Real Time Satellite Imagery Dissemination Website

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ABSTRACT

This project consists of a combination of APIs by which the user is able to visualize the data by using various tools like excel, python and R. The user can also get the data to include image file, image data, and image metadata for a particular day or date. From that date the user has the data in the form of image and detail about the image.

INTRODUCTION

The Earth's weather system includes the dynamics of the atmosphere and its interaction with the oceans and land. Weather may be foreseen with some success up to two weeks in advance and can range from local or micro-physical processes that happen in minutes to global occurrences.[1]. There is an increasing demand for efficient ways to visualize and understand the amount of Earth- and space-related data. Users that utilize data visualization can better understand complex information, spot trends, and make wise decisions. [2]. The goal of this project is to create a website with an intuitive user interface for the visualization of Earth-related data and astronomical images. [3]. The temperature, wind speed, wind direction, and precipitation are just a few of the meteorological factors that may be found on a weather map. [4].

PROBLEM STATEMENT

The problem is that people often have difficulty understanding and visualizing complex scientific phenomena such as astronomical events and Earth's weather patterns. This can lead to a lack of interest or understanding in these subjects, and may hinder efforts to educate and inform the public about important scientific discoveries and environmental issues. Therefore, there is a need to develop effective tools and platforms that can provide intuitive and engaging visualizations of phenomena such as the Astronomy Picture of the Day (APOD) and Earth's weather patterns, in order to increase public awareness and understanding of these important topics.

Project Scope

The API operates in the form to get the data from the sources to give a logical view, and the data returned by the API includes the image file and data related to the research. GIS is used by the National Weather Service. Forecasting and geospatial data visualization are both enhanced by GIS. It is an art because it aims to describe facts in such a way that non-technical audiences can understand and analyze it more easily.

METHODOLOGY

1. We will collect the data about the earth's weather in the format of temperature, pressure.

2. We were developing an interface that links the API and makes the data available.

3. When constraints have been met, resources must be gathered.

4. These procedures will involve website design, i.e., the type of visualization you desire, such as a 2-D effect, pi chart, bar graph, histogram, scatter, or histogram.

5. To visualize the data, we were applying a regression model.

6. We're going to use HTML, CSS, JavaScript, and XML to build a website.

7. In order to make the page more interactive and user-friendly, we were building a dynamic page.

8. We were creating an interface to link the API.

9. We're going to use the free source NASA API to get help linking the data through API.

10. The last part comes here in the assembling part of both the pages, to make the website user friendly and easy to use.

IMPLEMENTATION

1. Introduction

This chapter discuss regarding the implementation and testing of APOD and earth data visualization. The implementation is that the writing of code line and run the code in native host. Meanwhile, checking section square measure getting used to seek out the bug within the system by the test with dummy input file.

 2. Views

We are using html to building the page user-friendly the website consist of 2 page. one regards to APOD and another is for earth weather visualization.
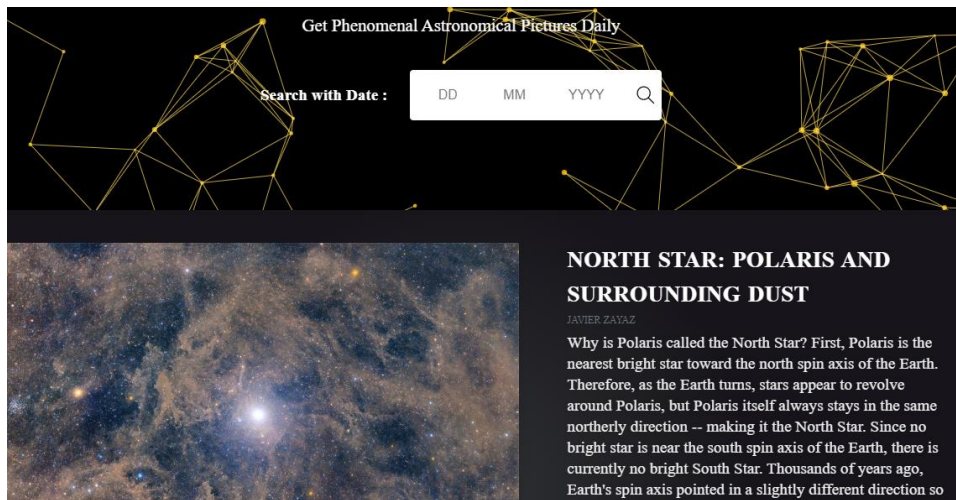
 3. Astronomic Picture Of Days

The APOD page consists of a date box , a container for HD photo and video, and a text box container. In this page we are creating a view in which user can select a specific date and view the content from API(application programming interface) which was called from API and response as it's data required and it will show high definition image and the data about image meta data and provide a feedback.

4. Earth Weather Visualization

The user interacted with the earth weather visualization page in this area. This page includes a visualization of earth weather. It uses prior year data and provides a logistic and analytic picture from graphs that users can readily grasp.

SUMMARY

The proposed system offers a user-friendly interface that enables users to examine and comprehend many facets of meteorological data and astronomy images related to Earth. The weather visualisation page offers a variety of visualizations, including graphs that show trends over time and maps that depict patterns in temperature and pressure. Users can examine excellent photographs of the universe and discover the science behind them with the APOD function.

LIMITATION

 There are some limitations of the project given below:

• Our project can't predict the future weather information.

• 10 queries per second per IP address.

• The availability of internet

• Missing details in the dataset and most of the values are taken approximately.

CONCLUSION

We conclude from the research and the proposed project that this website gives users information about a specific day for the subject and that the user should be able to view the dataset. After creating an API which also allows users to search for specific data and displays accurate date information in high-resolution images and videos with a defined format of DD-MM-YYYY, the user experience is enhanced. The users will be able to view the data set in several graphing forms. As a result, a website like this would be valuable for learning about or visualizing data.

REFERENCES

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