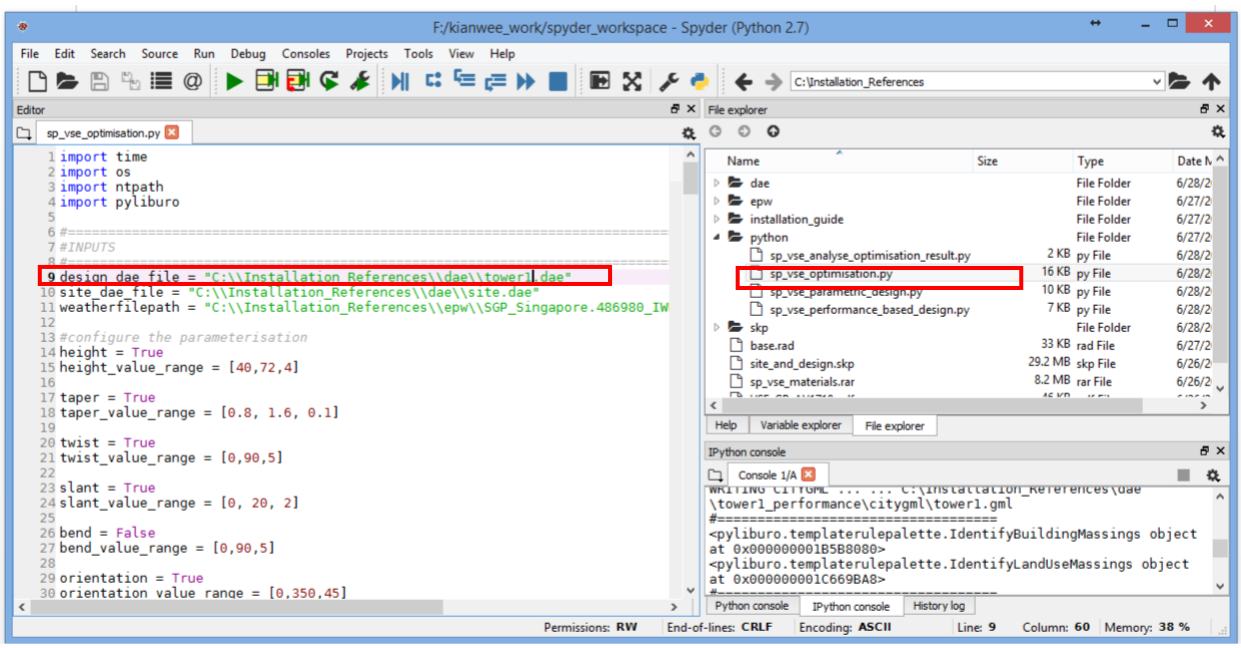
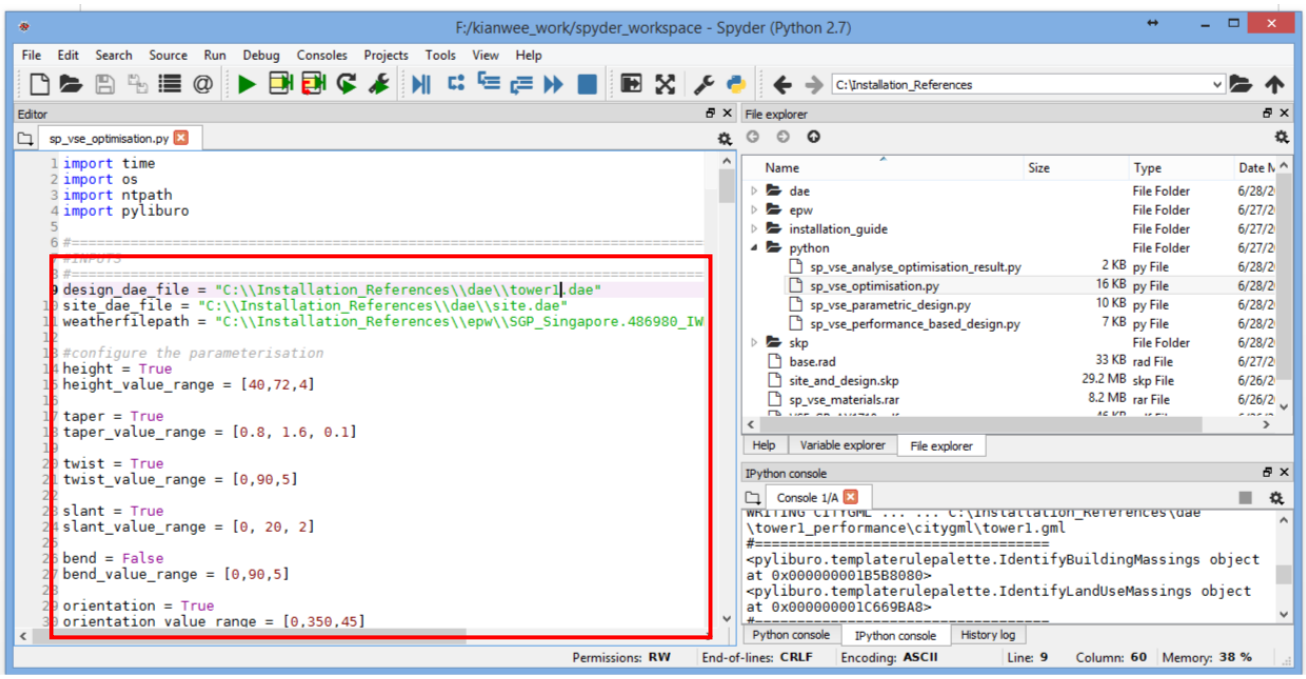
Pre-requisite:

- You must have read the installation guide for pyliburo and installed pyliburo before attempting this exercise.
- You must already finish exercise 1 and 2 to attempt exercise 3.

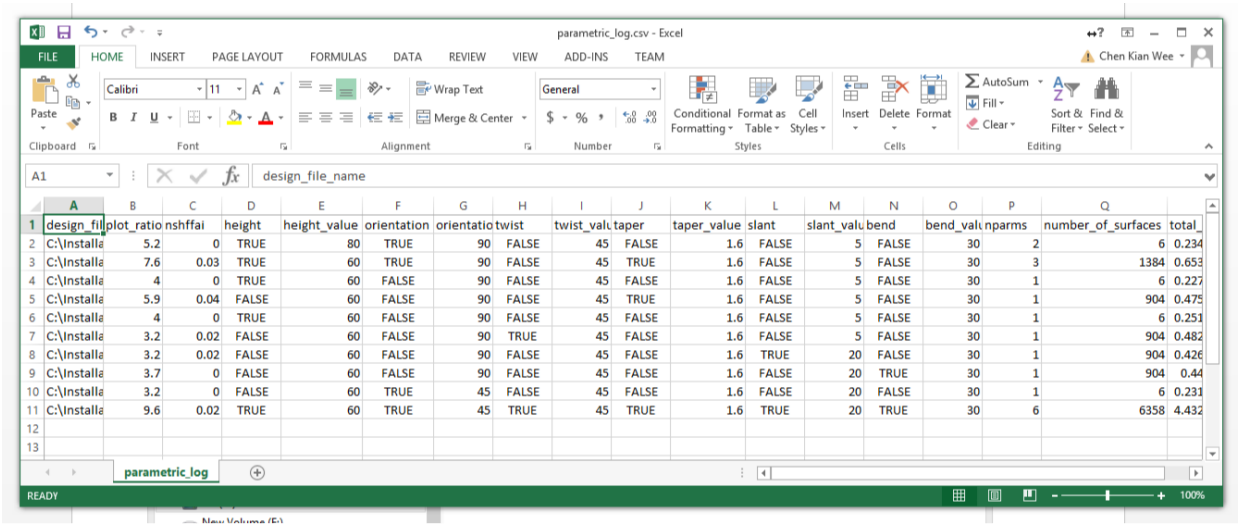
1.) Open spyder and go to the “sp_vse_optimisation.py” script by double clicking it. We will use the example from exercise 1, “c:\\Installation_References\\dae\\tower1.dae”.



2.) You can optimise your model according to 6 parameters. Height, taper, twist, slant, bend and orientation. Turn on each parameters by typing in True or False. Set the range of each parameter for the optimisation algorithm to explore. For example, if you set: height = True, height_value_range = [40, 72, 4]. It means the optimisation will generate design between the height of 40 to 72 and in intervals of 4 (40, 44, 48, 52, 56, 60, 64, 68, 72). There are 9 possible height variations. You can configure the rest of the parameters.



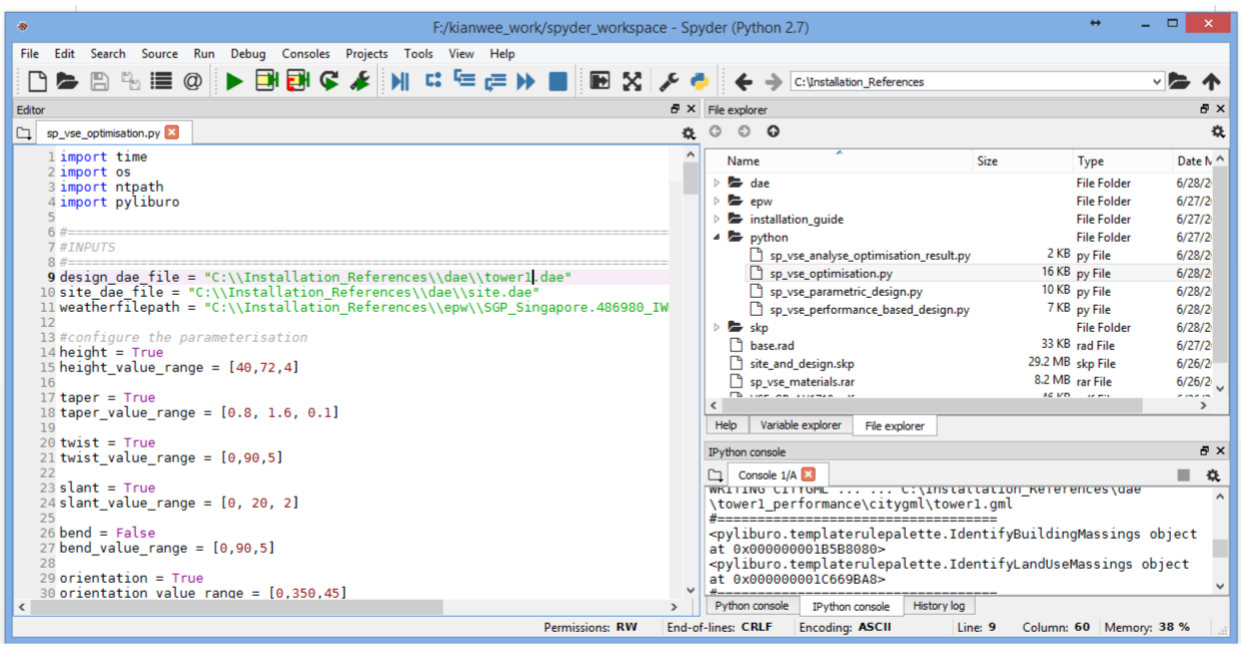
3.) Configure your parameters and value_ranges according to the parameteric_log.csv shown in the previous exercise. Look out for minimum and maximum parameter values and use them to set the parameter range and intervals.



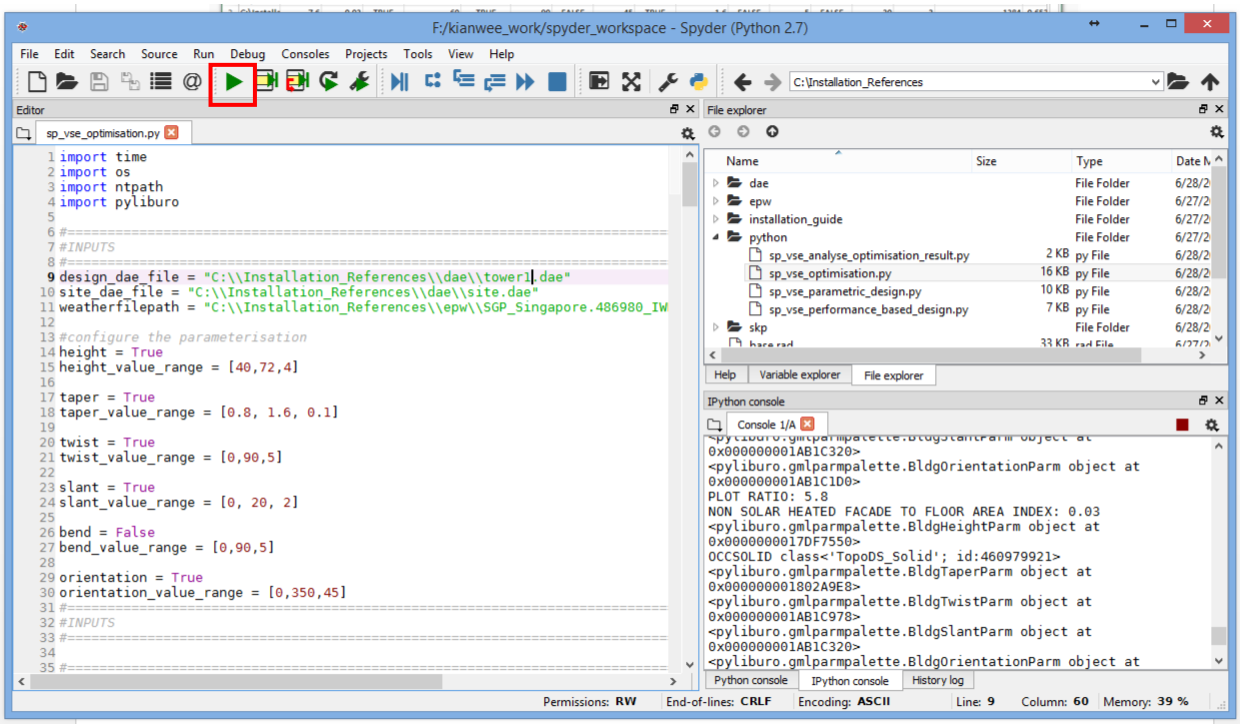
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
1	design_fil	plot_ratio	nshffai	height	height_value	orientation	orientatio	twist	twist_valu	taper	taper_value	slant	slant_valu	bend	bend_valu	nparms	number_of_surfaces	total_
2	C:\Installa	5.2	0	TRUE	80	TRUE	90	FALSE	45	FALSE	1.6	FALSE	5	FALSE	30	2	6	0.234
3	C:\Installa	7.6	0.03	TRUE	60	TRUE	90	FALSE	45	TRUE	1.6	FALSE	5	FALSE	30	3	1384	0.653
4	C:\Installa	4	0	TRUE	60	FALSE	90	FALSE	45	FALSE	1.6	FALSE	5	FALSE	30	1	6	0.227
5	C:\Installa	5.9	0.04	FALSE	60	FALSE	90	FALSE	45	TRUE	1.6	FALSE	5	FALSE	30	1	904	0.475
6	C:\Installa	4	0	TRUE	60	FALSE	90	FALSE	45	FALSE	1.6	FALSE	5	FALSE	30	1	6	0.251
7	C:\Installa	3.2	0.02	FALSE	60	FALSE	90	TRUE	45	FALSE	1.6	FALSE	5	FALSE	30	1	904	0.482
8	C:\Installa	3.2	0.02	FALSE	60	FALSE	90	FALSE	45	FALSE	1.6	TRUE	20	FALSE	30	1	904	0.426
9	C:\Installa	3.7	0	FALSE	60	FALSE	90	FALSE	45	FALSE	1.6	FALSE	20	TRUE	30	1	904	0.44
10	C:\Installa	3.2	0	FALSE	60	TRUE	45	FALSE	45	FALSE	1.6	FALSE	20	FALSE	30	1	6	0.231
11	C:\Installa	9.6	0.02	TRUE	60	TRUE	45	TRUE	45	TRUE	1.6	TRUE	20	TRUE	30	6	6358	4.432

4.) For example for the problem shown in the figure:

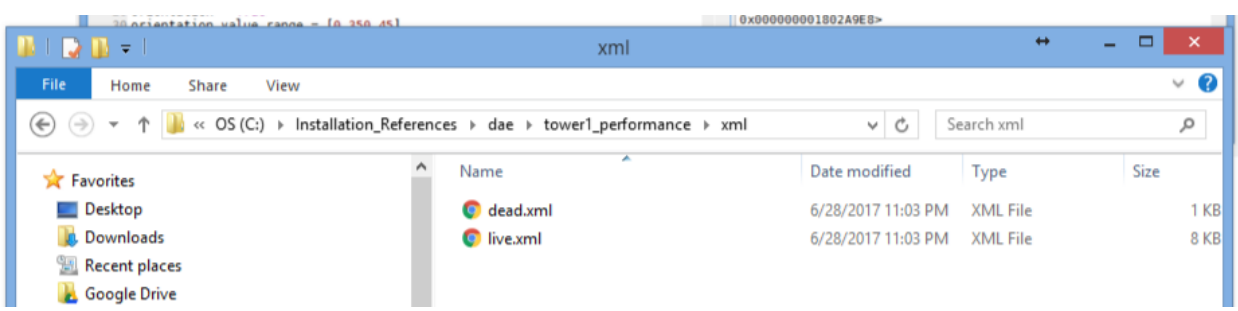
a. Height = [40, 72, 4] = 9 possibilities
b. Taper = [0.8, 1.6, 0.1] = 9 possibilities
c. Twist = [0, 90, 5] = 10 possibilities
d. Slant = [0, 20, 2] = 10 possibilities
e. Orientation = [0, 350, 45] = 8 possibilities
f. Total possibilities = 9 x 9 x 10 x 10 x 8 = 64800



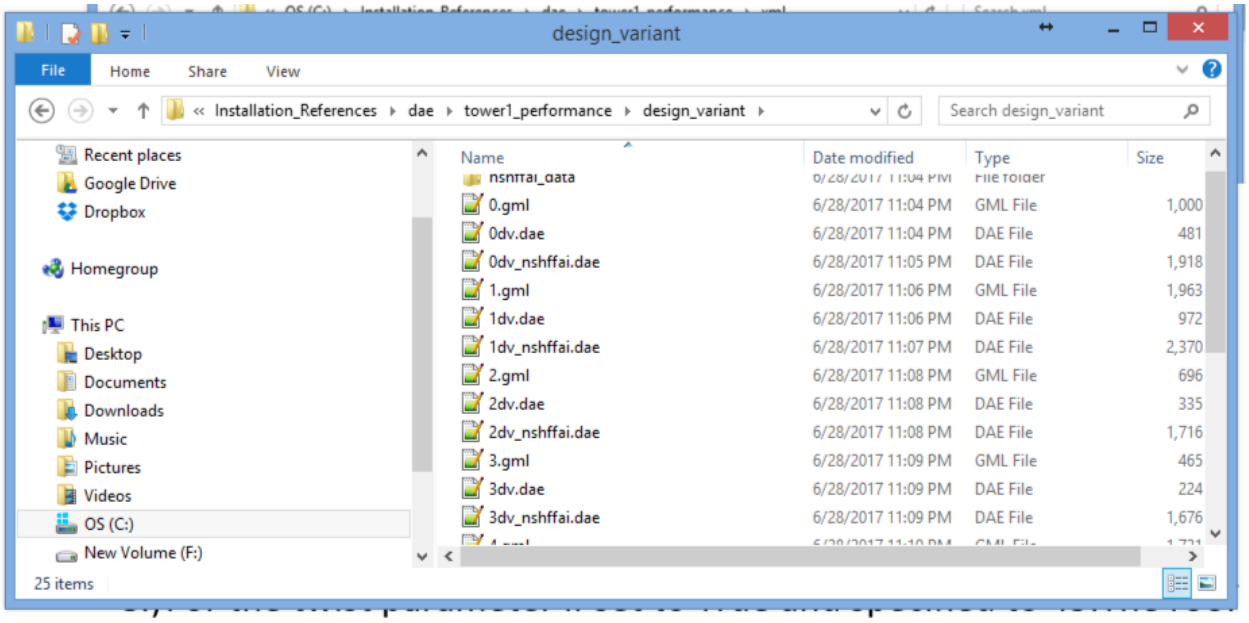
5.) Press run at spyder. The script will start running for 6-12 hours depending how complicated is your model.



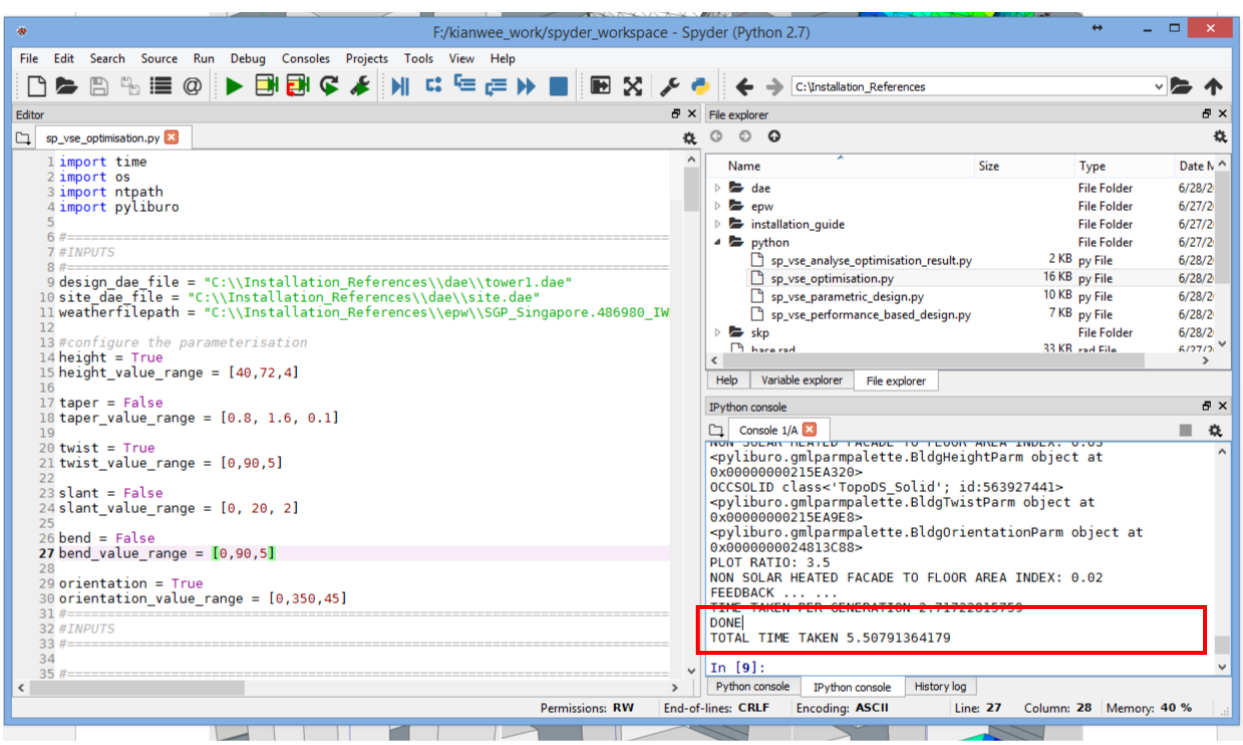
6.) Once the optimisation runs, it will produce 2 xml files named "dead.xml" and "live.xml". These 2 files documents all the results of the optimisation. (PLEASE DO NOT OPEN THE FILE WHILE THE OPTIMISATION IS RUNNING)



7.) You can check the generated design variants in the design variant folder.



8.) If you have successfully run the optimisation. You will see the DONE message at the console, with the total time taken.



9.) Create an archive folder, copy and paste the “dead.xml” and “live.xml” file into the archive folder. This is to make sure you keep an extra copy of your result for the 6-12 hours wait, as the xml file documents all the results of the optimisation.