

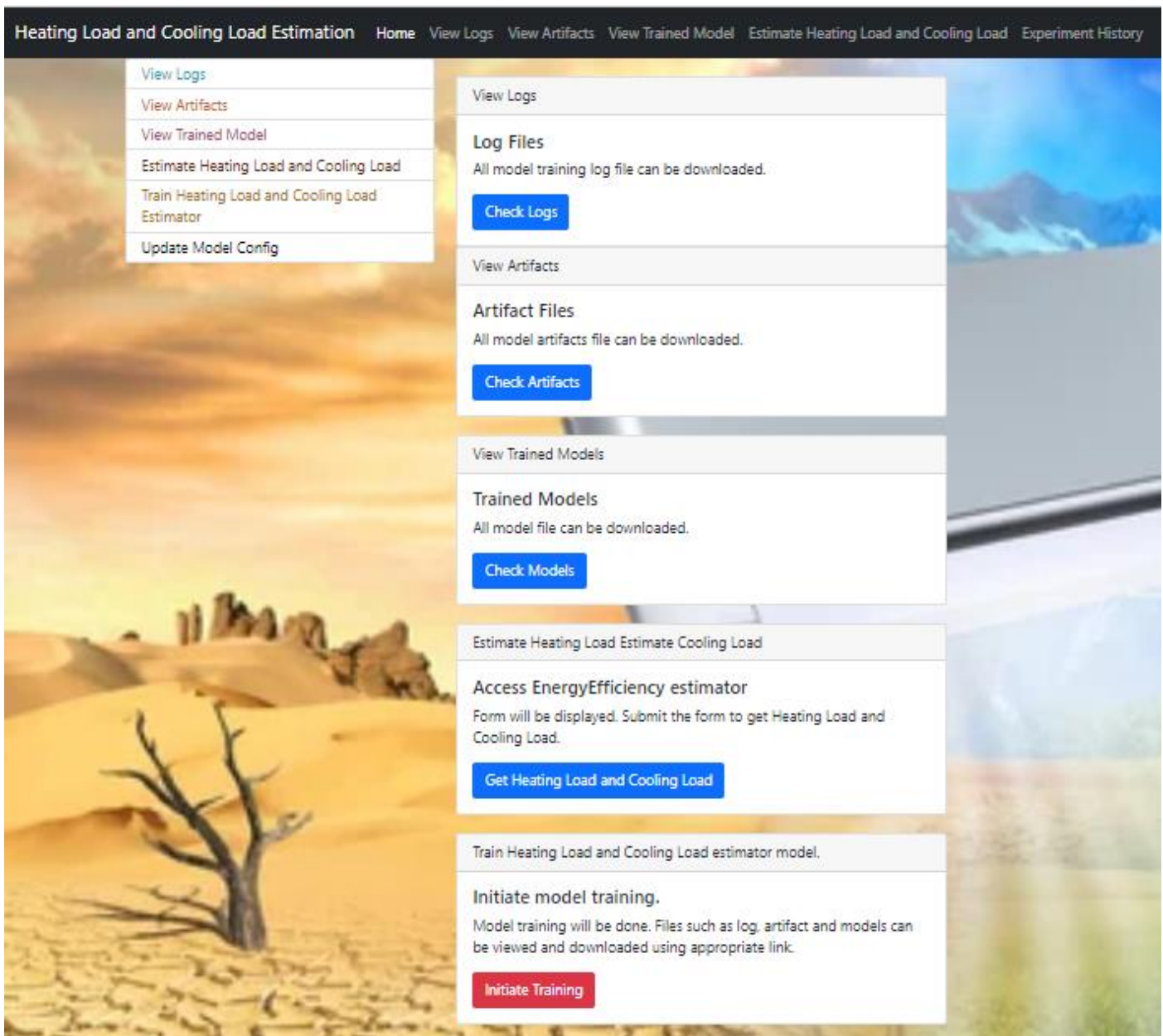
Energy Efficiency

Wireframe Documentation

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Homepage

1. Once the end user accesses the deployed URL and clicks on Home Button - he is navigated to the below homepage of Heating Load and Cooling Load Estimation.



2. On the homepage displayed user can access the top Nav Bar, the left side bar and also the tabs shown on the homepage.

Model Training Page

1. The user initially needs to Train the Machine Learning Model which carries out the step-by-step procedure mentioned in our Pipeline and saves the best Model under “View Trained Model Folder”. In order to achieve this the user needs to click on “Train Heating Load and Cooling Load Estimator” provided on the left bar or click on “Initiate training” on the Homepage.
2. User will receive a response saying “Training Started” and soon within a span of time the model training gets completed and similar kind of results shown below will be achieved.

Heating Load and Cooling Load Estimation Home View Logs View Artifacts View Trained Model Estimate Heating Load and Cooling Load Experiment History

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	experiment_id	artifact_time_stamp	running_status	start_time	stop_time	execution_time	message	accuracy	is_model_accepted	created_time_stamp
0	a97692b3-ee90-443f-b20c-2e23ed482c2c	2022-08-10-17-34-31	True	2022-08-10 17:34:31.055529	NaN	NaN	Pipeline has been started.	NaN	NaN	2022-08-10 17:34:31.055529
1	a97692b3-ee90-443f-b20c-2e23ed482c2c	2022-08-10-17-34-31	False	2022-08-10 17:34:31.055529	2022-08-10 17:34:34.960943	0 days 00:00:03.905414	Pipeline has been completed.	0.960189	True	2022-08-10 17:34:34.961023
2	2a06278d-f77f-40d0-aebd-cb6d82698561	2022-08-10-17-36-10	True	2022-08-10 17:36:10.883334	NaN	NaN	Pipeline has been started.	NaN	NaN	2022-08-10 17:36:10.883498
3	2a06278d-f77f-40d0-aebd-cb6d82698561	2022-08-10-17-36-10	False	2022-08-10 17:36:10.883334	2022-08-10 17:36:14.439079	0 days 00:00:03.556745	Pipeline has been completed.	0.959402	False	2022-08-10 17:36:14.439176

3. The status of the Model Training and the Accuracy obtained can be accessed by clicking on “Experiment History” provided on the top Nav Bar.
4. Trained Best Model is saved and can be accessed in the “View Trained Model Folder”.

Heating Load and Cooling Load Estimation Home View Logs View Artifacts **View Trained Model** Estimate Heating Load and Cooling Load Experiment History

View Logs
View Artifacts
View Trained Model
Estimate Heating Load and Cooling Load
Train Heating Load and Cooling Load Estimator
Update Model Config

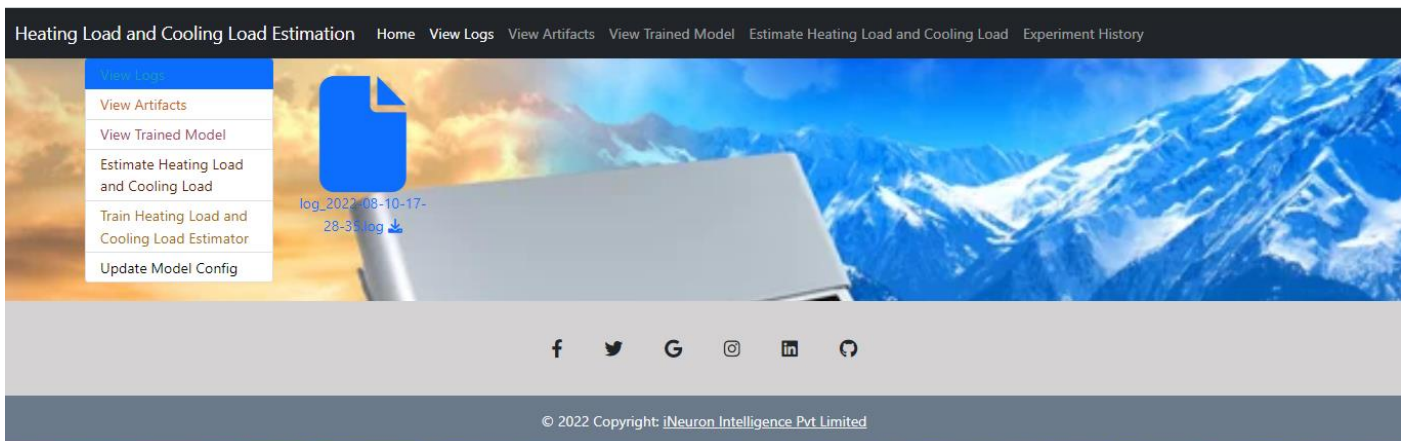
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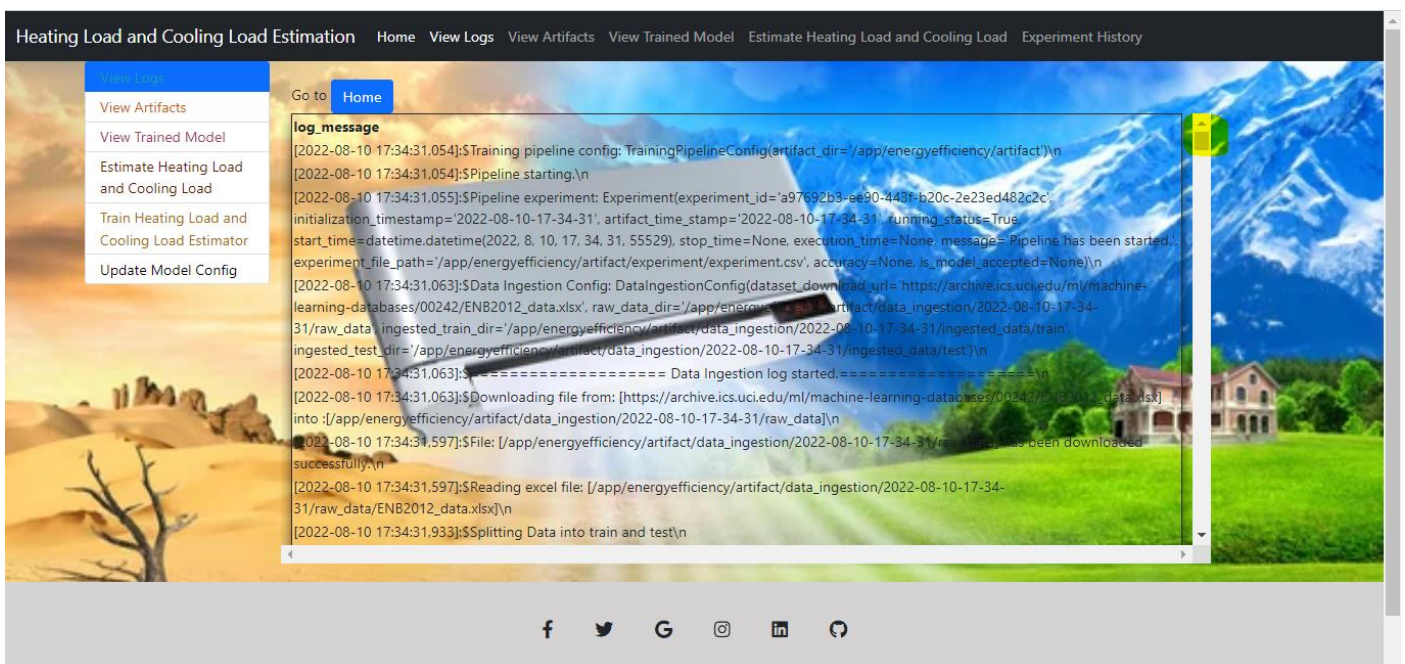
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View Logs

1. The log messages of all the steps carried out in the pipeline from the start of the Data Ingestion to the Model Push can be accessed via the log folder provided along with timestamp by clicking on “View Logs”.



2. Sample of log data shown below. User can read the messages and access further with the scroll bar (marked yellow in the image).

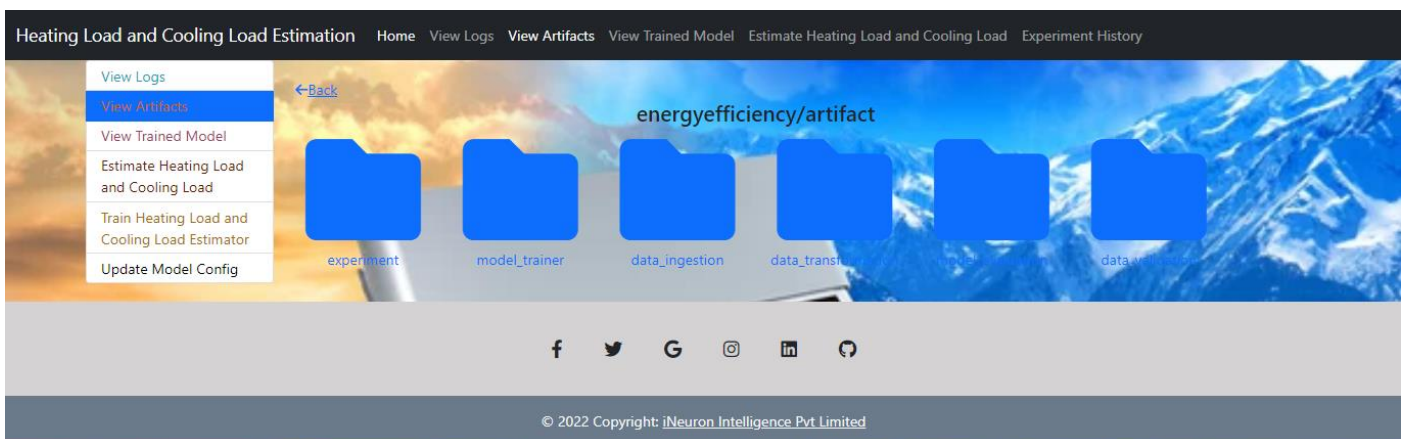


View Artifact

1. Artifact is the output of each component in the pipeline and the same can be accessed by clicking on “View Artifacts”.



2. The below individual folders can be accessed for the respective artifacts of the components.



Estimate Heating Load and Cooling Load

1. To estimate the output features the user has to enter the input parameters in the “Heating Load & Cooling Load Estimation Form” provided which can be accessed using “Estimate Heating Load and Cooling Load” on the left Nav bar or by clicking on “Get Heating Load and Cooling Load” on the homepage.

The screenshot displays the 'Heating Load and Cooling Load Estimation' web application. The top navigation bar includes links for Home, View Logs, View Artifacts, View Trained Model, Estimate Heating Load and Cooling Load (which is highlighted), and Experiment History. A left sidebar menu contains options: View Logs, View Artifacts, View Trained Model, Estimate Heating Load and Cooling Load (highlighted), Train Heating Load and Cooling Load Estimator, and Update Model Config. The main content area is titled 'Heating Load & Cooling Load Estimation Form' and features several input fields: Relative Compactness, Surface Area, Wall Area, Roof Area, Overall Height, Orientation, Glazing Area, and Glazing Area Distribution. Each field has a placeholder text 'Enter a value of [parameter name]'. Below these fields is a blue button labeled 'Predict Heating Load & Cooling Load'. Underneath the button is a section for 'Heating Load and Cooling Load' results, followed by a 'Submit Form' section with the instruction 'Kindly provide necessary information to estimate Heating Load and Cooling Load for your building.' and a 'Go to Home' button. The background of the form is a composite image showing a desert landscape on the left and a modern building on the right. The footer contains social media icons for Facebook, Twitter, Google+, Instagram, LinkedIn, and a refresh icon.

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Heating Load & Cooling Load Estimation Form

Relative Compactness
Enter a value of Relative Compactness

Surface Area
Enter a value of Surface Area

Wall Area
Enter a value of Wall Area

Roof Area
Enter a value of Roof Area

Overall Height
Enter a value of Overall Height

Orientation
Enter a value of Orientation

Glazing Area
Enter a value of Glazing Area

Glazing Area Distribution
Enter a value of Glazing Area Distribution

Predict Heating Load & Cooling Load

Heating Load and Cooling Load

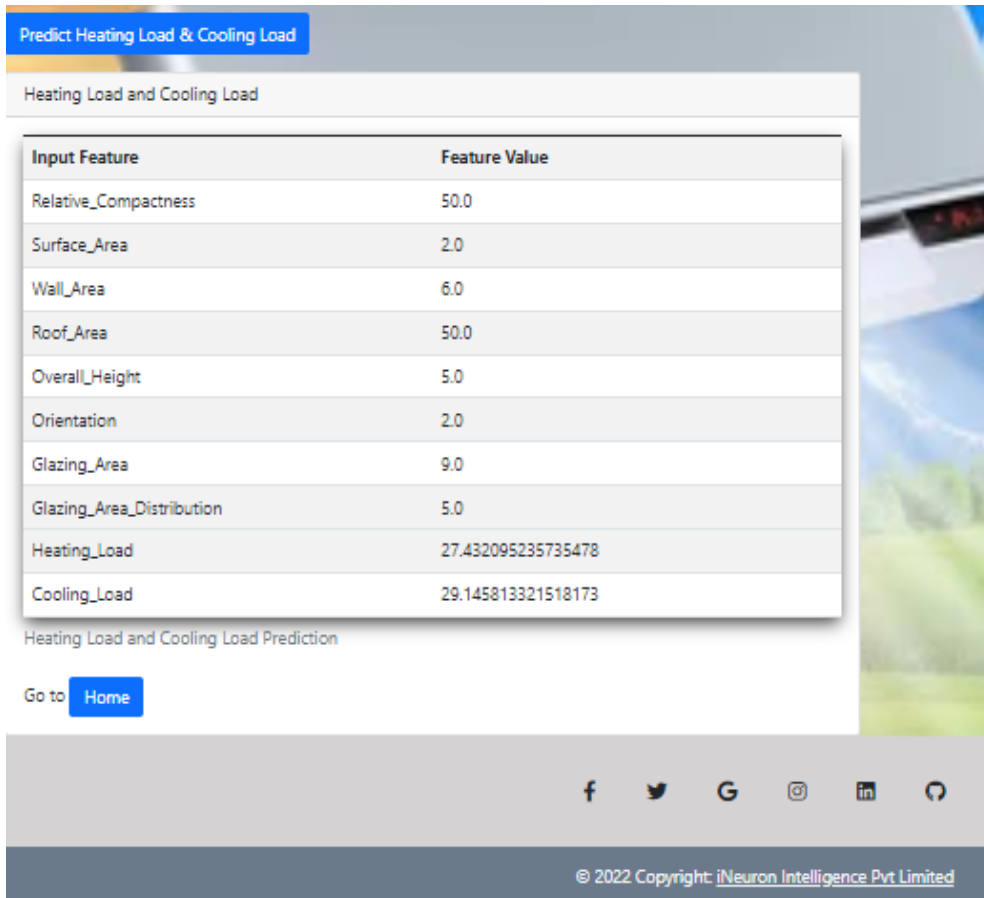
Submit Form
Kindly provide necessary information to estimate Heating Load and Cooling Load for your building.

Go to [Home](#)

f t G i in

- The user has to enter the input parameters and then click on “Predict Heating Load & Cooling Load” to get the output.

Sample output shown below



The screenshot shows a web application titled "Predict Heating Load & Cooling Load". It features a table with input features and their values, and the resulting predicted heating and cooling loads. Below the table, there is a "Go to Home" button and a footer with social media icons and copyright information.

Input Feature	Feature Value
Relative_Compactness	50.0
Surface_Area	2.0
Wall_Area	6.0
Roof_Area	50.0
Overall_Height	5.0
Orientation	2.0
Glazing_Area	9.0
Glazing_Area_Distribution	5.0
Heating_Load	27.432095235735478
Cooling_Load	29.145813321518173

Heating Load and Cooling Load Prediction

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Update Model Config

- User can modify or choose his own Machine Learning model by entering in the below “Update Model Config” area in JSON format along with the hyper-parameter tuning they want to perform.

