MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Project Report

on

Video Streaming Application

Submitted by:

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Faculty Mentor:

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

MADHAV INSTITUTE OF TECHNOLOGY AND SCIENCE

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A project report submitted in partial fulfilment of the requirement for the degree of

BACHELOR OF TECHNOLOGY

in

COMPUTER SCIENCE AND ENGINEERING

Submitted by:

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CERTIFICATE

This is certified that **Piyush Jharbade** (0901CS191077) has submitted the project report titled Video Streamer under the mentorship of Mr. Mir Shahnawaz Ahmad, in partial fulfilment of the requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering from Madhav Institute of Technology and Science, Gwalior.

09/05/2021

Mr. Mir Shahnawaz Ahmad
Faculty Mentor
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09/05/2021

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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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DECLARATION

I hereby declare that the work being presented in this project report, for the partial fulfilment of requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering at Madhav Institute of Technology & Science, Gwalior is an authenticated and original record of my work under the mentorship of **Mr. Mir Shahnawaz Ahmad, Computer Science and Engineering.**

I declare that I have not submitted the matter embodied in this report for the award of any degree or diploma anywhere else.

Piyush Jharbade
0901CS191077
3rd Year
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The full semester project has proved to be pivotal to my career. I am thankful to my institute, **Madhav Institute of Technology and Science** to allow me to continue my disciplinary/interdisciplinary project as a curriculum requirement, under the provisions of the Flexible Curriculum Scheme (based on the AICTE Model Curriculum 2018), approved by the Academic Council of the institute. I extend my gratitude to the Director of the institute, **Dr. R. K. Pandit** and Dean Academics, **Dr. Manjaree Pandit** for this.

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Abstract

The Video Streaming is an OTT platform media service offered directly to viewers via the Internet. It manages all the information about Movies, TV shows, Web series, Sports. The project is totally built at the administrative end and thus only the administrator is guaranteed access. The purpose of the project is to build an application program to reduce the manual work for managing the Movies, TV shows, Web series, Sports. CURD (Create-Update-Read-Delete) management for system administrator.

Keywords: OTT platform, CURD management.

सार :

वीडियोस्ट्रीमर एक ओटीटी प्लेटफॉर्म मीडिया सेवा है जो दर्शकों को सीधे इंटरनेट के माध्यम से दी जाती है। यह चलचित्र, टीवी शो, वेब सीरीज, खेल के बारे में सभी जानकारी का प्रबंधन करता है। परियोजना पूरी तरह से प्रशासनिक अंत में बनाई गई है और इस प्रकार केवल व्यवस्थापक को ही पहुंच की गारंटी है। प्रोजेक्ट का उद्देश्य मूवी, टीवी शो, वेब सीरीज, स्पोर्ट्स के प्रबंधन के लिए मैनुअल काम को कम करने के लिए एक एप्लिकेशन प्रोग्राम बनाना है। सिस्टम एडमिनिस्ट्रेटर के लिए कर्ड (क्रिएट-अपडेट-रीड-डिलीट) मैनेजमेंट।

कीवर्ड: ओटीटी प्लेटफॉर्म, कर्ड मैनेजमेंट।

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Chapter 1: INTRODUCTION

1.1 INTRODUCTION

The project Videostreaming is a web-based OTT application that allows the administrator to handle all the content online in an efficient manner. Using Interactive GUI anyone can quickly learn to use the complete platform. Video Streamer is your go-to video streaming app for the best of cricket, Hollywood & Bollywood Movies, Indian entertainment, TV shows and News. Enjoy unlimited access to non-stop cricket, blockbuster movies, exclusive shows from India's best filmmakers and storytellers, and watch your favourite TV shows in multiple Indian languages. The project Video Streamer is a web-based application that allows the administrator to handle all the activities online quickly and safely. Using Interactive GUI anyone can quickly learn to use the complete system. This system will give him power and flexibility to manage the entire system from a single online portal.

1.2 AIM

Our proposed system is an OTT platform system that enables ease for the customers. It overcomes the disadvantages of the traditional Video streaming applications. Our platform offers reliable streaming with no buffering or lag time. The interface is intuitive and easy for users of all ages and technical abilities to understand how it works. Good customer service and affordable pricing for our subscription plans. Our system does not require any equipment or technical know-how for installation or setup. It is compatible with any device. Our website has the best data security and privacy. This system also provides a feedback system in which users can rate their experience with our platform. Also, the proposed system can recommend movies, shows, based on the ratings given by the user. The subscription payment can be made online through Razor pay.

1.3 FRONT END

In this Section we will do Analysis of Technologies to use for implementing the project.

1.3.1 HTML

Hypertext Markup Language (HTML) 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 (CSS) and scripting languages such as JavaScript. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as <img /> and <input /> directly introduce content into the page. Other tags such as <p> surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page.

HTML can embed programs written in a scripting language such as JavaScript, which affects the behaviour and content of web pages. Inclusion of CSS defines the look and layout of content. The World Wide Web Consortium (W3C), former maintainer of the HTML and current maintainer of the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.

1.3.2 CSS

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language like HTML.CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file, and reduce complexity and repetition in the structural content.

CSS information can be provided from various sources. These sources can be the web browser, the user and the author. The information from the author can be further classified into inline, media type, importance, selector specificity, rule order, inheritance and property definition. CSS style information can be in a separate document or it can be embedded into an HTML document. Multiple style sheets can be imported. Different styles can be applied depending on the output device being used; for example, the screen version can be quite different from the printed version, so that authors can tailor the presentation appropriately for each medium. The style sheet with the highest priority controls the content display. Declarations not set in the highest priority source are passed on to a source of lower priority, such as the user agent style. The process is called cascading.

One of the goals of CSS is to allow users greater control over presentation. Someone who finds red italic headings difficult to read may apply a different style sheet. Depending on the browser and the web site, a user may choose from various style sheets provided by the designers, or may remove all added styles and view the site using the browser's default styling, or may override just the red italic heading style without altering other attributes.

1.3.3 JavaScript

JavaScript is a high-level, interpreted scripting language that conforms to the ECMAScript specification. JavaScript has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first-class functions. Alongside HTML and CSS, JavaScript is one of the core technologies of the World Wide Web. JavaScript enables interactive web pages and is an essential part of web applications. The vast majority of websites use it, and major web browsers have a dedicated JavaScript engine to execute it. As a multi-paradigm language, JavaScript supports event-driven, functional, and imperative (including object-oriented and prototype-based) programming styles. It has APIs for working with text, arrays, dates, regular expressions, and the DOM, but the language itself does not include any I/O, such as networking, storage, or graphics facilities. It relies upon the host environment in which it is embedded to provide these features.

Initially only implemented client-side in web browsers, JavaScript engines are now embedded in many other types of host software, including server-side in web servers and databases, and in non-web programs such as word processors and PDF software, and in runtime environments that make JavaScript available for writing mobile and desktop applications, including desktop widgets.

The terms Vanilla JavaScript and Vanilla JS refer to JavaScript not extended by any frameworks or additional libraries. Scripts written in Vanilla JS are plain JavaScript code. Google Chrome extensions, Opera's extensions, Apple's Safari 5 extensions, Apple's Dashboard Widgets, Microsoft's Gadgets, Yahoo! Widgets, Google Desktop Gadgets, and Serence Klipfolio are implemented using JavaScript.

1.4 BACK END

1.4.1 MySQL Workbench:

MySQL Workbench is a visual database design tool that integrates SQL development, administration, database design, creation and maintenance into a single integrated development environment for the MySQL database system. Workbench enables developers to develop iOS, Android and Web apps. It provides tools for tracking analytics, reporting and fixing app crashes, creating marketing and product experiments.

Workbench offers a number of services, including:

- Analytics – Google Analytics for Mysql workbench offers free, unlimited reporting on as many as 500 separate events. Analytics presents data about user behaviour in iOS and Android apps, enabling better decision-making about improving performance and app marketing.
- Authentication – Mysql workbench Authentication makes it easy for developers to build secure authentication systems and enhances the sign-in and on boarding experience for users. This feature offers a complete identity solution, supporting email and password accounts, phone auth, as well as Google, Facebook, GitHub, Twitter login and more.
- Realtime database – the Mysql workbench Realtime Database is a database that enables data to be stored and synced between users in real time. The data is synced across all clients in real time and is still available when an app goes offline.
- Performance – Mysql workbench Performance Monitoring service gives developers insight into the performance characteristics of their iOS and Android apps to help them determine where and when the performance of their apps can be improved.

1.4.2 Django Server:

Django is an extremely popular and fully featured server-side web framework, written in Python. This module shows you why Django is one of the most popular web server frameworks, how to set up a development environment, and how to start using it to create your own web applications.

Some features that make Django an ideal framework for web application development are as follows:

- **Super fast**: Django development is extremely fast. Our ideas can take the shape of a product very quickly.
- **Fully loaded**: Django has dozens of projects that can be integrated to carry out common tasks such as user authentication, authorization, and content administration.
- **Versatile**: Django can be used for almost any kind of project, from CMSs to e-commerce apps to on-demand delivery platforms.
- **Secure**: Django also has support to prevent common security issues, including cross-site request forgery, cross-site scripting, SQL injection, and clickjacking.
- **Scalable**: Django websites can scale fast to meet high traffic demands.

1.4.1 jQuery:

jQuery is a small, light-weight and fast JavaScript library. It is cross-platform and supports different types of browsers. It is also referred as write less do more because it takes a lot of common tasks that requires many lines of JavaScript code to accomplish, and binds them into methods that can be called with a single line of code whenever needed. It is also very useful to simplify a lot of the complicated things from JavaScript, like AJAX calls and DOM manipulation.

- jQuery is a small, fast and lightweight JavaScript library.
- jQuery is platform-independent.
- jQuery means "write less do more".
- jQuery simplifies AJAX call and DOM manipulation.

Following are the important features of jQuery :-

- HTML manipulation
- DOM manipulation
- DOM element selection
- CSS manipulation
- Effects and Animations
- Utilities
- AJAX
- HTML event methods
- JSON Parsing

- Extensibility through plug-ins

1.5 Feasibility

1.5.1 Operational Feasibility

In Operational Feasibility the degree of providing service to requirements is analyzed along with how easy the product will be to operate and maintain after deployment. Along with this other operational scopes are determining usability of product, Determining suggested solution by software development team is acceptable or not etc.

The project is feasible in terms of operations as it can be implemented anywhere with internet connectivity and system to process

1.5.2 Economic Feasibility

In the Economic Feasibility study, the cost and benefit of the project are analyzed. This means under this feasibility study a detailed analysis is carried out of what will be the cost of the project for development which includes all required costs for final development like hardware and software resources required, design and development cost and operational cost and so on. After that, it is analyzed whether the project will be beneficial in terms of finance for the organization or not. The project has an economical constraint as the API with more number of request and good internet connectivity require more budget.

1.5.3 Legal Feasibility

In Legal Feasibility study project is analyzed from a legal point of view. This includes analyzing barriers of legal implementation of project, data protection acts or social media laws, project certificate, license, copyright etc. Overall it can be said that Legal Feasibility Study is a study to know if proposed project conform to legal and ethical requirements. The project is feasible legally.
The data and their respective data sources that are helpful for our is discussed below, •Delhi city's major areas and neighbourhoods are provided by the Wikipedia web page.

- Geographical coordinates of the areas are provided by Python's geocoder library.
- Venues in each locality of Delhi city are provided by Foursquare API. The coordinate information is used by the Foursquare API to fetch the venues within the specified radius and venue limits.

Chapter 2 : SOFTWARE REQUIREMENTS SPECIFICATION

2.1 Hardware Requirements

Number	Description
1	PC with 250 GB or more Hard disk.
2	PC with 2 GB RAM.

2.2 Software Requirements

Number	Description	Type
1	Operating System	Windows/ Linux
2	Language	Python
3	Server-Side Programming	Django
4	Database	MySQL Workbench
5	IDE	PyCharm
6	Browser	Google Chrome/ Firefox /EE

Chapter 3: DESIGN & PLANNING

3.1 Software Development Life Cycle Model

3.1.1 WATERFALL MODEL

The waterfall model was selected as the SDLC model due to the following reasons:

- Requirements were very well documented, clear and fixed.
- Technology was adequately understood.
- Simple and easy to understand and use.
- There were no ambiguous requirements.
- Easy to manage due to the rigidity of the model. Each phase has specific deliverables and a review process.
- Clearly defined stages.
- Well understood milestones.

- Easy to arrange tasks.

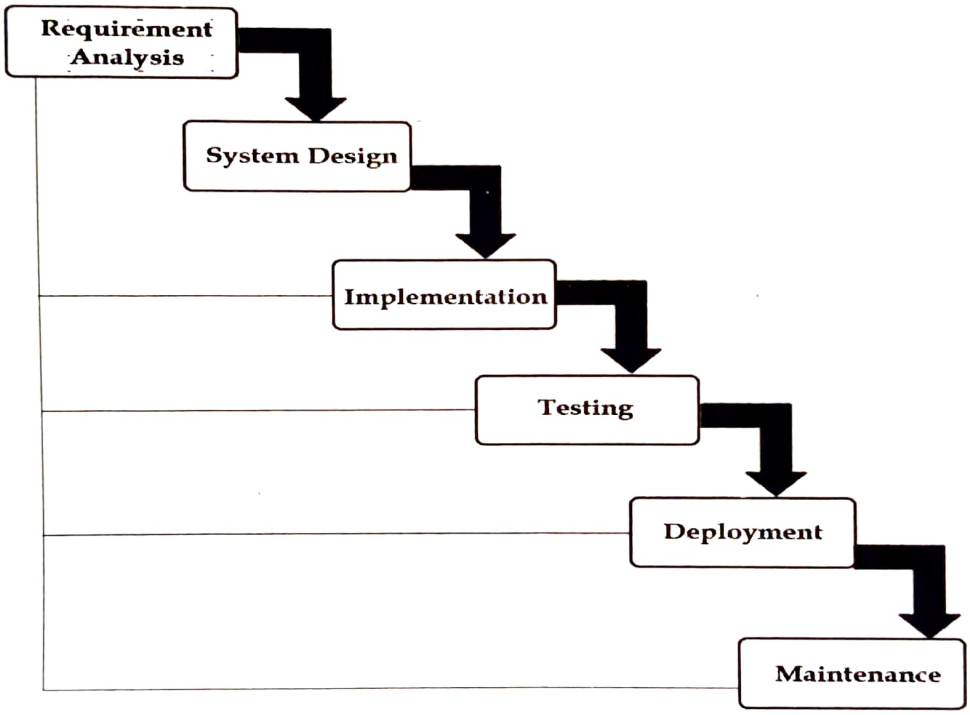


Fig. 3.11 Waterfall model

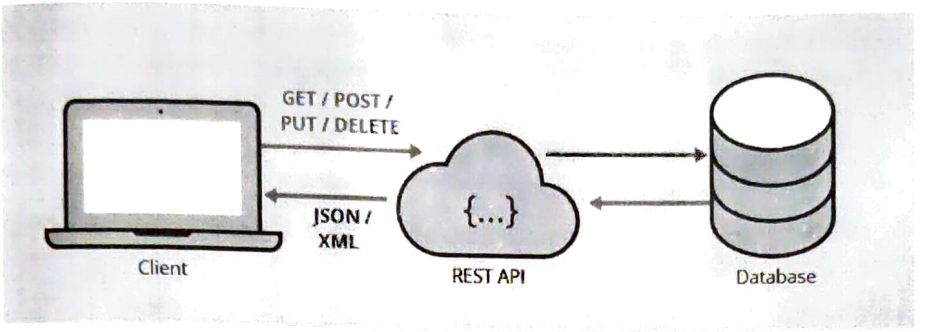
3.2 Tools and Technologies used

3.2.1 PyCharm

PyCharm is an integrated development environment (IDE) used in computer programming, specifically for the Python programming language. It is developed by the Czech company JetBrains (formerly known as IntelliJ).[5] It provides code analysis, a graphical debugger, an integrated unit tester, integration with version control systems (VCSes), and supports web development with Django as well as data science with Anaconda.[6]

PyCharm is cross-platform, with Windows, macOS and Linux versions. The Community Edition is released under the Apache License,[7] and there is also an educational version, as well as a Professional Edition with extra features (released under a subscription-funded proprietary license)

3.3 What is API & how does it work?



API is an acronym for Application Programming Interface that software uses to access data, server software or other applications and have been around for quite some time.

APIs communicate through a set of rules that define how computers, applications or machines can talk to each other. The API acts as a middleman between any two machines that want to connect with each other for a specified task.

3.4.1 Mapquest API

The core technology of online mapping is a process called geocoding, in which the street address of a location is converted into specific geographic coordinates (longitude and latitude). Once a location is geocoded, it can be pinned to a precise location on an online map.

3.4.2 Foursquare API

The Foursquare Places API provides location-based experiences with diverse information about venues, users, photos, and check-ins. The API supports real-time access to places, Snap-to-Place that assigns users to specific locations, and Geo-tag. Additionally, Foursquare allows developers to build audience segments for analysis and measurement. JSON is the preferred response format.

Foursquare allows users to input both a city and keywords related to what they're looking for there into its search bar. Users can then filter their search results — and read reviews on them — to choose a place to go. It will also start to recommend places to you based on your searches.

Chapter 4: FUTURE WORK & CONCLUSION

4.1: CONCLUSION

Finally, in the Video Streamer system, we have developed a secure, user-friendly OTT Binge-watching system. This System can take care of each member whether it is an Administrator or Customer. This System will help them to properly manage the movies, shows, episodes, TV shows, sports without creating any hassle. This System is completely secure since every user is provided with user ID and Password so there is no chance of any unauthorised access. Online Payment, Registration and cancellation make it easier to use. So, using this system will help in reducing the labour and provide more facilities for customers to like the services.

4.2: AUTHENTICATION & PAYMENT GATEWAY

Authentication is the process of verifying identity. A unique identifier is associated with a user which is the username or user-id. Traditionally, we use a combination of username and password to authenticate a user.In this Project we will use session management.

Django provides full support for anonymous sessions. The session framework lets you store and retrieve arbitrary data on a per-site-visitor basis. It stores data on the server side and abstracts the sending and receiving of cookies. Cookies contain a session ID – not the data itself (unless you're using the cookie-based backend). It aims to make building secure authentication systems easy, while improving the sign-in and onboarding experience for end users. It provides an end-to-end identity solution, supporting email and password accounts, phone auth, and Google, Twitter, Facebook, and GitHub login, and more.

Razorpay is the only payments solutions provider in India that allows businesses to accept, process and disburse payments with its product suite. Customers can avail access to all payment modes like credit and debit cards, UPI, and popular mobile wallets. With flash checkout, they can also transact seamlessly by just entering the CVV and 3D-secure.

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