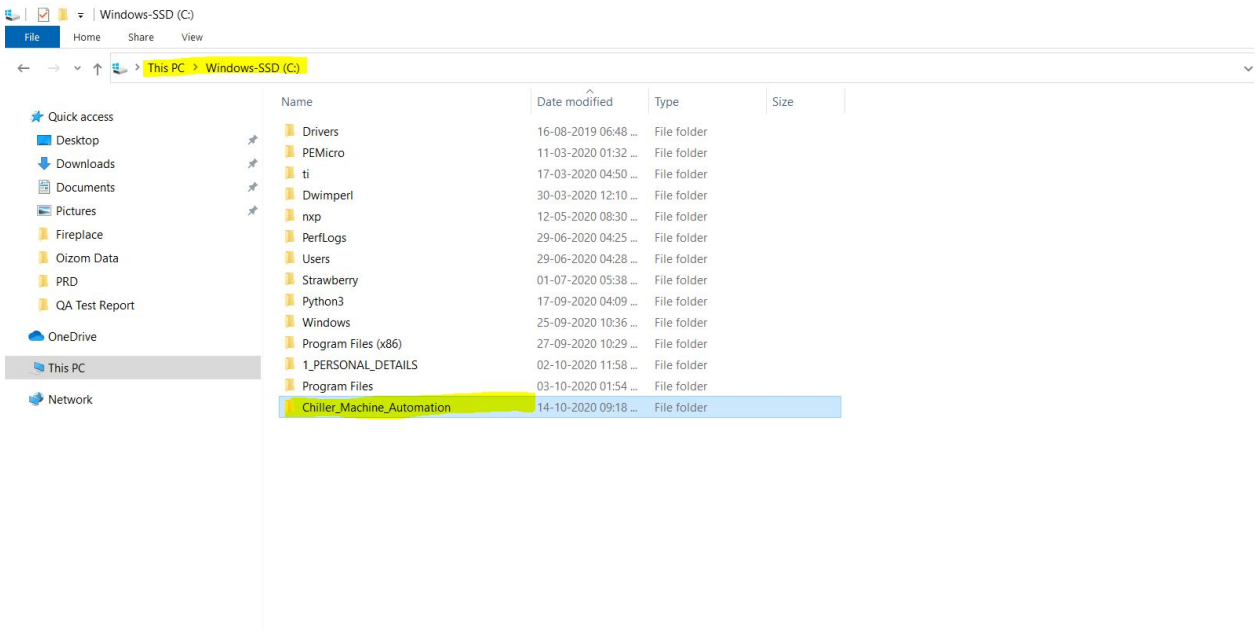
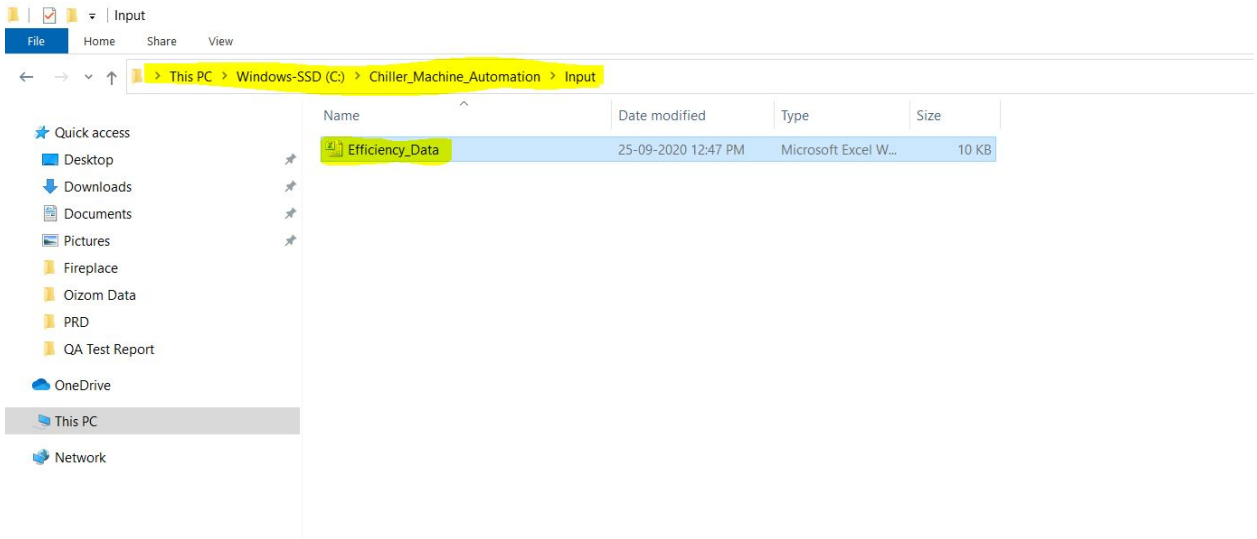
Steps To Run The Chiller Machine Python Utility

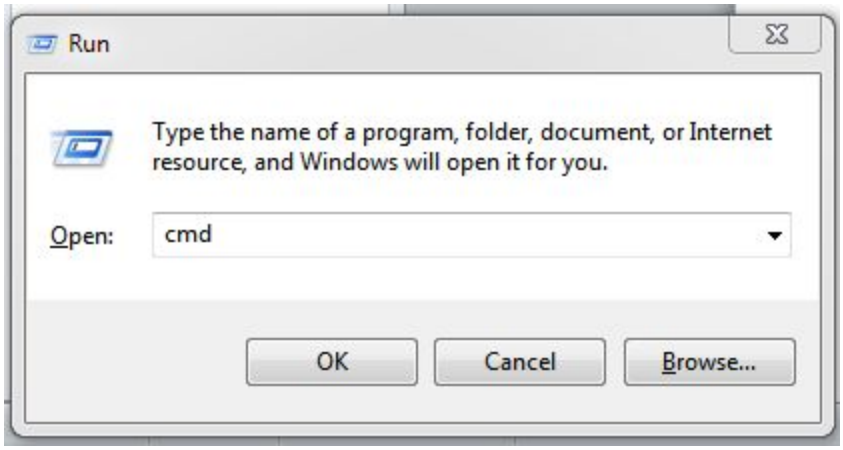
1. Keep the Chiller Machine Automation python utility package at your desired location in your system. For example keep this package at “C:\Chiller_Machine_Automation” location.



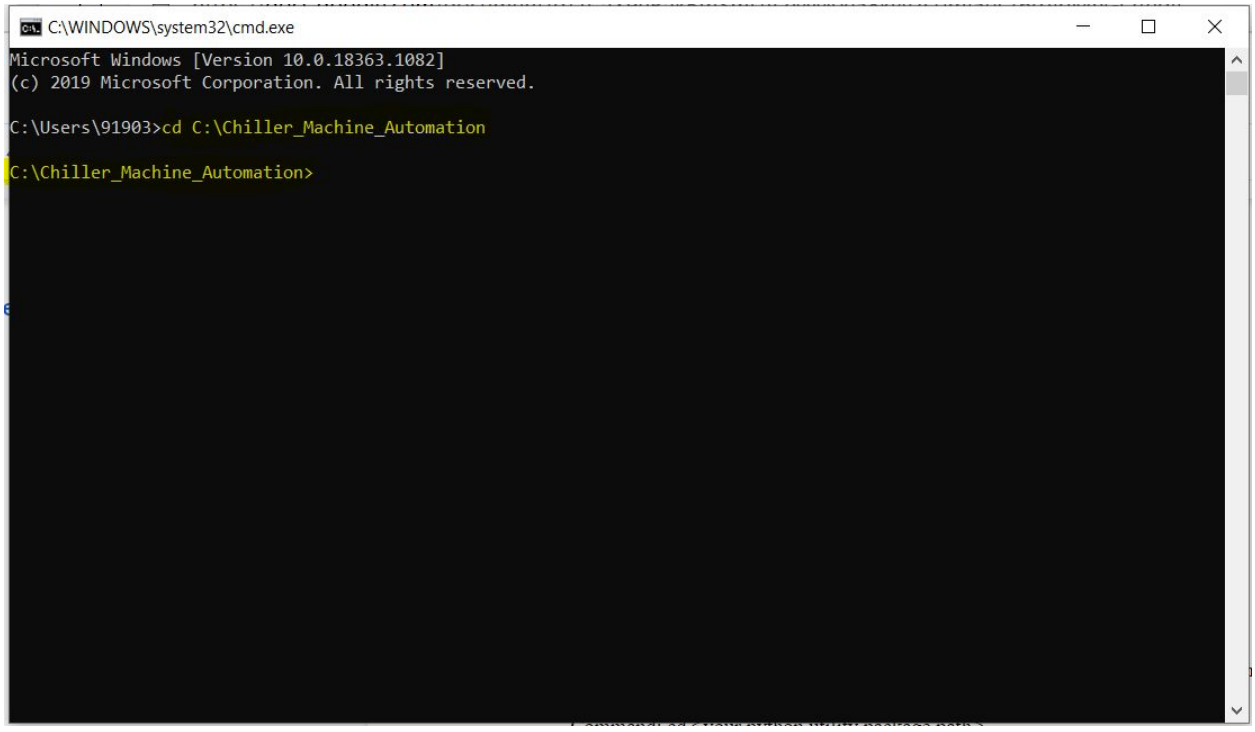
2. Open the “Input” folder of your utility package and make sure that your input excel template (i.e Efficiency_Data.xlsx) is available here.



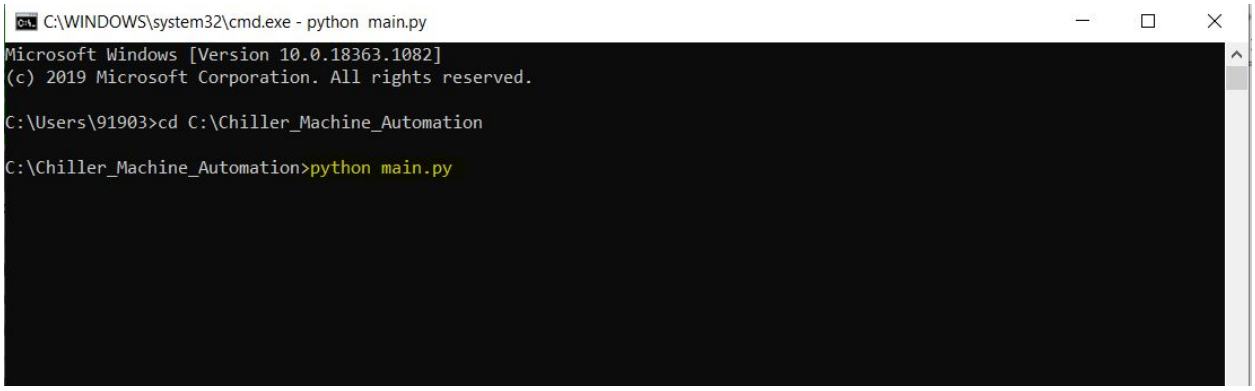
3. Open command prompt (Press Window + R keys) and Press “OK”.



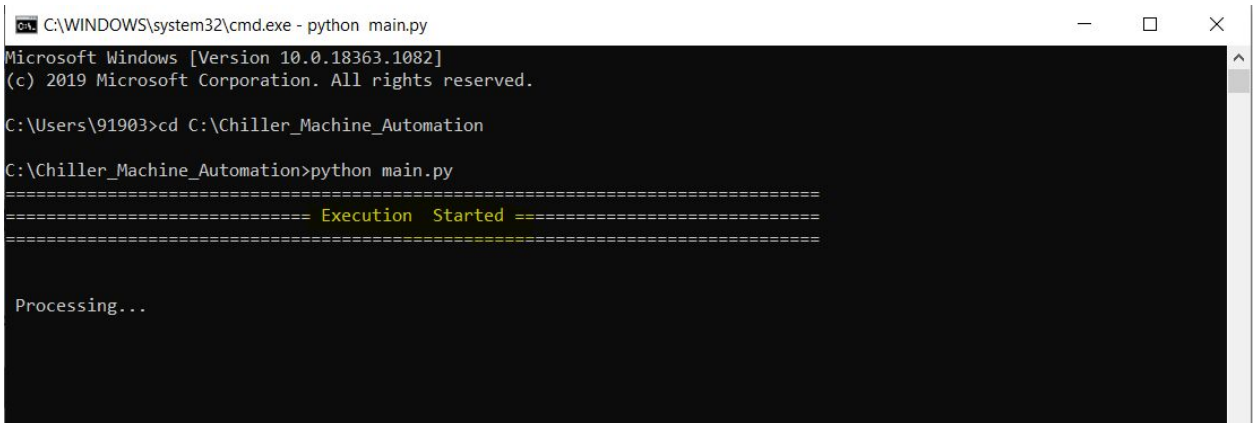
4. Go to your python utility path (i.e. C:\Chiller_Machine_Automation) by executing the following command from the command prompt.
   Command: cd <your python utility package path>



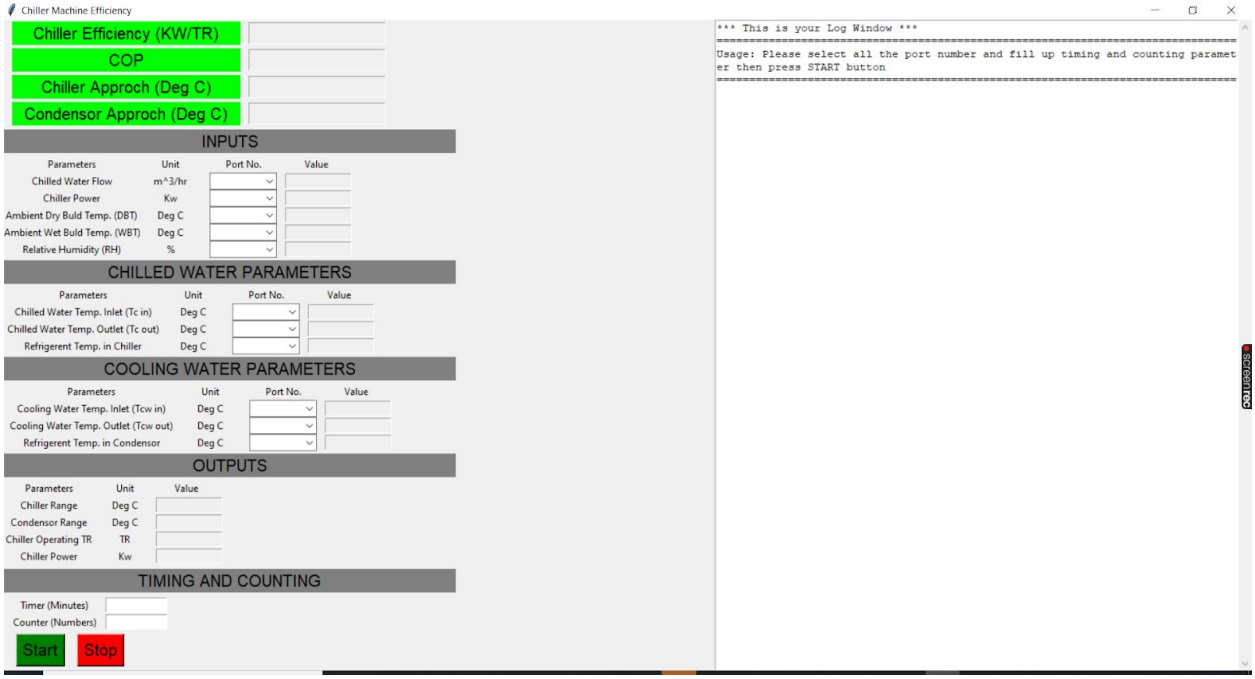
5. Run the following command from the command prompt.
   Command: python main.py



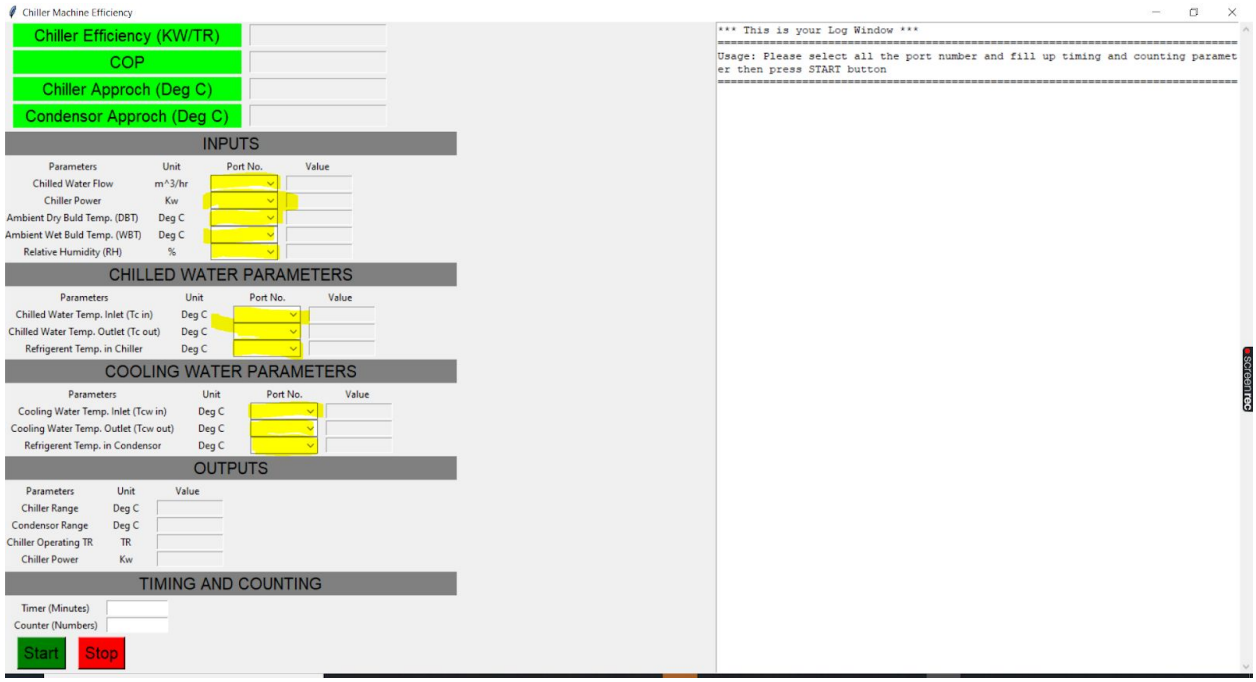
6. Make sure that you will get the “Execution Started” print on your command prompt.

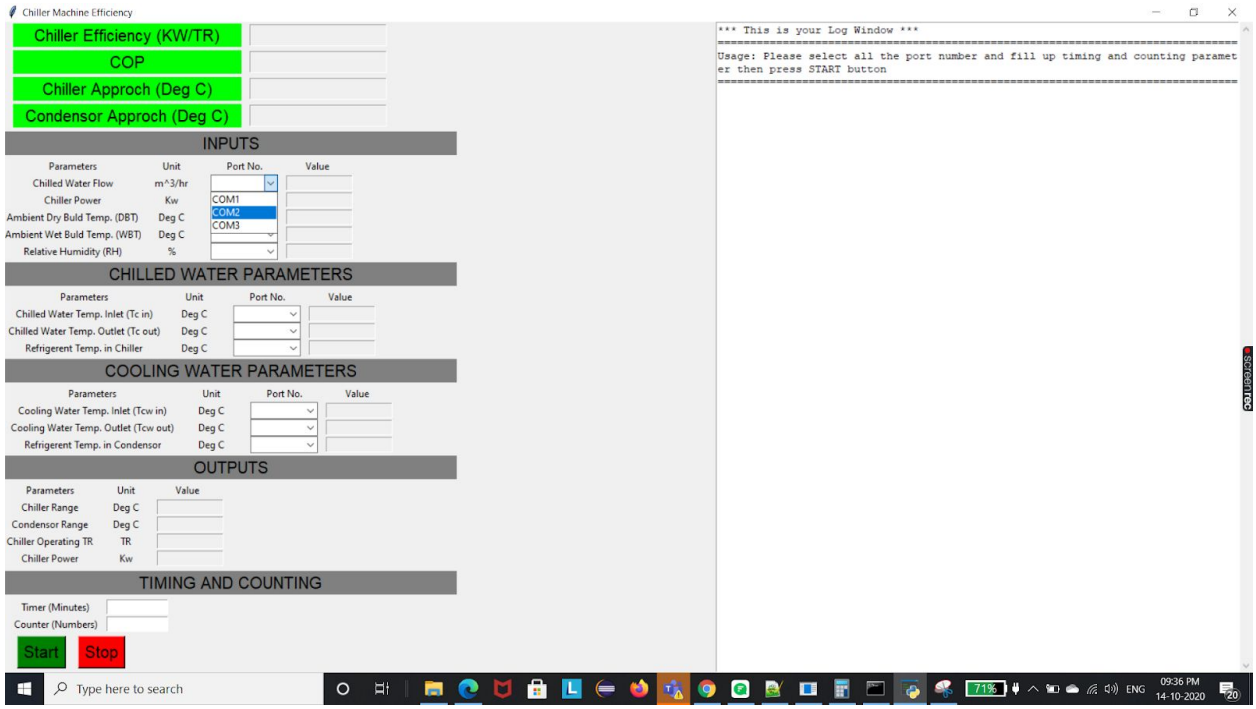


7. Once execution is started successfully, users will get the pop-up windows with the chiller machine parameters.

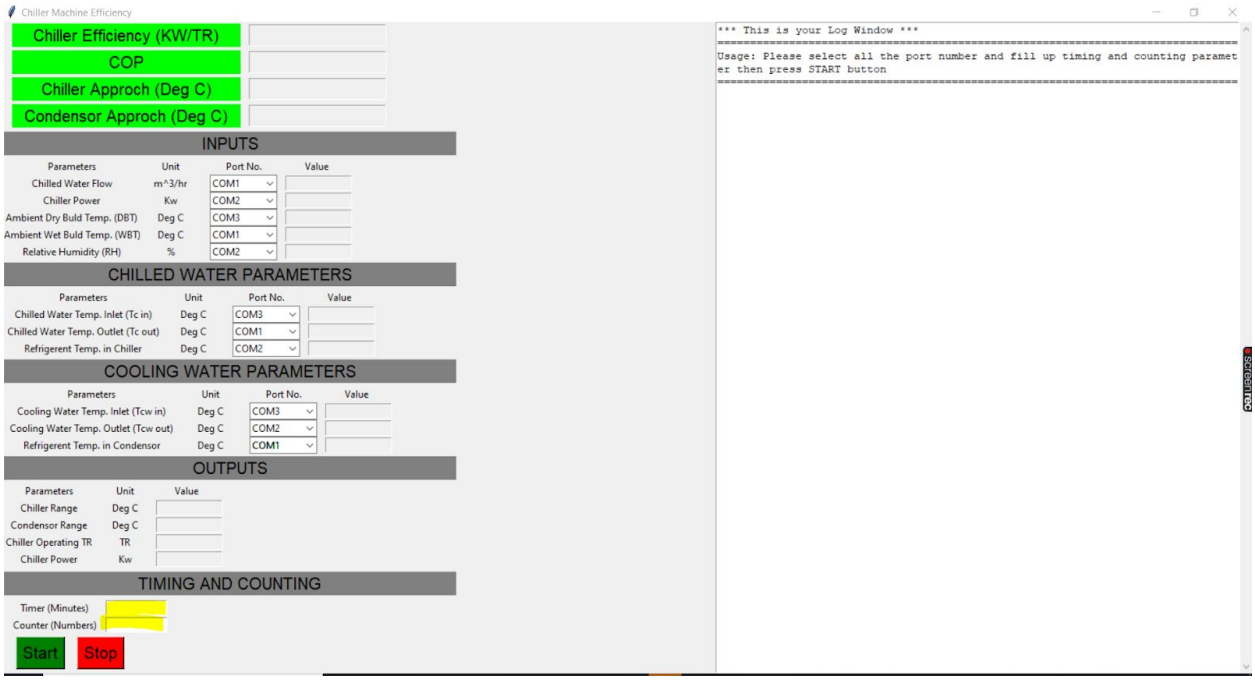


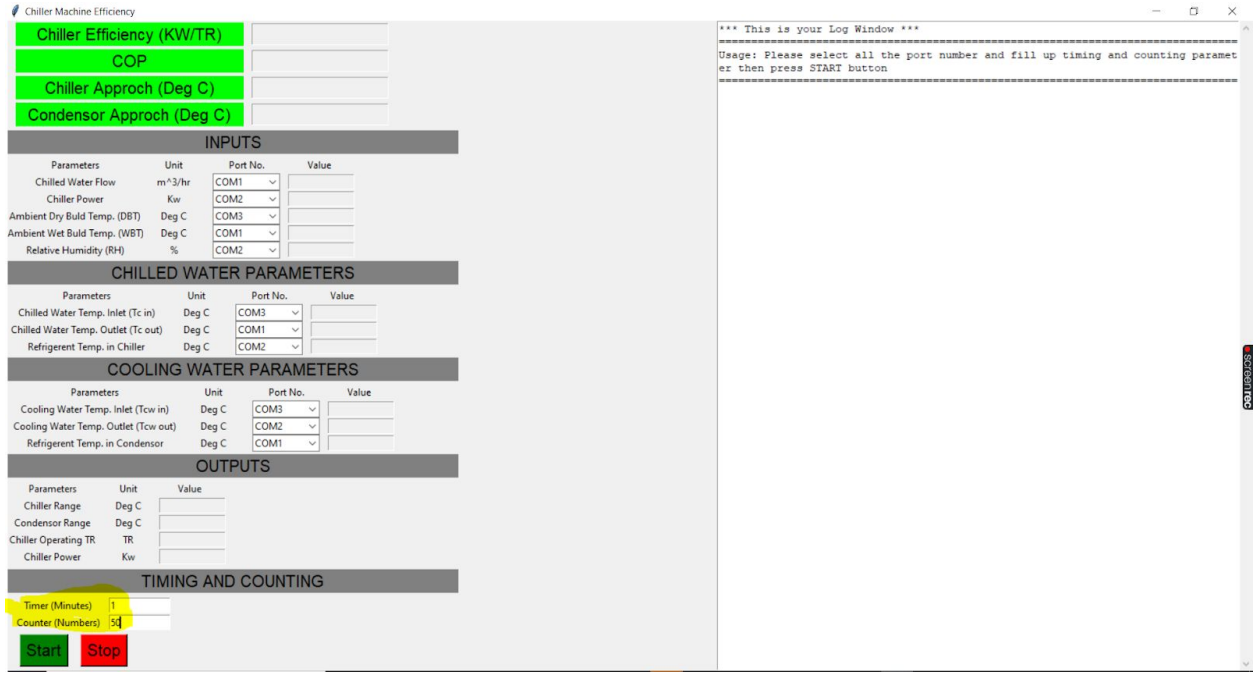
8. Users need to select all the appropriate COM PORTs from the drop down list for each required chiller machine parameters.



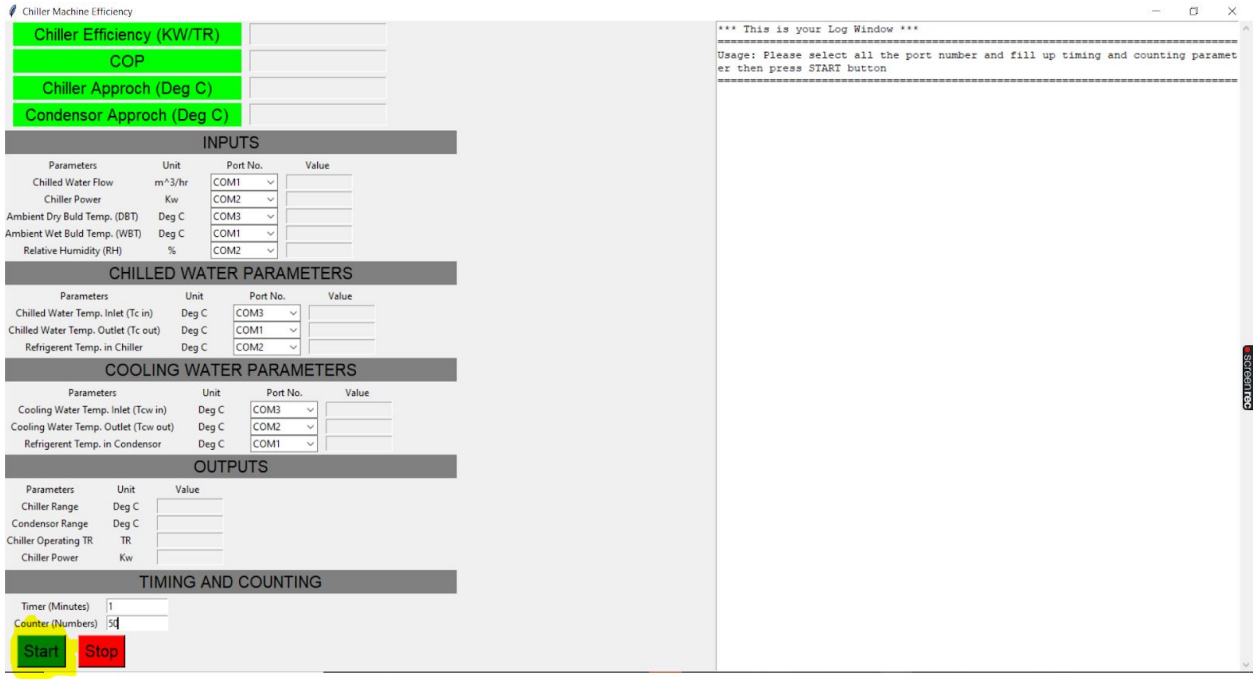


9. Users need to fill up Timer (Minutes) and Counter (Numbers) parameters.

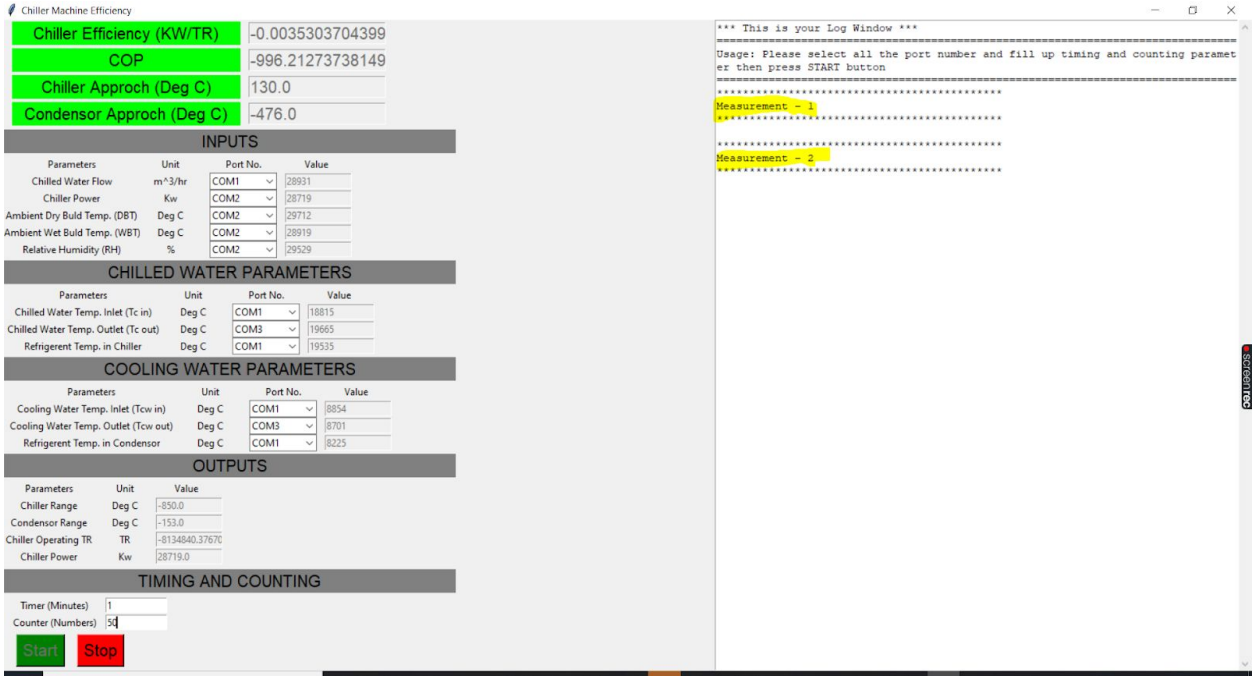




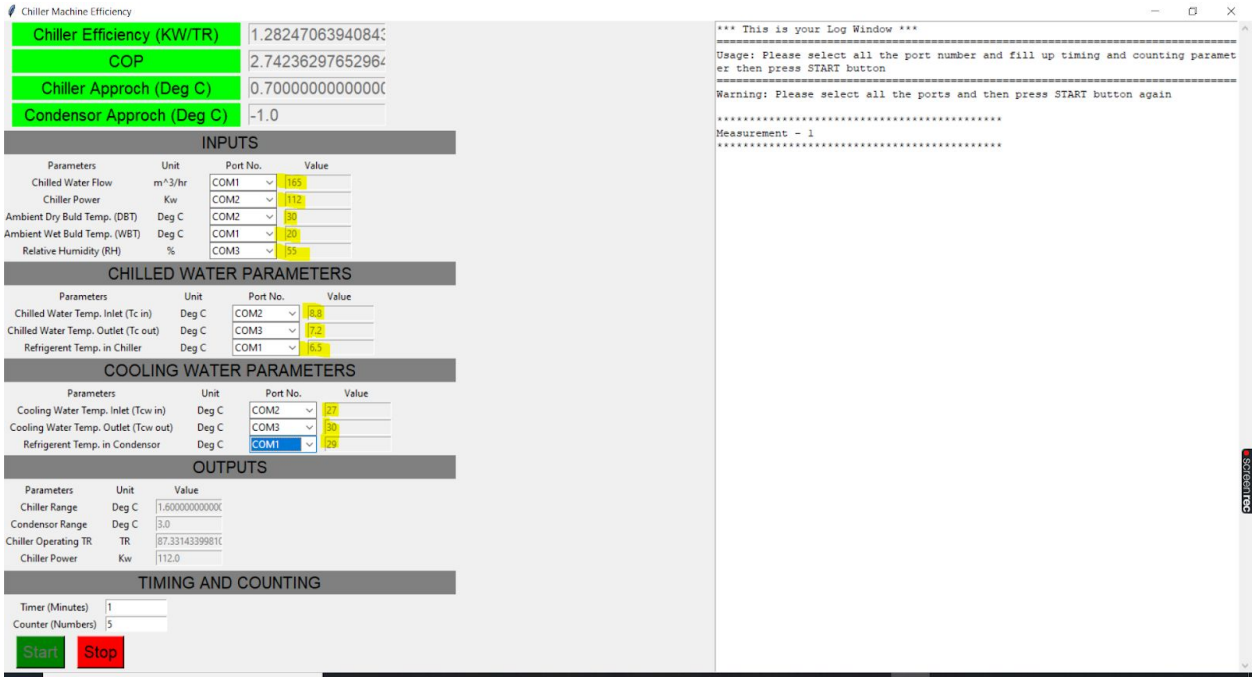
10. Press the “Start” button to start the utility



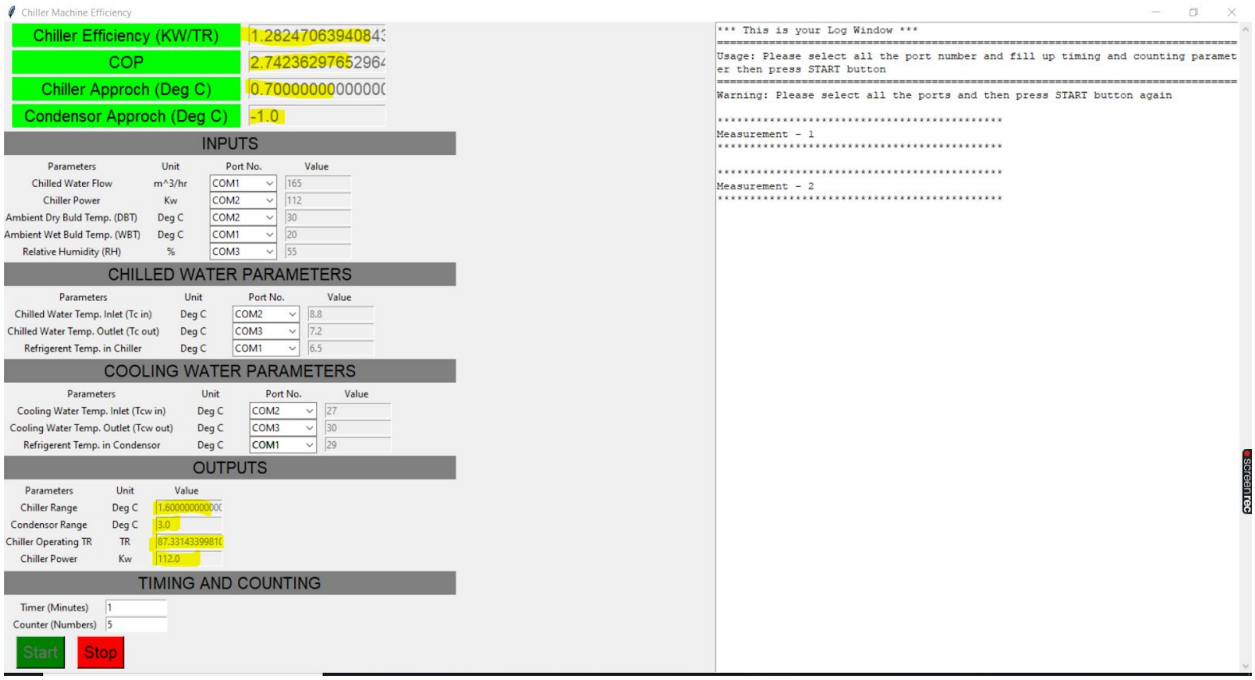
11. Now, python utility is started and user will getting the Measurement - # print on Log Window



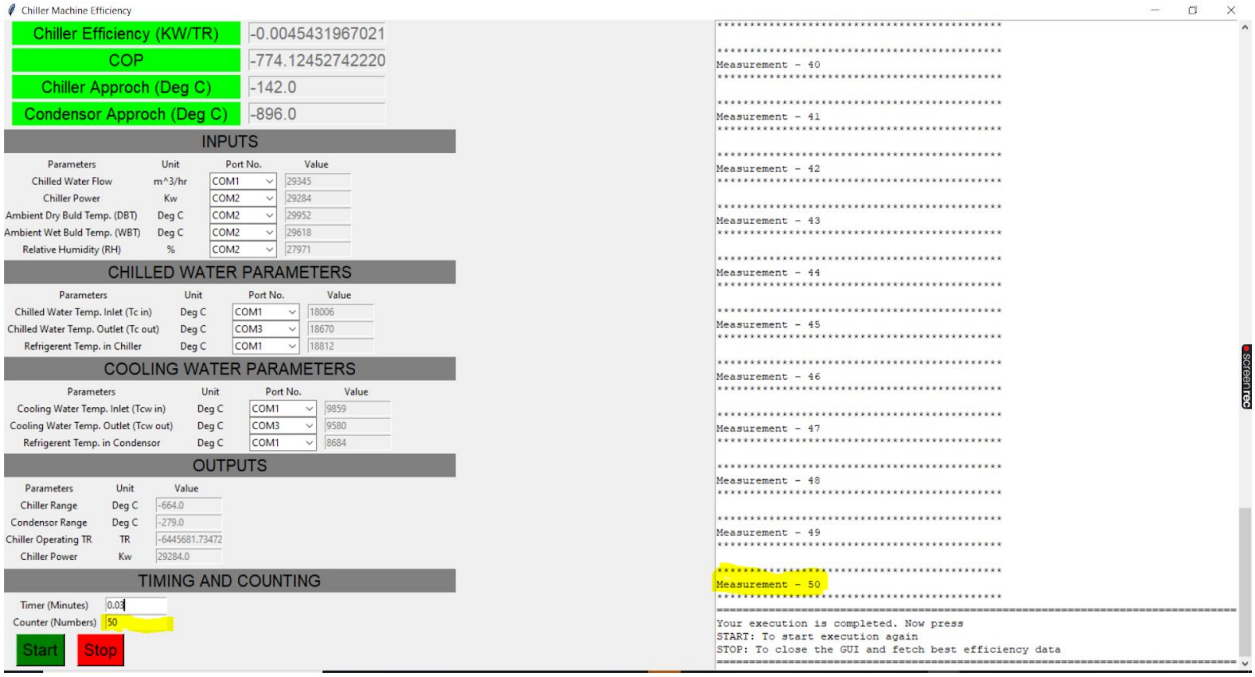
12. This python utility automatically reads the appropriate COM PORT and reflects the value to appropriate parameters.



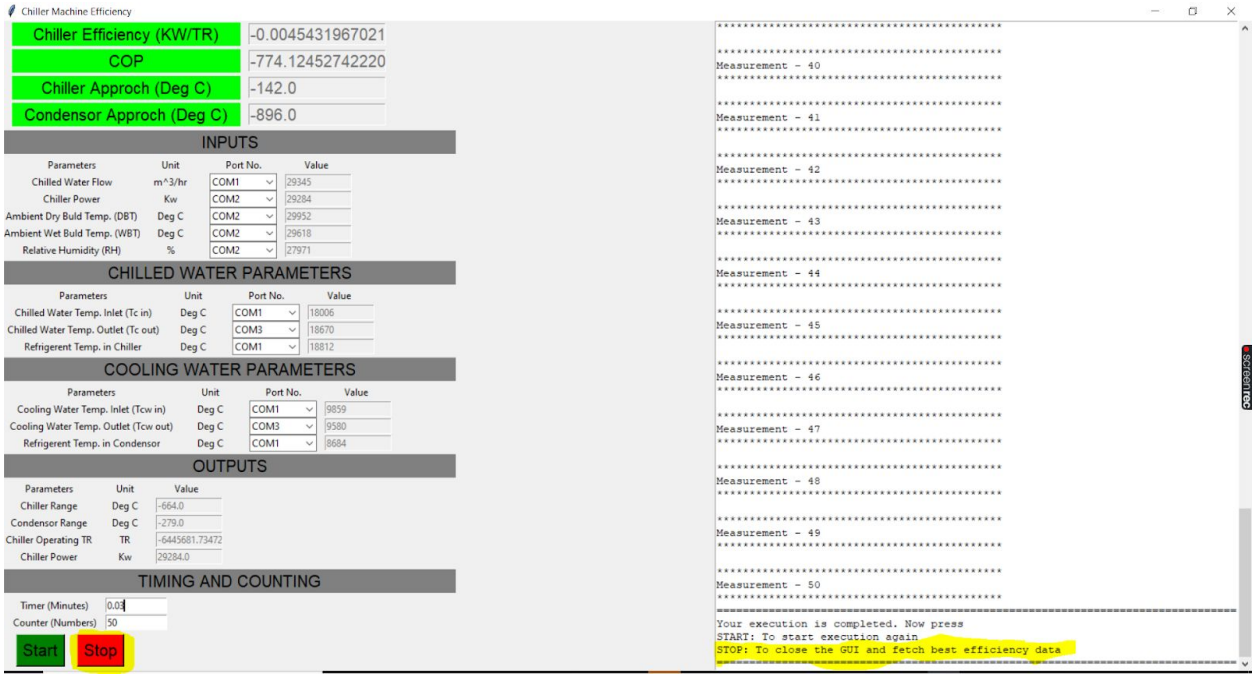
13. Based on the received value of Inputs, Chilled Water and Cooling water parameter values, this utility automatically calculates the Output parameters, Chiller Approach, Condenser Approach, COP and Chiller efficiency parameters.



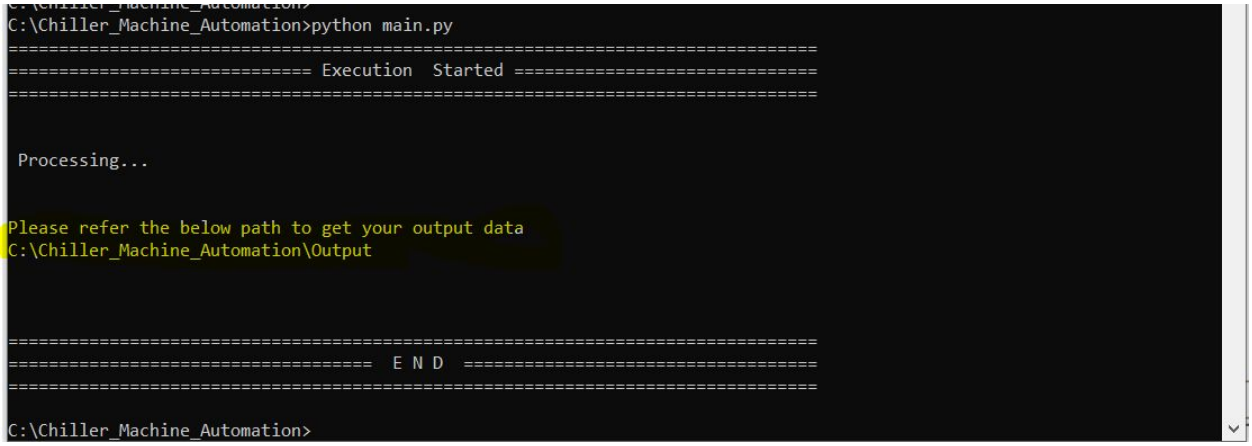
14. Wait until measurement reaches Counter parameter value.



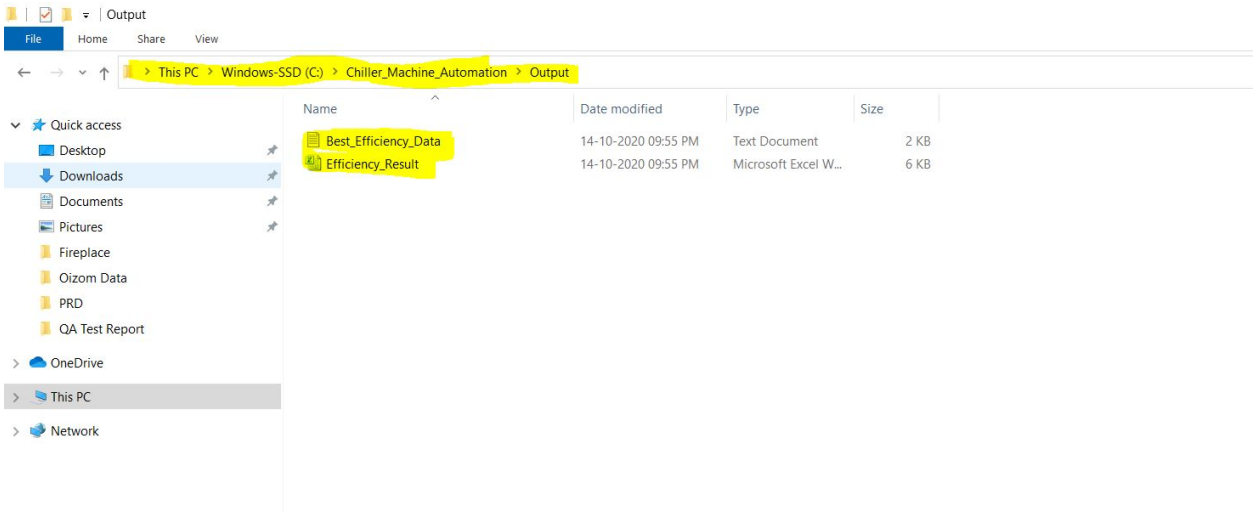
15. User can stop the utility and get the efficiency data by pressing the Stop button



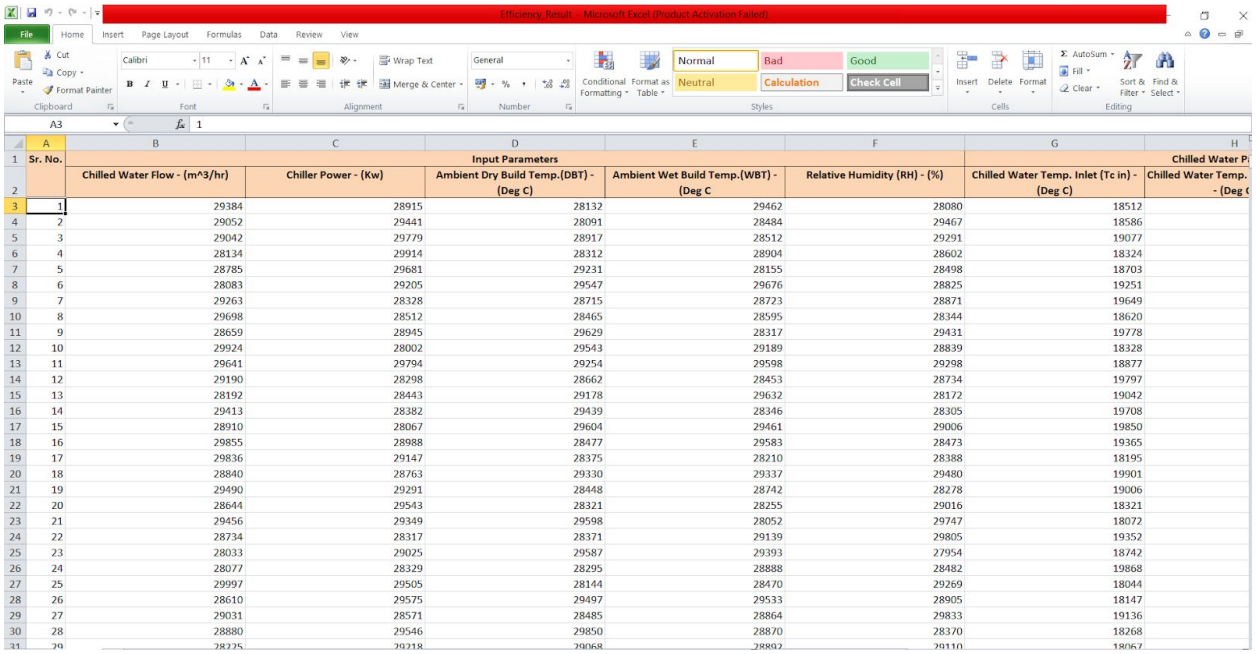
16. Execution will stop once the user presse Stop button and receives the “END” print on command prompt.



17. Open the “Output” folder of your Chiller Machine python utility package to get your efficiency data and best efficiency data.

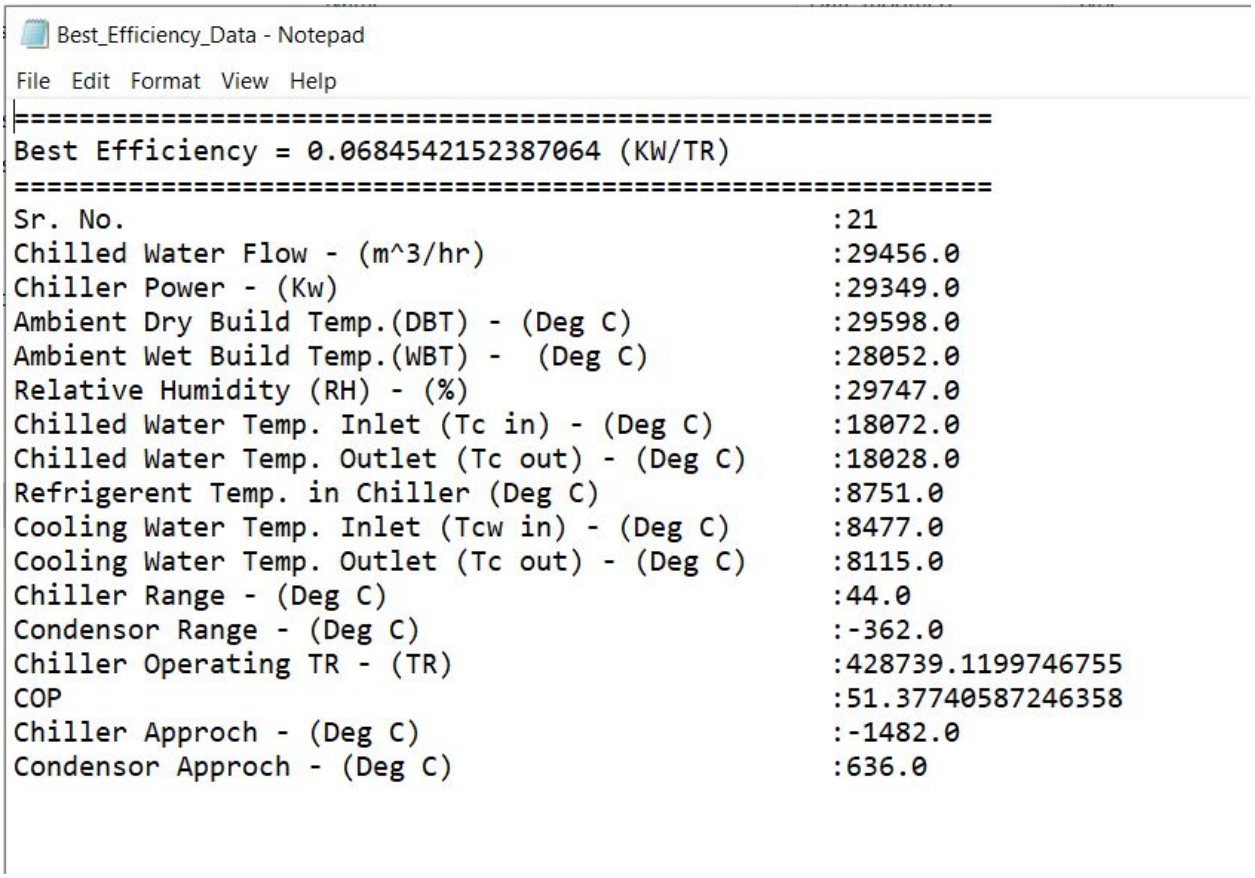


18. To get all the efficiency data with each and every parameters value, please open "Efficiency_Result.xlsx" file



Sr. No.	Input Parameters					
	Chilled Water Flow - (m^3/hr)	Chiller Power - (Kw)	Ambient Dry Build Temp.(DBT) - (Deg C)	Ambient Wet Build Temp.(WBT) - (Deg C	Relative Humidity (RH) - (%)	Chilled Water Temp. Inlet (Tc in) - (Deg C)
1	29384	28915	28132	29462	28080	18512
2	29052	29441	28091	28484	29467	18586
3	29042	29779	28917	28512	29291	19077
4	28134	29914	28312	28904	28602	18324
5	28785	29681	29231	28155	28498	18703
6	28083	29205	29547	29676	28825	19251
7	29263	28328	28715	28723	28871	19649
8	29698	28512	28465	28595	28344	18620
9	28659	28945	29629	28317	29431	19778
10	29924	28002	29543	29189	28839	18328
11	29641	29794	29254	29598	29298	18877
12	29190	28298	28662	28453	28734	19797
13	28192	28443	29178	29632	28172	19042
14	29413	28382	29439	28346	28305	19708
15	28910	28067	29604	29461	29006	19850
16	29855	28988	28477	29583	28473	19365
17	29836	29147	28375	28210	28388	18195
18	28840	28763	29330	29337	29480	19901
19	29490	29291	28448	28742	28278	19006
20	28644	29543	28321	28255	29016	18321
21	29456	29349	29598	28052	29747	18072
22	28734	28317	28371	29139	29805	19352
23	28033	29025	29587	29393	27954	18742
24	28077	28329	28295	28888	28482	19868
25	29997	29505	28144	28470	29269	18044
26	28610	29575	29497	29533	28905	18147
27	29031	28571	28485	28864	29833	19136
28	28880	29546	29850	28870	28370	18268

19. To get the best efficiency value and related parameters value, please open "Best_Efficiency_Data.txt" file



Best_Efficiency_Data - Notepad

File Edit Format View Help

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============================================================
Best Efficiency = 0.0684542152387064 (KW/TR)
============================================================
Sr. No.                                                :21
Chilled Water Flow - (m^3/hr)                          :29456.0
Chiller Power - (Kw)                                   :29349.0
Ambient Dry Build Temp.(DBT) - (Deg C)                 :29598.0
Ambient Wet Build Temp.(WBT) -  (Deg C)                :28052.0
Relative Humidity (RH) - (%)                           :29747.0
Chilled Water Temp. Inlet (Tc in) - (Deg C)            :18072.0
Chilled Water Temp. Outlet (Tc out) - (Deg C)          :18028.0
Refrigerent Temp. in Chiller (Deg C)                   :8751.0
Cooling Water Temp. Inlet (Tcw in) - (Deg C)           :8477.0
Cooling Water Temp. Outlet (Tc out) - (Deg C)          :8115.0
Chiller Range - (Deg C)                                :44.0
Condensor Range - (Deg C)                              :-362.0
Chiller Operating TR - (TR)                            :428739.1199746755
COP                                                    :51.37740587246358
Chiller Approch - (Deg C)                              :-1482.0
Condensor Approch - (Deg C)                            :636.0
```