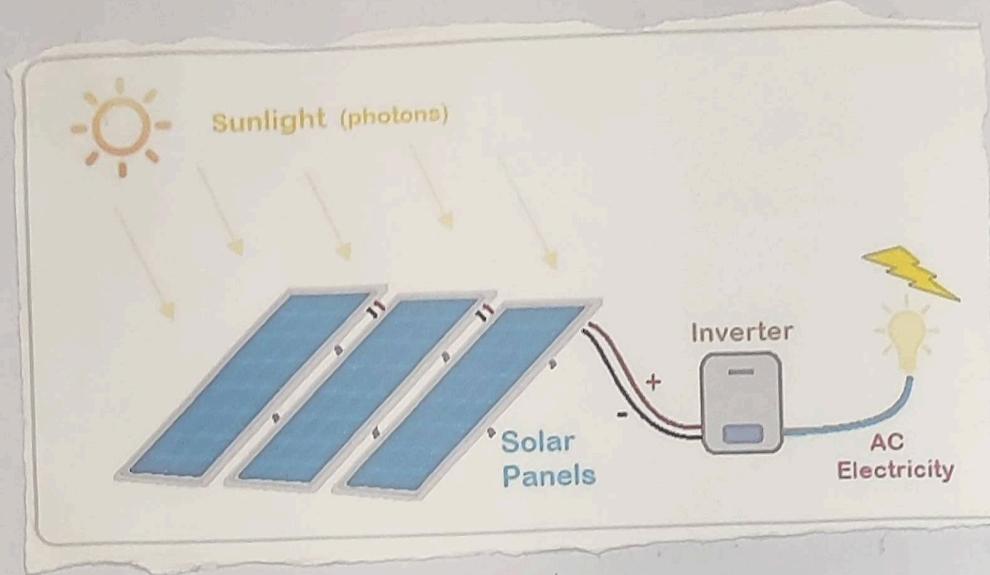


About Project:

- Welcome to our innovative Solar Panel Project. In a world striving for sustainable energy solutions. The power of the sun through cutting-edge technology. we developed a comprehensive dashboard, captivating story, insightful report. that do not only highlights the significance of solar energy but also provides a deep dive into our research and findings.
- Through this project. we aim to shed light on the potential of solar panel in transforming the way we generate and utilize clean, renewable energy. Join us as we explore the impact, challenges, and future possibilities of solar power in our quest for a more sustainable and environmentally responsible future.



Introduction:

- During our short-term internship with Smart Bridge, we've delved into the world of data analytics, with a primary focus on Solar panel forecasting.

In this introductory section, we'll provide an overview of the importance of data visualization in conveying insights and our objective to create informative visualizations, including dashboards, reports and data stories.

- Solar cell, also called photovoltaic cell, any device that directly converts the energy of light into electrical energy through the photovoltaic effect.

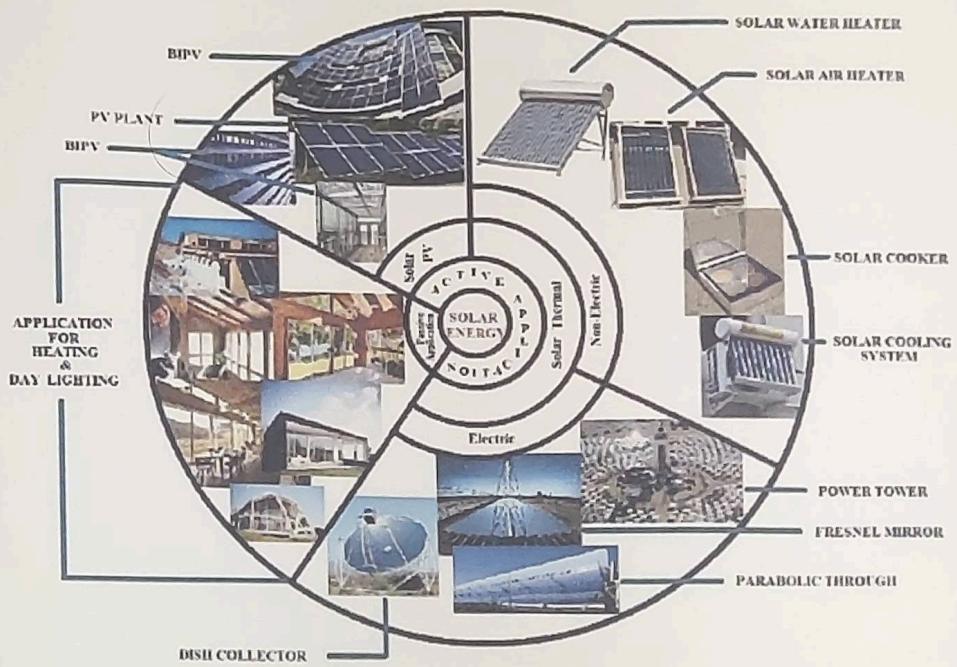
Overwhelming majority of solar cell are fabricated from silicon with increasing efficiency and lowering cost as the materials change.

Future Scopes :

- the future scopes section will provide insights into what lies ahead. we'll discuss potential area for further research and development in solar panel forecasting. as well as how our work can serve as a foundation for further projects and innovation.
- this will open the door to ongoing exploration and improvement in this critical field.
- By structuring your report in this way, you'll offer a comprehensive view of your project, including its advantages, results, practical applications, conclusions and future directions.
- In 1981, the American inventor Charles Fritts created the first commercial solar panel.

Applications of Solar:

- Solar water heating
- Pool heating
- Solar fabrics
- Solar transportation
- Solar calculators
- Solar cooking
- Solar farms
- Solar batteries
- mini Solar panels can be used to power a host of applications that require low power.
- they are good for devices that do not consume too much energy.
- they can be used to power pocket calculators, watches, flashlights, wearable devices and radios.



Solar water heating :

- A solar water heating unit comprises a blackened flat plate metal collector with an associated metal -tubing facing the general direction of the Sun.
- the plate collector has a transparent glass cover above and a layer of thermal insulation beneath it.

Solar distillation :

- In arid semi and on coastal areas there is scarcity of potable water . the abundant sunlight in these areas can be used for converting saline water into potable distilled water by the method of solar distillation.
- In this method, solar radiation is admitted through a transparent, air tight glass cover into a shallow blackened basin containing saline water .

Solar Green House :-

- A Green house is a structure covered with transparent materials that acts as a Solar collector and utilises Solar radiant energy to grow plants.
- It has heating, cooling and ventilating devices for controlling the temperature inside the green house.
- As the green house structure has a closed boundary, the air inside the greenhouse gets enriched with CO_2 as there is no mixing of the greenhouse air with the ambient air.
- Further, there is reduced moisture loss due to restricted transpiration.
- All these features helps to sustain plant growth throughout the day as well as during the night and all year round.

Literature Survey :

- Before diving into our own work, it's essential to review the existing literature on solar panel forecasting. This section will provide a comprehensive look at prior research and established methods in the field.
- We will explore how data analytics and visualization have been applied in the context of solar energy prediction.

Theoretical analysis :

- In this section, we'll transition from the literature survey to our own theoretical analysis.
- We'll delve into the principles, models, and methodologies we've employed to forecast solar panel performance. This is where we outline the concepts and theories that underpin our work, including the factors considered in solar energy prediction.

Pros and Cons of Solar Energy



8 Billion Trees
.com

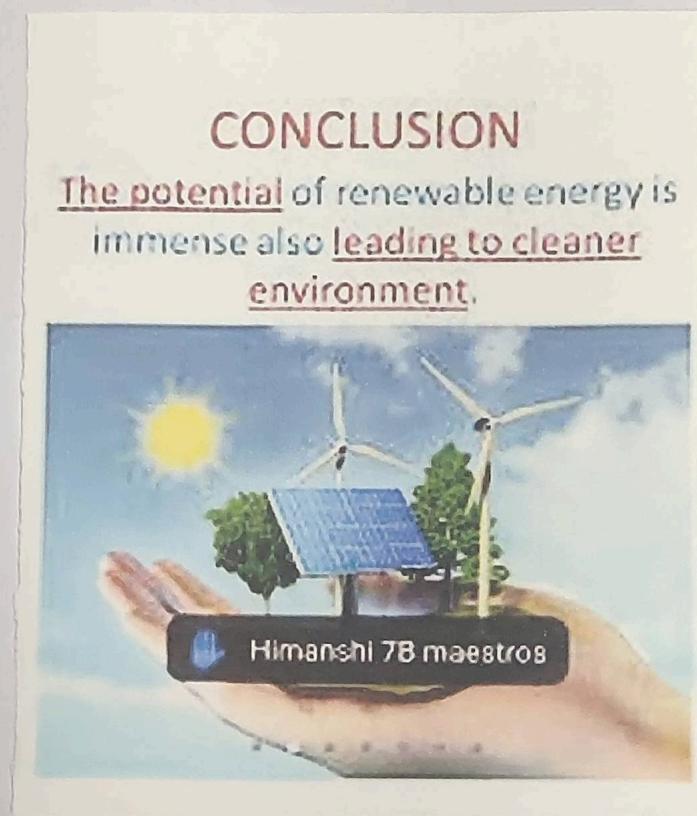
Advantages and disadvantages :

- In our exploration of solar panel forecasting and data analytics, we've encountered several advantages and disadvantages.
- Advantages include the ability to make informed decisions based on data, optimize solar panel performance, and identify trends.
- Disadvantages may include the complexity of data analytics and the potential for inaccuracies in forecasting models.
- This section will provide a balanced view of the pros and cons of our approach.

Result :

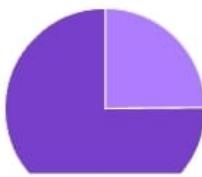
- The results section will delve into the specific findings we've uncovered during our internship.
- It will include a summary of the insights gained from our data visualization and analytics work.

- this section should highlight key takeaways from the project, such as notable trends, performance indicators, and data-driven recommendation.
- Conclusion:
- In the conclusion, we'll summarize the significant of our internship project with Smartbridge
- this section will emphasize the value of data analytics and data visualization in the context of solar panel forecasting.



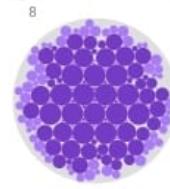
Power Generated by Year

Year
Year
2008 2009



Relative Humidity hierarchy colored by Year and sized by Month

Month (Count disti... Year
1 8 2008 2009



Power Generated compared to Day

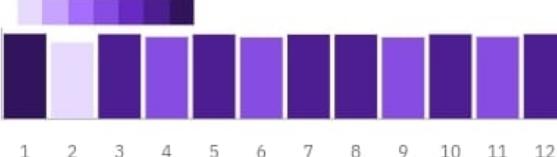
6590000 ↑

Power Generated

10 (+65,899,900%)
Day

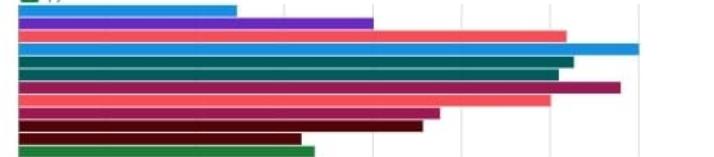
Average Barometric Pressure (Period) by Month colored by Average Barometric Pressure (Period)

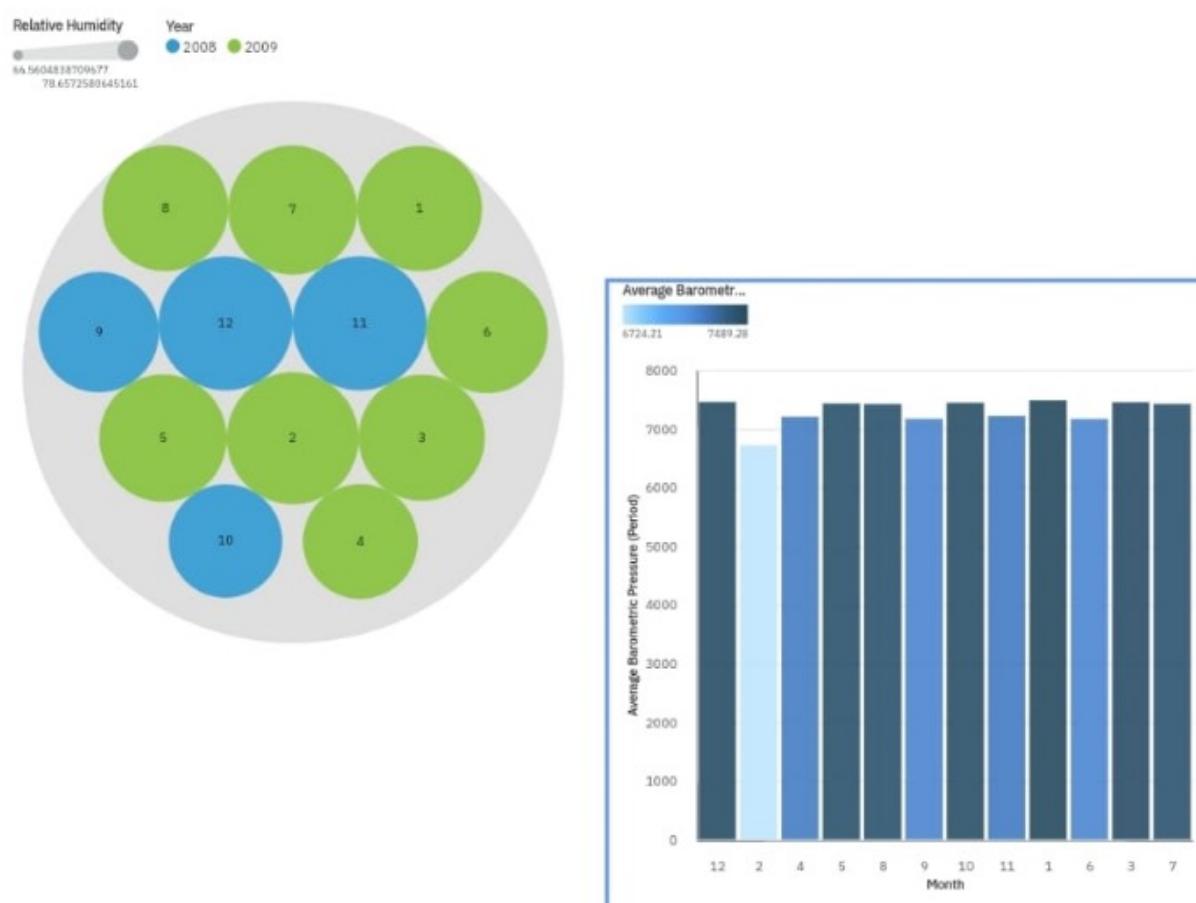
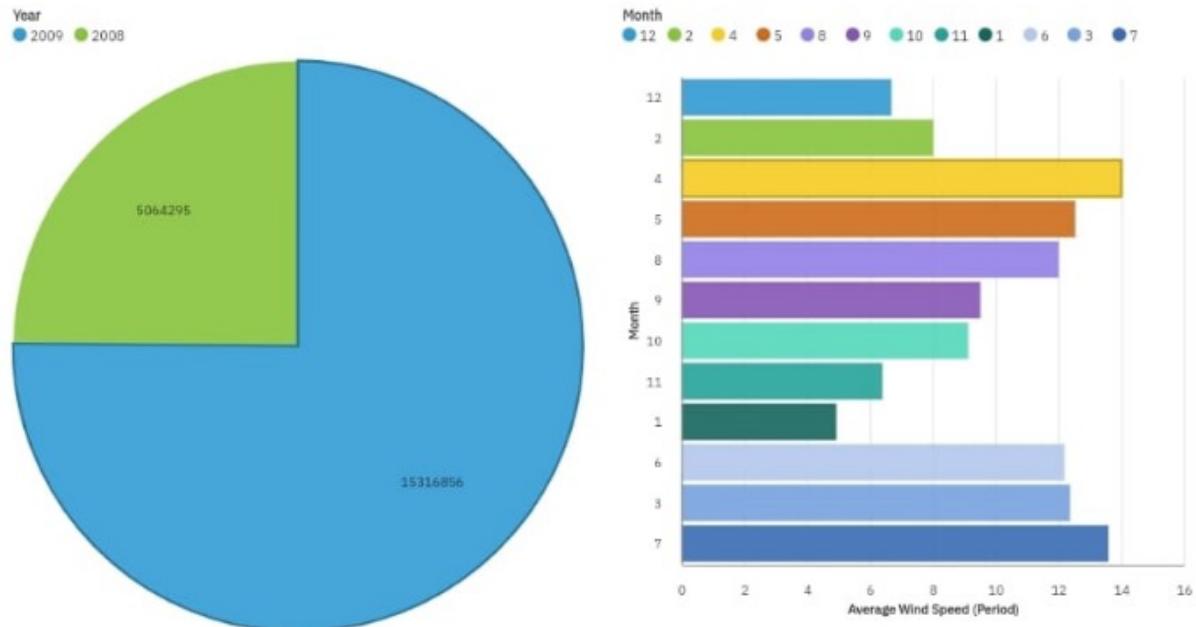
Average Barometr...

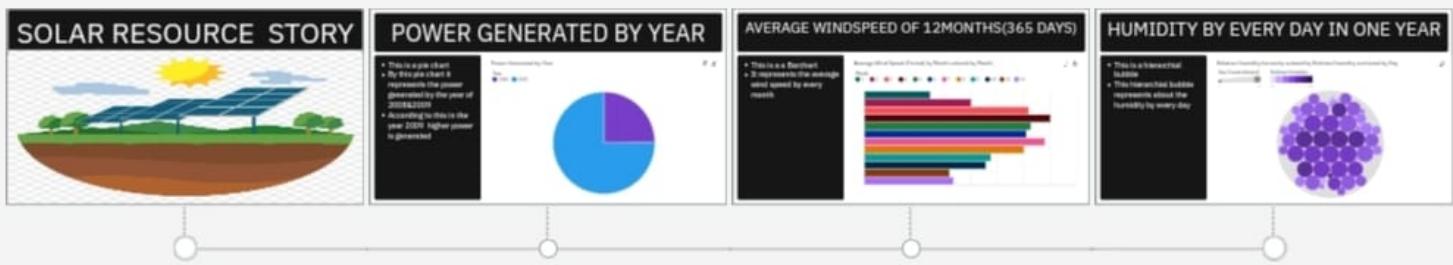


Average Wind Speed (Period) by Month colored by Month

Month
1 2 3 4 5 6 7 8 9 10 11
12







A screenshot of the Microsoft Visual Studio Code (VS Code) interface. The title bar shows "cognos bootstrap". The left sidebar has icons for file, folder, search, and other development tools. The main editor area displays an "app.py" file with the following code:

```
C:\> Users > pravalika > Downloads > Scaffold > Scaffold > app.py > ...
1  from flask import Flask, render_template, request
2
3
4  app = Flask(__name__)
5
6
7  @app.route('/')
8  def index():
9      return render_template('index.html')
10
11 if __name__ == '__main__':
12     app.run(debug = True, port = 8000)
```

The status bar at the bottom indicates "Ln 12, Col 38" and "Python 3.11.6 64-bit (Microsoft Store)".

File Edit Selection View Go Run Terminal Help

index.html inner-page.html app.py

Scaffold > templates > index.html > HTML > Head > Meta

```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="utf-8">
6   <meta content="width=device-width, initial-scale=1.0" name="viewport">
7
8   <title>solar panel</title>
9   <meta content="" name="description">
10  <meta content="" name="keywords">
11
12  <!-- Favicons -->
13  <link href="assets/img/favicon.png" rel="icon">
14  <link href="assets/img/apple-touch-icon.png" rel="apple-touch-icon">
15
16  <!-- Google Fonts -->
17  <link href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,600,600i,700,700i|Krub:300,300i,400,400i,500,500i,600,600i,700,700i|Poppins:300,300i,400
18
19  <!-- Vendor CSS Files -->
20  <link href="assets/vendor/aos/aos.css" rel="stylesheet">
21  <link href="assets/vendor/bootstrap/css/bootstrap.min.css" rel="stylesheet">
22  <link href="assets/vendor/bootstrap-icons/bootstrap-icons.css" rel="stylesheet">
23  <link href="assets/vendor/boxicons/css/boxicons.min.css" rel="stylesheet">
24  <link href="assets/vendor/lightbox/css/lightbox.min.css" rel="stylesheet">
25  <link href="assets/vendor/swiper/swiper-bundle.min.css" rel="stylesheet">
26
27  <!-- Template Main CSS File -->
28  <link href="assets/css/style.css" rel="stylesheet">
29
30  <!-- =====
31  * Template Name: Bikin
32  * Updated: Sep 18 2023 with Bootstrap v5.3.2
33  * Template URL: https://bootstrapmade.com/bikin-free-simple-landing-page-template/
34  * Author: BootstrapMade.com
35  * License: https://bootstrapmade.com/license/
36  ===== -->
37 </head>
```

In 6, Col 73 Spaces:2 UTRF HTML