PCGT PORTAL

Software Manual

BITS Pilani
Hyderabad Campus

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INTRODUCTION

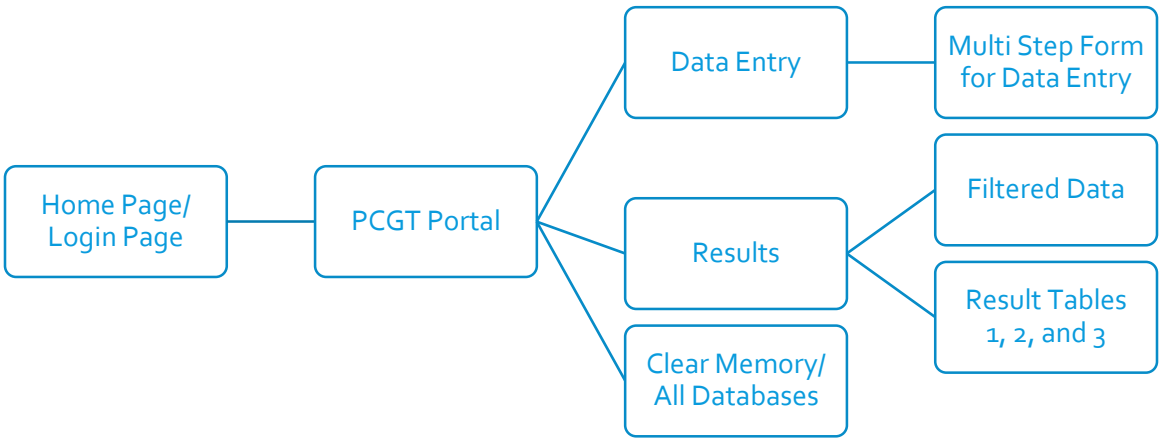
OBJECTIVE

The objective of the **PCGT Portal** is to ease the process of comparing the power curve from site and the comparing of that with the one from the actual site of deployment. The software compiles the provided raw data by performing various filtration processes as well as the required calculations to get the Power Curve.

OVERVIEW

The portal is web based running over technologies like HTML5, JSP and MySQL.

The overview of the portal is:

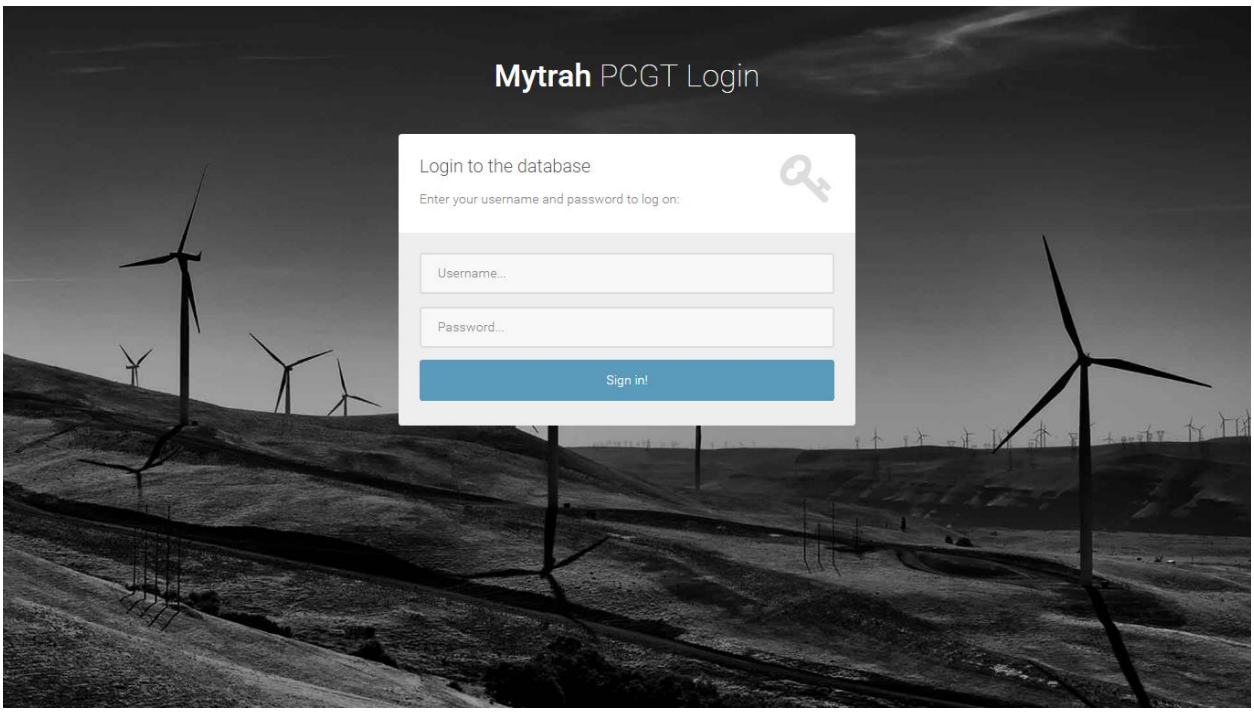


PAGES / STAGES

DIFFERENT STAGES

1. Home Page
2. PCGT Portal
3. Data Entry
4. Results
5. Clear Memory

1. HOME PAGE / LOGIN PAGE

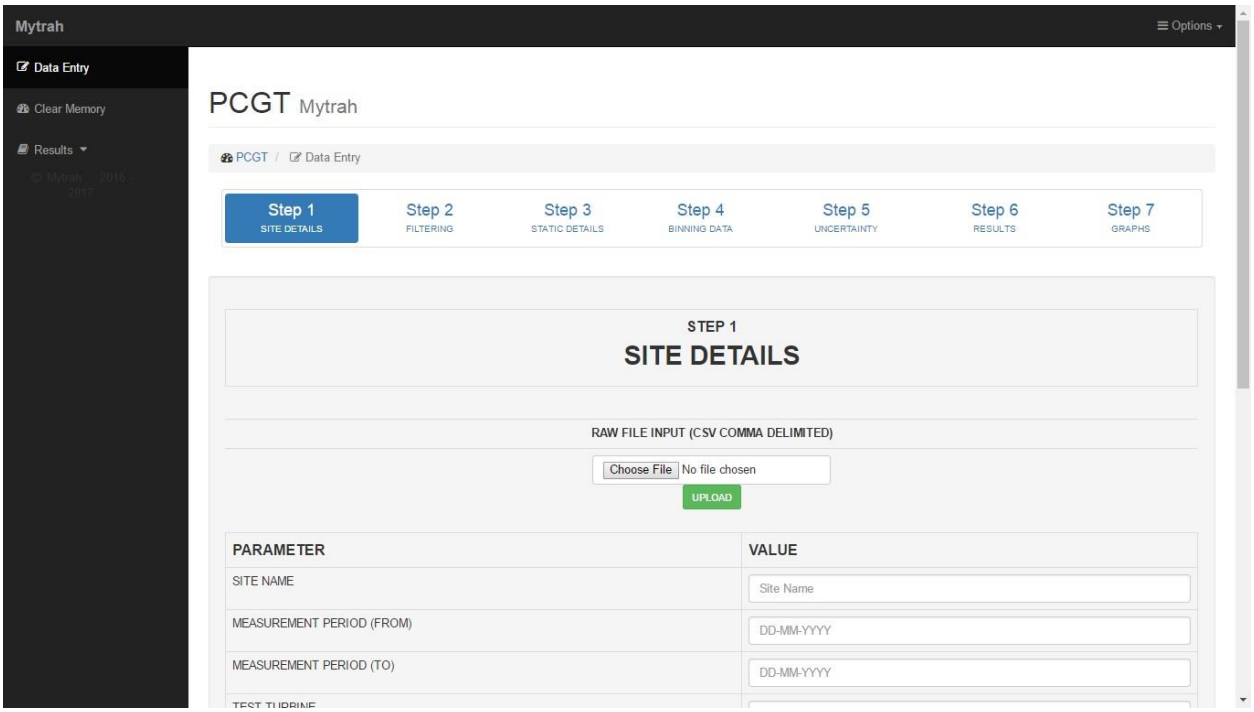


Home Page / Login Page (Screen Shot)

The Login Page is the Authentication page for giving access to the portal.

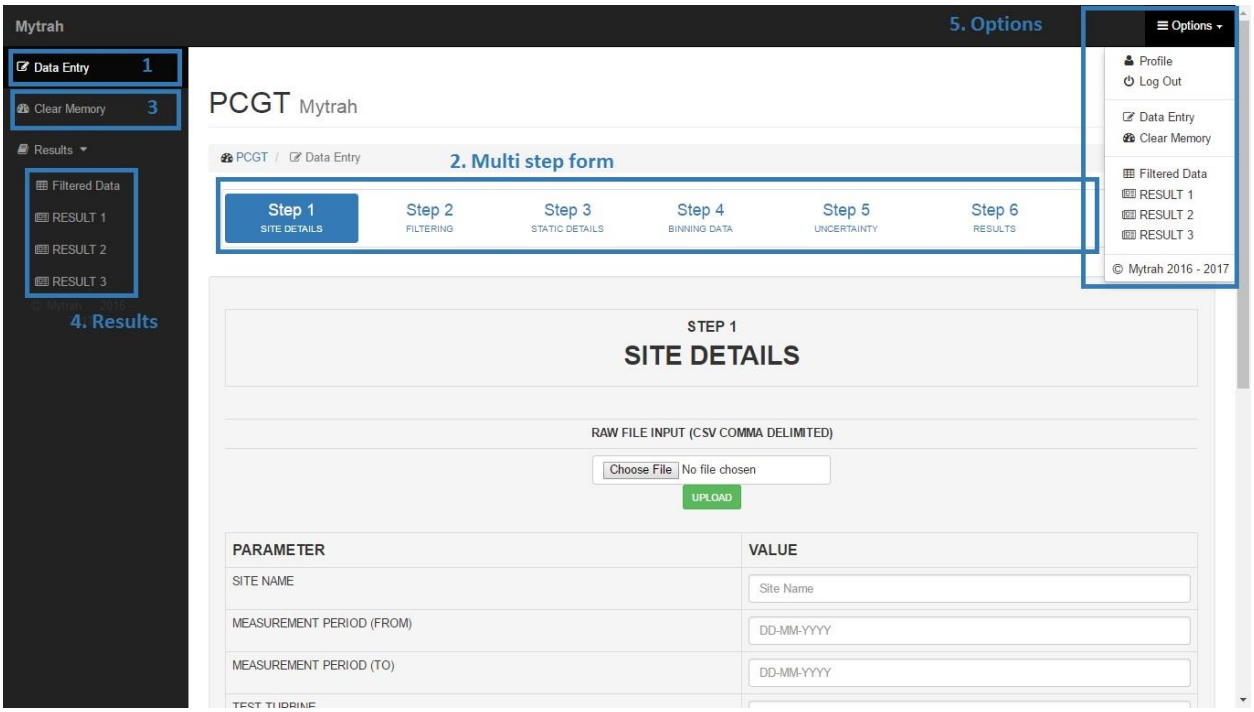
It has a login form for the user where they can enter there Username and Password.

2. PCGT PORTAL



PCGT Portal Landing page (Screen Shot)

3. DATA ENTRY



Data Entry Page (Screen Shot)

1. Menu Item to go to Data Entry

2. Multi Step Form with progress bar

3. Clear Memory

4. Results

5. Options Menu

SOFTWARE SETUP

INCLUDED ITEMS

The package includes:

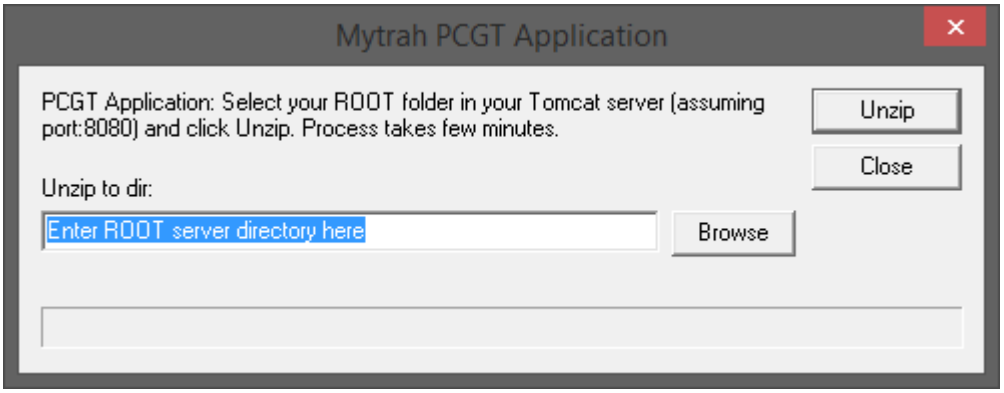
1. An executable (*.exe) Installation file which contains software and all the necessary setup files.
2. Software manual for instructions.

FIRST TIME SETUP

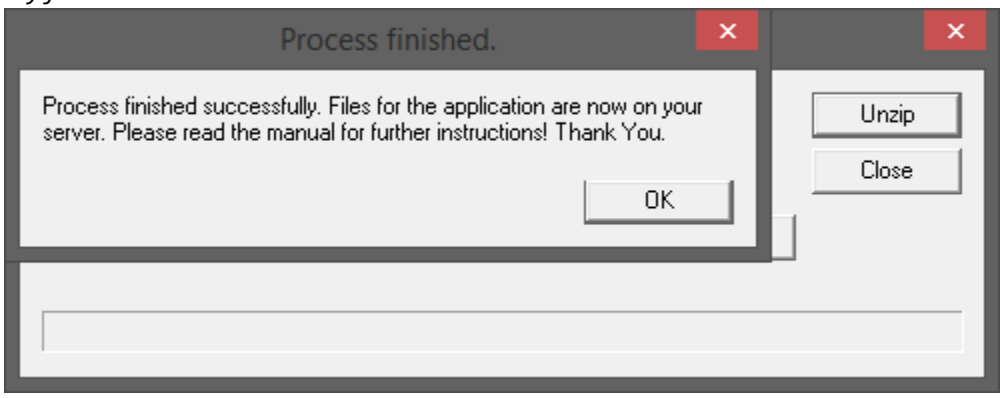
For the first time setup follow the following steps:

1. Install Apache Tomcat server on your machine along with latest JDK and set-up the environment variables.
   Download Tomcat here: http://tomcat.apache.org/ (Version 7 or later)
   Download JDK here: http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html (Version 8 or later)
   Also setup MySQL for database querying.
   Download MySQL here: https://www.mysql.com/
   Note: You can use Xampp for MySQL and Tomcat server and Navicat lite as the GUI for MySQL.

2. Assuming you were able to setup a proper functioning Tomcat server. Double Click on the executable file included.



3. Enter the ROOT directory location (from your installed Tomcat server folder) and click Unzip. If successful: *This process will create a new folder by the name Mytrah which contains all the necessary files.*



4. MySQL database setup:
   The folder Mytrah contains a folder by the name of SETUP
   This folder contains a file named pcgt.sql which contains a set of MySQL queries which when executed will automatically set up the database for the application.
   For Convenience use: Database name: pcgt; ID (username): "root" and password as "" i.e. Empty.
   Note: In case you want to use your own Database name, User Id and password you need to be changed in all the .jsp files in folder Mytrah/PCGT.

5. Tomcat libraries and configuration setup:
   The folder Mytrah contains a folder by the name of SETUP
   This folder contains a folder named WEB-INF which contains all the libraries and configuration settings used in the application. Copy this folder to your native server ROOT folder (same place where folder Mytrah is) and replace the existing one. This will copy the configuration as well as libraries.
   You will also need to set the server details from: Mytrah/ServerDetails/config.html
   . *Note: Please visit this only once during setup. The file path you set can be viewed from the portal page results menu.*

   Rules for setting the file path:
   - You cannot have a back-slash (\\ ) at the end of your file path.
   - You cannot have 2 or more consecutive back-slashes (\\ ) in your file path.
   - You cannot have forward-slashes (/) in your file path.
   - Your file path is INVALID. It MUST contain a colon (:).
   - Your file path cannot contain empty spaces!
   - Your file path must start with a capital letter!

   NOTE: You will get an ERROR!! Message if file path is invalid.

Note: In case you like to use your own configurations you will need to copy the java files in WEB-INF/lib to you own WEB-INF/lib folder in order to add the java libraries used in the application. If any troubleshooting situation rises due to configuration changes try comparing the web.xml files.

6. Now the setup of database as well as Tomcat server is complete. If you are accessing it from the local host you need not make any further changes. Now open browser.
   To login: http://localhost:8080/Mytrah/index.html
   To go directly to PCGT database: http://localhost:8080/Mytrah/PCGT/index.html
   Note: Here we are assuming that it is run on localhost with port number: 8080 being used. In case you wish to change the place please you need to change the following respectively in all the .jsp files in folder Mytrah/PCGT. For easy process search for "localhost:8080" and replace with whatever you are using. **YOU HAVE INSTALLED THE APPLICATION ON YOUR SERVER**

EXTRA SETUP

It is assumed that this application will be a part of bigger database therefore no login database is setup and therefore for security reasons no login credentials are asked from the user side to be uploaded. Although if you wish to set-up a separate login page for the application a fully responsive login page has been included.

To go to login page: http://localhost:8080/Mytrah/index.html

This can be edited according to requirements. In case it is not setup the portal can be accessed by everyone on the following link: http://localhost:8080/Mytrah/PCGT/index.html

Note: Here we are assuming that it is run on localhost with port number :8080 being used. In case you wish to change the place please you need to change the following respectively in all the .jsp files in folder Mytrah/PCGT. For easy process search for "localhost:8080" and replace with whatever you are using.

CHANGING SOURRCE CODE

After you unzip the exe file any of the source code can be changed using any normal compatible editor using the files in the folder.

SOFTWARE USAGE

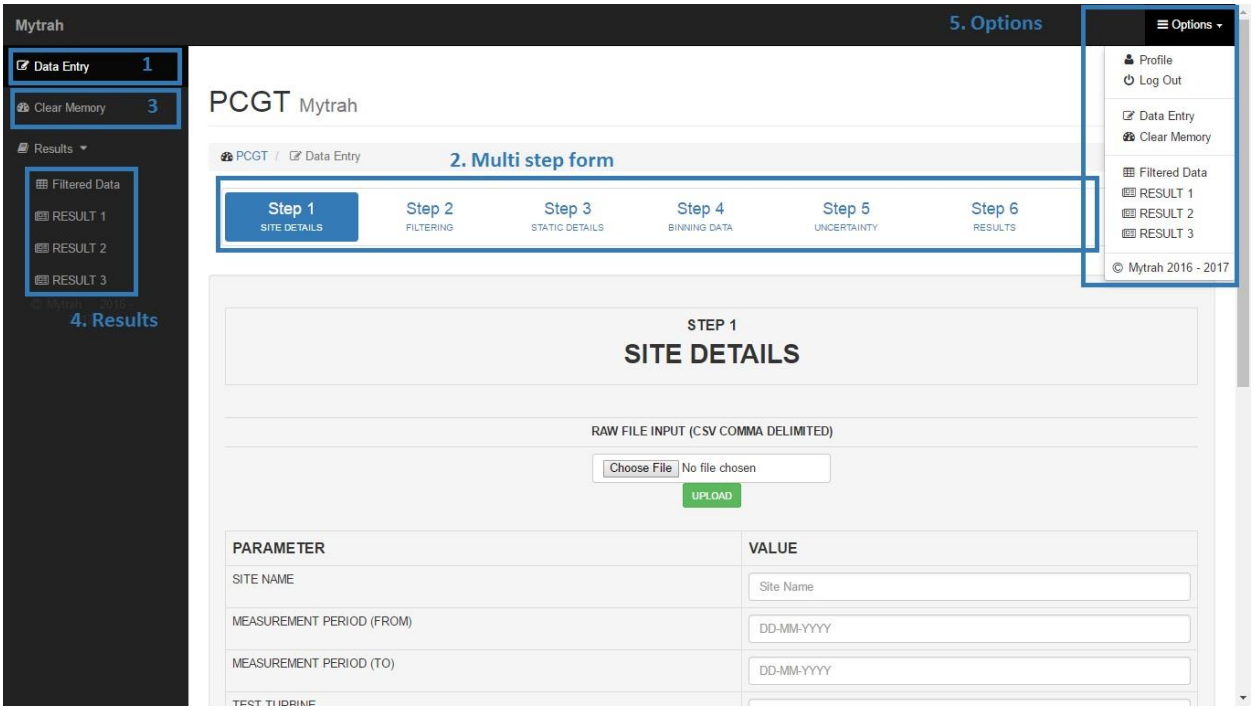
The application is simple to use with minimal number of pages for ease of visibility and layout.

LOGIN PAGE

To login: http://localhost:8080/Mytrah/index.html

In login page you need to enter the username and password given by the admin in order to login into the portal.

PCGT PORTAL



PCGT Portal (Screen Shot)

1. MENU ITEM TO GO TO DATA ENTRY

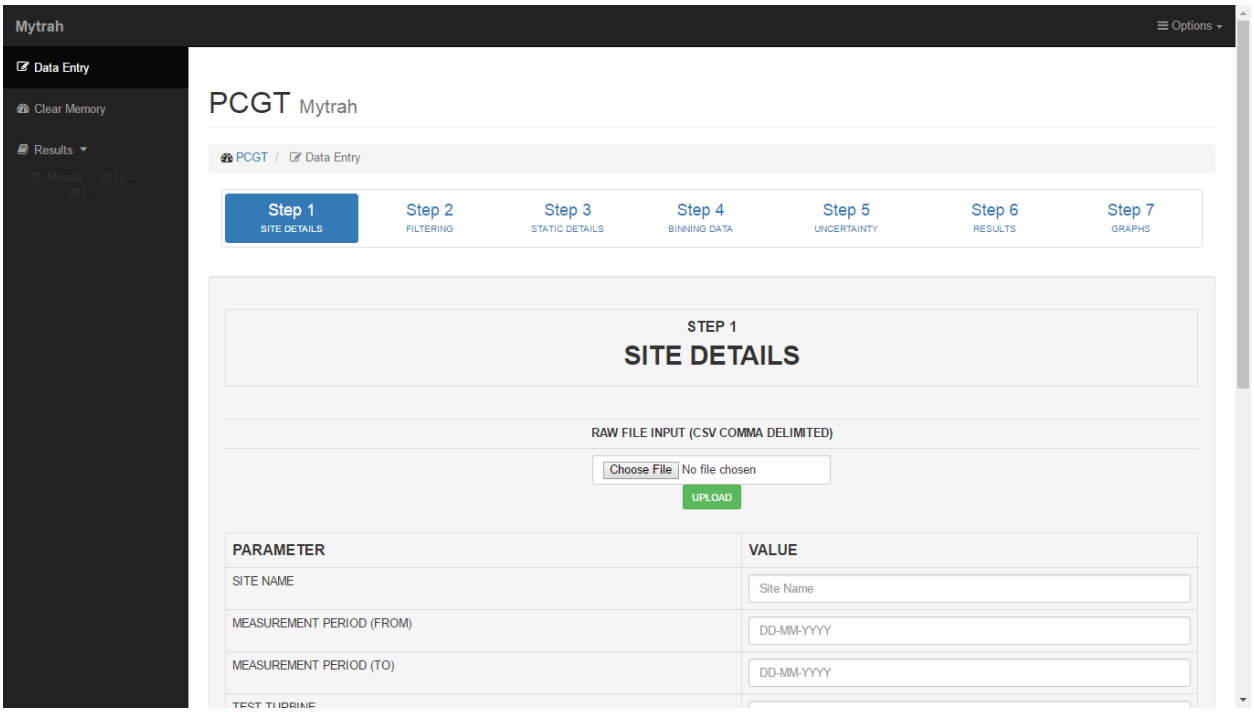
Click on this in the menu if not already active to go to data entry page where you can fill in the details for the process

This can also be accessed from the options menu

2. MULTI STEP FORM WITH PROGRESS BAR

The multi-step form is 7 step form where each step has either 1 or more forms to be uploaded.

STEP 1 SITE DETAILS

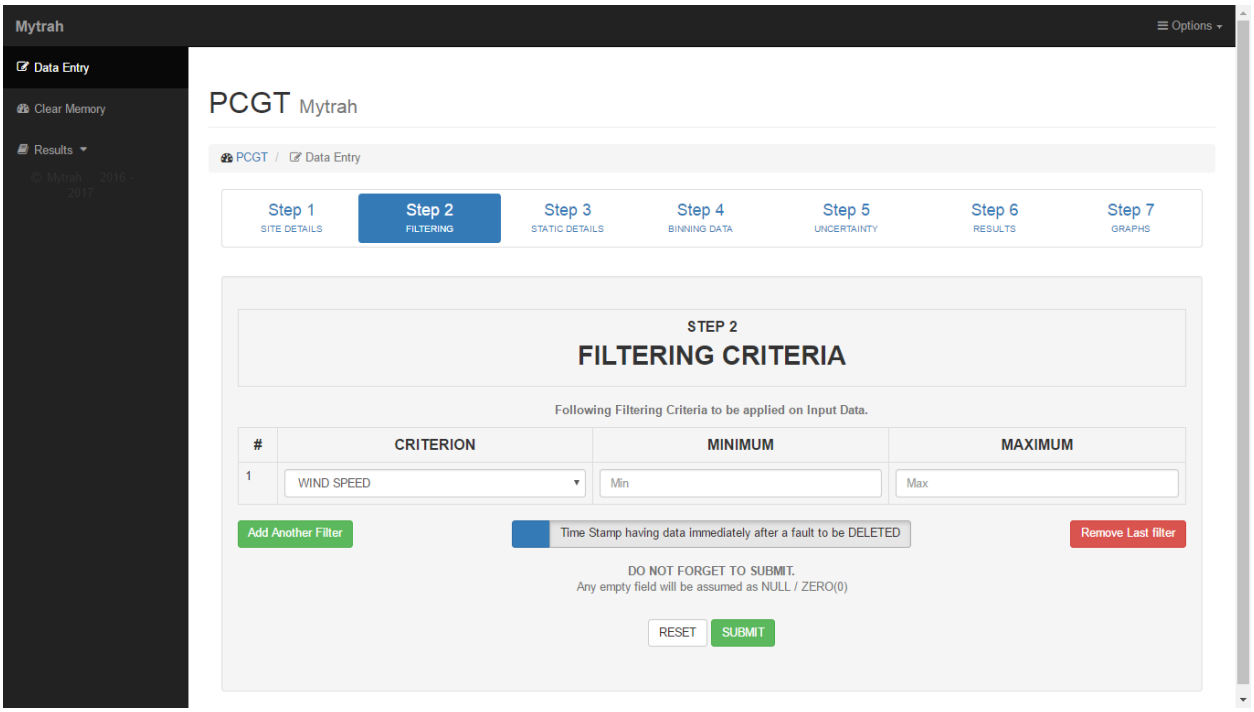


The site details contain two forms one for raw data file input and one for site details.

The raw data file is expected to be a CSV COMMA DELIMITED file i.e. *.csv. After uploading don't forget to click Upload button.

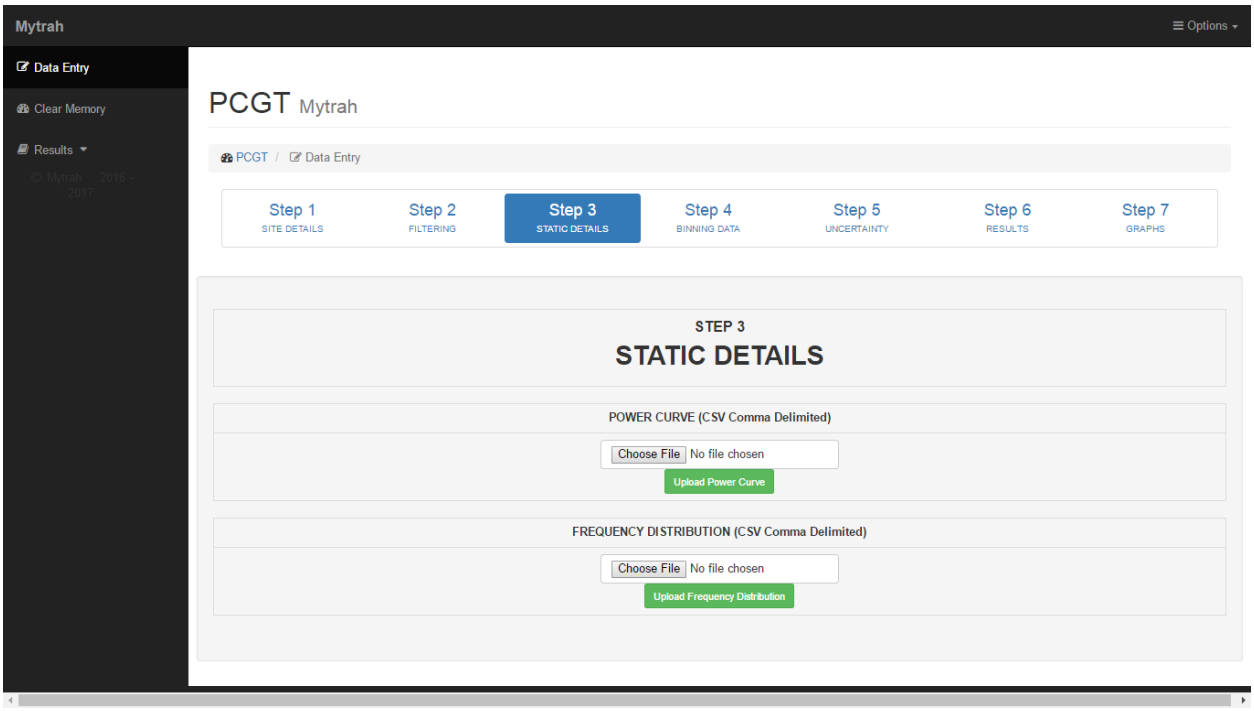
After entering all the site details in the form don't forget to click submit.

STEP 2 FILTERING



Filtering contains one form with dynamic number of fields. Any empty field will be assumed as NULL / ZERO (0) so if any unwanted fields remove them.

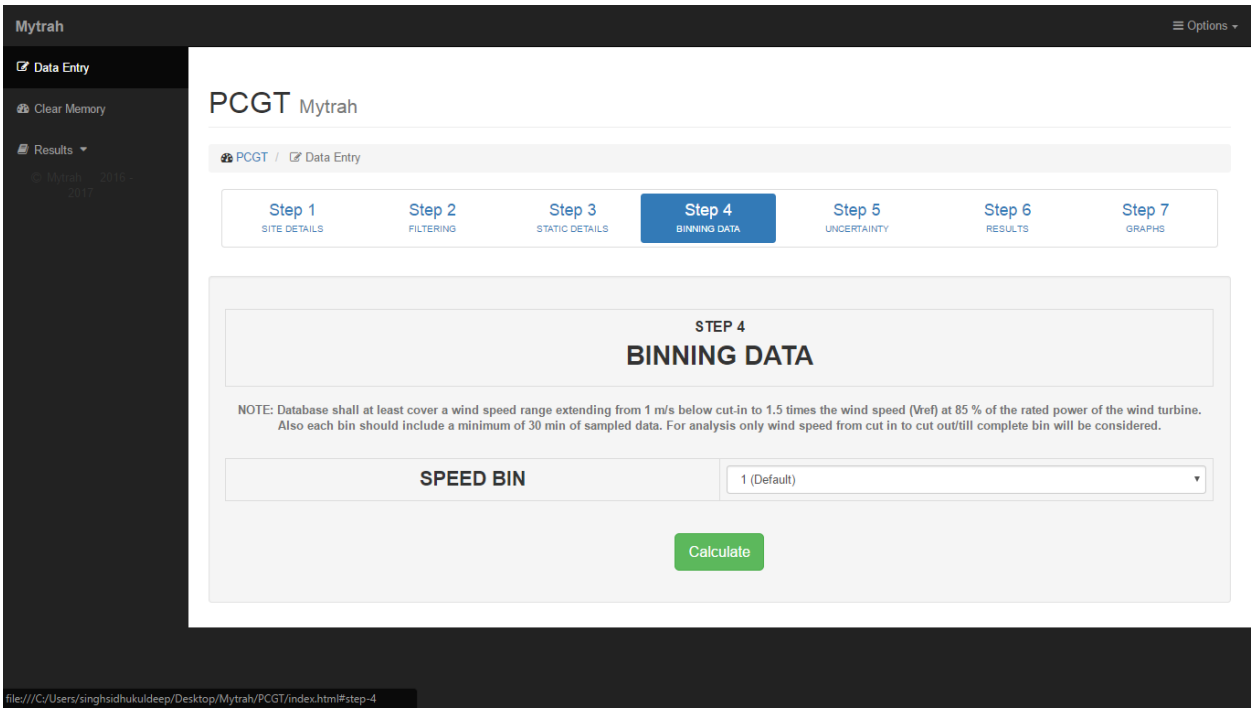
STEP 3 STATIC DETAILS



This contains two forms one for uploading Power curve and other for uploading Frequency distribution.

You need click Upload twice one after uploading each file.

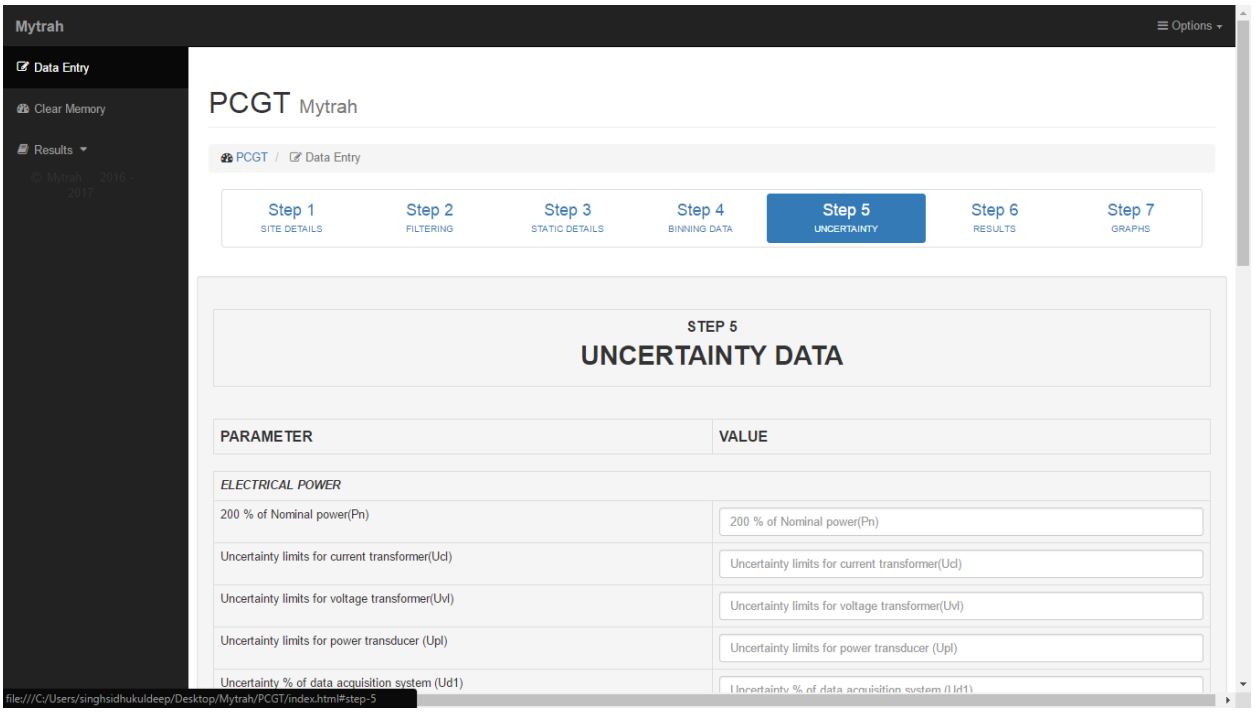
STEP 4 BINNING DATA



This contains just one form which asks for the binning range. After you click calculate the binning data calculations happen on the server. By default binning range is taken as 1.

NOTE: Database shall at least cover a wind speed range extending from 1 m/s below cut-in to 1.5 times the wind speed (Vref) at 85 % of the rated power of the wind turbine. Also each bin should include a minimum of 30 min of sampled data. For analysis only wind speed from cut in to cut out/till complete bin will be considered.

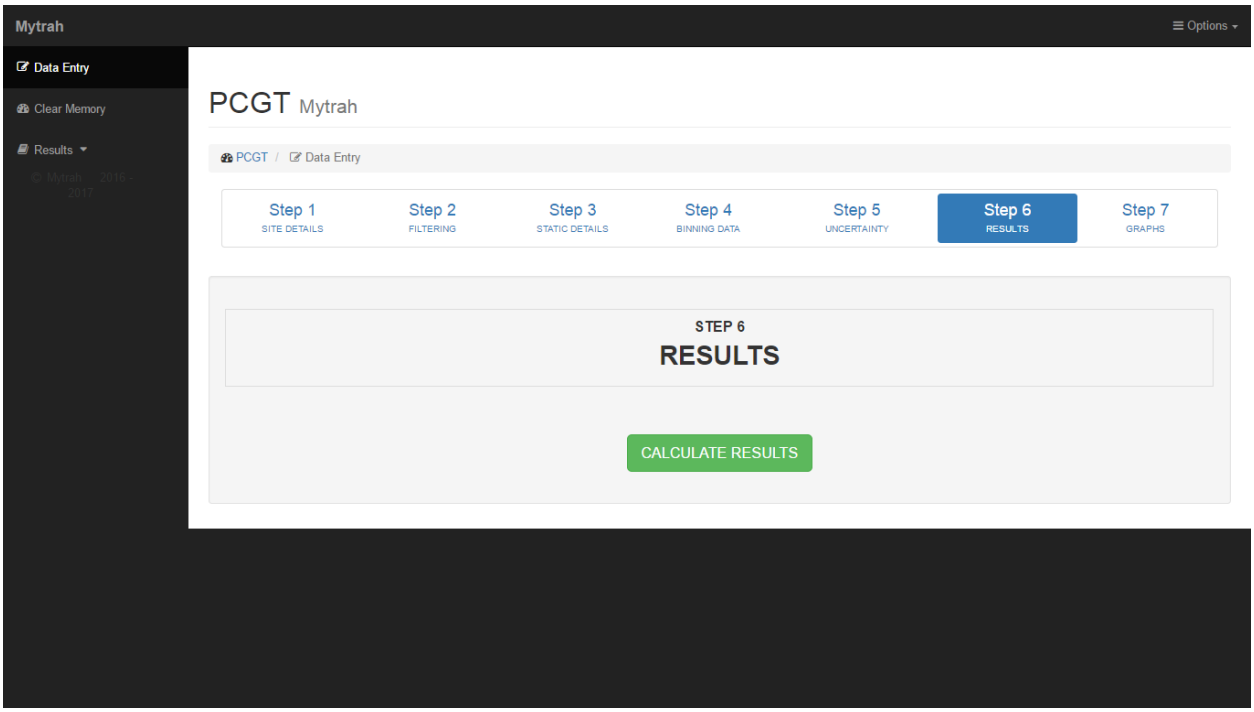
STEP 5 UNCERTAINTY



This contains one form with many inputs to get the values for uncertainty. Do not forget to submit after filling the data.

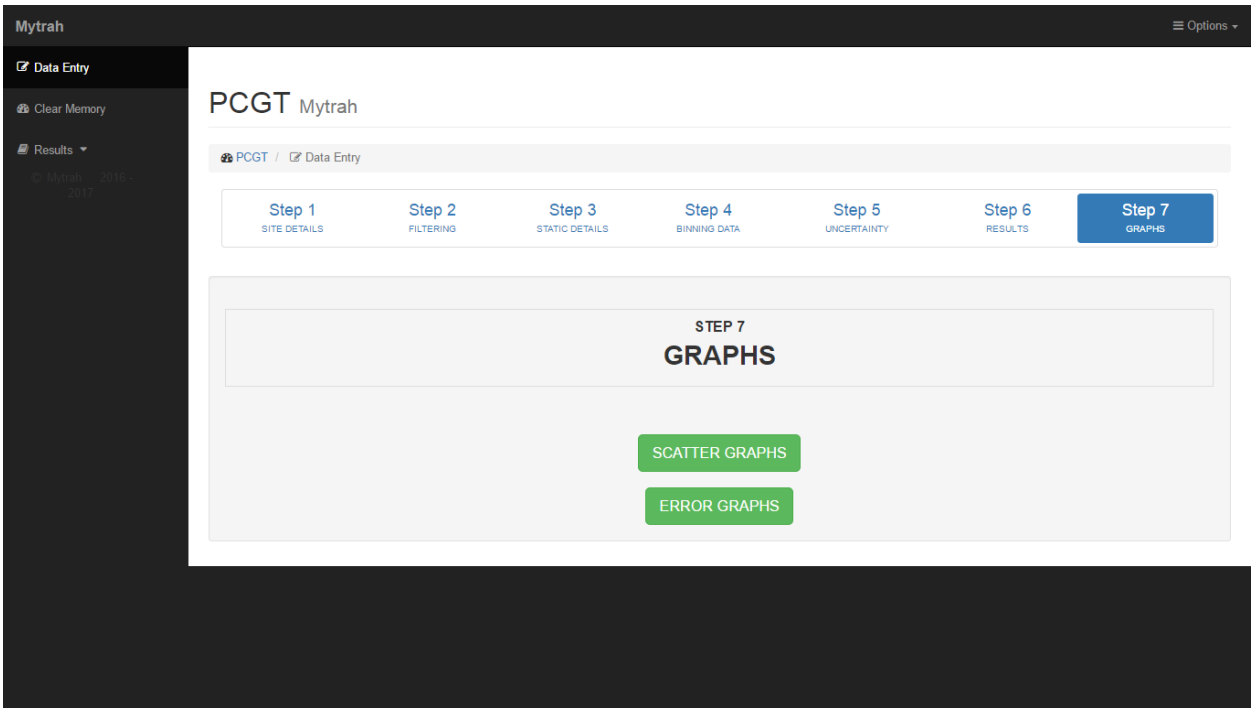
Note: Any empty field will be assumed as NULL / ZERO (0).

STEP 6 RESULTS

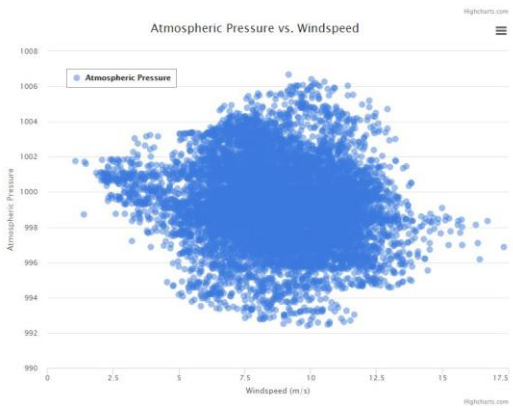


After you have entered valid data in all the previous steps click calculate results to compute and generate the result reports.

STEP 7 GRAPHS



Sample Graphs:



3. CLEAR MEMORY

This will clear all the data in the database. It is recommended to use this before performing any new calculations with any new data.

4. RESULTS

The results tab contains a one spot place to download all the result tables including the filtered data table.

5. OPTIONS MENU

Options menu contains profile as well as logout option along with all the options available in the side menu. In case the application is remotely accessed from a device with a smaller screen any of the menus can be used.

CREDITS

http://localhost:8080/Mytrah/PCGT/credits.html

COMPANY

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PCGT SOFTWARE MANUAL

BITS PILANI HYDERABAD CAMPUS

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