. However, with the introduction of multiple digital channels, binge-watching has become the new norm. Video live streaming applications have undeniably altered the television industry and are in high demand in the market. This project proposes an Ott platform for the ui/ux.

Index terms: Firebase, stripe payment, react js, design, authentication.

I. Introduction

With improved networks, better internet access, and mobile devices capable of multimedia services, Indian subscribers are becoming more and more prevalent on over-the-top (OTT) platforms. The growth of new subscribers coming from Tier I and Tier II cities is responsible for this increase in OTT consumption in India.

All media and entertainment outlets' focus. Numerous media and entertainment outlets have started their own platforms or are attempting to work with other platforms to stream their content in response to the growing demand. In India, the OTT market is anticipated to grow significantly during the next five years. Disney+ Hot star, Amazon Prime Video, and Netflix currently have the largest user bases for over-the-top services in India. However, there are a number of local OTTs supported by production houses. With improved networks, better internet access, and mobile devices capable of multimedia services, Indian subscribers are becoming more and more prevalent on over-the-top (OTT) platforms. The growth of new subscribers coming from Tier I and Tier II cities is responsible for this increase in OTT consumption in India.

Such as Sony LIV, Voot , Zee5, Eros Now, and AL Balaji, which are vying for market share against these big competitors globally. People have stayed at home as a result of the COVID-19 pandemic and the ensuing lockdown, increasing the number of subscribers for these OTT platforms. Additionally, since the lockdown caused by the coronavirus hampered the theatrical experience, producers are moving new releases to OTT platforms. With improved networks, better internet access, and mobile devices capable of multimedia services, Indian subscribers are becoming more and more prevalent on over-the-top (OTT) platforms. The growth of new subscribers coming from Tier I and Tier II cities is responsible for this increase in OTT consumption in India [2].

A digital media service that is given directly to audiences over the Internet is known as an OTT (over-the-top) media platform. OTT avoids the businesses that formerly acted as a controller or distributor of this content, including cable, radio, and satellite television channels. It has also been applied to cell phones with no carriers, who charge for all communications as data in order to prevent monopolistic competition. Another term for OTT is a new breed of contemporary television networks that, like traditional satellite or cable TV providers, deliver live broadcasts of linear specialty channels over the open Internet as opposed to a closed, exclusive network of private network of proprietary equipment like setup box.

Over-the-top (OTT) is the video content that is provided over all types of devices which include the traditional closed TVs. When using OTT, customers don't want to pay a TV cable organization to watch content, as most of it is accessible via the internet. With improved networks, better internet access, and mobile devices capable of multimedia services, Indian subscribers are becoming more and more prevalent on over-the-top (OTT) platforms. The growth of new subscribers coming from Tier I and Tier II cities is responsible for this increase in OTT consumption in India [1].

Almost all industries have been adversely impacted by the COVID-19 epidemic in various ways. During these times, the OTT platforms have gone through changes and advanced to the next stage. The use of has increased across all age groups, not just among young people. worldwide entertainment has been satisfied through these platforms which made the OTT wider acceptance.

The mechanism through which internet users watch content like as films and web series directly is known as the Ott platform. The purpose of this platform is to create a web-based interface for the OTT streaming website. This website will be simple to use, making it enjoyable for consumers to watch.

The main objectives of this website are to create an intuitive web interface that allows users to search for films, read a detailed description of the film, and watch the film.

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II. LITERATURE SURVEY

The proliferation of internet-enabled digital devices that can support digitized information has led to an increase in the consumption of digital content internationally, according to the Deloitte research "Digital Media: Rise of on-demand Content." This tendency is visible in India on a variety of channels, including audio, visual, news, music, etc. It states that an Indian teenager, on

The average person devotes 14% of their time and over 17% of their monthly budget to entertainment. An internet user in India consumes 6.2 hours of content on a daily average, with 21% of that time going towards audio-visual entertainment. a change in consumer behavior about a preference for OTT material and convenient access to huge libraries

Manoj Kumar Patel (2020): According to the findings, OTT platforms are evolving and have a significant advantage over traditional entertainment channels. The study claims that the rise of OTT will undoubtedly increase in 8 India due to its cost effectiveness and continual development of content richness, based on an online survey with 95 percent of the primary stakeholders aged 20 to 40 years. Finally, the author believes that the rapid rise of streaming media in India is due to the freedom it offers customers to access information at any time, regardless of location.

Prof. Ripal Madhani and Dr. Vidya Nakhate (2020): The study compares viewing behavior across traditional television channels and over-the-top video platforms in Maharashtra. The article examines the behavioral characteristics of traditional and OTT viewers for a total of 110 persons utilizing a structured questionnaire. In conclusion, the survey find that consumers prefer OTT platforms to traditional television channels because they offer greater convenience in terms of time and locate lower data costs, and instant access to high-quality content.

Meghan McAdams (2019): "Understanding the Modern Media Streaming Landscape: What is OTT." Due to their involvement with so many channels, % of OTT users are experiencing "subscription fatigue." It was also observed that the potential for comparable specialist offers would not be affected by the emergence of expansive platforms like Disney Plus.

2019: Brett Hutchins According to him, the growth of media sort websites and the market for coverage rights will be disrupted by live streaming services. Tensent Amazon Prime Video, and DAZN are establishing new standards for the availability and curation of sports media, emphasizing a significant change in the media platforms that broadcast live content as well as the global market for sports broadcast rights.

P Singh (2019): P Singh's study, "New Media as a Change Agent of Indian Television and Film: A Study of Over-the-Top Platforms," examines how these new digital platforms are influencing Indian television and film as well as how young people use them to view videos.

According to study, young people enjoy viewing OTT web series and films. The typical OTT watcher watches for two hours, with midnight viewing being the most common. Young people choose over-the-top (OTT) over traditional television due to the service's accessibility to international programming.

Paramveer Singh (2019): According to 2019 research, Jio, Netflix, and Hot star are the most widely used services among young people in India. Youth are more likely to use these sites' free trials, watch at night, and favor web series over films. Over-the-top applications, according to the respondents, are altering Indian media consumption practices.

Drs. Priya Grover and Sabyasachi Dasgupta (2019): According to the study "UNDERSTANDING ADOPTION FACTORS OF OVER-THE-TOP VIDEO SERVICES AMONG MILLENNIUM CONSUMERS," Indian viewers are lured to OTT content and are willing to pay for simple, limitless access to content that is not time- or location-restricted. It again highlights the unfavorable correlation between OTT's pricing strategy and its level of popularity. In addition to their viewing habits and media choices, another aspect that makes it tough for Indian viewers to choose is data consumption.

Valliappan Raju and Muhammad Farooq (2019): the report demonstrates how OTT services have an impact on telecom companies in the era of transformational marketing. This paper focuses on how the emergence of Over-the-Top (OTT) services like WhatsApp, Messenger, and Telegram, which offer many new features like sharing pictures, videos, file transferring, video calling, group conversations, and so on, has caused a revenue loss for telecom's traditional voice and information sectors. According to the survey, customers are purchasing fixed internet contracts and using OTT for communication, which is reducing the revenue generated by voice and SMS for telecom providers. The analysis found that, on the plus side, OTT services had previously been the primary reason for income decreases.

III. IMPLEMENTATION

1. For creating a website where we are using a backend as Firebase, so we need to create an account in firebase.
2. For design purpose we are using react JS for the better user experience while using the website
3. To implement Firebase Authentication in your ReactJS app so that users can login and register. Firebase provides. Various authentication methods, including email/password authentication, google and other sign-ins.
4. We are using a fire store for storing our data. It is best in the business, by this we can easily retrieve and store data.
5. When you're creating an Ott platform the biggest concern is payment mode it should be more secured so, we are using one of the best payment gateway applications know as stripe payment method [3].
6. We are using video.js or hls.js to implement the streaming functionality. You can store video files in

Firebase Storage and use the streaming libraries to play the videos on the platform.

7. For testing we are using postman for some api testing and basic user interface testing we are just doing manual testing for this project.

VI. RESULTS

Sign up page: Figure 1: This page is used for user to sign up to the application, we are using email id as user identity for Login after the giving the mail user will verify it and verify it and add other personal details.

Figure 1. Sign up page.

Sign in page: Figure 2: This page is used for user to login to the platform and use the website, could be able to login and if we not signed up there is a option for it, once click Login it will check in database whether the user exist if not will throw an error.

Figure 2. Sign in page

Home page: Figure 3: After the login we will reach the home page, here we display all the movie/Tv series.

Poster will be displayed we are fetching these details from firebase DB, depending upon user selection user can watch the movie/series, after clicking on a movie /tv series user will redirect the streaming page.

When you click on any of the movie/series you will redirect to description page of the movie, if you click on play button.

You will reach the stream page where user could watch the movie/tv series.

We use row module so that users could scroll movies from home page.

Figure 3. Home page

Sign out: Figure 4: from the page and edit the details and user as other facility of shifting the profiles to other profiles here you can choose your payment mode there are total three kind of payment modes here depending which ever you choose you will redirect to payment link where you could enter your details of your credit/debit card and also you can could able to sign out from this page after clicking on sign out page

You can change your profile photo if you want to form your computer by browsing the pic, but the pic should be at limited in size.
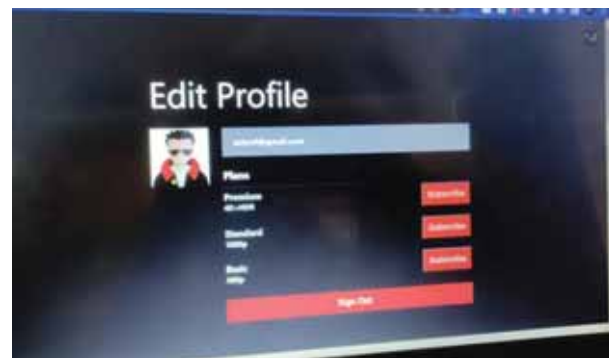

Figure 4. Sign out page.

Payment page: Figure 5: This the page where user will enter his/her credit card details for payment process as we are using payment process it will redirect stripe payment page here is sample of the payment page.
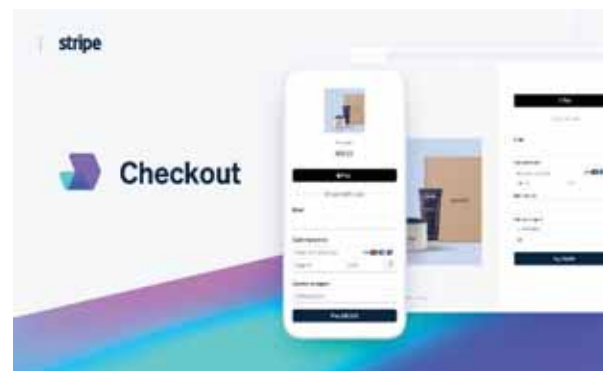

Figure 5. Payment page

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V. CONCLUSIONS

React JS is a popular and widely-used JavaScript library for building user interfaces, and it is well-suited for building complex web applications such as OTT platforms. An OTT platform built with React JS can offer a seamless user experience, with fast loading times and intuitive navigation. To ensure the success of the project, it is important to carefully plan the architecture and design of the platform, as well as to thoroughly test and optimize the performance of the application. Overall, building an OTT platform using React JS can be a challenging and rewarding project that requires a combination of technical skills and creativity.

Growing demand [4] for online video content: With the increasing popularity of video streaming services and the rise of mobile devices, the demand for online video content is expected to continue to grow. Improved user experience: OTT platforms using React JS can offer a seamless user experience, with fast loading times and intuitive navigation, which is essential for engaging and retaining users. Ongoing development and innovation: The React JS community is constantly developing new features and tools to improve the performance, scalability, and functionality of the library, which means that OTT platforms built with React JS can benefit from ongoing development and innovation.

React.js has proven to be a great option for creating OTT (Over-The-Top) systems, in conclusion. React.js's component-based architecture, which is effective and modular, has a number of benefits that make it a good choice for creating OTT platforms that are both reliable and user-friendly.

First of all, React.js offers a high level of maintainability and reusability. Developers can more quickly and easily handle updates and modifications by decomposing the user interface into reusable components. Teams can work efficiently together because of its modularity, with many developers working on various components at the same time.

Second, React.js provides outstanding performance. Faster page loads and better user experiences are made possible by its virtual DOM (Document Object Model), which enables efficient rendering by ensuring that only the required components are updated when changes are made.

This is vital for OTT platforms because they transmit a lot of media content and need to ensure seamless playback.

Redux or React Router are only two examples of the numerous modules and tools in the extensive React.js ecosystem that improve development possibilities. Developers can design complex features like user authentication, personalized recommendations, and content management systems using these technologies, which offer state management, routing, and other crucial functionalities.

Additionally, the React.js community offers fantastic help. Developers can discover a wide range of online resources, tutorials, and forums thanks to the huge and active community. React.js is kept current with the newest ideas and best practices thanks to this active community, which encourages the development of OTT platforms.

In conclusion, React.js provides a great foundation for creating OTT platforms, offering performance, reusability, a wide range of tools, and strong community support. By utilizing these benefits, developers may produce interactive features, responsive and engaging user interfaces, and effective content delivery systems, all of which contribute to an outstanding user experience in the realm of online streaming.

React.js-based OTT platforms have a bright future because of the evolving and growing need for online streaming services. Here are some crucial aspects for advancement and development:

React.js can be used by OTT platforms to give more personalized content recommendations based on user preferences, watching history, and behavior. React.js can be combined with machine learning and AI algorithms to deliver more accurate and pertinent suggestions, increasing user engagement and retention.

Advanced Search and Filtering: React.js can be used to create advanced search and filter options that make it simple for users to locate and discover content based on different factors like genre, language, actors, or release dates. The user experience can be further improved by implementing sophisticated search features, such as voice search or predictive search.

React.js may continue to develop to optimize efficiency and scalability for massive OTT platforms, which brings us to point three. The framework can take advantage of technologies like static site generation or server-side rendering (SSR) to speed up initial page loads and overall performance. React.js may also easily adjust to handle growing user traffic and content catalogue growth.

Seamless Multi-Platform Experience: React.js makes it possible to create user interfaces that are responsive and can change fluidly to fit different devices and screen sizes. OTT platforms can employ React.js to create a uniform and understandable user experience across many platforms as mobile devices, smart TVs, and other connected devices become more prevalent.

Integration with Emerging Technologies: To improve the OTT platform experience, React.js may integrate with emerging technologies. Immersive viewing experiences can be provided, for instance, by incorporating virtual reality (VR) or augmented reality (AR) capabilities. Voice-controlled playback and navigation can be made possible by integration with voice assistants or smart home gadgets.

Accessibility and Inclusivity: React.js offers outstanding assistance with creating inclusive and accessible online applications. OTT platforms can concentrate on enhancing accessibility features like keyboard shortcuts, audio descriptions, and closed captioning.

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