**PROJECT MUBIES**

***A Project Report***

***Submitted in partial fulfilment of the***

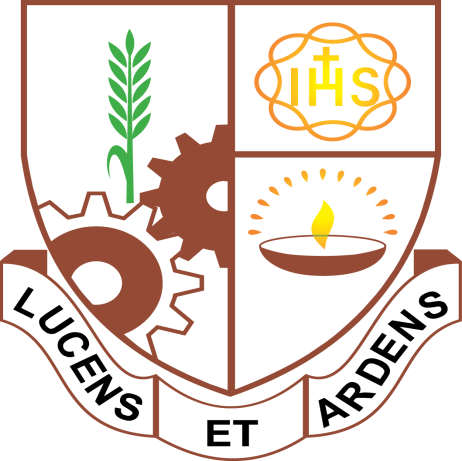
***Requirement for the award of the Degree of***

**Bachelor of Science (Honours) Computer Application**

BY

**AMAN ABHISHEK AIND**

**18VBCA037712**



**DEPARTMENT OF COMPUTER SCIENCE**

**ST. XAVIER’S COLLEGE, RANCHI**

**2021**

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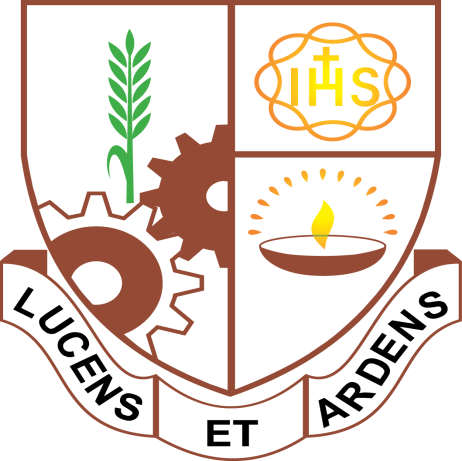
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**SYNOPSIS**

**TITLE OF THE PROJECT**

Project Mubies – A Movie Searching Web Application

**OBJECTIVE**

The primary goal of the Mubies web app is to facilitate a go-to-place for anyone who is in search of movies and their details. Hence this project falls under category of “multi-media and entertainment”. The web app allow users to make search query for the movie names or make search query for movies of a particular genre and all the results matching the query will be presented before the user to look through and even fetch more details about a movie and even give rating to the movie and write a review about the movie.

**INTRODUCTION**

The project “Mubies” is a movie searching web app which falls under the category of ‘multi-media and entertainment’. The numbers of users over internet are growing rapidly day by day. As a result, there is an overwhelming demand for entertaining-content, respective to various people with their own preferences of genres. More & more people are drawn towards this media every year, and as a rough estimate an average person watches 20 to 30 movies per year and further adding to it the current trends among the youngsters (aged 18-29) of “binging” or consumption in ‘bulk’, of the multimedia into their routines. Also, to take into account the current situation of ‘Pandemic of covid-19' still prevalent in many parts of the world where people have to be inside their home in isolation and many of the working class also have to work from home which also add to the demand for entertainment contents in the internet. There is a heap of content available for entertainment on the internet and people may want a “go-to-place" where they can find such vast collection of content and get more detailed information about them. This web app helps in achieving this by making search query for the movie names or make search query for movies of a particular genre and all the results matching the query will be presented before the user to look through and even fetch more details about a movie and even give rating to the movie and write a review about the movie.

**BACKGROUND STUDY**

**TOOLS & TECHNOLOGY Used**

* VS code
* Bootstrap
* OMDb API
* Axios
* Node.js

**LANGUAGE Used**

* HTML
* CSS
* JavaScript

**SOFTWARE REQUIREMENTS**

* Windows O/S - 7/8/10
* Text Editor
* Web Browser

**HARDWARE REQUIREMENTS**

* Processor - 1 GHz
* RAM - 2 GB
* GPU – Video card supporting 720p resolution
* Ethernet connection (LAN) or a wireless adapter (Wi-Fi)

**ABSTRACT**

The project “Mubies” is a movie searching web app which falls under the category of ‘multi-media and entertainment’. The numbers of users over internet are growing rapidly day by day. As a result, there is an overwhelming demand for entertaining-content, respective to various people with their own preferences of genres. More & more people are drawn towards this media every year, and as a rough estimate an average person watches 20 to 30 movies per year and further adding to it the current trends among the youngsters (aged 18-29) of “binging” or consumption in ‘bulk’, of the multimedia into their routines. Also, to take into account the current situation of ‘Pandemic of covid-19' still prevalent in many parts of the world where people have to be inside their home in isolation and many of the working class also have to work from home which also add to the demand for entertainment contents in the internet. There is a heap of content available for entertainment on the internet and people may want a “go-to-place" where they can find such vast collection of content and get more detailed information about them. This web app helps in achieving this by making search query for the titles of the movies and all the results matching the query will be presented before the user to look through and even fetch more details about a movie in a beautiful looking UI and provide an overall decent experience to the user.

**ACKOWLEDGEMENT**

Achievement is finding out what you would be then doing, what you have to

do. The higher the summit, the harder is the climb.

This project work, which is my first step in the field of professionalization, has

been successfully accomplished only because of my timely support of wellwishers. I would like to pay my sincere regards and thanks to those, who

directed me at every step in my project work.

I would also like to thank my guide for his indefatigable guidance, valuable

suggestion, moral support, and contribution of time for the successful

completion of project work. At the outset, I sincerely thank all faculty members

of my institutions for her extra efforts to make our session on line inspire of all

ideas.

My completion of this project could not have been accomplished without the

support of my team members. Great thanks to our team members who had

helped each other and completed the project on time.

Last but not least, i would like to acknowledge the ongoing support of my

parents and my family members, whose patience and encouragement during

these long days and night have been paramount in making this project a

reality.

Thanking you,

Rishabh Prakash

Niraj Singh

Rajbala Keshri

Vineeta Kumari

**DECLARATION BY THE CANDIDATE**

I the undersigned solemnly declare that the project report “WEB CONTENT TRUST RATING” is based on my own work carried out during the course of our study under the supervision of “R.K sir”. I assert the statements made and conclusions drawn are an outcome of my project work. I further certify that , the work contained in the report is original and has been done by our team member under the general supervision of my supervisor. We have followed the guidelines provided by the teacher in writing the report. The project is made by our team member with lot of effort and under the guidelines of our teacher. I hereby declare that all the information given by me in this project is true and correct to the best of my knowledge and belief. The project is made by our team member with lot of effort and under the guidelines of our teacher.

Rishabh Prakash

Niraj Singh

Rajbala Keshri

Vineeta Kumari

DECLARATION CERTIFICATE OF GUIDE

It certify that the work incorporated in the project “WEB CONTENT TRUST

RATING” was carried out by the candidate under my supervision upto my

satisfactory level. They have completed the project on the required duration

as given by the teacher. They did their best to complete the project. They

were well behaved and hardworking team. The materials used in the project

were under my guidance. The project report was properly made as per the

requirement and under my guidance and support.

Submitted by:

Rishabh Prakash

Niraj Singh

Rajbala Keshri

Vineeta Kumari

CERTIFICATE OF ORIGINALITY

The foregoing project report entitled “WEB CONTENT TRUST RATING” is

hereby approved as a creditable work and has been presented in satisfactory

manner to warrant its acceptance as prerequisite to the degree for which it

has been submitted.

It is understood that by this approval, the undersigned do not necessarily

endorse any conclusion drawn or opinion expressed therein, but approve the

Project Report for the purpose for which it is submitted.

Rishabh Prakash

Niraj Singh R.K SIR

Rajbala Keshri (project guide)

Vineeta Kumari

(internal examiner) (external examiner1) (external examiner2)

(Head of the department)

**CHAPTER 1: WEB API**

**1.1 INTRODUCTION**

API stands for Application Programming Interface. API is actually some kind of interface which is having a set of functions. These set of functions will allow programmers to acquire some specific features or the data of an application.

Web API is an API as the name suggests, it can be accessed over the web using the HTTP protocol. It is a framework that helps you to create and develop HTTP based RESTFUL services. The web API can be developed by using different technologies such as java, ASP.NET, etc. Web API is used in either a web server or a web browser. Basically Web API is a web development concept. It is limited to Web Application’s client-side and also it does not include a web server or web browser details. If an application is to be used on a distributed system and to provide services on different devices like laptops, mobiles, etc then web API services are used. Web API is the enhanced form of the web application.

**1.2 ASP.NET Web API**

ASP.NET stands for Active Server Pages.NET. It is mostly used for creating web pages and web technologies. It is considered a very important tool for developers to build dynamic web pages using languages like C# and Visual Basic. ASP.NET Web API is a framework that helps you to build services by making it easy to reach a wide range of clients including browsers, mobiles, tablets, etc. With the help of ASP.NET, you can use the same framework and same patterns for creating web pages and services both.

**1.3 Where to use Web API?**

1. Web APIs are very useful in implementation of RESTFUL web services using .NET framework.
2. Web API helps in enabling the development of HTTP services to reach out to client entities like browser, devices or tablets.
3. ASP.NET Web API can be used with MVC for any type of application.
4. A web API can help you develop ASP.NET application via AJAX.
5. Hence, web API makes it easier for the developers to build an ASP.NET application that is compatible with any browser and almost any device.

**1.4 Why to Choose Web API?**

* A Web API services are preferable over other services to use with a native application that does not support SOAP but require web services.
* For creating resource-oriented services, the web API services are the best to choose. By using HTTP or restful service, these services are established.
* If you want good performance and fast development of services, the web API services are very helpful.
* For developing light weighted and maintainable web services, web API services are really helpful to develop that service. It supports any text pattern like JSON, XML etc.
* The devices that have tight bandwidth or having a limitation in bandwidth, then the Web API services are the best for those devices.

**1.5 How to use Web API?**

Web API receives requests from different types of client devices like mobile, laptop, etc, and then sends those requests to the webserver to process those requests and returns the desired output to the client. Web API is a System to System interaction, in which the data or information from one system can be accessed by another system, after the completion of execution the resultant data or we can say as output is shown to the viewer.

API provides data to its programmers which are made available to outside users. When programmers decide to make some of their data available to the public, they “expose endpoints, ” meaning they publish a portion of the language they have used to build their program. Other programmers can then extract the data from the application by building URLs or using HTTP clients to request data from those endpoints.

**1.5.1 Server Side:** A server-side web API is a programmatic interface. It consists of one or more publicly exposed endpoints. It defines a request-response message system. Mashup is a web application that is a server-side API that combines several server-side APIs. Webhook is a server-side API that takes input as a uniform resource identifier.

**1.5.2 Client Side:** Client Side web APIs target standardized JavaScript bindings. Google created their native client architecture designed to replace native plug-ins with secure native sandboxed extensions and applications.

**1.6 Steps to use Web API:**

* Most APIs require an API key. Once you find an API you want to play with, look in the documentation for access requirements. Most APIs will ask you to complete an identity verification, like signing in with your Google account. You’ll get a unique string of letters and numbers to use when accessing the API.
* The easiest way to start using an API is by finding an HTTP client online, like REST-Client, Postman, or Paw. These ready-made tools help you structure your requests to access existing APIs with the API key you received. You’ll still need to know some of the syntaxes from the documentation, but there is very little coding knowledge required.
* The next best way to pull data from an API is by building a URL from existing API documentation.

**1.7 Popular API Examples:**

1. **Google Maps API’s:** Google Maps APIs allows developers to use Google Maps on Webpages using a JavaScript or Flash interface.
2. **YouTube API’s:** Google’s API lets developers integrate YouTube and functionality into websites or applications. YouTube APIs include the YouTube analytics API, YouTube Data API, YouTube live streaming API, YouTube Player APIs and others.
3. **The Flickr APIs:** It is used by developers to access the Flick photo sharing community data.
4. **Twitter APIs:** Twitter offers two APIs, the REST API allows developers to access core Twitter data and the search API provides methods for developers to interact with twitter search and trends data.

**1.8 Web API Security**

ASP.NET Web API Authentication and Authorization are important concepts for Web API security.

Suppose a web API is created and the access to the API is for some specific users, and also different operations are available for different users.

* **Authentication** is to validate the credentials for the user and identify them.  
  For example, a user login with his username and password and server authenticate the user by a password.
* **Authorization** is to define the access level for each user to perform a different operation.  
  For example, a person is allowed to create a resource but not to delete the record.

If a request requires authentication in web API, but the client does not provide the credentials in the request header, then the server will return **401 (Unauthorized**).

**1.9 MOVIE API**

**1.9.1 UNOFFICIAL IMDB API**

The Unofficial IMDb (Internet Movie Database) API queries information about films, actors, and characters as on the official IMDb site. The API is available via RapidAPI and the endpoints to access include cast, plots, ratings, user reviews, award summary, and production status.

**1.9.2 OMDB API**

The OMDb API is a RESTful web service to obtain movie information, all content and images on the site are contributed and maintained by our users.

**1.9.3 ADVANCED MOVIE SEARCH API**

The OMDb API is a RESTful web service to obtain movie information, all content and images on the site are contributed and maintained by our users.

**CHAPTER 2: TOOLS AND TECHNOLOGY**

**2.1 NODE.JS**

Node.js is a cross-platform JavaScript runtime environment. It allows the creation of scalable Web servers without threading and networking tools using JavaScript and a collection of “modules” that handle various core functionalities. It can make console-based and web-based node.js applications.

Node.js is an open-source and cross-platform runtime environment for executing JavaScript code outside a browser. You need to remember that Node.JS is not a framework and it’s not a programming language. Most people are confused and understand it’s a framework or a programming language. We often use Node.js for building back-end services like APIs like Web App or Mobile App. It’s used in production by large companies such as Paypal, Uber, Netflix, Walmart, and so on.

**2.1.1 Features of Node.JS:**

There are other programming languages also which we can use to build back-end services so what makes Node.js different I am going to explain.

1. It’s easy to get started and can be used for prototyping and agile development
2. It provides fast and highly scalable services
3. It uses JavaScript everywhere, so it’s easy for a JavaScript programmer to build back-end services using Node.js
4. Source code cleaner and consistent.
5. Large ecosystem for open source library.
6. It has Asynchronous or Non-blocking nature.

**2.1.2Advantages of Node.JS:**Here are the benefits of using Node.js 

1. **Easy Scalability:** Developers prefer to use Node.js because it is easily scaling the application in both horizontal and vertical directions. We can also add extra resources during the scalability of the application.
2. **Real-time web apps:** If you are building a web app you can also use PHP, and it will take the same amount of time when you use Node.js, But if I am talking about building chat apps or gaming apps Node.js is much more preferable because of faster synchronization. Also, the event loop avoids HTTP overloaded for Node.js development.
3. **Fast Suite:** NodeJs runs on the V8 engine developed by Google. Event loop in NodeJs handles all asynchronous operation so NodeJs acts like a fast suite and all the operations can be done quickly like reading or writing in the database, network connection, or file system
4. **Easy to learn and code:** NodeJs is easy to learn and code because it uses JavaScript. If you are a front-end developer and have a good grasp of JavaScript you can easily learn and build the application on NodeJS
5. **Advantage of Caching:**It provides the caching of a single module. Whenever there is any request for the first module, it gets cached in the application memory, so you don’t need to re-execute the code.
6. **Data Streaming:** In NodeJs HTTP request and response are considered as two separate events. They are data stream so when you process a file at the time of loading it will reduce the overall time and will make it faster when the data is presented in the form of transmissions. It also allows you to stream audio and video files at lightning speed.
7. **Hosting:** PaaS (Platform as a Service) and Heroku are the hosting platforms for NodeJS application deployment which is easy to use without facing any issue.
8. **Corporate Support:** Most of the well-known companies like Walmart, Paypal, Microsoft, Yahoo are using NodeJS for building the applications. NodeJS uses JavaScript, so most of the companies are combining front-end and backend Teams together into a single unit.

**2.1.3 Application of Node.JS:**

Node.JS should be preferred to build:

* Real-Time Chats,
* Complex Single-Page applications,
* Real-time collaboration tools,
* Streaming apps
* JSON APIs based application

**2.1.4 NODE.JS NODEMON MODULE**

The nodemon Module is a module that develop node.js based applications by automatically restarting the node application when file changes in the directory are detected. Nodemon does not require any change in the original code and method of development.

Advantages of Using nodemon Module**:**

1. It is easy to use and easy to get started.
2. It does not affect the original code and no instance require to call it.
3. It help to reduce the time of typing the default syntax node <file name> for execution again and again.

**2.2 EXPRESS.JS**

**2.2.1 Introduction**

Express is a fast, assertive, essential and moderate web framework of Node.js. You can assume express as a layer built on the top of the Node.js that helps manage a server and routes. It provides a robust set of features to develop web and mobile applications.

**2.2.2 Features of Express**

Let's see some of the core features of Express framework:

* It can be used to design single-page, multi-page and hybrid web applications.
* It allows to setup middlewares to respond to HTTP Requests.
* It defines a routing table which is used to perform different actions based on HTTP method and URL.
* It allows to dynamically render HTML Pages based on passing arguments to templates.

**2.2.3 Why use Express**

* Ultra fast I/O
* Asynchronous and single threaded
* MVC like structure
* Robust API makes routing easy

**2.3 POSTMAN**

* + 1. **Introduction**

Postman is one of the most popular software testing tools which is used for API testing. With the help of this tool, developers can easily create, test, share, and document APIs. Postman is a standalone software testing API (Application Programming Interface) platform to build, test, design, modify, and document APIs. It is a simple Graphic User Interface for sending and viewing HTTP requests and responses. While using Postman, for testing purposes, one doesn't need to write any HTTP client network code. Instead, we build test suites called collections and let Postman interact with the API. In this tool, nearly any functionality that any developer may need is embedded. This tool has the ability to make various types of HTTP requests like GET, POST, PUT, PATCH, and convert the API to code for languages like JavaScript and Python.

**2.3.1 Why use Postman?**

Postman is based on a wide range of extremely user-friendly power tools. For more than 8 million users, Postman has become a tool of convenience. Following are the reasons why Postman is used:

1. **Accessibility-** One can use it anywhere after installing Postman into the device by simply logging in to the account.
2. **Use Collections**-Postman allows users to build collections for their API-calls. Every set can create multiple requests and subfolders. It will help to organize the test suites.
3. **Test development-** To test checkpoints, verification of successful HTTP response status shall be added to every API- calls.
4. **Automation Testing-**Tests can be performed in several repetitions or iterations by using the Collection Runner or Newman, which saves time for repeated tests.
5. **Creating Environments-** The design of multiple environments results in less replication of tests as one can use the same collection but for a different setting.
6. **Debugging-** To effectively debug the tests, the postman console helps to track what data is being retrieved.
7. **Collaboration-** You can import or export collections and environments to enhance the sharing of files. You may also use a direct connection to share the collections.
8. **Continuous integration-**It can support continuous integration.
   1. **HEROKU**

Heroku is a fully managed, contained-based PAAS(Platform as a service). When developers use Heroku, they get relief because they are not distracted from maintaining servers, hardware, and infrastructure. Heroku gives all the services, support, and workflow, which increases the developer's productivity as there is only a need that remains is to focus on the core product. The platform of Heroku is elegant, easy, and manageable. It also offers the most straightforward path to reach their apps to the market.

The primary use of Heroku is to develop, manage and scale modern applications.

**2.4.1 Characteristics of Heroku**

The following are the characteristics of Heroku -

* High productivity of developers - Heroku delivers a high order value by giving a set of capabilities. We do not need to focus on network management, the latest version of the database, server configurations. Heroku does not give any obstacles so that developers can focus on the best building.
* The best design - Everything in Heroku is very meticulously defined, from capabilities to tools to workflows that maximize the output. The design is so user-friendly a novice can understand it and start working on Heroku. Also, the tool guide is in easy words and very understandable.
* Developer experience - Some developers work with new and critical ideas. Heroku secures them. It makes app development more than just a job by rewarding experience and bringing out the best work. Heroku experiences more than 26 billion requests every day and three lakh requests in a second.

**2.4.2 Advantages of Heroku**

The following are the advantages of Heroku -

* Heroku provides high flexibility that supports unique workflow needs for DevOps
* Developers focus on core rather than infrastructure
* Heroku provides a secure connection to salesforce data that build a single view of the customer
* A single bill generates for all projects
* Heroku gives a medium learning curve with the best-in-class developer experience.
* It creates a unified dashboard for developers, QA, and stakeholders.
* High-performance and support modern programming languages
* Have a powerful CLI and a bunch of supportive tools
* Heroku offers no downtime during system updates
* Heroku have a rich application monitoring and have vertical stability
* Heroku team is available 24X7 for help
* It is very beginner and startup-friendly and allows the creation of a server in 10 seconds by using Heroku CLI.
* It can be easily integrated with AWS products.

**2.4.3 Disadvantages of Heroku**

The following are the disadvantages of Heroku –

* It is not best suited for heavy computing objects
* Limited instances with high inbound and outbound latency
* No other service can be run on dynos
* Sometimes dynos are not reachable due to various reasons
* If we need additional dynos, we have to pay $35 for a month which is quite costly.
* It is expensive for apps that have high traffic on them.
  1. **MONGODB**

[MongoDB](https://www.javatpoint.com/mongodb-tutorial) is an open-source document database that provides high performance, high availability, and automatic scaling.

In simple words, you can say that - Mongo DB is a document-oriented database. It is an open source product, developed and supported by a company named 10gen.

MongoDB is available under General Public license for free, and it is also available under Commercial license from the manufacturer.

MongoDB, the most popular NoSQL database, is an open-source document-oriented database. The term ‘NoSQL’ means ‘non-relational’. It means that MongoDB isn’t based on the table-like relational database structure but provides an altogether different mechanism for storage and retrieval of data. This format of storage is called BSON ( similar to JSON format).

**2.5.1 Features of MongoDB:**

* **Document Oriented**: MongoDB stores the main subject in the minimal number of documents and not by breaking it up into multiple relational structures like RDBMS. For example, it stores all the information of a computer in a single document called Computer and not in distinct relational structures like CPU, RAM, Hard disk, etc.
* **Indexing**: Without indexing, a database would have to scan every document of a collection to select those that match the query which would be inefficient. So, for efficient searching Indexing is a must and MongoDB uses it to process huge volumes of data in very less time.
* **Scalability**: MongoDB scales horizontally using sharding (partitioning data across various servers). Data is partitioned into data chunks using the shard key, and these data chunks are evenly distributed across shards that resides across many physical servers. Also, new machines can be added to a running database.
* **Replication and High Availability**: MongoDB increases the data availability with multiple copies of data on different servers. By providing redundancy, it protects the database from hardware failures. If one server goes down, the data can be retrieved easily from other active servers which  also had the data stored on  them.
* **Aggregation**: Aggregation operations process data records and return the computed results. It is similar to the GROUPBY clause in SQL. A few aggregation expressions are sum, avg, min, max, etc

**2.5.3 Where do we use MongoDB?**

MongoDB is preferred over RDBMS in the following scenarios:

* **Big Data**: If you have huge amount of data to be stored in tables, think of MongoDB before RDBMS databases. MongoDB has built in solution for partitioning and sharding your database.
* **Unstable Schema**: Adding a new column in RDBMS is hard whereas MongoDB is schema-less. Adding a new field, does not effect old documents and will be very easy.
* **Distributed data** Since multiple copies of data  are stored across different servers, recovery of data is instant and safe even if there is a hardware failure.

**2.5.4 MONGODB MONGOOSE MODULE**

Mongoose module is one of the most powerful external module of the node.js. Mongoose is a MongoDB ODM (Object database Modelling) that is used to translate the code and its representation from MongoDB to the Node.js server.

**2.5.1 Advantages of Mongoose module:**

1. Collection validation of the MongoDB database can be done easily.
2. Predefined Structure can be implemented on the collection.
3. Constraints can be applied to documents of collections using Mongoose.

Mongoose module provides several functions in order to manipulate the documents of the collection of the MongoDB database.

* 1. **AXIOS**

In [ReactJS](https://www.javatpoint.com/reactjs-tutorial), **Axios** is a library that serves to create HTTP requests that are present externally. It is evident from the fact that we may sometimes in React applications need to get data from the external source. It is quite difficult to fetch such data so that they can be normally shown on the website. Thus, it helps in **retrieving the data** thereby adding it to the state to facilitate the application whenever the requirement arises.

Additionally, react Axios is very easy to modify and is quite lightweight. It also works great with many other frameworks present today. The main purpose of using Axios is to get support for request and response interception, conversion of data into [JSON](https://www.javatpoint.com/json-tutorial) format, and transform it. It also helps you in **protecting XSRF forgery** by default while you request cross-site access.

Axios is promise-based, which gives you the ability to take advantage of JavaScript's **async** and **await** for more readable asynchronous code.

It lets you make use of asynchronous readable code present in [Javascript](https://www.javatpoint.com/javascript-tutorial). It can be easily used to cancel or intercept requests with the help of the in-built feature of client-side protection of forgery across the cross-site request.

Here, you will learn the uses of Axios with JSON and API integration along with other applications in React.

* 1. **PASSPORT NODEJS AUTHENTIFICATION**

Passport is the authentication middleware for Node. It is designed to serve a singular purpose which is to authenticate requests. It is not practical to store user password as the original string in the database but it is a good practice to hash the password and then store them into the database. But with passport-local-mongoose you don’t have to hash the password using the crypto module, passport-local-mongoose will do everything for you. If you use passport-local-mongoose this module will auto-generate salt and hash fields in the DB. You will not have a field for the password, instead, you will have salt and hash.

**2.7.1 Why salting of password is needed**

If the user simply hashes their password and if two users in the database have the same password, then they’ll have the same hash. And if any one of the passwords is hacked then the hacker can access every account using the same password because users with the same password will have the same hash fields.

So before we hash it, we prepend a unique string. Not a secret, just something unique. so the hash is completely different for every salt.

* 1. **BOOTSTRAP**

Bootstrap is a free and open-source tool collection for creating responsive websites and web applications. It is the most popular HTML, CSS, and JavaScript framework for developing responsive, mobile-first websites. Nowadays, the websites are perfect for all the browsers (IE, Firefox, and Chrome) and for all sizes of screens (Desktop, Tablets, and Phones).

**2.8.1 Why we use Bootstrap ?**

* It is Faster and Easier way for Web-Development.
* It creates Platform-independent web-pages.
* It creates Responsive Web-pages.
* It designes the responsive web pages for mobile devices too.
* It is Free and open-source framework available on www.getbootstrap.com
  1. **JQUERY**

JQuery is an open-source JavaScript library that simplifies the interactions between an HTML/CSS document, or more precisely the Document Object Model (DOM), and JavaScript. Elaborating the terms, jQuery simplifies HTML document traversing and manipulation, browser event handling, DOM animations, Ajax interactions, and cross-browser JavaScript development.

**2.9.1 Why to use jQuery?**

jQuery helps us to do the following:

* It helps us to manipulate HTML and CSS
* It helps us to manipulate DOM (Document Object Model) elements
* Provides event methods to trigger and respond to an events on a html page such as mouse click, keypress etc.
* Implements AJAX calls.

**2.9.2 Using jQuery (JS) library on HTML page:** There are several ways to start using jQuery on your website.

* Use the Google-hosted/Microsoft-hosted content delivery network (CDN) to include a version of jQuery. or
* Download own version of jQuery from jQuery.com and host it on own server or local filesystem.

**CHAPTER 3: LANGUAGE USED**

**3.1 HTML**

HyperText Markup Language is the most basic building block of the Web. It defines the meaning and structure of web content. Other technologies besides HTML are generally used to describe a web page's appearance/presentation (CSS) or functionality/behavior (JavaScript). "Hypertext" refers to links that Connect web pages to one another, either within a single website or between websites. Links are a fundamental aspect of the Web. By uploading content to the Internet and linking it to pages created by other people, you become an active participant in the World Wide Web.

* Web pages development - HTML is used to create pages which are rendered over the web. Almost every page of web is having html tags in it to render its details in browser.
* Internet Navigation - HTML provides tags which are used to navigate from one page to another and is heavily used in internet navigation.
* Responsive UI - HTML pages now-a-days works well on all platforms, mobile, tabs, desktop or laptops owing to responsive design strategy.
* Offline support HTML pages once loaded can be made available offline on the machine without any need of internet.

**3.2 CSS**

Cascading Style Sheets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable. CSS is a MUST for students and working professionals to become a great Software Engineer specially when they are working in Web Development Domain. CSS handles the look and feel part of a web page. Using CSS, you can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colors are used, layout designs,variations in display for different devices and screen sizes as well as a variety of other effective. If you want to start a carrer as a professional web designer, HTML and CSS designing is a must skill. CSS is easy to learn and understand but it provides powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the markup languages HTML .

* CSS saves time - You can write CSS once and then reuse same sheet in multiple HTML pages. You can define a style for each HTML element and apply it to as many Web pages as you want.
* Pages load faster - If you are using CSS, you do not need to write HTML tag attributes every time. Just write one CSS rule of a tag and apply it to all the occurrences of that tag. So less code means faster download times.
* Easy maintenance - To make a global change, simply change the style, and all elements in all the web pages will be updated automatically.
* Superior styles to HTML - CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.
* Multiple Device Compatibility - Style sheets allow content to be optimized for more than one type of device. By using the same HTML document, different versions of a website can be presented for handheld devices such as PDAs and cell phones or for printing.
* Global web standards - Now HTML attributes are being deprecated and it is being recommended to use CSS. So its a good idea to start using CSS in all the HTML pages to make them compatible to future browsers.

**3.3 JAVASCRIPT**

JavaScript enables interactive web pages and is an essential part of web applications. The vast majority of websites use it for client-side page behavior, and all major web browsers have a dedicated JavaScript engine to execute it. As a multi-paradigm language, JavaScript supports event driven, functional, and imperative programming styles. It has application programming interfaces (APIs) for working with text, dates, regular expressions, standard data structures, and the Document Object Model (DOM). However, the language itself does not include any input/output (I/O), such as networking, storage, or graphics facilities, as the host environment (usually a web browser) provides those APIs. JavaScript engines were originally used only in web browsers, but they are now embedded in some servers, usually via Node.js. They are also embedded in a variety of applications created with frameworks such as Electron and Cordova. Client-side JavaScript is the most common form of the language. The script should be included in or referenced by an HTML document for the code to be interpreted by the browser. It means that a web page need not be a static HTML, but can include programs that interact with the user, control the browser, and dynamically create HTML content. The JavaScript client-side mechanism provides many advantages over traditional CGI server-side scripts. For example, you might use JavaScript to check if the user has entered a valid e-mail address in a form field. The JavaScript code is executed when the user submits the form, and only if all the entries are valid, they would be submitted to the Web Server. JavaScript can be used to trap user-initiated events such as button clicks, link navigation, and other actions that the user initiates explicitly or implicitly. Although there are similarities between JavaScript and Java, including language name, syntax, and respective standard libraries, the two languages are distinct and differ greatly in design. The merits of using JavaScript are –

* Less server interaction − you can validate user input before sending the page off to the server. This saves server traffic, which means less load on your server.
* Immediate feedback to the visitors − they don't have to wait for a page reload to see if they have forgotten to enter something.
* Increased interactivity − you can create interfaces that react when the user hovers over them with a mouse or activates them via the keyboard.
* Richer interfaces − you can use JavaScript to include such items as drag-and-drop components and sliders to give a Rich Interface to your site visitors.