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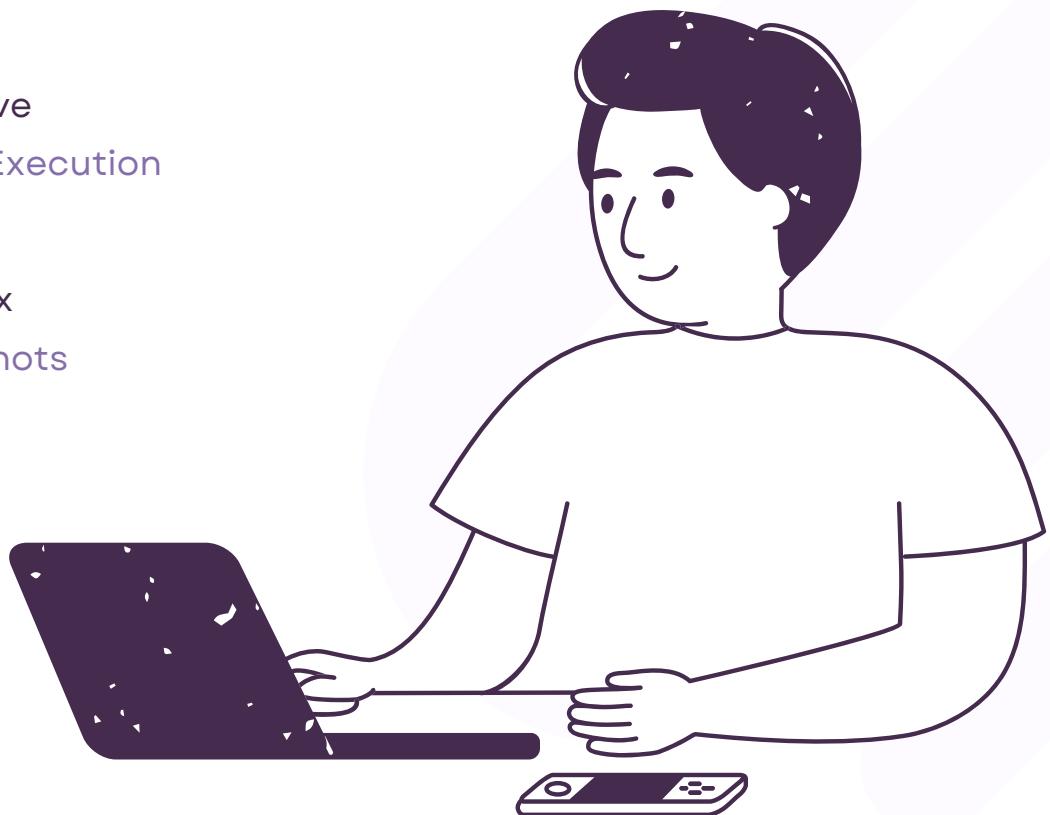
Avantika-BT20CSE086

VAMPS- NEWS Rest API

Guided By: Dr.Vrinda Yadav

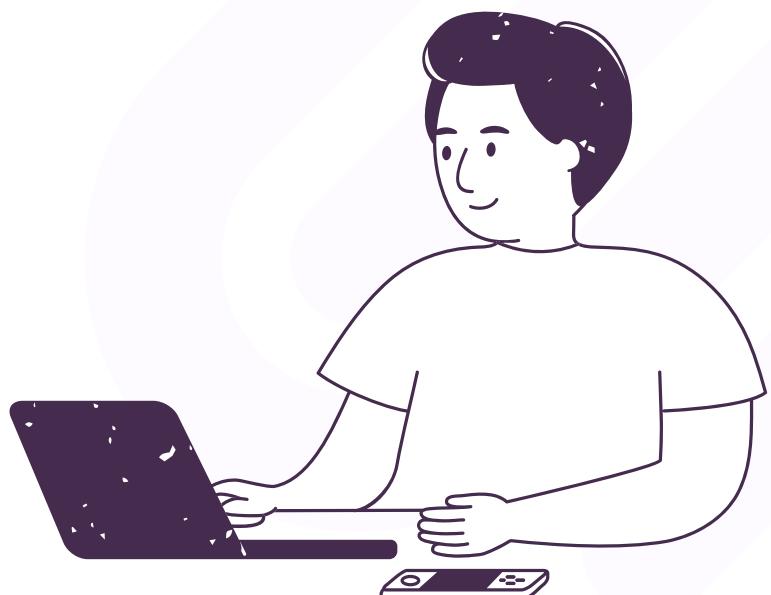
Contents

- | | | | |
|----|----------------------------------------------|----|---------------------------------|
| 03 | Part One Abstract | 24 | Part Seven Conclusion |
| 04 | Part Two Introduction to Rest API | 25 | Part Eight Reference |
| 10 | Part Three News API Development Phases | | |
| 16 | Part Four Code Implementation | | |
| 19 | Part Five Code Execution | | |
| 22 | Part Six Snapshots | | |



Abstract

- The VAMPS-News website project is a web application that utilizes a RESTful API architecture to provide users with up-to-date news articles from various sources. The application sends HTTP requests to the API to retrieve news articles, headlines, and sources based on user-selected parameters such as location, language, and category. The RESTful API offers both free and paid plans with different levels of access and rate limits.
- The website employs various web technologies, including HTML, CSS, JavaScript, and AJAX to create a responsive and dynamic user interface. It also uses server-side scripting languages such as PHP or Node.js to interact with the RESTful API.



UNLEASHING THE POWER OF **REST API**



INTRODUCTION TO REST API

- *REST (Representational State Transfer) is an architectural style for building web services that uses HTTP protocol to communicate between client and server.*
- *RESTful APIs are designed to be scalable, flexible, and easy to maintain.*
- *A RESTful API allows developers to access resources on a remote server using simple HTTP requests. It defines a set of rules or constraints that must be followed in order to create a well-designed API.*

HTTP basics



What is
REST API?



BENEFITS OF USING REST API

Using RESTful APIs has several benefits for developers.

They are lightweight and can be easily scaled up or down based on demand. They also allow for separation of concerns, meaning that the front-end and back-end can be developed independently.

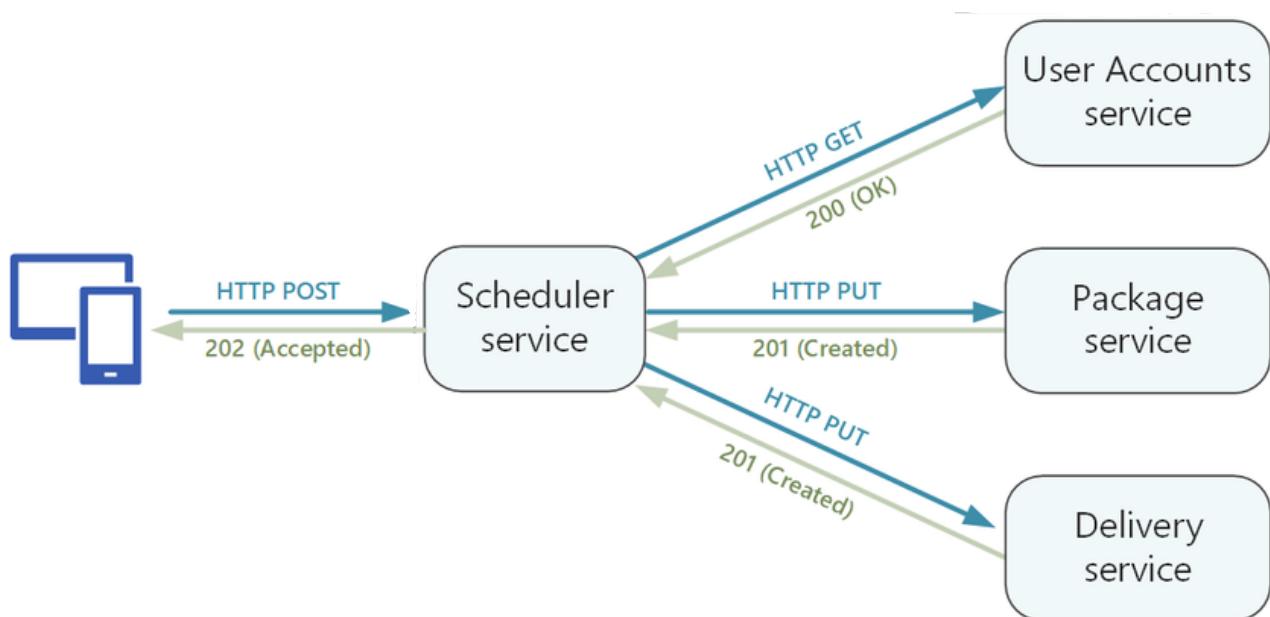
Another advantage of RESTful APIs is that they are language-agnostic, which means that they can be used with any programming language or platform. They are also highly cacheable, which can improve performance and reduce network traffic.





DESIGNING A REST API

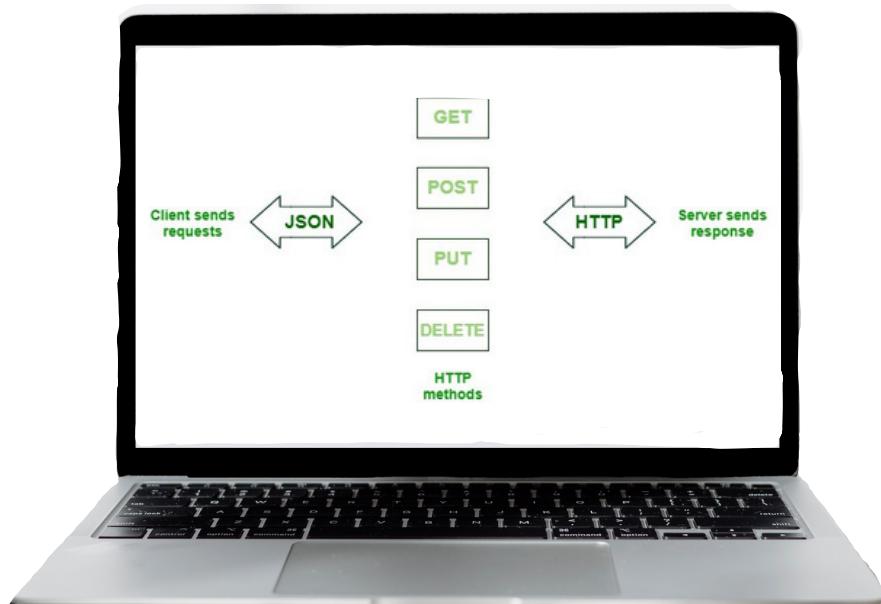
- Designing a RESTful API involves defining the resources that will be exposed, along with their URLs and HTTP methods. It also involves deciding on the data format that will be used, such as JSON or XML.
- Other considerations when designing a RESTful API include versioning, error handling, authentication, and documentation. It is important to follow best practices and standards when designing a RESTful API to ensure that it is easy to use and maintain.





IMPLEMENTING A REST API

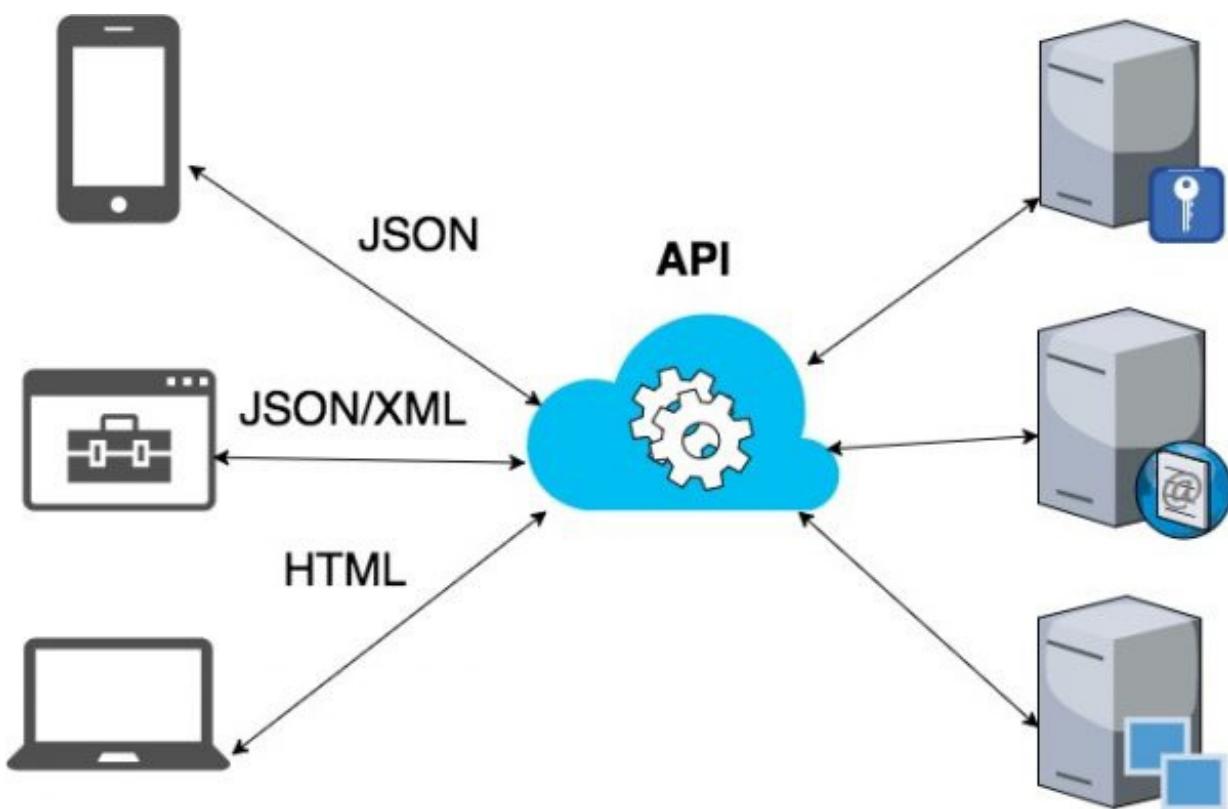
- Implementing a RESTful API involves writing code that handles the HTTP requests and responses. This code should follow the rules and constraints defined in the API's design.
-
- Tools and frameworks like Node.js, Express, and Swagger can make it easier to implement a RESTful API. Testing and debugging are also important parts of the implementation process to ensure that the API works as intended.





SECURING A REST API

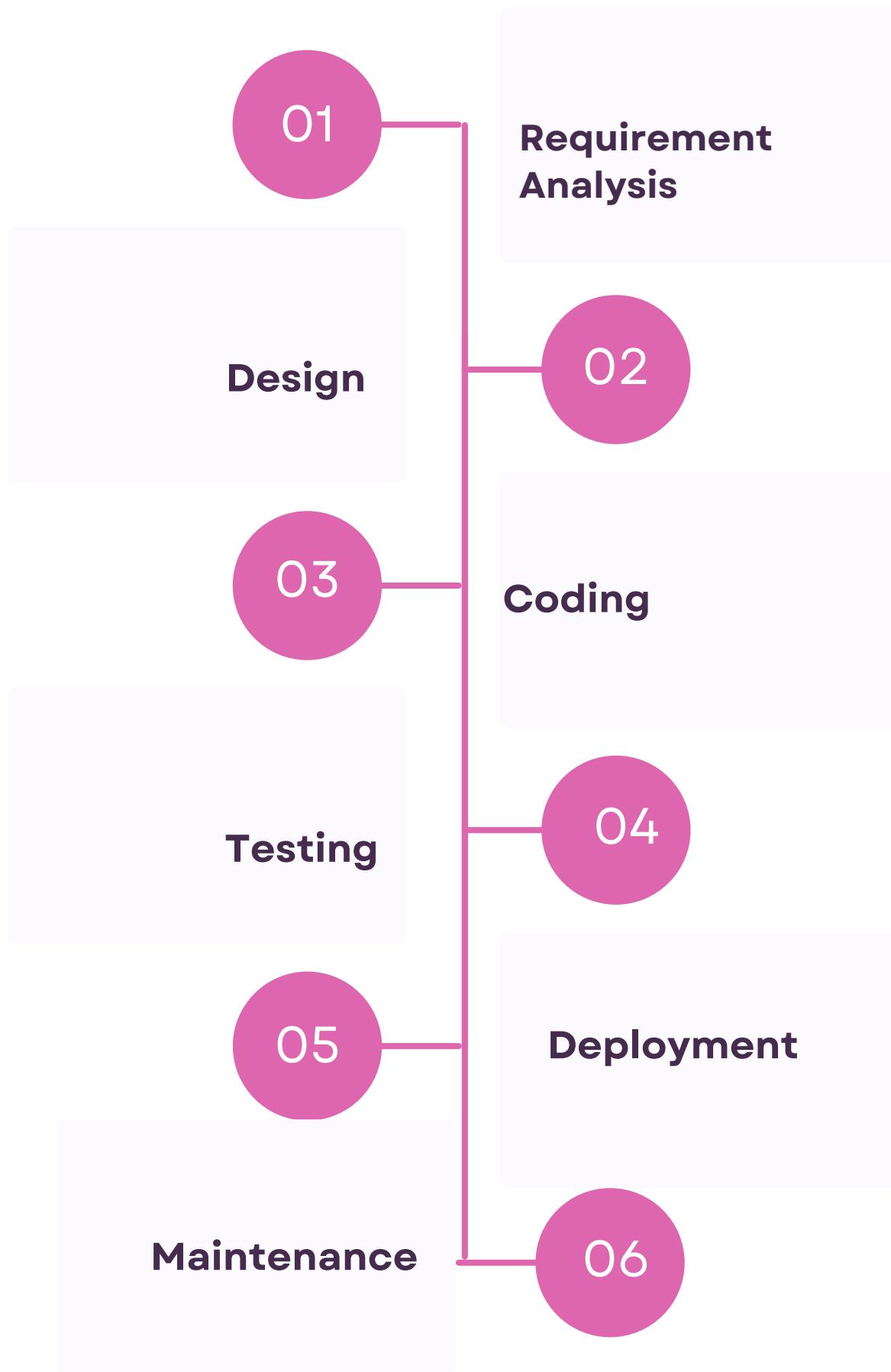
- Security is an important consideration when developing a RESTful API. It is important to protect sensitive data and prevent unauthorized access.
- Some common security measures for RESTful APIs include using HTTPS, implementing authentication and authorization mechanisms, and using encryption for sensitive data. Regular security audits and updates are also recommended



DEVELOPMENT PHASES

VAMPS-NEWS

SOFTWARE PHASES





REQUIREMENT ANALYSIS

MUSKAN-BT20CSE66

- Requirement Analysis is a process of determining user expectations for a new or modified product.
- This requirement must be quantifiable, relevant and detailed.
- Here major requirement for this is to get accurate result upon search.
- First to design a model and then use of it according to need of user requirement.
- Conducting this analysis ensures that a product meets stakeholder expectations.
- There are several types of requirement analysis. Some examples are user cases ,the development of a workflow for a project, and interviews with stakeholders.
- Here for example, there will be news related to cricket on search of key word cricket. It will be considered as basic requirement.

- In the design module we have taken the requirement analysis from the user.
- Make data available easily, rather than hidden or hard to find.
- Require only the information necessary to accomplish the desired task.
- Use hypermedia links to inform API clients the available actions at any given point, based on the current state of the data and the permissions of the API client.
- This design phase serves as input for the next phase of the model.
- There are two kinds of design documents developed in this phase:
HIGH-LEVEL DESIGN
LOW-LEVEL DESIGN

HIGH-LEVEL DESIGN:

Database tables identified along with their key elements

Complete architecture diagrams along with technology details

LOW-LEVEL DESIGN:

Functional logic of the modules

Database tables, which include type and size

Complete detail of the interface

Addresses all types of dependency issues



- In this phase coding of News module is done usning javascript.
- Rest api architechture is used in which get request is used to dispay the news requested by users and post request method is used to display the response of search from server.
- Api key is generated from the NEWS-API official site .
- This api key is added to the pakage.json and this is used in entire coding of project as a url attribute so that it fetched.
- Live server localhost 3000 is used for the execution of code.
- News module is imported in main app.js file.
- All the module are integrated and then passed for testing phase.
- The programming languages used for this are node js ,html,css.
- Express node module is also used.

- Unit testing: This involves testing of API endpoint so that it give proper result and handle errors correctly. for this we used testing framework such as Pytest.
- Integration testing : All the integrated module from coding phase are tested so as to ensure toghether it works properly .
- Load testing: Tested API endpoints under heavy loads, to ensure that they can handle a large number of requests without crashing or slowing down
- Security testing:Tested API endpoints for security vulnerabilities, such as authentication of users.

CODE
IMPLEMENTATION

Languages



- EJS 54.3%
- JavaScript 23.1%
- CSS 22.6%

➤ This News app is build with the help of NodeJs, Express, EJS and bootstrap.

➤ The app.js file:

- The app.js file is the root of our news app which initializes the application by setting up the required dependencies, middleware, and routes.
- It also defines the API endpoints that will be used to fetch news articles and search for articles based on specific keywords.
- The app is set up to listen on port "3000" for incoming requests.

➤ The news.js file:

- This file defines the functions for fetching news articles from the News API.
- It uses the Axios library to make HTTP requests to the API and returns the response data to the calling function.

➤ The news.ejs file:

- This file is an EJS template that is used to render the news articles fetched from the News API.
- It defines the HTML and CSS layout for the news articles, including the navigation bar and search bar.
- It uses a loop to iterate over the list of articles and displays the article title, image, content, and published date.
- It also includes a moment.js library to format the published date into a readable format.
- If any article data is not available, it skips that article and proceeds with the next one.

➤ The style.css file:

- This file sets basic styles for the body, font family, and background color in our news app. It also includes styles for the navigation bar, images, news containers, and search bar.
- It also uses hover effects on the news boxes and images, including a scaling effect and box shadow.

CODE
EXECUTION

Initialize the New Project

- To initialize the new project you just need to create a new folder "News App" and open folder in visual studio code or any other IDE and run the below code in command line

```
npm init
```

- This takes only few seconds and also asks few question about your project like project name , description etc. after that initialization is over and a file name "Package.json" is generated .

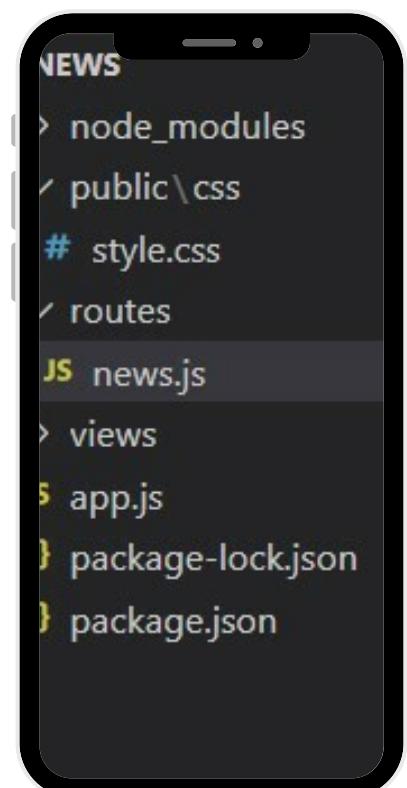
Structure of Project

- As with the reference of the above image create folders and files leave node_modules package-lock and package-json as they generate automatically .
- Installing Dependencies: express, ejs, body-parser, axios, math, moment.

```
npm install express ejs body-parser axios math moment
```

- To start the server automatically we just need to install Nodemon which restart server automatically when any change is detected.

```
npm install -D nodemon
```



- Setup application for developer run and normal run. Just change the Script section with the below code in package.json.

```
"scripts": {  
    "start": "node app.js",  
    "dev": "nodemon app.js"  
},
```

Start developer local server

- To start our app for testing/developer just simply type the following command in the command line:

```
npm dev
```



**AND THE WEBSITE IS READY
TO LAUNCH**



SNAPSHOTS

Home Page

Latest News Today: VAMPS NEWS +
localhost:3000

VAMPS-news Search Search



Ponniyin Selvan 2 Trailer Launch: Aishwarya Rai Bachchan, Trisha And Others Dazzle On The Red Carpet - NDTV Movies
PS 2: Trisha and Sobhita Dhulipala on the red carpet. (courtesy: @LycaProductions) New Delhi: The Cholas are back and how. The grand trailer launch of Ponniyin Selvan 2 is currently taking place in ... [+2249 chars]
Updated: Wed Mar 29 2023 09 : 33 PM



Watch: Mamata Banerjee's Laundry Day With "BJP Washing Machine" - NDTV
Mamata Banerjee said, "If required, I can sit on a dharma at the PM's house too." Kolkata: At Mamata Banerjee's protest today in Kolkata, an outsized washing machine took centre stage. As Trinamool ... [+2302 chars]
Updated: Wed Mar 29 2023 09 : 24 PM



Won't Speak On Rahul Gandhi's Disqualification Because...: Nitish Kumar - NDTV
Nitish Kumar today declined to speak on Rahul Gandhi's disqualification as MP. (File) Patna: Bihar Chief Minister Nitish Kumar today declined to speak on Congress leader Rahul Gandhi's disqualification ... [+3160 chars]
Updated: Wed Mar 29 2023 09 : 23 PM



After Priyanka Chopra's revelations on Bollywood, her manager Anjula Acharia says 'naysayers are just noise' - India Today
By Prachi Arya: The entire Indian film industry was taken aback when global icon Priyanka Chopra made some shocking revelations about working in Hollywood. While the fans were celebrating the worldwi... [+2655 chars]
Updated: Wed Mar 29 2023 08 : 00 PM

Search Results 1: IIT BOMBAY

Latest News Today: VAMPS NEWS +
localhost:3000/search

VAMPS-news Search



When IOE opens purse-strings, campuses get a range of benefits: IISc to IITs, DU to BHU
THE DIFFERENCE is visible and telling. On one side, the Government is dragging its feet on awarding the Institution of Eminence status to four selected private campuses while four others in this cat... [+8876 chars]
Updated: Tue Mar 28 2023 04 : 00 AM



IIT Bombay revises syllabus for CEED, UCEED
CEED, UCEED 2024: The Indian Institute of Technology, Bombay has revised the syllabus for Common Entrance Exam For Design (CEED) and Undergraduate Common Entrance Exam For Design (UCEED) which will b... [+918 chars]
Updated: Mon Mar 06 2023 02 : 56 PM



QS World University Rankings: IIT Bombay ranks first in country in Engineering and Technology
The Indian Institute of Technology (IIT) Bombay has been ranked first in India and 47th globally in Engineering and Technology in the Quacquarelli Symonds (QS) World University Rankings by Subject fo... [+1390 chars]
Updated: Wed Mar 22 2023 08 : 28 PM



JEE Main 2023: HC to hear plea on 75% eligibility criteria on April 6
JEE Main 2023: The Bombay High Court has deferred the hearing on the removal of JEE Main 75 per cent eligibility criterion to April 6. In its plea, the petitioner had requested the NTA to remove the ... [+1204 chars]
Updated: Wed Mar 01 2023 12 : 10 PM

SNAPSHOTS

Search Results 2: BOLLYWOOD MOVIES

Latest News Today: VAMPS NEWS × +
localhost:3000/search

Utomik Games Booking.com Express VPN LastPass password... PYTHON links Jupyter Notebook... SVG Icons - Ready t... Booking.com NewsNow: Yemen n... Other favorites

VAMPS-news BOLLYWOOD MOVIES Search



Oscar glory for Indian movie with first ever award for best song
India has made movie history by scooping its first Oscar for the best original song, Naatu Naatu. Praised for its buoyant choreography and catchy tune, the song, which has already won a Golden Globe... [+2598 chars]

Updated: Mon Mar 13 2023 05 : 14 PM



Crash Landing On You: What binds the magnificent worlds of K-dramas and Bollywood
An accident leaves a young woman stranded in a hostile country, where she is rescued by a handsome army officer. They fall in love but must cross several hurdles - including the line that divides th... [+7844 chars]

Updated: Sun Mar 05 2023 04 : 17 AM



Can't wait for the new Mission: Impossible movie? Just watch the Bollywood spy blockbuster Pathaan
Were all excited for Mission: Impossible Dead Reckoning Part One, right? One of the most consistent franchises in Hollywood returns in for its seventh installment, promising globetrotting thrills and... [+4393 chars]

Updated: Fri Mar 24 2023 10 : 30 PM



Director SS Rajamouli breaks down his Oscar-winning musical number "Naatu Naatu"
Hollywood may be the biggest, but many countries produce quality films. Typically whenever one talks about the world of "foreign cinema," one name immediately earns a mention: Bollywood. However, eve... [+911 chars]

Updated: Mon Mar 13 2023 06 : 53 PM

CONCLUSION

In conclusion, the development of our REST API for our news website has been a successful and valuable project. The API provides users with access to a wide range of news articles and data from a variety of sources, which can be easily retrieved and analyzed for insights and trends.

Throughout the development process, we encountered a number of challenges and technical issues, such as ensuring the security and reliability of the API and managing the large volume of data retrieved through it.

However, through careful planning and testing, we were able to overcome these obstacles and create a stable and user-friendly API that meets the needs of our users.

We believe that our news website REST API has the potential to be a valuable tool for journalists, researchers, and others interested in analyzing and understanding trends in the news media, and we look forward to seeing its impact in the years to come.



REFERENCE

- <https://newsapi.org>
- <https://reutersinstitute.politics.ox.ac.uk/digital-news-report/2021>
- <https://www.ibm.com/topics/rest-apis>



Thank You



https://github.com/AvantikaKodape16/News_Website