



Presentation 2024

INTERNSHIP PROJECT

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Overview

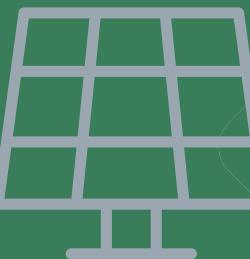
The Full-Stack Data Management and Visualization Platform represents a significant step forward in the efficient handling of big data, offering a powerful tool for organizations to manage and visualize their data effectively.

01



To visualize the static solar plants assets data into an easy readable format and provide one platform for all the operation for user to get data standardized

This need is particularly evident in the renewable energy sector, where vast amounts of data are generated daily from various sources



02

03



The platform integrates with Google BigQuery to handle large datasets efficiently, ensuring real-time updates and synchronization

Users can perform CRUD operations directly within the application, with changes instantly reflected in the BigQuery database



04

Objectives

project's overall objectives and goals.

Objective 01

To visualize the real-time solar assets data into an easy and readable format and provide one platform for all operation for the user to get data standardized

Objective 02

To address all challenges, of data getting located anywhere in the excel this project will act as a central platform for any solar related data



System Architecture

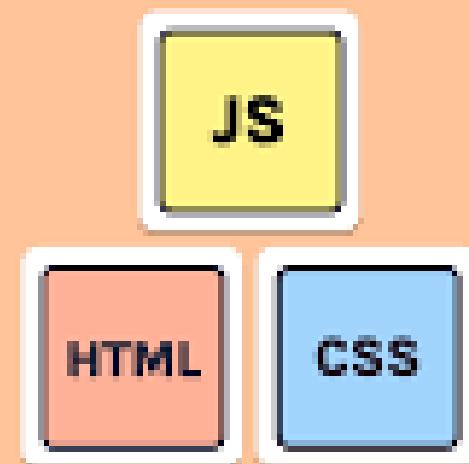
Flask as Backend



Flask

Flask is a web framework that allows developers to build lightweight web applications quickly and easily with Flask Libraries.

HTML, CSS, JS as Frontend



HTML provides the basic structure of sites, which is enhanced and modified by other technologies like CSS and JavaScript.

Big Query as Database

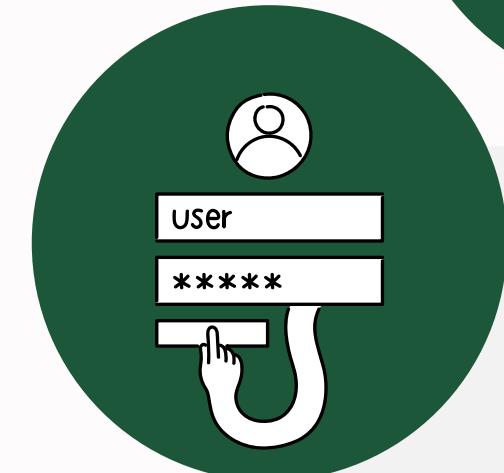


BigQuery

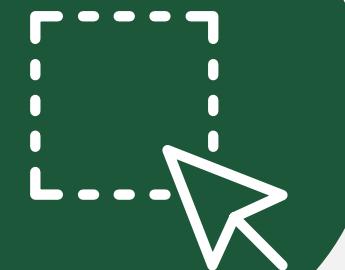
BigQuery is a fully managed, AI-ready data platform that helps you manage and analyze your data with built-in features

Steps Involved

various Step Involved
in order to access the
platform and perform
operation



1st step
Login using the
provided credentials



2nd step
Select the plants and
the corresponding
blocks



3rd Step
Access the table
through Big Query
Database



4th Step
change the data
according to your
specifications (CRUD)

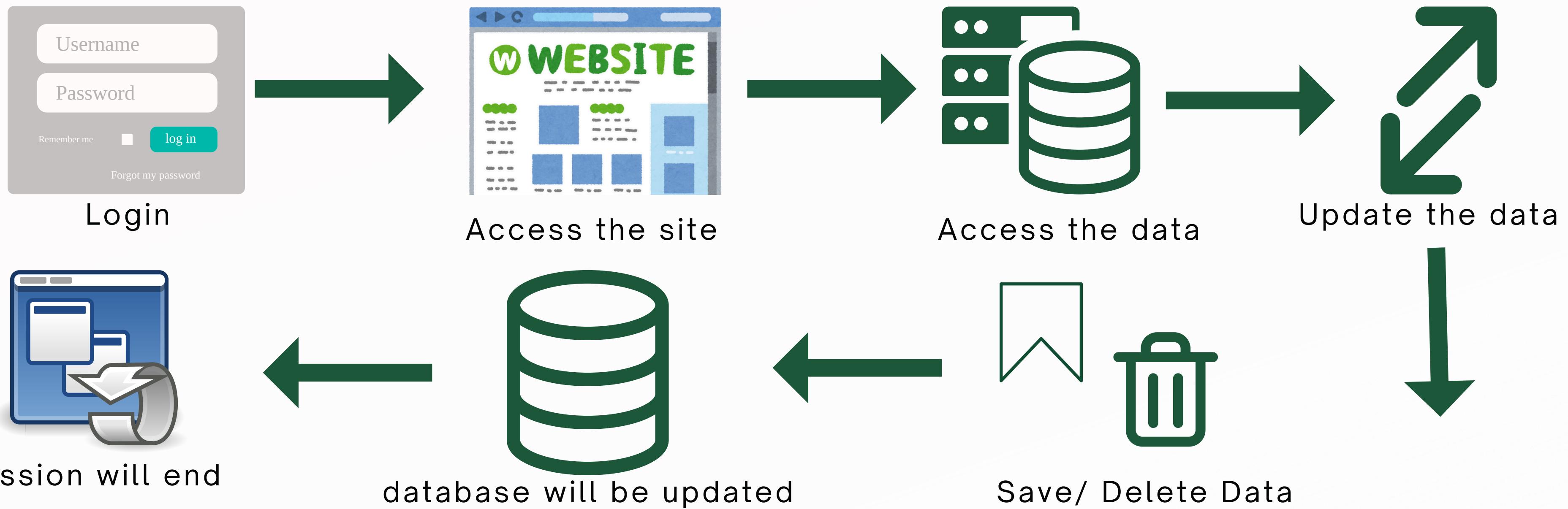


5th Step

Save the changes in
order to reflect it in
Database

WORKING

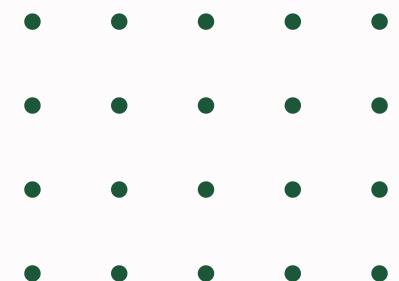
An E.R.Diagram to demonstrate how
the project works





Benefits and Impact

- Operational Efficiency:
 - Improved data management.
 - Enhanced decision-making.
- Scalability:
 - Capable of handling large datasets.
 - Real-time updates.
- User Experience:
 - Intuitive interface.
 - Seamless interaction between backend and frontend.



Drawbacks & future enhancements

01 Authentication & security

Authorization can be provided but authentication feature is not there till now which can be added further and security functionality can be added

02 Session Management

Till now the session last until the user has closed its browser but time based session management can be provided along with the cookies which can modify the site according to user preference

03 Multiple features like excel

The website lacks advance features like the we get in excel such as making a plant as important, highlighting plants and loading data in bulk.

04 Additional data visualization

Currently the Visualization feature is provided just the summary of the plant is rendered we can also provide the data visualization through various python libraries.





CONCLUSION

Through this we can conclude that....

- This project demonstrates the successful integration of backend and frontend technologies to solve real-world problems.
- It highlights the importance of data-driven decision-making and the role of efficient data management in achieving it.



Renewables

THANK YOU

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