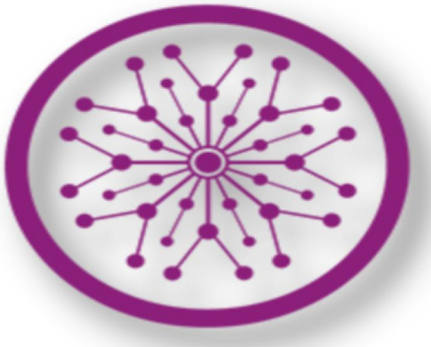

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NASA InSight Mars Weather Flask App - Documentation

Introduction

This Flask-based web application fetches and displays the latest weather data from Mars using NASA's **InSight Mars Weather API**. The data includes temperature, wind speed, and atmospheric pressure for different Martian days (sols).

Features

Fetches real-time Mars weather data from NASA's InSight lander . Displays temperature, wind speed, and pressure for multiple sols . Modern UI with a **Mars-themed futuristic design** . Uses Flask to handle API requests and serve HTML templates .Fully responsive and styled with CSS

Flask Backend (`app.py`)

1. Importing Required Libraries

```
from flask import Flask, render_template
import requests
```

- `Flask`: Framework for handling routes and rendering templates.
- `requests`: Library for making API calls to NASA.

2. Defining API Key and URL

```
NASA_API = "PQJ1o3eHjBHbKQhYZOXMkFDubNXCkbFdqhDHMLOv"
MARS_WEATHER_URL = "https://api.nasa.gov/insight_weather/"
```

- `NASA_API`: Your unique API key for accessing NASA data.
- `MARS_WEATHER_URL`: Endpoint for fetching Mars weather data.

3. Creating the Home Route

- The `index()` function fetches data from **NASA's InSight Weather API**.
- The JSON response is passed to the `index.html` template for display.

4. Running the Flask App

```
if __name__ == "__main__":
    app.run(debug=True)
```

- This starts the Flask web server.

Frontend (`index.html`)

1. Dynamic Data Rendering

- Loops through available **sols (Martian days)** and extracts key weather details.
- Displays **temperature, wind speed, and atmospheric pressure** for each sol.

Styling (`static/style.css`)

- **Dark-themed UI** with **Mars-inspired color scheme**.
- **Responsive design** with well-structured sections.

Running the Application

1. Install dependencies if not already installed:

```
pip install flask requests
```

2.
3. Run the Flask application:

```
python app.py
```

4.
5. Open http://127.0.0.1:5000/ in your browser to view the Mars weather data.

Conclusion

This project successfully integrates NASA's **InSight Weather API** into a Flask web application, providing real-time **Mars weather updates** in a visually appealing format.