AstroBlog - Documentation

Application Frameworks – SE3040

Assignment 2

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Usage of NASA Open APIs ..... **Error! Bookmark not defined.**

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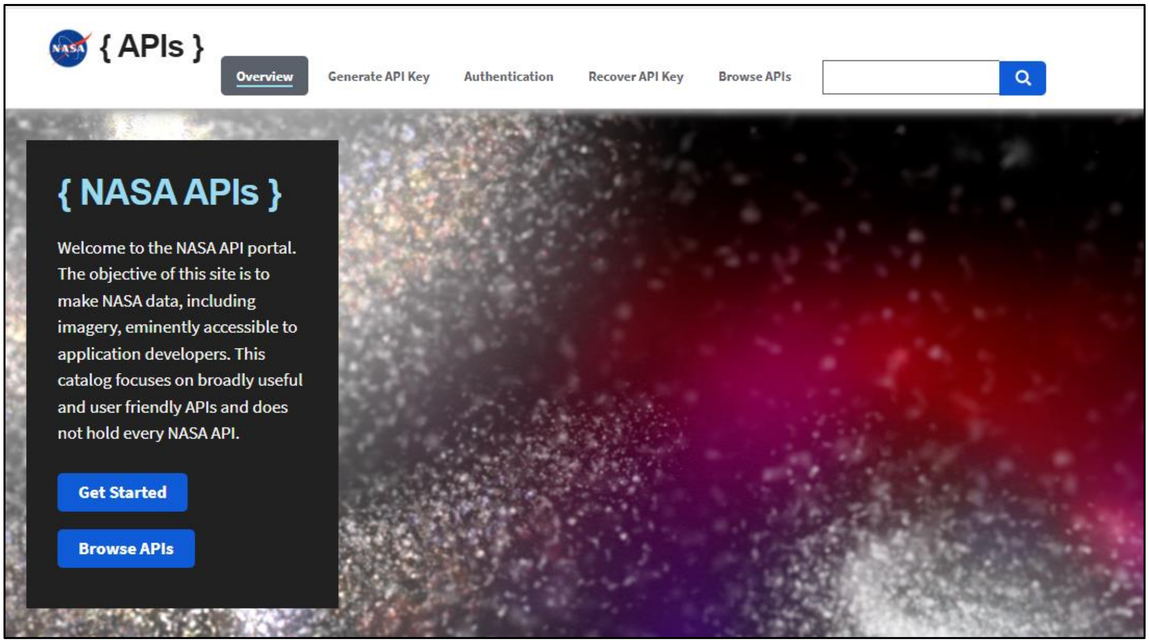
1. NASA API’s

How to use the NASA Open API’s

The National Aeronautics and Space Administration which is abbreviated to NASA has made a number of API’s available to the public use. They’re known as NASA Open API’s. They can be found at the website of the NASA API website which is https://api.nasa.gov.

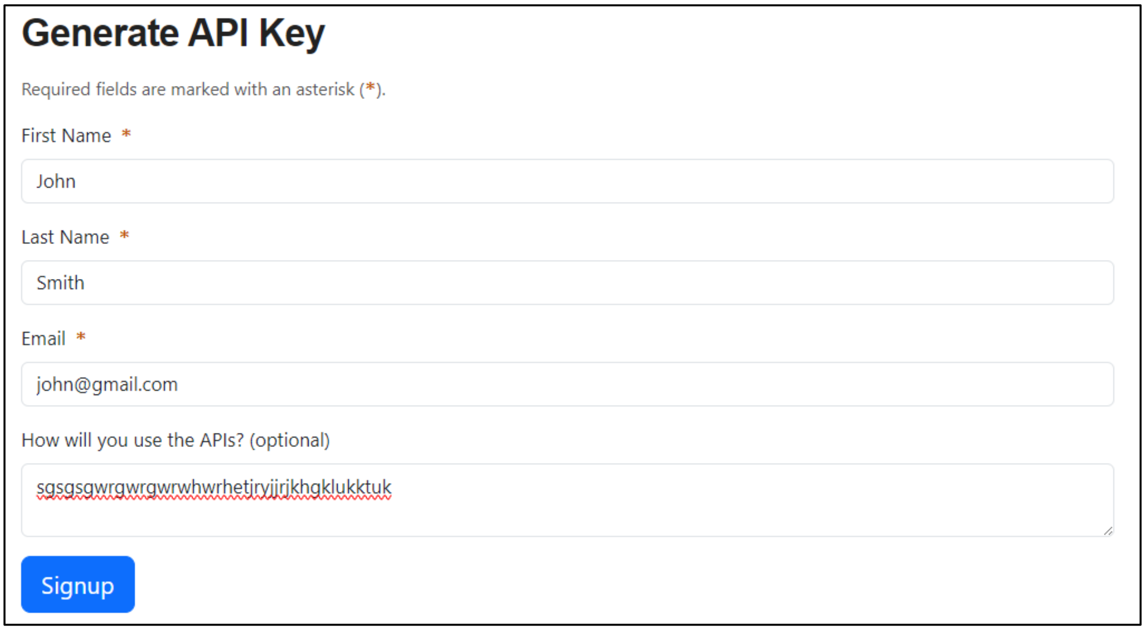


{ NASA APIs }

Welcome to the NASA API portal. The objective of this site is to make NASA data, including imagery, eminently accessible to application developers. This catalog focuses on broadly useful and user friendly APIs and does not hold every NASA API.

Landing Page of the NASA Open API Website

After arriving at the landing page of the website, people can give their personal information such as the name and the email. Afterwards, an email containing the ‘API KEY’ for that specific user will be sent to the email provided. That API KEY should be used while fetching information from the specific API listed on the website.



Generate API Key

Required fields are marked with an asterisk (*).

First Name *

John

Last Name *

Smith

Email *

john@gmail.com

How will you use the APIs? (optional)

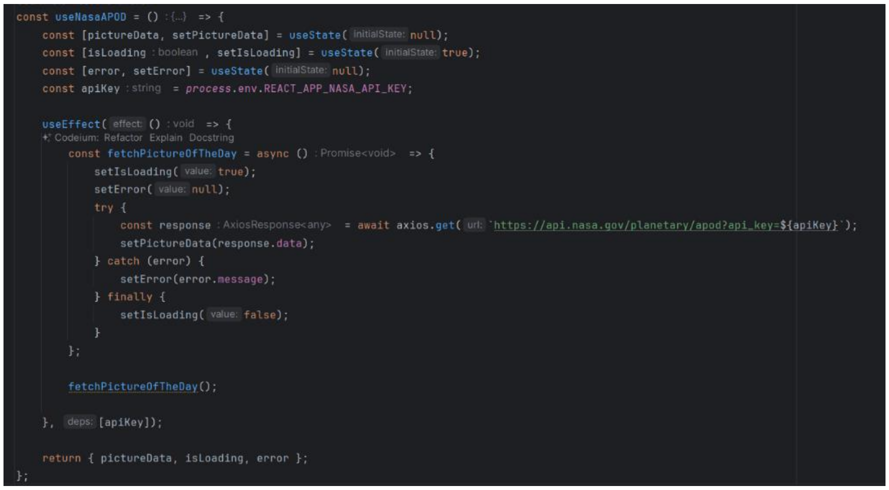
sgsgsgwrgwrgwrwhwrhetjryjjrjkhgklukktuk

Form to enter details to generate the API KEY

NASA Open API's used in Explore Space

APOD – Astronomy Picture Of the Day

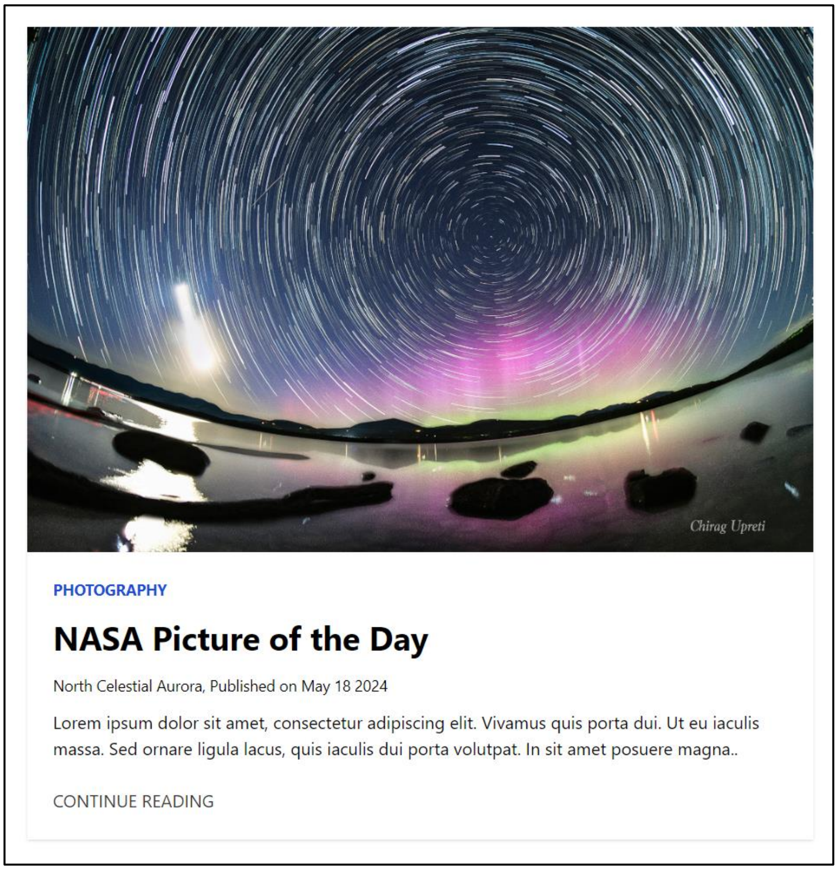
This API is one of the most popular used by developers. Once a request is sent through this API, it returns a picture related to astronomy and it provides a brief explanation regarding the picture in the response. The request needs to be sent with the API KEY that was generated for yourself accordingly.



```
const useNasaAPOD = () :{...}  => {
    const [pictureData, setPictureData] = useState( initialState: null);
    const [isLoading :boolean , setIsLoading] = useState( initialState: true);
    const [error, setError] = useState( initialState: null);
    const apiKey :string  = process.env.REACT_APP_NASA_API_KEY;

    useEffect( effect: () :void  => {
    +̈ Codeium: Refactor  Explain  Docstring
        const fetchPictureOfTheDay = async () :Promise<void>  => {
            setIsLoading( value: true);
            setError( value: null);
            try {
                const response :AxiosResponse<any>  = await axios.get( url: `https://api.nasa.gov/planetary/apod?api_key=${apiKey}`);
                setPictureData(response.data);
            } catch (error) {
                setError(error.message);
            } finally {
                setIsLoading( value: false);
            }
        };

        fetchPictureOfTheDay();

    },  deps: [apiKey]);

    return { pictureData, isLoading, error };
};
```

Fetch Request to get the APOD Response

The API implementation done on my project was to load the image in a separate component called APOD, it had details regarding the APOD picture below. For the designing purposes bootstrap components were used and media queries were implemented for the responsive user interface of the APOD component.



PHOTOGRAPHY

NASA Picture of the Day

North Celestial Aurora, Published on May 18 2024

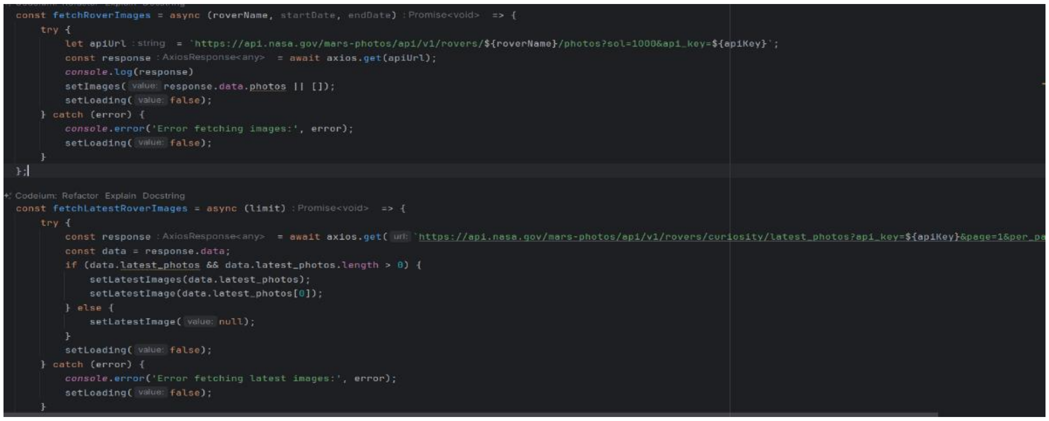
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus quis porta dui. Ut eu iaculis massa. Sed ornare ligula lacus, quis iaculis dui porta volutpat. In sit amet posuere magna..

CONTINUE READING

User Interface of the APOD Component

Mars Rover Photos

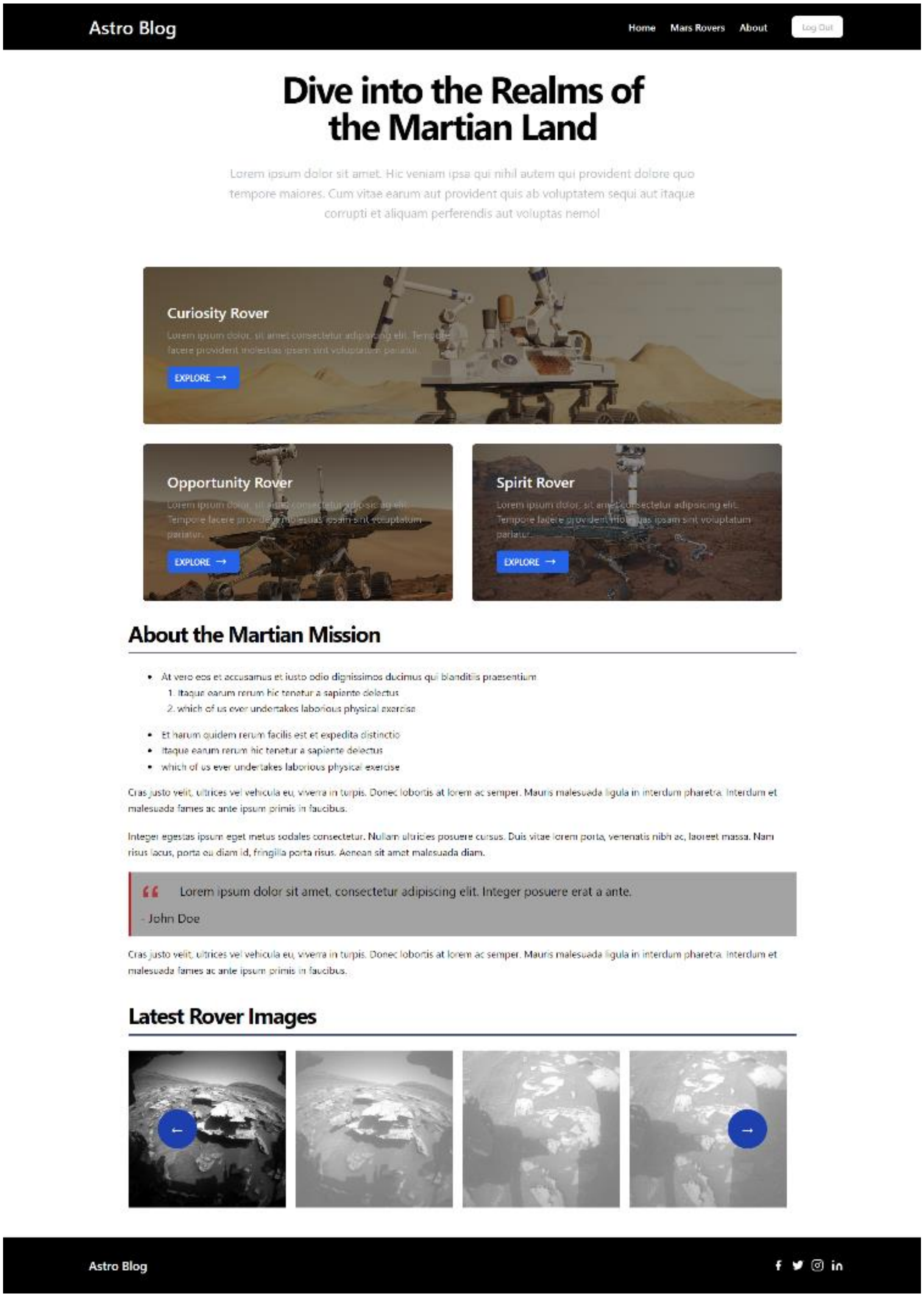
The Mars Rover Photos API was designed to collect image data gathered by the Rovers on the Martian planet. They are the NASA’s Curiosity, Opportunity, and Spirit rovers. This API responds with a collection of images of the surface of the planet Mars when a request is made, and these images are made available to use to the public by the NASA. The request needs to be sent with the API KEY that was generated for yourself accordingly.



```
const fetchRoverImages = async (roverName, startDate, endDate) :Promise<void>  => {
    try {
        let apiUrl :string  = `https://api.nasa.gov/mars-photos/api/v1/rovers/${roverName}/photos?sol=1000&api_key=${apiKey}`;
        const response :AxiosResponse<any>  = await axios.get(apiUrl);
        console.log(response)
        setImages( value: response.data.photos || []);
        setLoading( value: false);
    } catch (error) {
        console.error('Error fetching images:', error);
        setLoading( value: false);
    }
};

Codeium: Refactor Explain Docstring
const fetchLatestRoverImages = async (limit) :Promise<void>  => {
    try {
        const response :AxiosResponse<any>  = await axios.get( url: `https://api.nasa.gov/mars-photos/api/v1/rovers/curiosity/latest_photos?api_key=${apiKey}&page=1&per_pa
        const data = response.data;
        if (data.latest_photos && data.latest_photos.length > 0) {
            setLatestImages(data.latest_photos);
            setLatestImage(data.latest_photos[0]);
        } else {
            setLatestImage( value: null);
        }
        setLoading( value: false);
    } catch (error) {
        console.error('Error fetching latest images:', error);
        setLoading( value: false);
    }
```

Fetch Request to get the Mars Rover Response

The API implementation done on my project was to load the image in a separate component called MarsRover, it had 3 separate cards that redirects you to information regarding the 3 separate rovers that was on Mars for NASA. For the designing purposes bootstrap components were used and media queries were implemented for the responsive user interface of the Mars Rover component. The carousel bootstrap component to use the images that provided in the response in a slideshow, where the user can go back and forth with the images.



Dive into the Realms of the Martian Land

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Curiosity Rover

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Opportunity Rover

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Spirit Rover

Lorem ipsum dolor, sit amet consectetur adipisicing elit. Tempore facere provident molestias ipsam sint voluptatum pariatur.

About the Martian Mission

- At vero eos et accusamus et iusto odio dignissimos ducimus qui blanditiis praesentium
  1. Itaque earum rerum hic tenetur a sapiente delectus
  2. which of us ever undertakes laborious physical exercise
- Et harum quidem rerum facilis est et expedita distinctio
- Itaque earum rerum hic tenetur a sapiente delectus
- which of us ever undertakes laborious physical exercise

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>
> - John Doe

Cras justo velit, ultrices vel vehicula eu, viverra in turpis. Donec lobortis at lorem ac semper. Mauris malesuada ligula in interdum pharetra. Interdum et malesuada fames ac ante ipsum primis in faucibus.

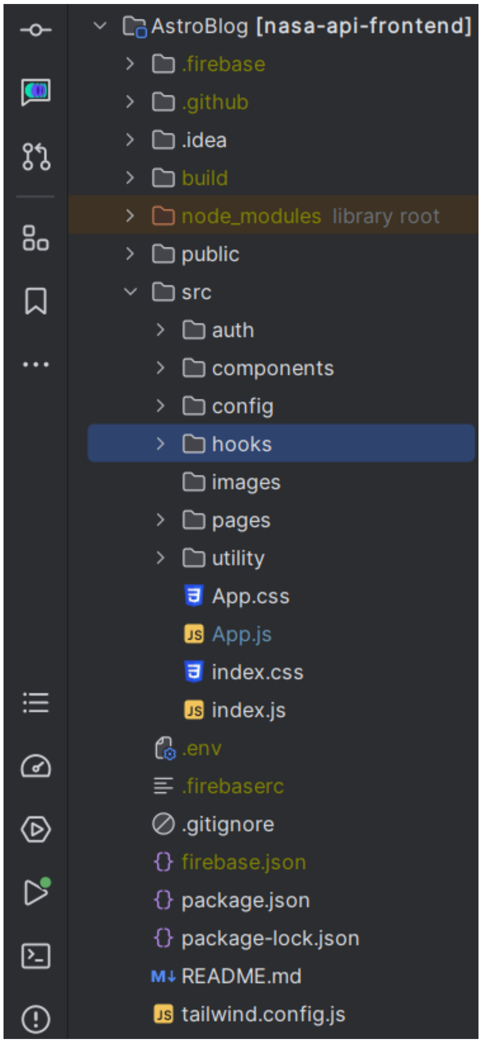
Latest Rover Images

User Interface of the MarsRover Component

2. Implementation of the system

For development of this system various frameworks were used in both frontend and the there is no backend for this system, AstroBlog. For the frontend development the javascript based framework React was used. And API's were taken from the NASA's Open API portal.

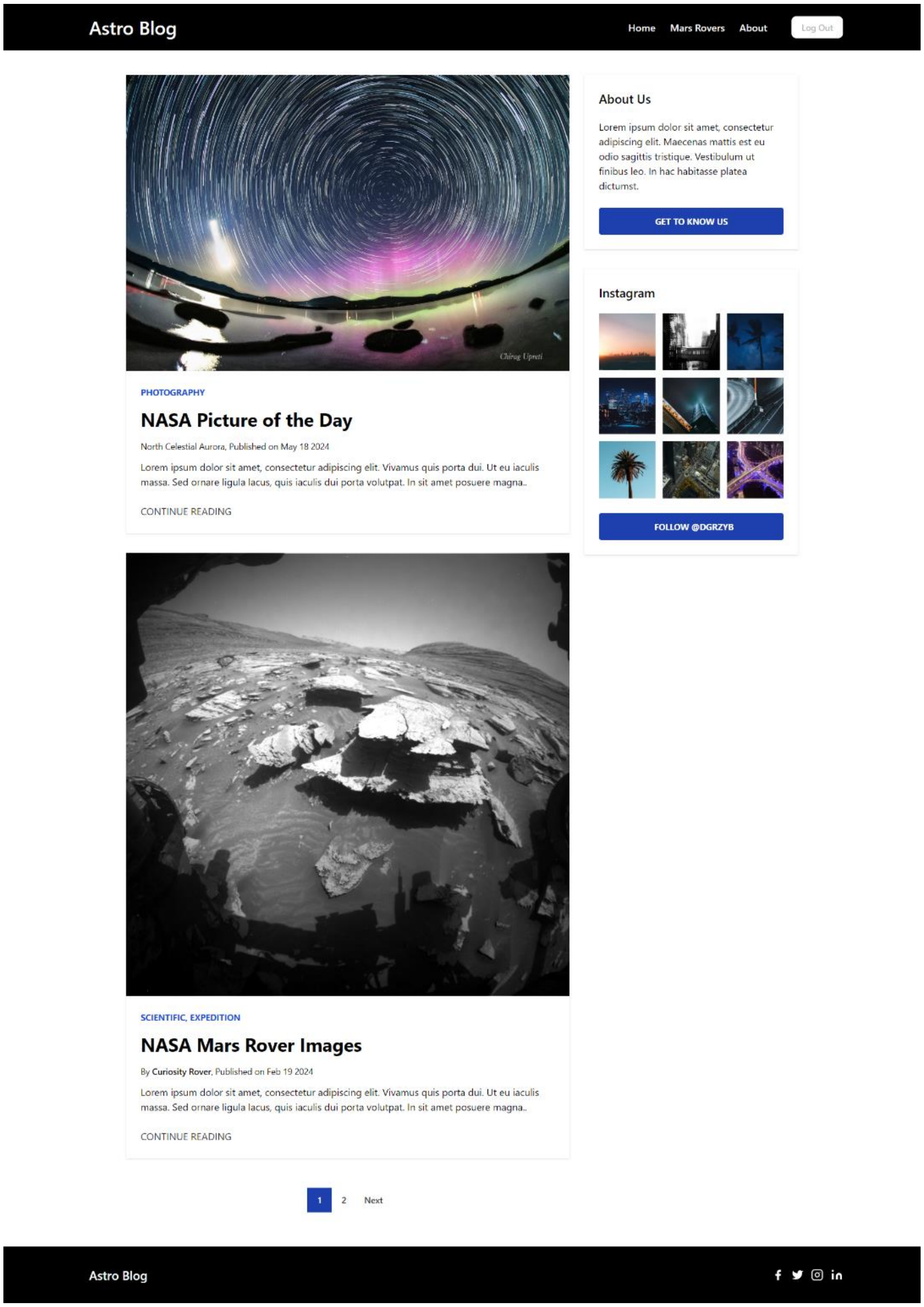
The frontend development of AstroBlog was done using the React framework. It is a component-based framework which is used for frontend development. I used the function-based components for the development of the components over class-based components. I also used Bootstrap as a CSS framework which was used to get components such as Cards, Forms, and Carousels.



```
AstroBlog [nasa-api-frontend]
  .firebase
  .github
  .idea
  build
  node_modules  library root
  public
  src
    auth
    components
    config
    hooks
    images
    pages
    utility
    App.css
    App.js
    index.css
    index.js
  .env
  .firebaserc
  .gitignore
  firebase.json
  package.json
  package-lock.json
  README.md
  tailwind.config.js
```

Set of Components that were developed for the FE

3. User Interfaces



About Us

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Instagram

PHOTOGRAPHY

NASA Picture of the Day

North Celestial Aurora, Published on May 18 2024

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CONTINUE READING

SCIENTIFIC, EXPEDITION

NASA Mars Rover Images

By **Curiosity Rover**, Published on Feb 19 2024

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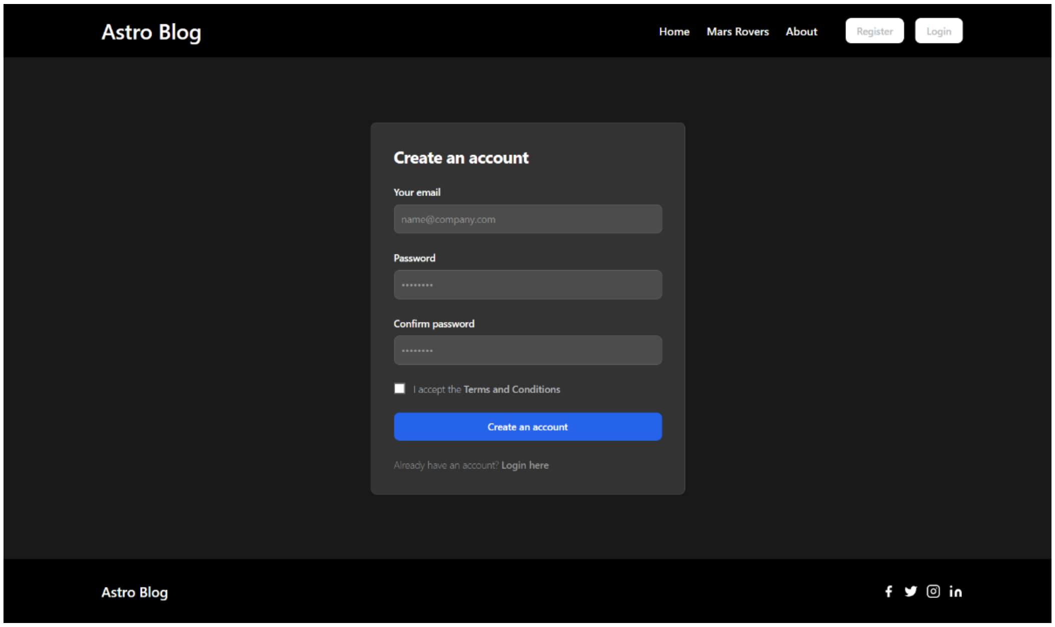
CONTINUE READING

Main Page / Home Page



Create an account

Your email

name@company.com

Password

••••••••

Confirm password

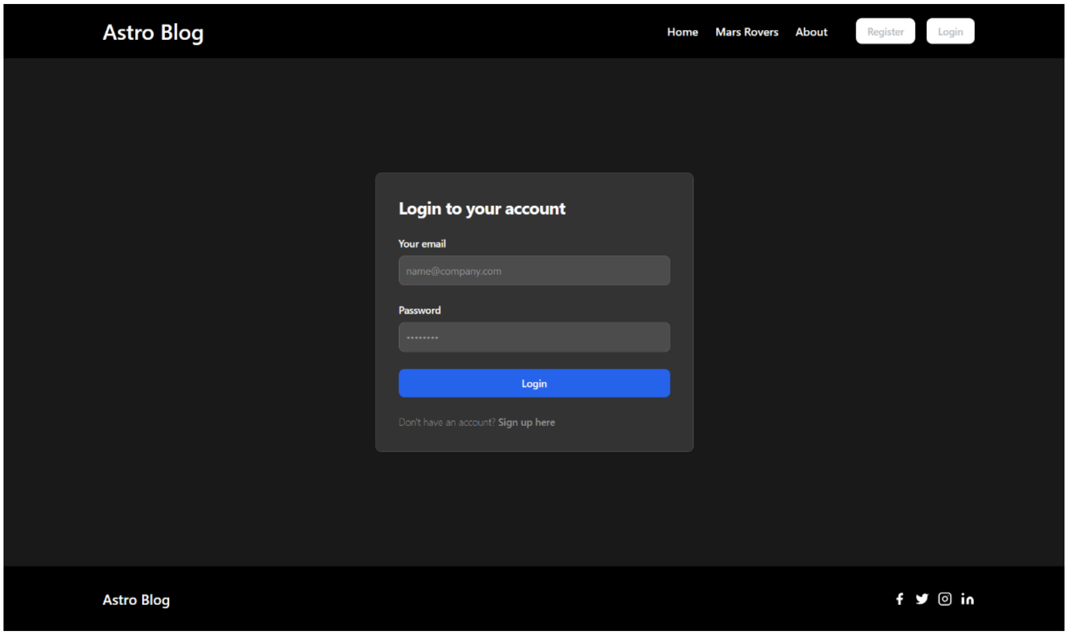
••••••••

□ I accept the Terms and Conditions

Create an account

Already have an account? Login here

Sign up / Register Page



Login to your account

Your email

name@company.com

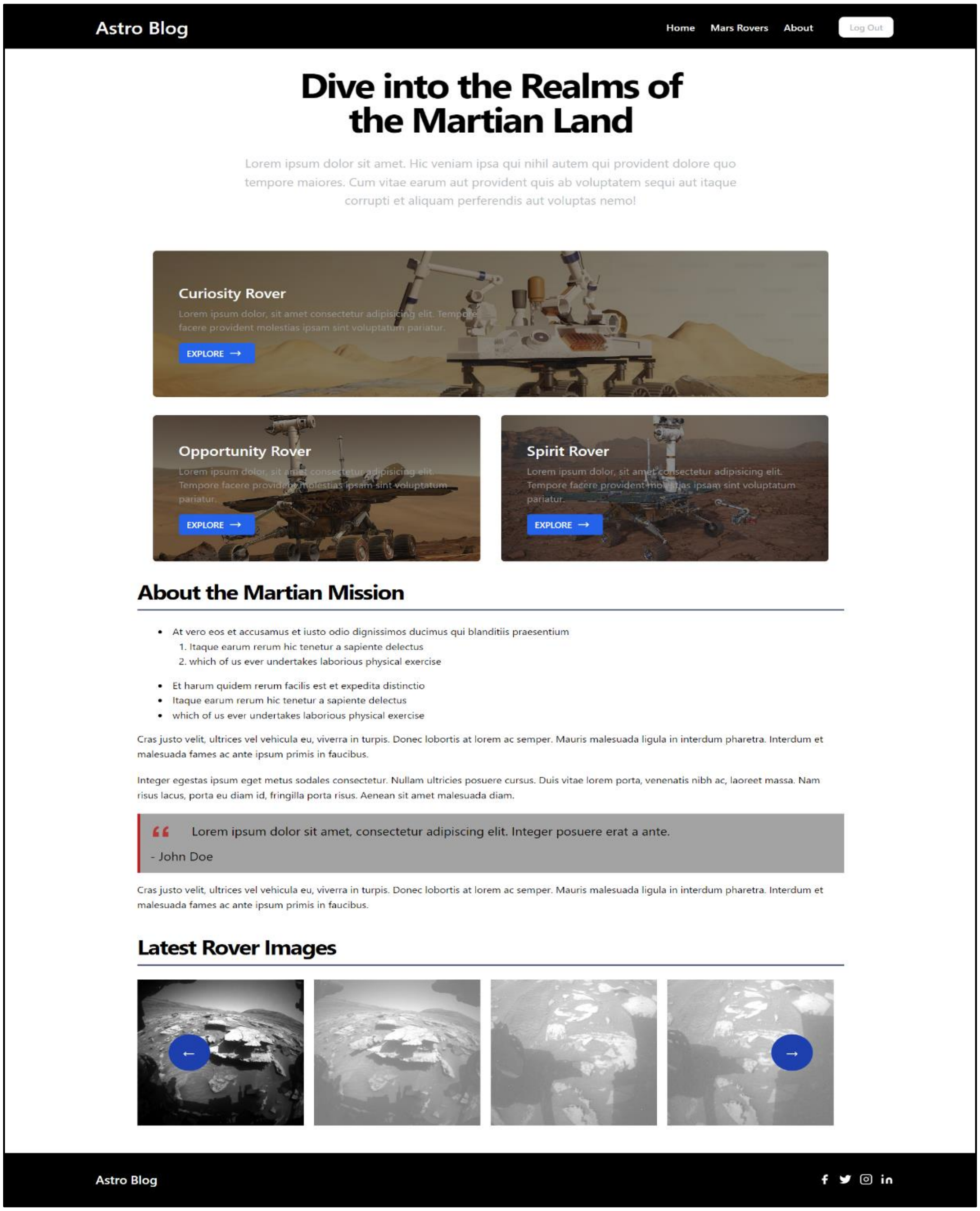
Password

••••••••

Login

Don't have an account? Sign up here

Login Page



Dive into the Realms of the Martian Land

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Curiosity Rover

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Opportunity Rover

Lorem ipsum dolor, sit amet consectetur adipisicing elit. Tempore facere provident molestias ipsam sint voluptatum pariatur.

Spirit Rover

Lorem ipsum dolor, sit amet consectetur adipisicing elit. Tempore facere provident molestias ipsam sint voluptatum pariatur.

About the Martian Mission

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- Et harum quidem rerum facilis est et expedita distinctio
- Itaque earum rerum hic tenetur a sapiente delectus
- which of us ever undertakes laborious physical exercise

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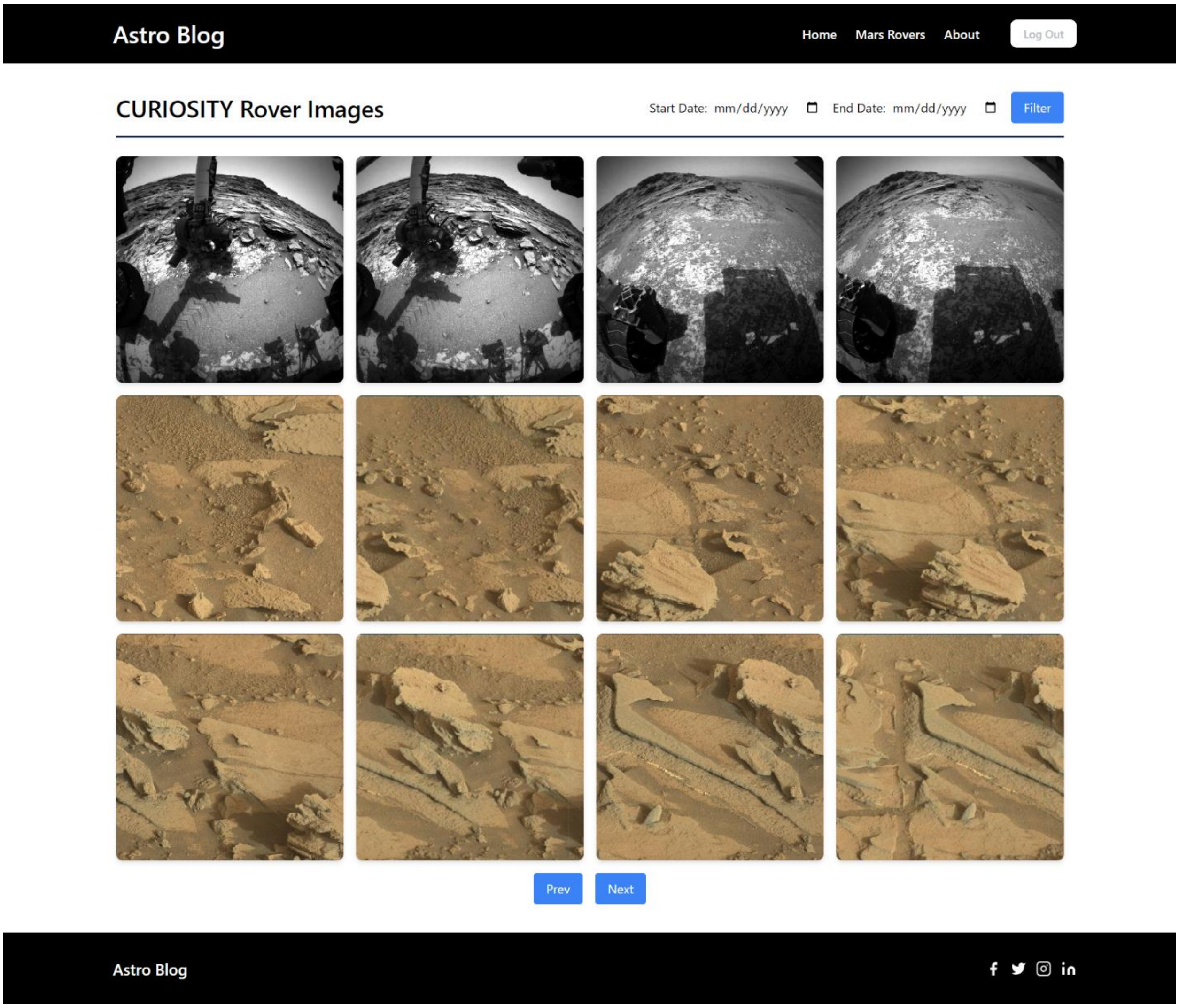
>
> - John Doe

Cras justo velit, ultrices vel vehicula eu, viverra in turpis. Donec lobortis at lorem ac semper. Mauris malesuada ligula in interdum pharetra. Interdum et malesuada fames ac ante ipsum primis in faucibus.

Latest Rover Images

Mars Rover API Component



CURIOSITY Rover Images

Start Date: mm/dd/yyyy

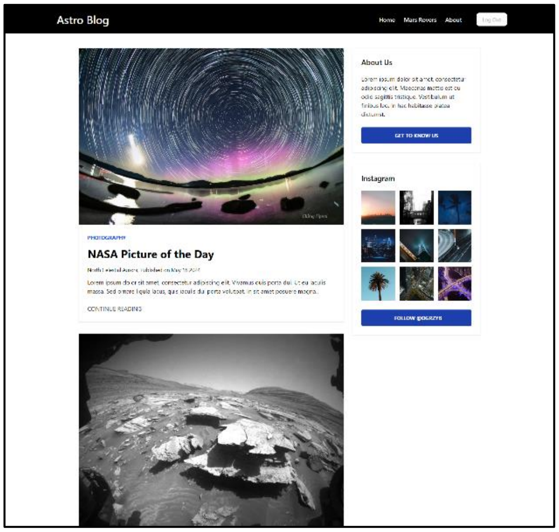
End Date: mm/dd/yyyy

Curiosity Rover based Component

4. Challenges Faced

Responsive User Interface Creation

The next challenge I faced was creating the Responsive User Interfaces. Previously, in most of the project I did not care about the responsiveness of the user interfaces. I finally learnt how to make the screens responsive according to the screen size. I was able to master the use of Media queries in CSS which allowed me to make CSS changes depending on the size of the screen.



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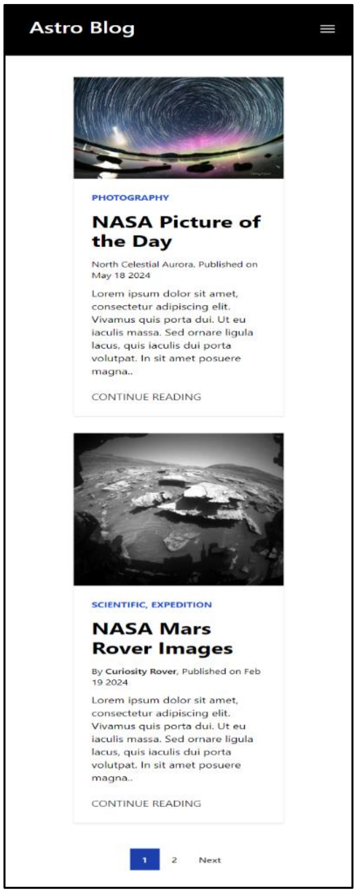
CONTINUE READING

Normal User Interface in a Laptop Screen



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NASA Mars Rover Images

By **Curiosity Rover**, Published on Feb 19 2024

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CONTINUE READING

Normal User Interface in a Smaller Screen