**Website for Assessing Solar Panel Suitability in Europe**

**Introduction**

This document outlines the functionalities and structure of a website that allows users to enter coordinates of a specific region in Europe and receive information on whether the location is suitable for installing solar panels during different seasons for the period 2020-2024.

**Project Goals**

The main goals of the website are:

1. To provide information on solar radiation for a specific location in Europe.

2. To assess the suitability of the location for installing solar panels during different seasons.

3. To provide historical data for the period 2020-2024.

**Key Features**

**1. Coordinate Entry:**

- Users enter the geographical coordinates (latitude and longitude) of a specific region in Europe.

**2. Suitability Assessment:**

- The site uses historical solar radiation data from 2020-2024 to assess the suitability of the location for installing solar panels during different seasons.

**3. Result Display:**

- Results are presented as textual information and graphs showing solar radiation levels during different seasons.

**Technical Requirements**

**1. Front-end:**

- HTML/CSS for building the user interface.

- JavaScript for dynamically loading data and visualizations.

**2. Back-end:**

- Server technology such as Python with Flask or Django for handling requests and data management.

- Database connection for storing historical solar radiation data.

**3. Database:**

- Relational database like PostgreSQL for storing solar radiation data.

**4. Data API:**

- Use of external APIs for retrieving solar radiation data if necessary.

**Site Structure**

**1. Home Page:**

- Coordinate entry (latitude and longitude).

- Search button.

**2. Results Page:**

- Display of solar radiation information during different seasons.

- Graphs showing data for the period 2020-2024.

- Suitability assessment for installing solar panels.

**Example Workflow**

1. The user visits the home page and enters the coordinates.

2. The user clicks the search button.

3. The site sends a request to the server with the entered coordinates.

4. The server retrieves solar radiation data from the database or an external API.

5. The server assesses the location's suitability for installing solar panels and returns the results to the front-end.

6. The user views the results as text and graphs.

**Visualizations**

**1. Solar Radiation Graph:**

- Line charts showing solar radiation during different seasons for the period 2020-2024.

**2. Map of Europe:**

- Visualization of the entered coordinates on a map.

**Conclusion**

This website provides valuable information for individuals who want to install solar panels and need to know if their chosen location is suitable. By using historical data and visualizations, the site offers detailed and clear information on solar radiation during different seasons, facilitating informed decision-making.