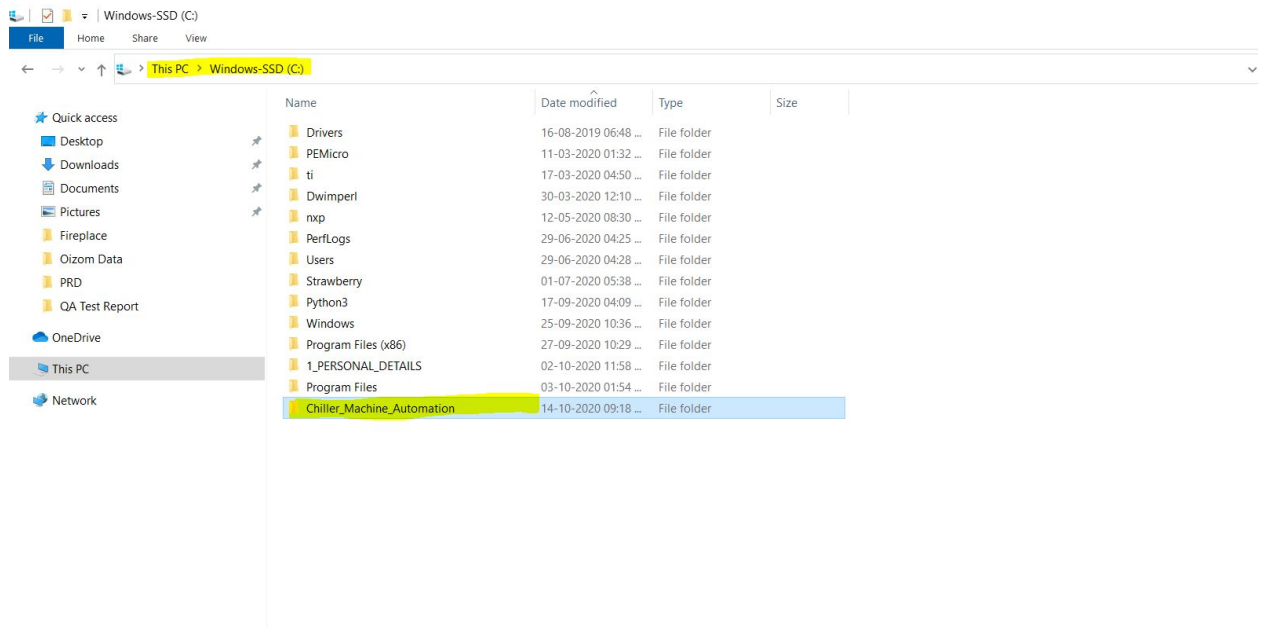
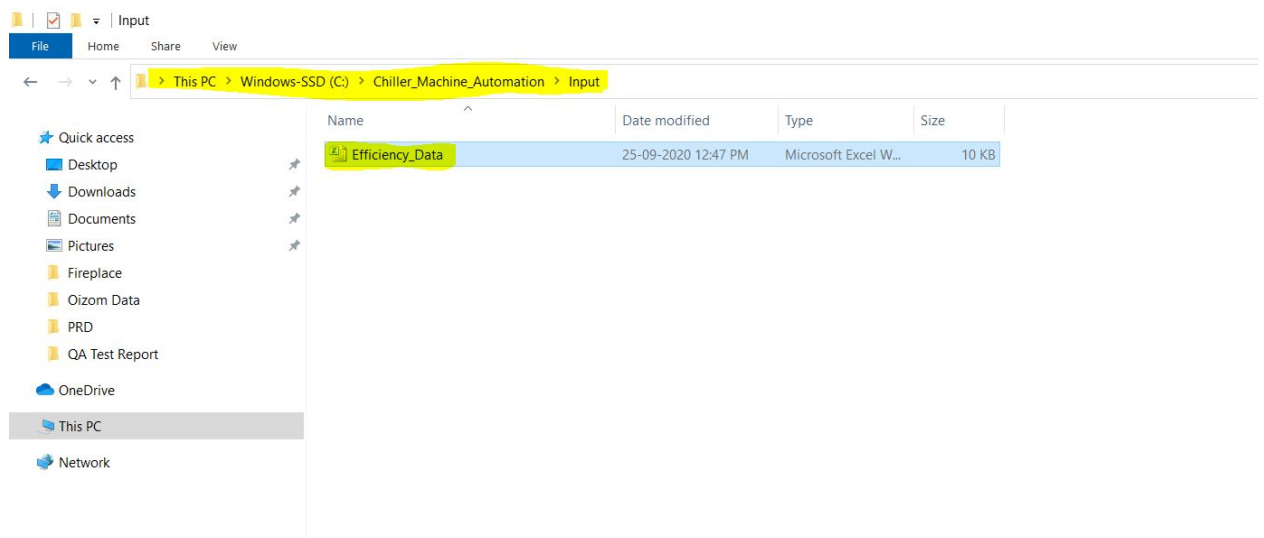


Steps To Run The Chiller Machine Python Utility

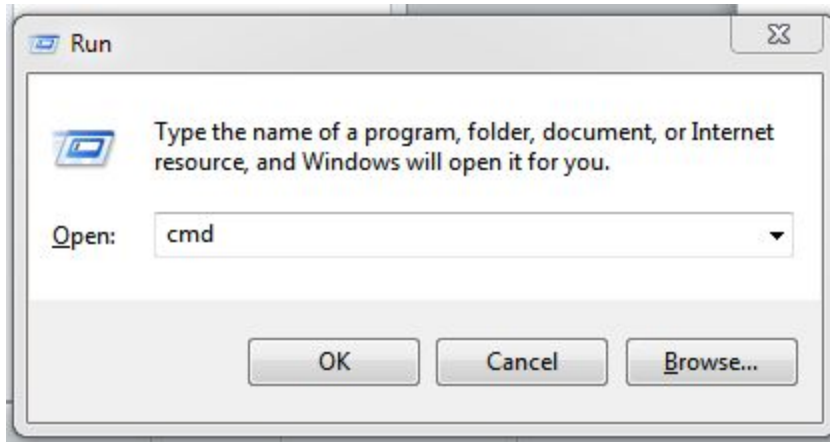
1. Keep the Chiller Machine Automation python utility package at your desired location in your system. For example keep this package at “C:\Chiller_Machine_Automation” location.



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.

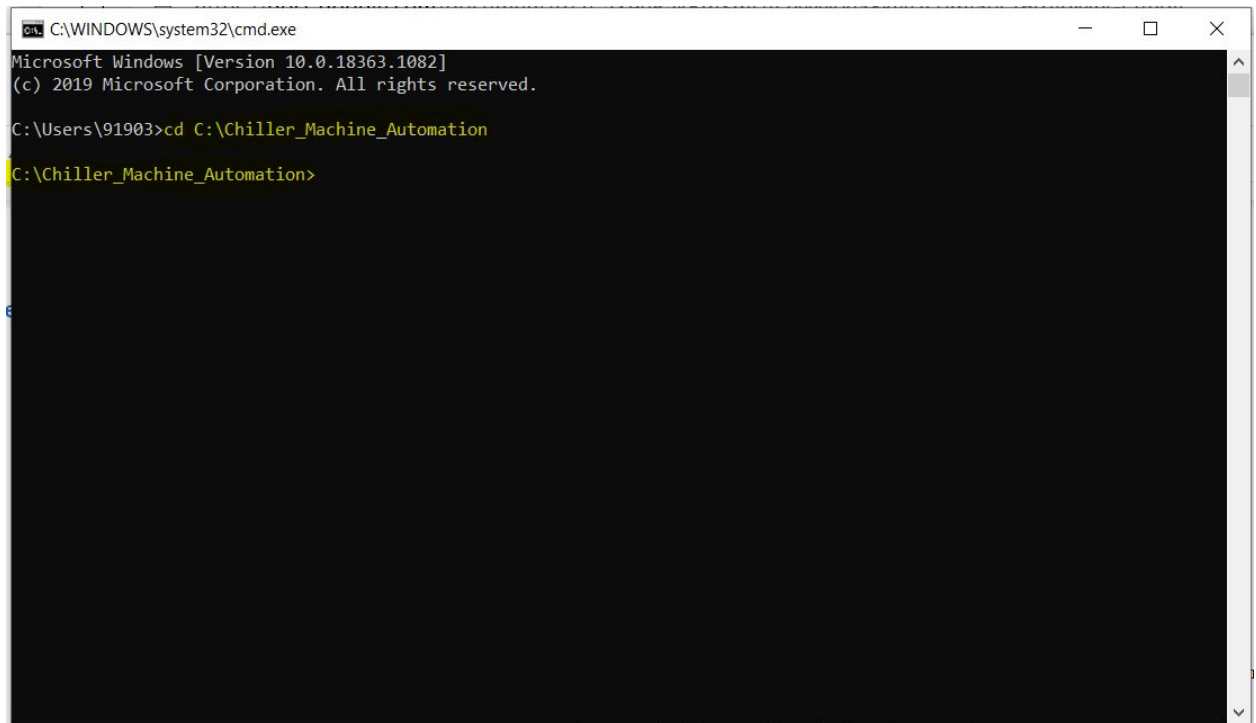


3. Open command prompt (Press Window + R keys) and Press “OK”.



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`

```
C:\WINDOWS\system32\cmd.exe - python main.py
Microsoft Windows [Version 10.0.18363.1082]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\91903>cd C:\Chiller_Machine_Automation

C:\Chiller_Machine_Automation>python main.py
```

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

```
C:\WINDOWS\system32\cmd.exe - python main.py
Microsoft Windows [Version 10.0.18363.1082]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\91903>cd C:\Chiller_Machine_Automation

C:\Chiller_Machine_Automation>python main.py
=====
===== Execution Started =====
=====

Processing...
```

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

Chiller Machine Efficiency

Chiller Efficiency (KW/TR)	
COP	
Chiller Approach (Deg C)	
Condensor Approach (Deg C)	

INPUTS

Parameters	Unit	Port No.	Value
Chilled Water Flow	m ³ /hr		
Chiller Power	Kw		
Ambient Dry Bulb Temp. (DBT)	Deg C		
Ambient Wet Bulb Temp. (WBT)	Deg C		
Relative Humidity (RH)	%		

CHILLED WATER PARAMETERS

Parameters	Unit	Port No.	Value
Chilled Water Temp. Inlet (Tc in)	Deg C		
Chilled Water Temp. Outlet (Tc out)	Deg C		
Refrigerant Temp. in Chiller	Deg C		

COOLING WATER PARAMETERS

Parameters	Unit	Port No.	Value
Cooling Water Temp. Inlet (Tcw in)	Deg C		
Cooling Water Temp. Outlet (Tcw out)	Deg C		
Refrigerant Temp. in Condensor	Deg C		

OUTPUTS

Parameters	Unit	Value
Chiller Range	Deg C	
Condensor Range	Deg C	
Chiller Operating TR	TR	
Chiller Power	Kw	

TIMING AND COUNTING

Timer (Minutes)

Counter (Numbers)

*** This is your Log Window ***

User: Please select all the port number and fill up timing and counting parameter then press START button

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

Chiller Machine Efficiency

Chiller Efficiency (KW/TR)

COP

Chiller Approach (Deg C)

Condensor Approach (Deg C)

INPUTS

Parameters	Unit	Port No.	Value
Chilled Water Flow	m ³ /hr	<input type="text"/>	<input type="text"/>
Chiller Power	Kw	<input type="text"/>	<input type="text"/>
Ambient Dry Buld Temp. (DBT)	Deg C	<input type="text"/>	<input type="text"/>
Ambient Wet Buld Temp. (WBT)	Deg C	<input type="text"/>	<input type="text"/>
Relative Humidity (RH)	%	<input type="text"/>	<input type="text"/>

CHILLED WATER PARAMETERS

Parameters	Unit	Port No.	Value
Chilled Water Temp. Inlet (Tc in)	Deg C	<input type="text"/>	<input type="text"/>
Chilled Water Temp. Outlet (Tc out)	Deg C	<input type="text"/>	<input type="text"/>
Refrigerent Temp. in Chiller	Deg C	<input type="text"/>	<input type="text"/>

COOLING WATER PARAMETERS

Parameters	Unit	Port No.	Value
Cooling Water Temp. Inlet (Tcw in)	Deg C	<input type="text"/>	<input type="text"/>
Cooling Water Temp. Outlet (Tcw out)	Deg C	<input type="text"/>	<input type="text"/>
Refrigerent Temp. in Condensor	Deg C	<input type="text"/>	<input type="text"/>

OUTPUTS

Parameters	Unit	Value
Chiller Range	Deg C	<input type="text"/>
Condensor Range	Deg C	<input type="text"/>
Chiller Operating TR	TR	<input type="text"/>
Chiller Power	Kw	<input type="text"/>

TIMING AND COUNTING

Timer (Minutes)

Counter (Numbers)

*** This is your Log Window ***

Usage: Please select all the port number and fill up timing and counting parameter then press START button

Chiller Machine Efficiency

Chiller Efficiency (KW/TR)

COP

Chiller Approach (Deg C)

Condensor Approach (Deg C)

INPUTS

Parameters	Unit	Port No.	Value
Chilled Water Flow	m ³ /hr	<input type="text"/>	<input type="text"/>
Chiller Power	Kw	<input type="text"/>	<input type="text"/>
Ambient Dry Buld Temp. (DBT)	Deg C	<input type="text"/>	<input type="text"/>
Ambient Wet Buld Temp. (WBT)	Deg C	<input type="text"/>	<input type="text"/>
Relative Humidity (RH)	%	<input type="text"/>	<input type="text"/>

CHILLED WATER PARAMETERS

Parameters	Unit	Port No.	Value
Chilled Water Temp. Inlet (Tc in)	Deg C	<input type="text"/>	<input type="text"/>
Chilled Water Temp. Outlet (Tc out)	Deg C	<input type="text"/>	<input type="text"/>
Refrigerent Temp. in Chiller	Deg C	<input type="text"/>	<input type="text"/>

COOLING WATER PARAMETERS

Parameters	Unit	Port No.	Value
Cooling Water Temp. Inlet (Tcw in)	Deg C	<input type="text"/>	<input type="text"/>
Cooling Water Temp. Outlet (Tcw out)	Deg C	<input type="text"/>	<input type="text"/>
Refrigerent Temp. in Condensor	Deg C	<input type="text"/>	<input type="text"/>

OUTPUTS

Parameters	Unit	Value
Chiller Range	Deg C	<input type="text"/>
Condensor Range	Deg C	<input type="text"/>
Chiller Operating TR	TR	<input type="text"/>
Chiller Power	Kw	<input type="text"/>

TIMING AND COUNTING

Timer (Minutes)

Counter (Numbers)

*** This is your Log Window ***

Usage: Please select all the port number and fill up timing and counting parameter then press START button

Chiller Machine Efficiency

Chiller Efficiency (KW/TR)

COP

Chiller Approach (Deg C)

Condensor Approach (Deg C)

INPUTS

Parameters	Unit	Port No.	Value
Chilled Water Flow	m ³ /hr	COM1	
Chiller Power	Kw	COM2	
Ambient Dry Buld Temp. (DBT)	Deg C	COM3	
Ambient Wet Buld Temp. (WBT)	Deg C	COM1	
Relative Humidity (RH)	%	COM2	

CHILLED WATER PARAMETERS

Parameters	Unit	Port No.	Value
Chilled Water Temp. Inlet (Tc in)	Deg C	COM3	
Chilled Water Temp. Outlet (Tc out)	Deg C	COM1	
Refrigerent Temp. in Chiller	Deg C	COM2	

COOLING WATER PARAMETERS

Parameters	Unit	Port No.	Value
Cooling Water Temp. Inlet (Tcw in)	Deg C	COM3	
Cooling Water Temp. Outlet (Tcw out)	Deg C	COM2	
Refrigerent Temp. in Condensor	Deg C	COM1	

OUTPUTS

Parameters	Unit	Value
Chiller Range	Deg C	
Condensor Range	Deg C	
Chiller Operating TR	TR	
Chiller Power	Kw	

TIMING AND COUNTING

Timer (Minutes)

Counter (Numbers)

Start Stop

*** This is your Log Window ***

Usage: Please select all the port number and fill up timing and counting parameter then press START button

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

Chiller Machine Efficiency

Chiller Efficiency (KW/TR)

COP

Chiller Approach (Deg C)

Condensor Approach (Deg C)

INPUTS

Parameters	Unit	Port No.	Value
Chilled Water Flow	m ³ /hr	COM1	
Chiller Power	Kw	COM2	
Ambient Dry Buld Temp. (DBT)	Deg C	COM3	
Ambient Wet Buld Temp. (WBT)	Deg C	COM1	
Relative Humidity (RH)	%	COM2	

CHILLED WATER PARAMETERS

Parameters	Unit	Port No.	Value
Chilled Water Temp. Inlet (Tc in)	Deg C	COM3	
Chilled Water Temp. Outlet (Tc out)	Deg C	COM1	
Refrigerent Temp. in Chiller	Deg C	COM2	

COOLING WATER PARAMETERS

Parameters	Unit	Port No.	Value
Cooling Water Temp. Inlet (Tcw in)	Deg C	COM3	
Cooling Water Temp. Outlet (Tcw out)	Deg C	COM2	
Refrigerent Temp. in Condensor	Deg C	COM1	

OUTPUTS

Parameters	Unit	Value
Chiller Range	Deg C	
Condensor Range	Deg C	
Chiller Operating TR	TR	
Chiller Power	Kw	

TIMING AND COUNTING

Timer (Minutes)

Counter (Numbers)

Start Stop

*** This is your Log Window ***

Usage: Please select all the port number and fill up timing and counting parameter then press START button

Chiller Machine Efficiency

Chiller Efficiency (KW/TR)

COP

Chiller Approach (Deg C)

Condensor Approach (Deg C)

INPUTS

Parameters	Unit	Port No.	Value
Chilled Water Flow	m ³ /hr	COM1	<input type="text"/>
Chiller Power	Kw	COM2	<input type="text"/>
Ambient Dry Buld Temp. (DBT)	Deg C	COM3	<input type="text"/>
Ambient Wet Buld Temp. (WBT)	Deg C	COM1	<input type="text"/>
Relative Humidity (RH)	%	COM2	<input type="text"/>

CHILLED WATER PARAMETERS

Parameters	Unit	Port No.	Value
Chilled Water Temp. Inlet (Tc in)	Deg C	COM3	<input type="text"/>
Chilled Water Temp. Outlet (Tc out)	Deg C	COM1	<input type="text"/>
Refrigerent Temp. in Chiller	Deg C	COM2	<input type="text"/>

COOLING WATER PARAMETERS

Parameters	Unit	Port No.	Value
Cooling Water Temp. Inlet (Tcw in)	Deg C	COM3	<input type="text"/>
Cooling Water Temp. Outlet (Tcw out)	Deg C	COM2	<input type="text"/>
Refrigerent Temp. in Condensor	Deg C	COM1	<input type="text"/>

OUTPUTS

Parameters	Unit	Value
Chiller Range	Deg C	<input type="text"/>
Condensor Range	Deg C	<input type="text"/>
Chiller Operating TR	TR	<input type="text"/>
Chiller Power	Kw	<input type="text"/>

TIMING AND COUNTING

Timer (Minutes)

Counter (Numbers)

Start Stop

*** This is your Log Window ***

Usage: Please select all the port number and fill up timing and counting parameter then press START button

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

Chiller Machine Efficiency

Chiller Efficiency (KW/TR)

COP

Chiller Approach (Deg C)

Condensor Approach (Deg C)

INPUTS

Parameters	Unit	Port No.	Value
Chilled Water Flow	m ³ /hr	COM1	<input type="text"/>
Chiller Power	Kw	COM2	<input type="text"/>
Ambient Dry Buld Temp. (DBT)	Deg C	COM3	<input type="text"/>
Ambient Wet Buld Temp. (WBT)	Deg C	COM1	<input type="text"/>
Relative Humidity (RH)	%	COM2	<input type="text"/>

CHILLED WATER PARAMETERS

Parameters	Unit	Port No.	Value
Chilled Water Temp. Inlet (Tc in)	Deg C	COM3	<input type="text"/>
Chilled Water Temp. Outlet (Tc out)	Deg C	COM1	<input type="text"/>
Refrigerent Temp. in Chiller	Deg C	COM2	<input type="text"/>

COOLING WATER PARAMETERS

Parameters	Unit	Port No.	Value
Cooling Water Temp. Inlet (Tcw in)	Deg C	COM3	<input type="text"/>
Cooling Water Temp. Outlet (Tcw out)	Deg C	COM2	<input type="text"/>
Refrigerent Temp. in Condensor	Deg C	COM1	<input type="text"/>

OUTPUTS

Parameters	Unit	Value
Chiller Range	Deg C	<input type="text"/>
Condensor Range	Deg C	<input type="text"/>
Chiller Operating TR	TR	<input type="text"/>
Chiller Power	Kw	<input type="text"/>

TIMING AND COUNTING

Timer (Minutes)

Counter (Numbers)

Start Stop

*** This is your Log Window ***

Usage: Please select all the port number and fill up timing and counting parameter then press START button

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

Chiller Machine Efficiency

Chiller Efficiency (KW/TR) -0.0035303704399

COP -996.21273738149

Chiller Approach (Deg C) 130.0

Condensor Approach (Deg C) -476.0

INPUTS

Parameters	Unit	Port No.	Value
Chilled Water Flow	m ³ /hr	COM1	28931
Chiller Power	Kw	COM2	28719
Ambient Dry Buld Temp. (DBT)	Deg C	COM2	29712
Ambient Wet Buld Temp. (WBT)	Deg C	COM2	28919
Relative Humidity (RH)	%	COM2	29529

CHILLED WATER PARAMETERS

Parameters	Unit	Port No.	Value
Chilled Water Temp. Inlet (Tc in)	Deg C	COM1	18815
Chilled Water Temp. Outlet (Tc out)	Deg C	COM3	19665
Refrigerent Temp. in Chiller	Deg C	COM1	19535

COOLING WATER PARAMETERS

Parameters	Unit	Port No.	Value
Cooling Water Temp. Inlet (Tcw in)	Deg C	COM1	8854
Cooling Water Temp. Outlet (Tcw out)	Deg C	COM3	8701
Refrigerent Temp. in Condensor	Deg C	COM1	8225

OUTPUTS

Parameters	Unit	Value
Chiller Range	Deg C	-850.0
Condensor Range	Deg C	-153.0
Chiller Operating TR	TR	-8134840.37676
Chiller Power	Kw	28719.0

TIMING AND COUNTING

Timer (Minutes) 1

Counter (Numbers) 54

Start Stop

*** This is your Log Window ***

Usage: Please select all the port number and fill up timing and counting parameter then press START button

Measurement - 1

Measurement - 2

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

Chiller Machine Efficiency

Chiller Efficiency (KW/TR) 1.2824706394084

COP 2.7423629765296

Chiller Approach (Deg C) 0.7000000000000

Condensor Approach (Deg C) -1.0

INPUTS

Parameters	Unit	Port No.	Value
Chilled Water Flow	m ³ /hr	COM1	1165
Chiller Power	Kw	COM2	1112
Ambient Dry Buld Temp. (DBT)	Deg C	COM2	30
Ambient Wet Buld Temp. (WBT)	Deg C	COM1	120
Relative Humidity (RH)	%	COM3	155

CHILLED WATER PARAMETERS

Parameters	Unit	Port No.	Value
Chilled Water Temp. Inlet (Tc in)	Deg C	COM2	18.8
Chilled Water Temp. Outlet (Tc out)	Deg C	COM3	17.2
Refrigerent Temp. in Chiller	Deg C	COM1	16.5

COOLING WATER PARAMETERS

Parameters	Unit	Port No.	Value
Cooling Water Temp. Inlet (Tcw in)	Deg C	COM2	27
Cooling Water Temp. Outlet (Tcw out)	Deg C	COM3	30
Refrigerent Temp. in Condensor	Deg C	COM1	129

OUTPUTS

Parameters	Unit	Value
Chiller Range	Deg C	1.6000000000000
Condensor Range	Deg C	3.0
Chiller Operating TR	TR	87.3314339981C
Chiller Power	Kw	112.0

TIMING AND COUNTING

Timer (Minutes) 1

Counter (Numbers) 5

Start Stop

*** This is your Log Window ***

Usage: Please select all the port number and fill up timing and counting parameter then press START button

Warning: Please select all the ports and then press START button again

Measurement - 1

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.

Chiller Machine Efficiency

Chiller Efficiency (KW/TR) 1.2824706394084

COP 2.74236297652964

Chiller Approach (Deg C) 0.70000000000000

Condensor Approach (Deg C) 1.0

INPUTS			
Parameters	Unit	Port No.	Value
Chilled Water Flow	m ³ /hr	COM1	165
Chiller Power	Kw	COM2	112
Ambient Dry Buld Temp. (DBT)	Deg C	COM2	30
Ambient Wet Buld Temp. (WBT)	Deg C	COM1	20
Relative Humidity (RH)	%	COM3	55

CHILLED WATER PARAMETERS			
Parameters	Unit	Port No.	Value
Chilled Water Temp. Inlet (Tc in)	Deg C	COM2	8.8
Chilled Water Temp. Outlet (Tc out)	Deg C	COM3	7.2
Refrigerent Temp. in Chiller	Deg C	COM1	6.5

COOLING WATER PARAMETERS			
Parameters	Unit	Port No.	Value
Cooling Water Temp. Inlet (Tcw in)	Deg C	COM2	27
Cooling Water Temp. Outlet (Tcw out)	Deg C	COM3	30
Refrigerent Temp. in Condensor	Deg C	COM1	29

OUTPUTS		
Parameters	Unit	Value
Chiller Range	Deg C	1.60000000000000
Condensor Range	Deg C	3.0
Chiller Operating TR	TR	107.31143399814
Chiller Power	Kw	112.0

TIMING AND COUNTING

Timer (Minutes) 1

Counter (Numbers) 5

Start Stop

*** This is your Log Window ***

Usage: Please select all the port number and fill up timing and counting parameter then press START button

Warning: Please select all the ports and then press START button again

Measurement - 1

Measurement - 2

14. Wait until measurement reaches Counter parameter value.

Chiller Machine Efficiency

Chiller Efficiency (KW/TR) -0.0045431967021

COP -774.12452742220

Chiller Approach (Deg C) -142.0

Condensor Approach (Deg C) -896.0

INPUTS			
Parameters	Unit	Port No.	Value
Chilled Water Flow	m ³ /hr	COM1	29345
Chiller Power	Kw	COM2	29284
Ambient Dry Buld Temp. (DBT)	Deg C	COM2	29952
Ambient Wet Buld Temp. (WBT)	Deg C	COM2	29618
Relative Humidity (RH)	%	COM2	27971

CHILLED WATER PARAMETERS			
Parameters	Unit	Port No.	Value
Chilled Water Temp. Inlet (Tc in)	Deg C	COM1	18006
Chilled Water Temp. Outlet (Tc out)	Deg C	COM3	18670
Refrigerent Temp. in Chiller	Deg C	COM1	18812

COOLING WATER PARAMETERS			
Parameters	Unit	Port No.	Value
Cooling Water Temp. Inlet (Tcw in)	Deg C	COM1	9859
Cooling Water Temp. Outlet (Tcw out)	Deg C	COM3	9580
Refrigerent Temp. in Condensor	Deg C	COM1	8684

OUTPUTS		
Parameters	Unit	Value
Chiller Range	Deg C	-664.0
Condensor Range	Deg C	-279.0
Chiller Operating TR	TR	-6445681.73472
Chiller Power	Kw	29284.0

TIMING AND COUNTING

Timer (Minutes) 0.03

Counter (Numbers) 50

Start Stop

Measurement - 40

Measurement - 41

Measurement - 42

Measurement - 43

Measurement - 44

Measurement - 45

Measurement - 46

Measurement - 47

Measurement - 48

Measurement - 49

Measurement - 50

Your execution is completed. Now press
START: To start execution again
STOP: To close the GUI and fetch best efficiency data

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

Chiller Machine Efficiency

Chiller Efficiency (KW/TR)	-0.0045431967021
COP	-774.12452742220
Chiller Approach (Deg C)	-142.0
Condensor Approach (Deg C)	-896.0

INPUTS			
Parameters	Unit	Port No.	Value
Chilled Water Flow	m ³ /hr	COM1	29345
Chiller Power	Kw	COM2	29284
Ambient Dry Buld Temp. (DBT)	Deg C	COM2	29952
Ambient Wet Buld Temp. (WBT)	Deg C	COM2	29618
Relative Humidity (RH)	%	COM2	27971

CHILLED WATER PARAMETERS			
Parameters	Unit	Port No.	Value
Chilled Water Temp. Inlet (Tc in)	Deg C	COM1	18006
Chilled Water Temp. Outlet (Tc out)	Deg C	COM3	18670
Refrigerent Temp. in Chiller	Deg C	COM1	18812

COOLING WATER PARAMETERS			
Parameters	Unit	Port No.	Value
Cooling Water Temp. Inlet (Tcw in)	Deg C	COM1	9859
Cooling Water Temp. Outlet (Tcw out)	Deg C	COM3	9580
Refrigerent Temp. in Condensor	Deg C	COM1	8684

OUTPUTS		
Parameters	Unit	Value
Chiller Range	Deg C	-664.0
Condensor Range	Deg C	-279.0
Chiller Operating TR	TR	-6445681.73472
Chiller Power	Kw	29284.0

TIMING AND COUNTING	
Timer (Minutes)	0.00
Counter (Numbers)	50

Start Stop

 Measurement - 40

 Measurement - 41

 Measurement - 42

 Measurement - 43

 Measurement - 44

 Measurement - 45

 Measurement - 46

 Measurement - 47

 Measurement - 48

 Measurement - 49

 Measurement - 50

 Your execution is completed. Now press
 START: To start execution again
 STOP: To close the GUI and fetch best efficiency data

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

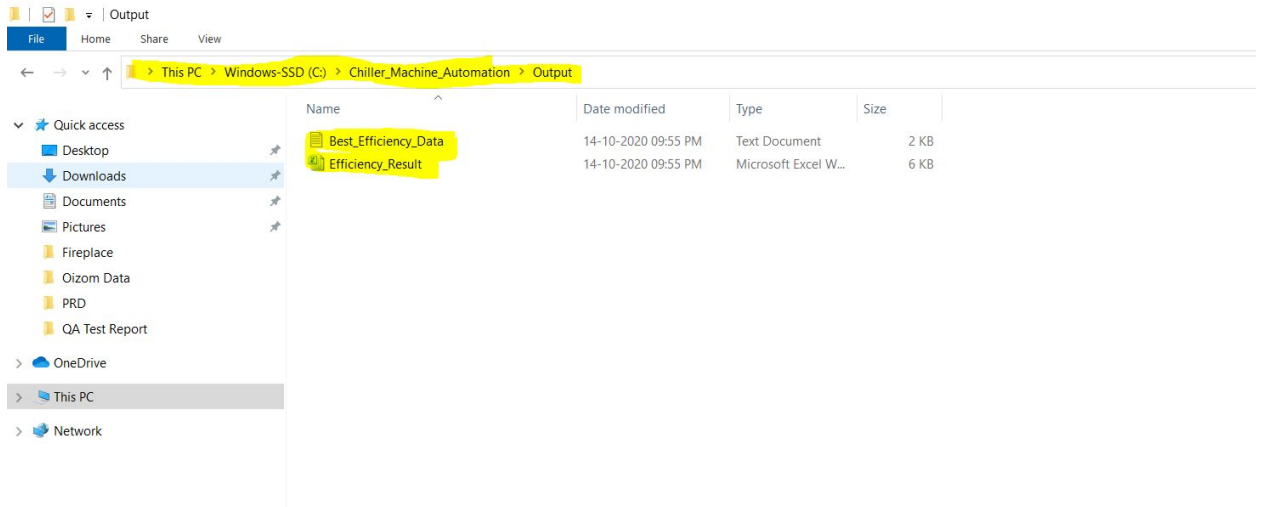
```
C:\Chiller_Machine_Automation>python main.py
===== Execution Started =====

Processing...

Please refer the below path to get your output data
C:\Chiller_Machine_Automation\Output

===== E N D =====
C:\Chiller_Machine_Automation>
```

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.	Chilled Water Flow - (m³/hr)	Chiller Power - (Kw)	Ambient Dry Bulb Temp.(DBT) - (Deg C)	Ambient Wet Bulb Temp.(WBT) - (Deg C)	Relative Humidity (RH) - (%)	Chilled Water Temp. Inlet (Tc in) - (Deg C)	Chilled Water Temp. - (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	28676	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
29	28225	29218	29068	28892	29110		18067

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

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