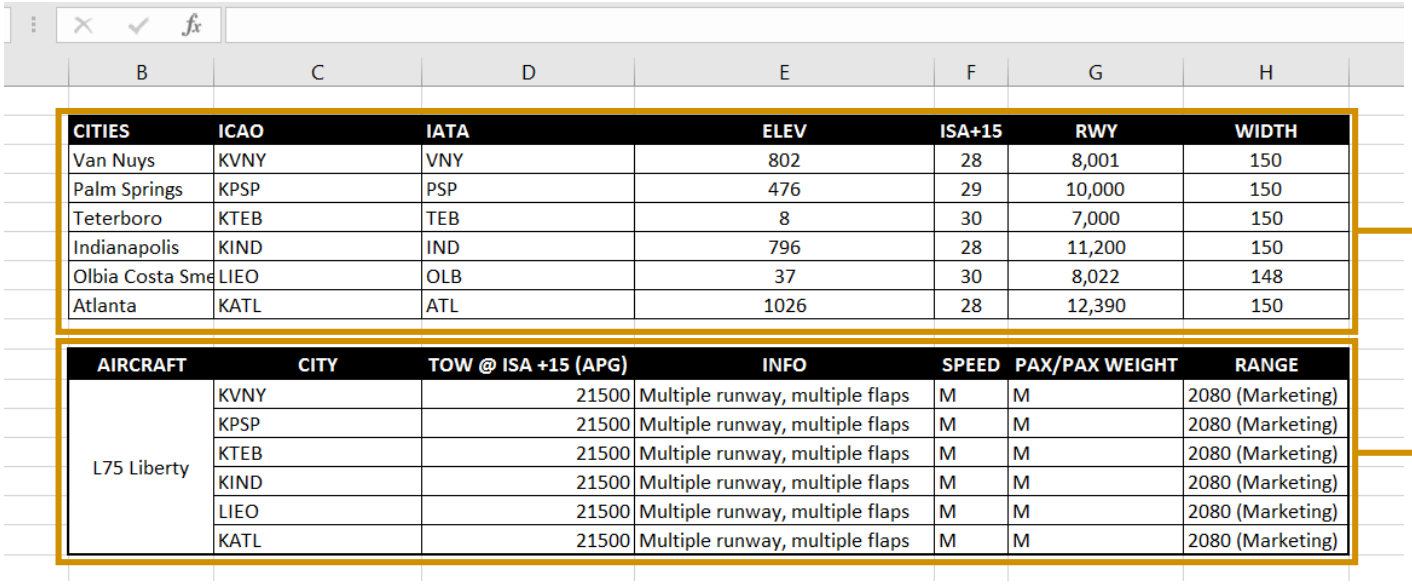
“The Dream” Instruction manual

August 2020

What is “The Dream”?

The project is divided into simple two categories, for automating two different data tables.



CITIES	ICAO	IATA	ELEV	ISA+15	RWY	WIDTH
Van Nuys	KVNY	VNY	802	28	8,001	150
Palm Springs	KPSP	PSP	476	29	10,000	150
Teterboro	KTEB	TEB	8	30	7,000	150
Indianapolis	KIND	IND	796	28	11,200	150
Olbia Costa Sme	LIEO	OLB	37	30	8,022	148
Atlanta	KATL	ATL	1026	28	12,390	150

AIRCRAFT	CITY	TOW @ ISA +15 (APG)	INFO	SPEED	PAX/PAX WEIGHT	RANGE
L75 Liberty	KVNY	21500	Multiple runway, multiple flaps	M	M	2080 (Marketing)
	KPSP	21500	Multiple runway, multiple flaps	M	M	2080 (Marketing)
	KTEB	21500	Multiple runway, multiple flaps	M	M	2080 (Marketing)
	KIND	21500	Multiple runway, multiple flaps	M	M	2080 (Marketing)
	LIEO	21500	Multiple runway, multiple flaps	M	M	2080 (Marketing)
	KATL	21500	Multiple runway, multiple flaps	M	M	2080 (Marketing)

1. Automating Table 1 by parsing through ACU-KWIK
2. Automating Table 2 by parsing through APG reports.

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Achieving "The Dream"

The essence of this project is to "web scrape" and automate data collection. We scrape from websites like ACU-KWIK and APG. The goal is to:

1. **Reduce human error, and increase time saving**
2. **Make the job easier**

This is ultimately working towards **automated range maps (and route studies!)** meaning they can easily be done by anyone (i.e. Sales Directors could complete requests with no support).

1

Table 1

Parsing through the HTML source of ACU-KWIK website, using ICAO codes as identifiers

Text-fields into data frame

2

Table 2

Parsing through PDFs generated by APG and auto-searching maximum weights

Parsed output into data frame

With…

python™

Microsoft® Visual Basic® for Applications

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Contents

This document is divided into the following categories. Click on the words to navigate directly!

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1. Installation

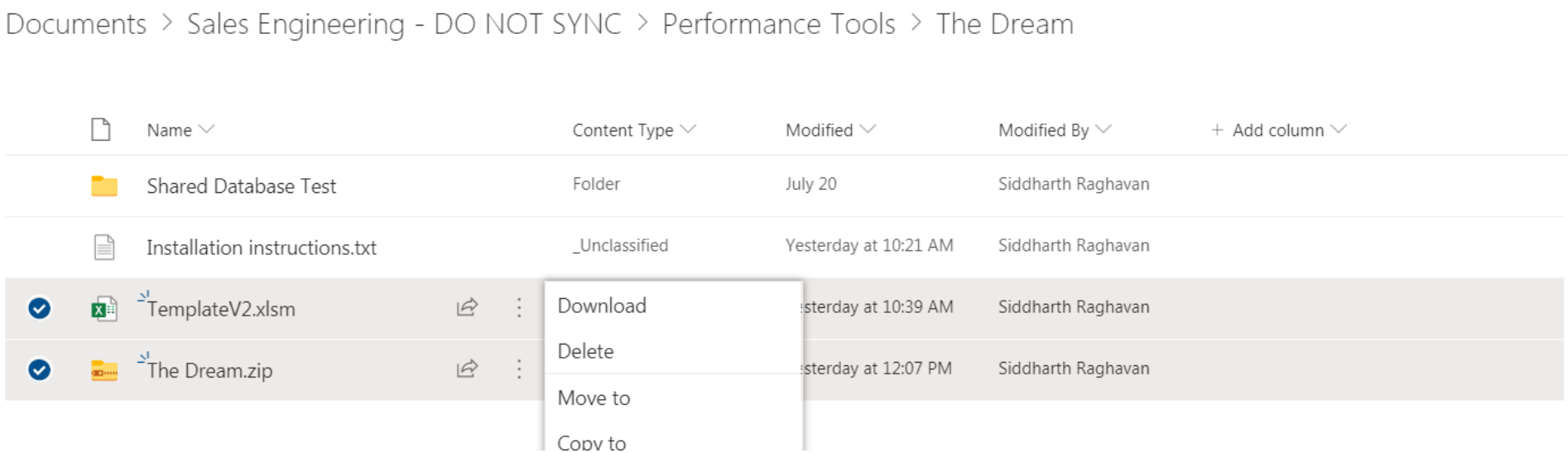
Downloading

The project is hosted on Sales Engineering's Sharepoint. If you have access to this Sharepoint, you can use this link.

If you do not have access to Sales Engineering's Sharepoint, contact Mathieu St-Cyr (mathieu.st-cyr@aero.bombardier.com) to get access.

Future hosting could be via a more accessible Sharepoint folder shared amongst many teams. It could also be transferred via a USB.

Once you click on the link, download "The Dream" zip folder and the template excel file. This downloading step may not be required if you already have a parent folder synced (like Performance Tools). In this case, you might be able to extract straight away.



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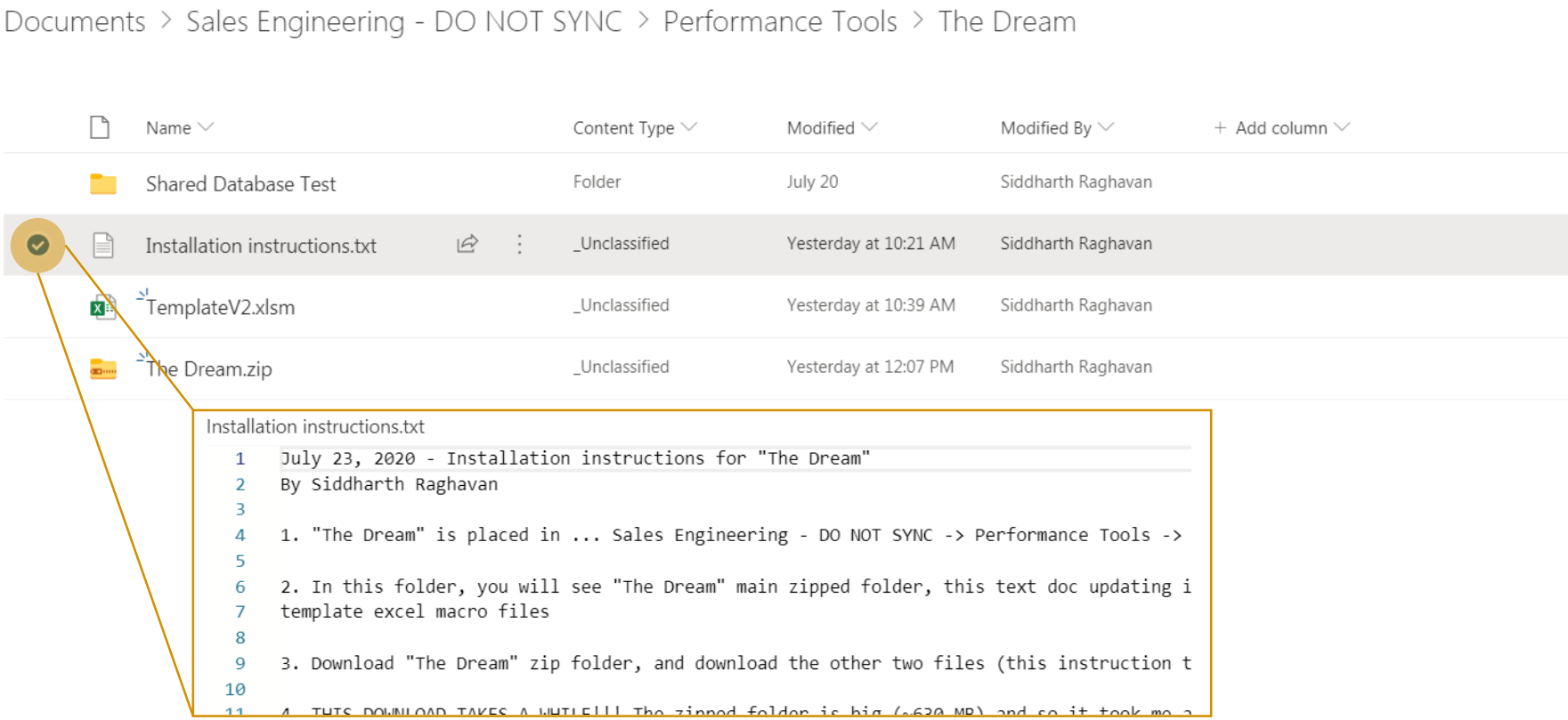
1. Installation - continued

Installation text doc

Also in the Sharepoint folder, you can view the “Installation instructions” text document, which details 10 simple steps to follow to set-up the tool. Follow these instructions. This manual also walks a user through these steps.



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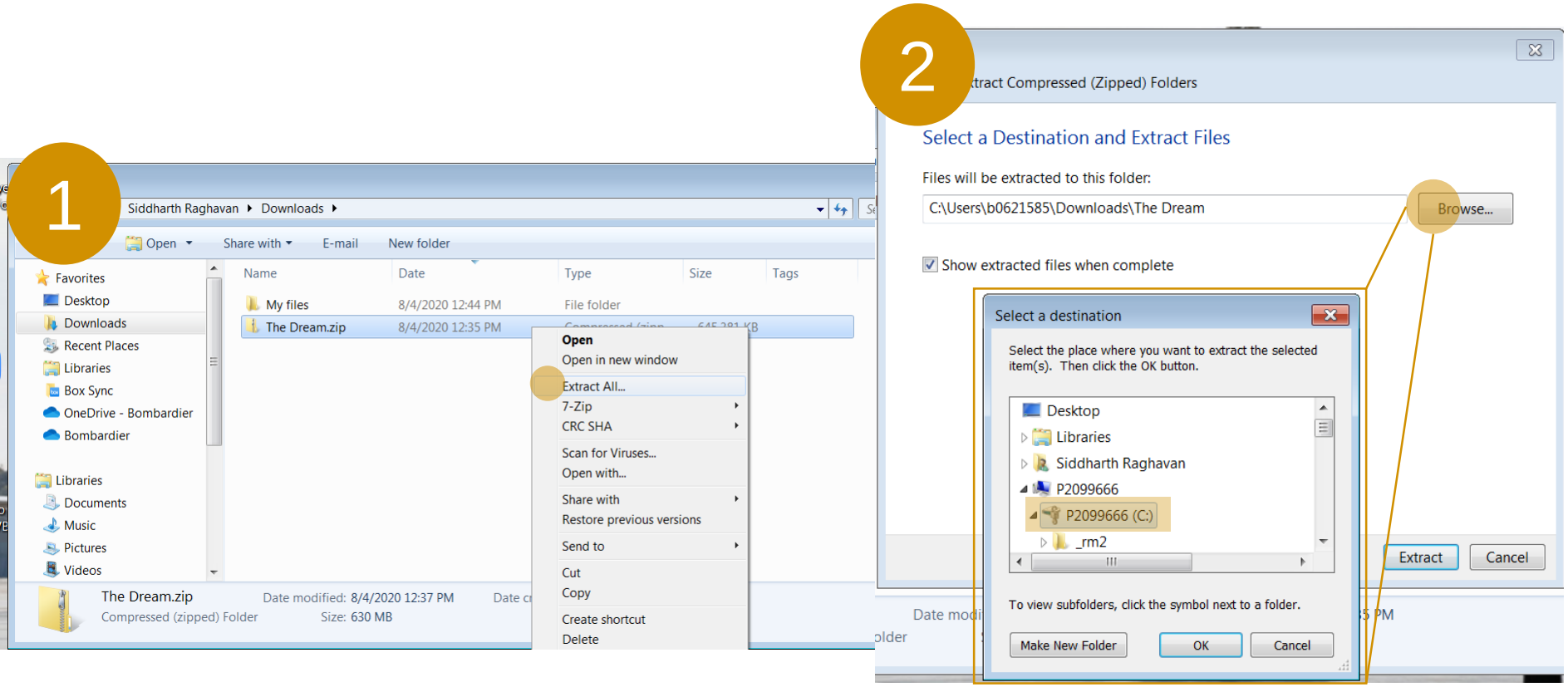
1. Installation - continued

Extraction

Once you download the zip folder, extract it to your C: drive as shown. Click “OK” and then “Extract” once the correct location is chosen. Extraction may take a while. If you have a previous version of “The Dream”, delete it completely before the extraction.



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1. Installation - continued

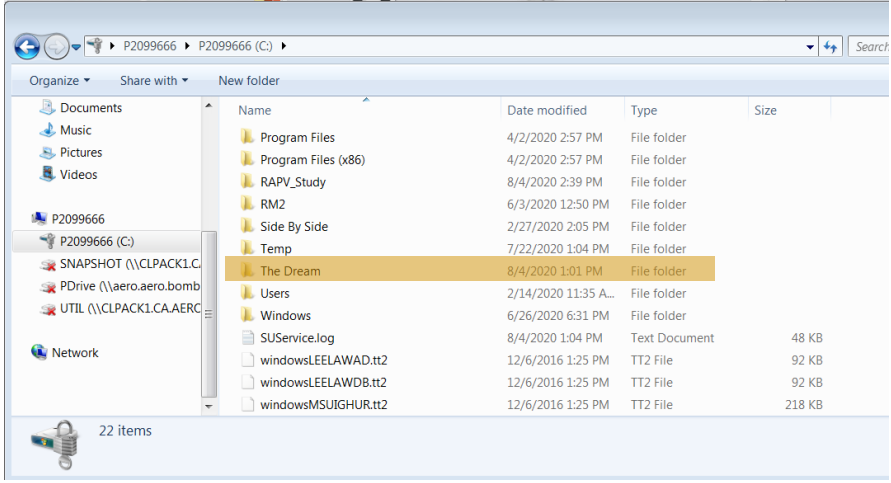
Setting Java path

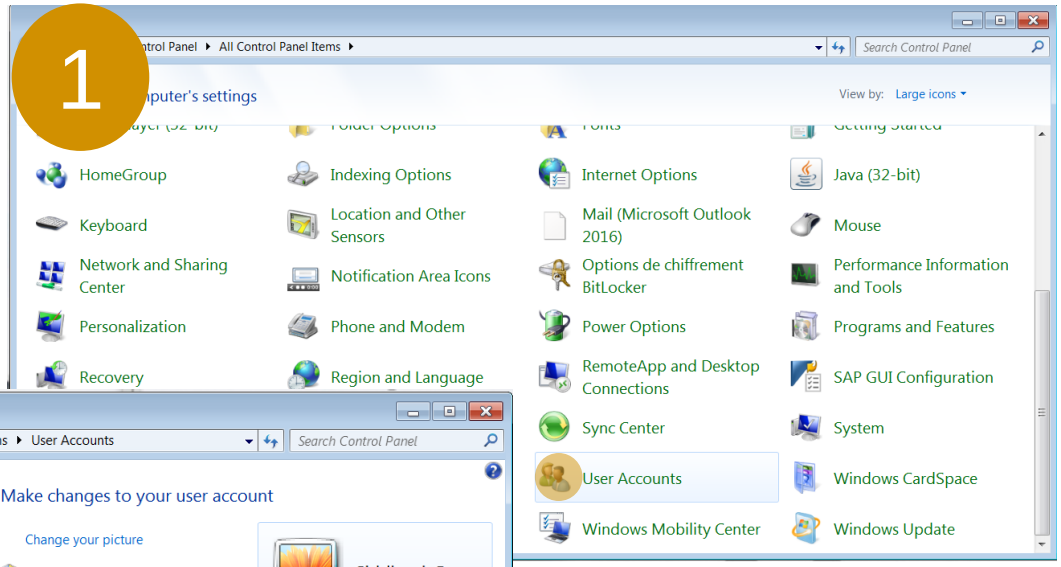
Now, you should have “The Dream” on your C: drive. Continue following instructions as per the “Installation instructions” text doc.

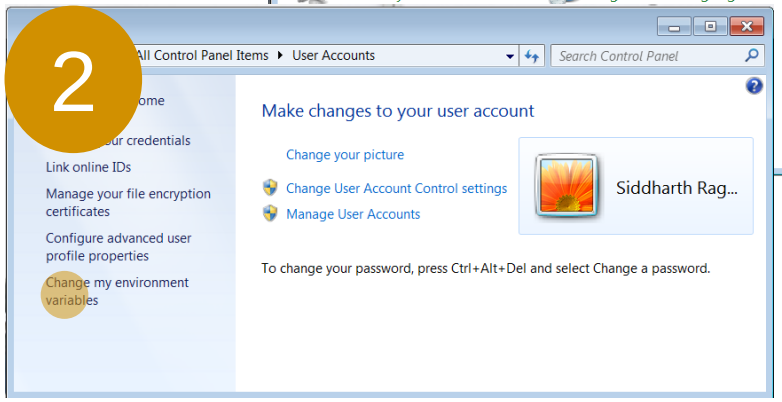
Copy the path below.

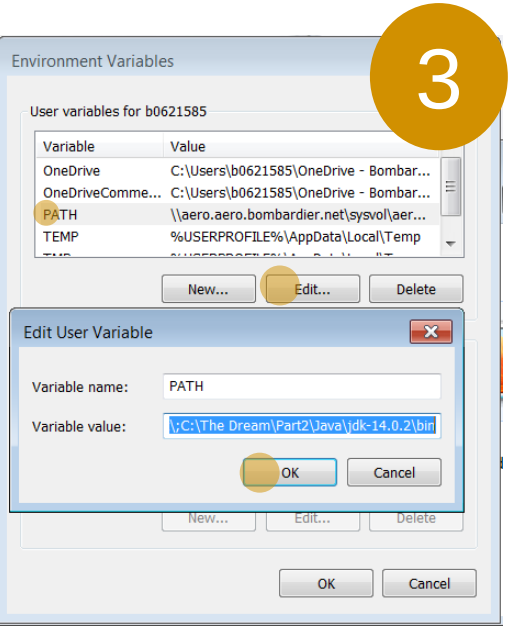
;C:\The Dream\Part2\Java\jdk-14.0.2\bin

Go to the Control Panel in the start menu, click on User Accounts, then on Change my Environment variables. Click on PATH, edit, and paste the path above at the end of existing PATH. Click OK, and OK and close all windows.









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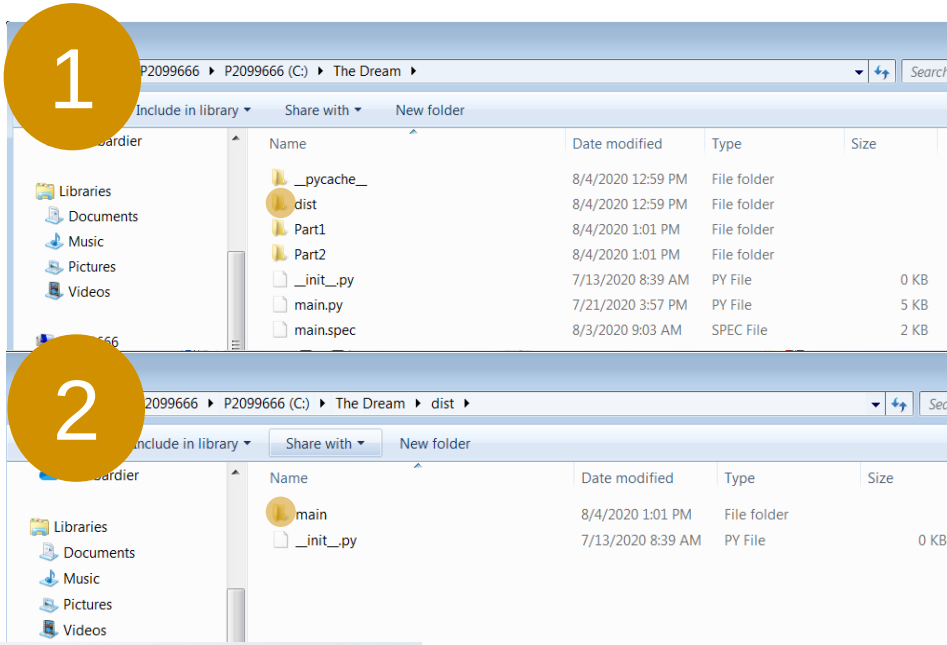
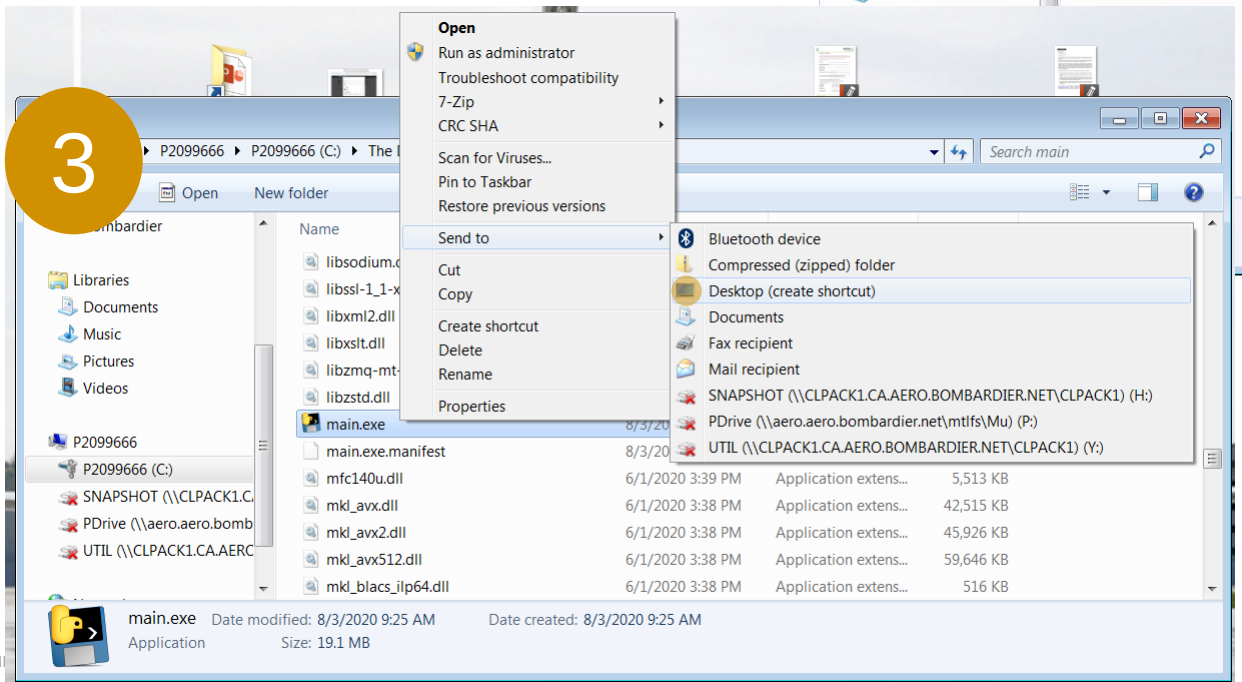
1. Installation - continued

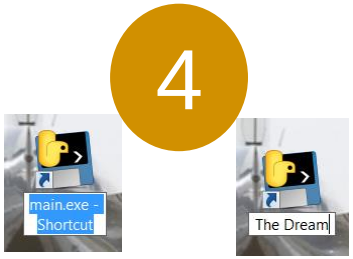
Creating desktop shortcut

Open “The Dream” on the C: drive. Navigate to dist, then to main, and then scroll till you find “main.exe”. Right-click, send to, and create a desktop shortcut.

You can rename this shortcut on your desktop if you wish to. The tool is now installed! You will never need to find this directory again!







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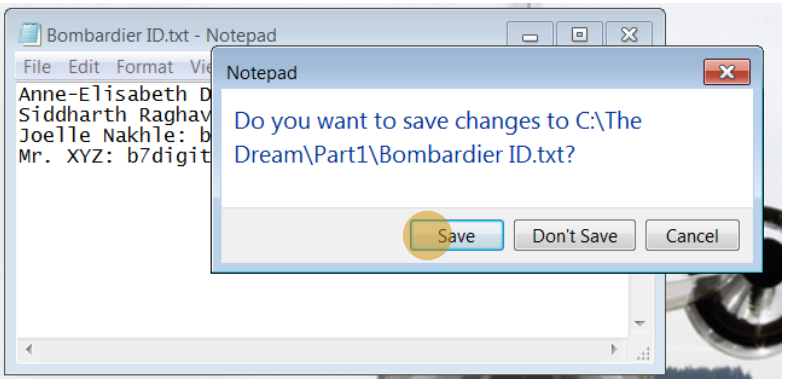
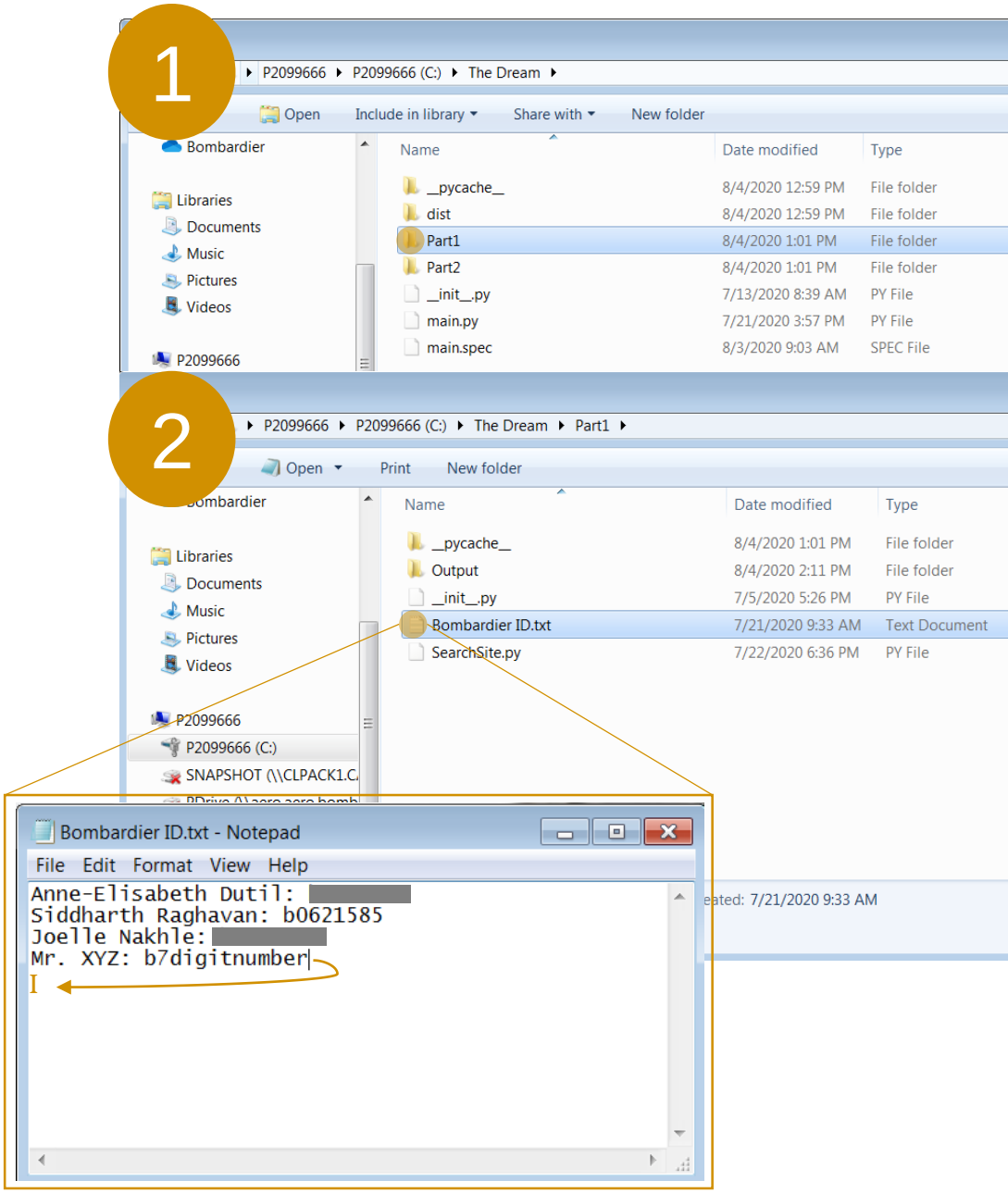
2. Pre-requirements

ID number for database

Before you start using the tool, make sure certain pre-requirements are satisfied. First, you need to have your name and ID in the tool's database searcher. Go to "The Dream" and click on Part 1, then click on the Bombardier ID text doc.

Enter your name, followed by a colon, and then your Bombardier ID number. Make sure to hit ENTER after you're done (i.e. cursor is on next line). Close the text doc and save when prompted.





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2. Pre-requirements - continued

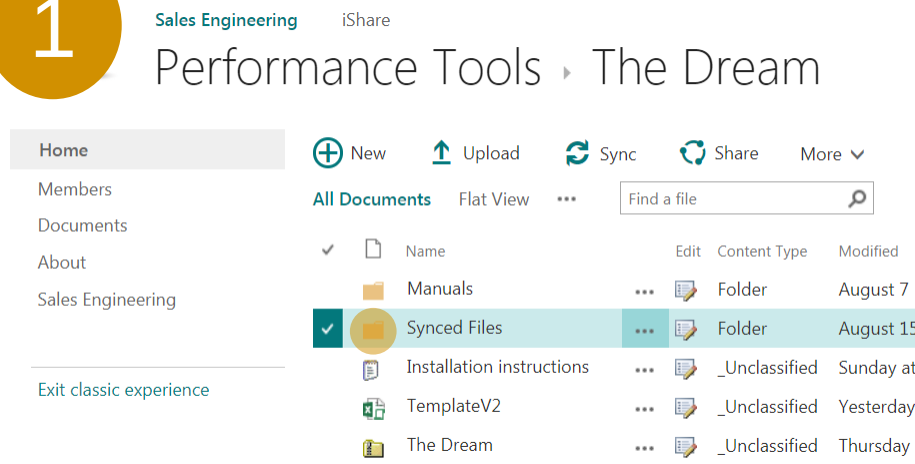
Syncing for database and latest version

Second, you need to make sure that the database file and latest version text file on Sharepoint are synced. To do this, use the Sharepoint link again (link) and click on Synced Files. Then, click on Sync. With a properly set-up OneDrive account, you should be able to see this folder on your laptop.

You can check this by looking at your File Explorer, clicking on Bombardier (with the OneDrive icon), navigating to Synced Files, and then verifying that the Excel file and text file are there.

(Syncing may not be required if you have already synced a parent folder, like "Performance Tools")

1



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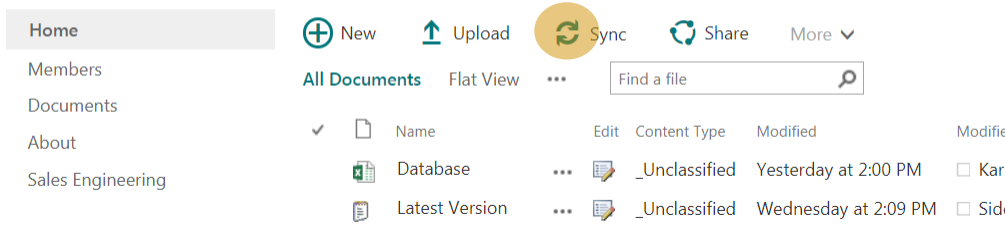

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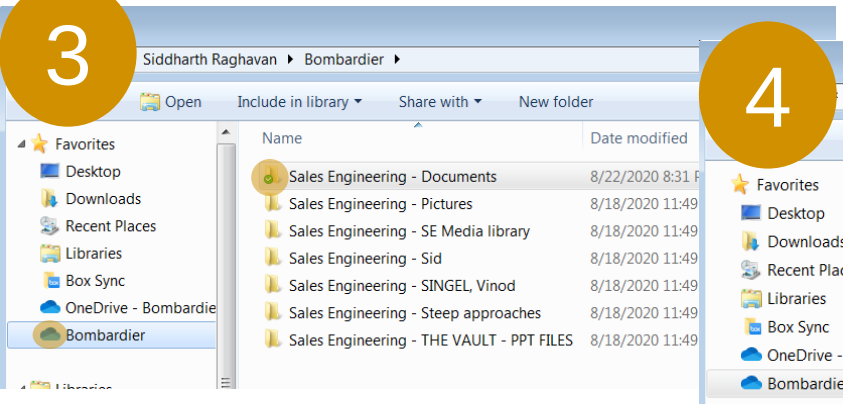

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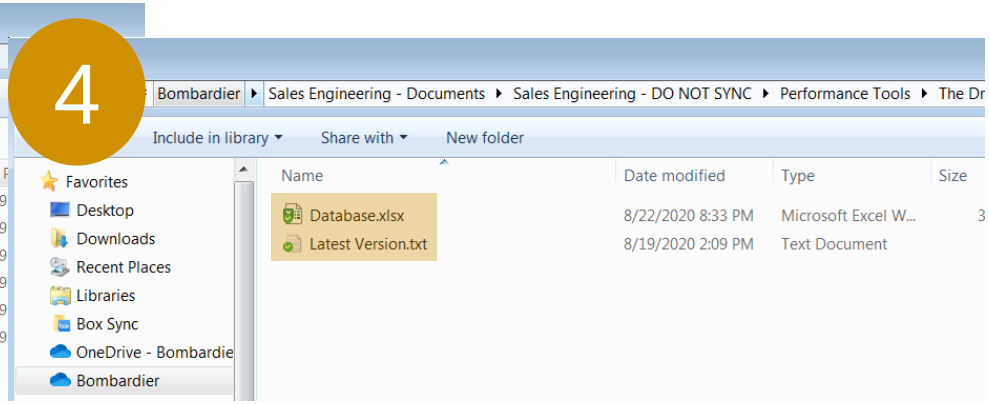

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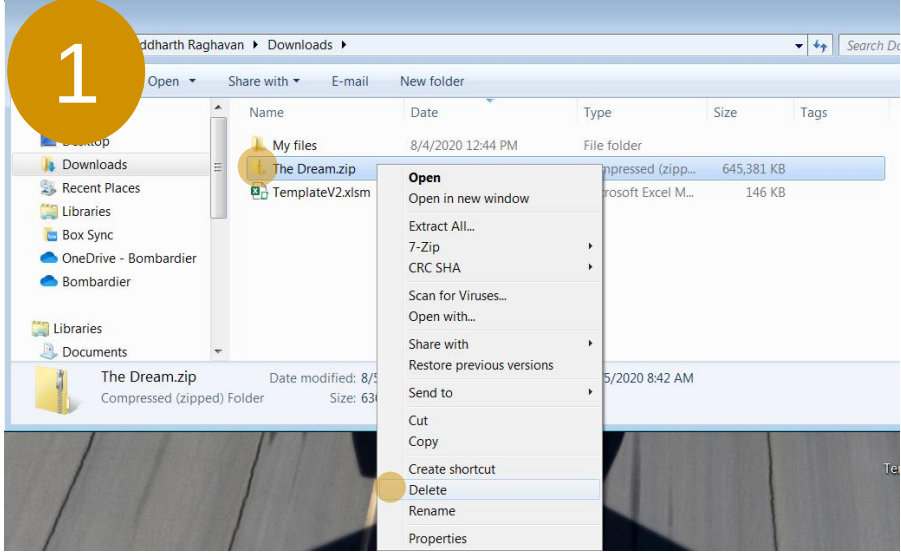
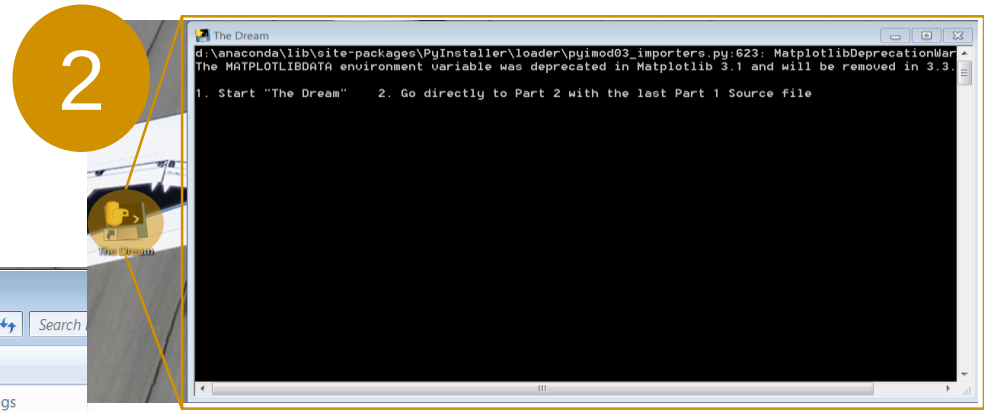
3. Using the tool

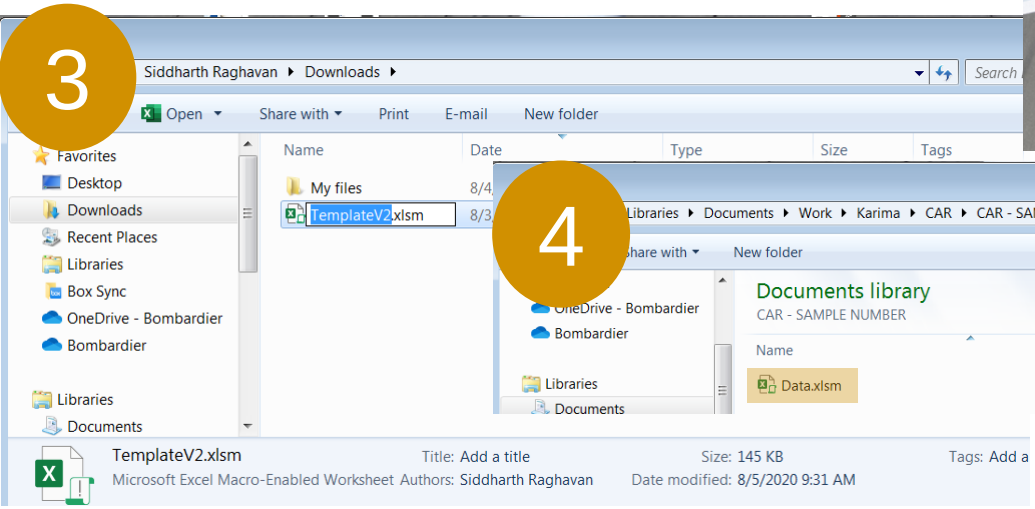
Opening relevant interfaces

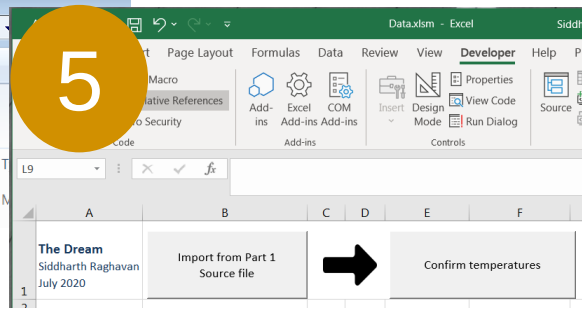
You're all ready to use the tool! You can delete the zipped folder that you downloaded. Double-click on the shortcut you created on the desktop. This will open a prompt window, which will be the main interface.

Now, for the template Excel file, you can move/copy this Excel file to any location you wish to. You can rename that file (or copy of that file) if you want. I've moved a copy of the template file to a CAR folder, with a new name – Data. Open the file. This will be the secondary interface.









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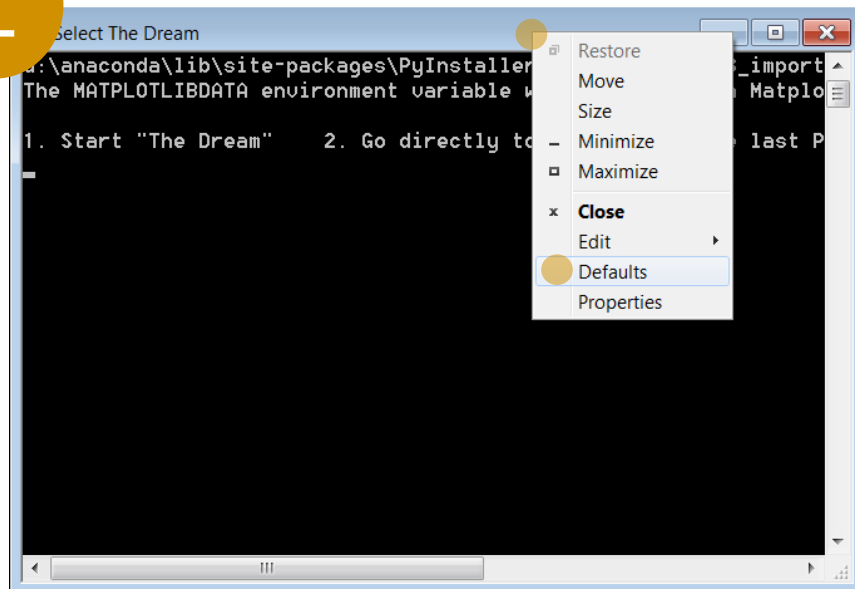
3. Using the tool - continued

Re-sizing prompt window

You can re-size the prompt window, if it suits your needs. You can do this by right-clicking on the top of the window, and then clicking Defaults. Then click on Layout and enter your preferred dimensions. I have mine at 110x300 buffer size, and 100x25 window size. Click OK once done.

1



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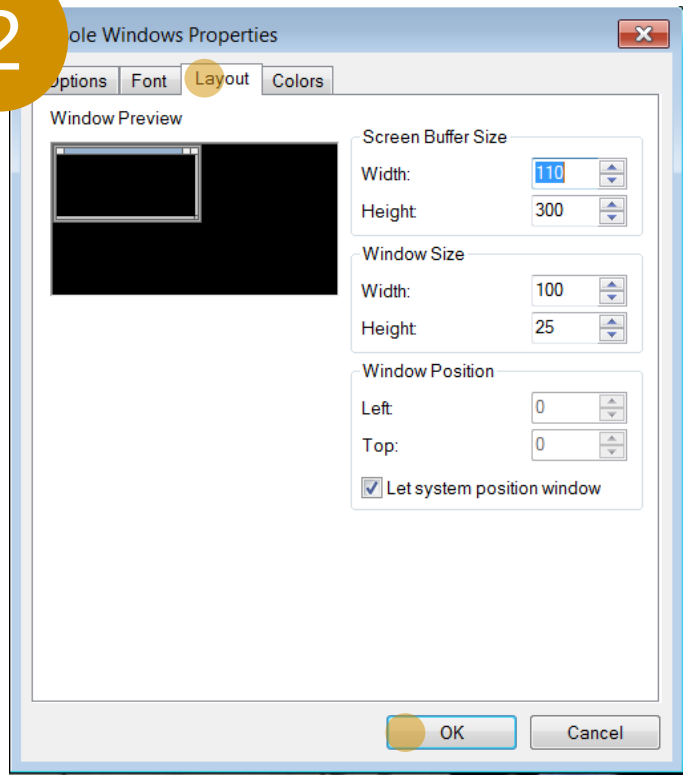

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3. Using the tool - continued

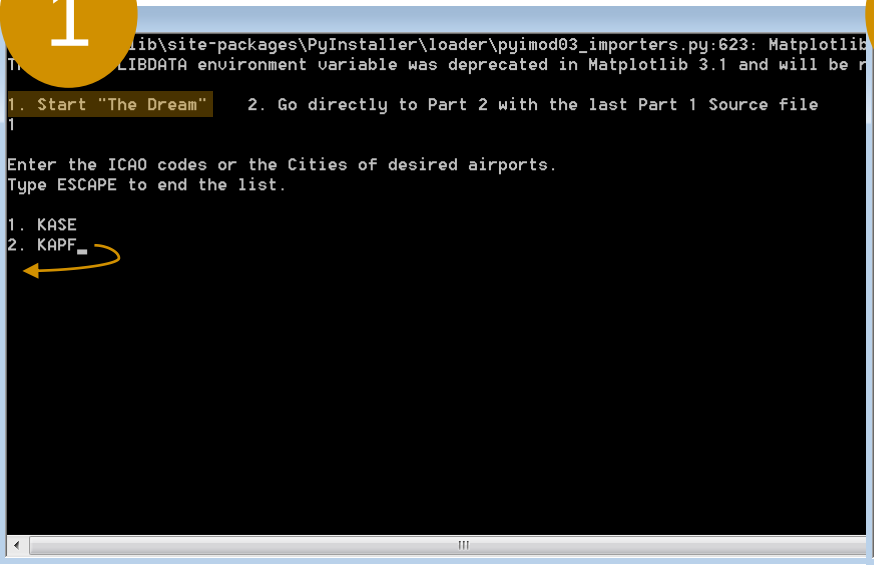
ICAO code/city name inputs

Say I receive a range map request.

It is for “KASE, KAPF, London, Dubai, Hong Kong”. It is to be a comparison between the Global 7500 and the G650ER. The takeoff weights (TOWs) are to be computed at a standard ISA+15C. Wet runway performance is not needed.

Start by choosing 1. Start “The Dream”. To do this, simply type 1, and hit ENTER. Type in the ICAO codes/city names. Hit ENTER after you type each one. Once all ICAO codes/city names are entered, type “escape” and hit ENTER. This ends the list. Anything you type in is case-insensitive (i.e. you can type “london”, not necessarily “London”. Or you can type “kaSe” not necessarily “KASE”)

1



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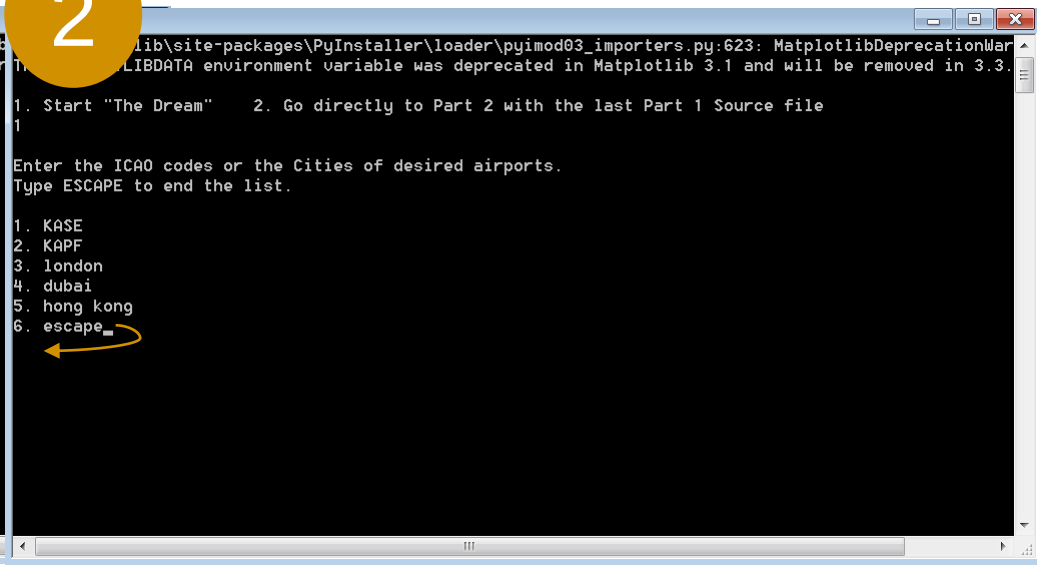

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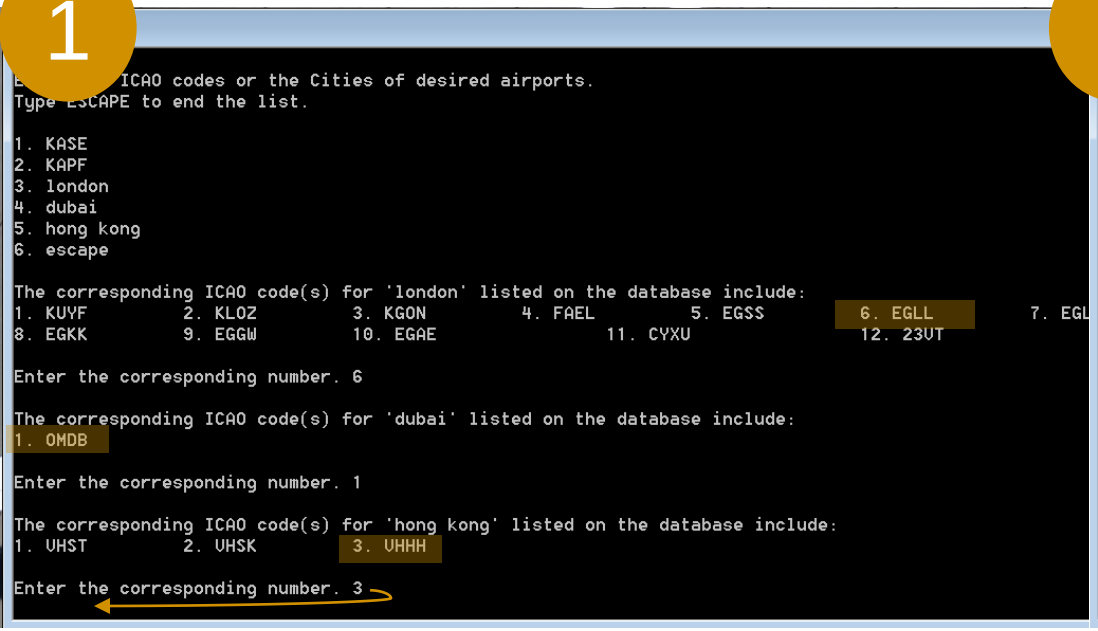
3. Using the tool - continued

Code selection for city names

If you input some city names (like in our example), you will get new prompts to choose specific codes for that city name. So make sure you know which airport you're flying from if you input city names! For our example, London likely refers to Heathrow Int'l (EGLL), Dubai likely refers to the Dubai Int'l (OMDB), and Hong Kong likely refers to Hong Kong Int'l (VHHH). The choices input are therefore 6, 1, and 3 respectively. Hit ENTER after you type each number.

You will then receive a prompt to go into Part 2.

1



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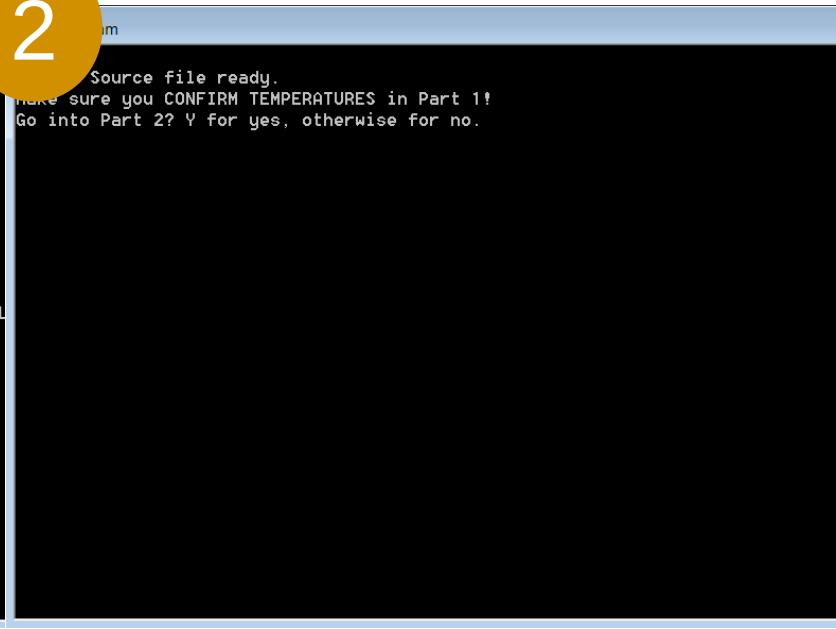

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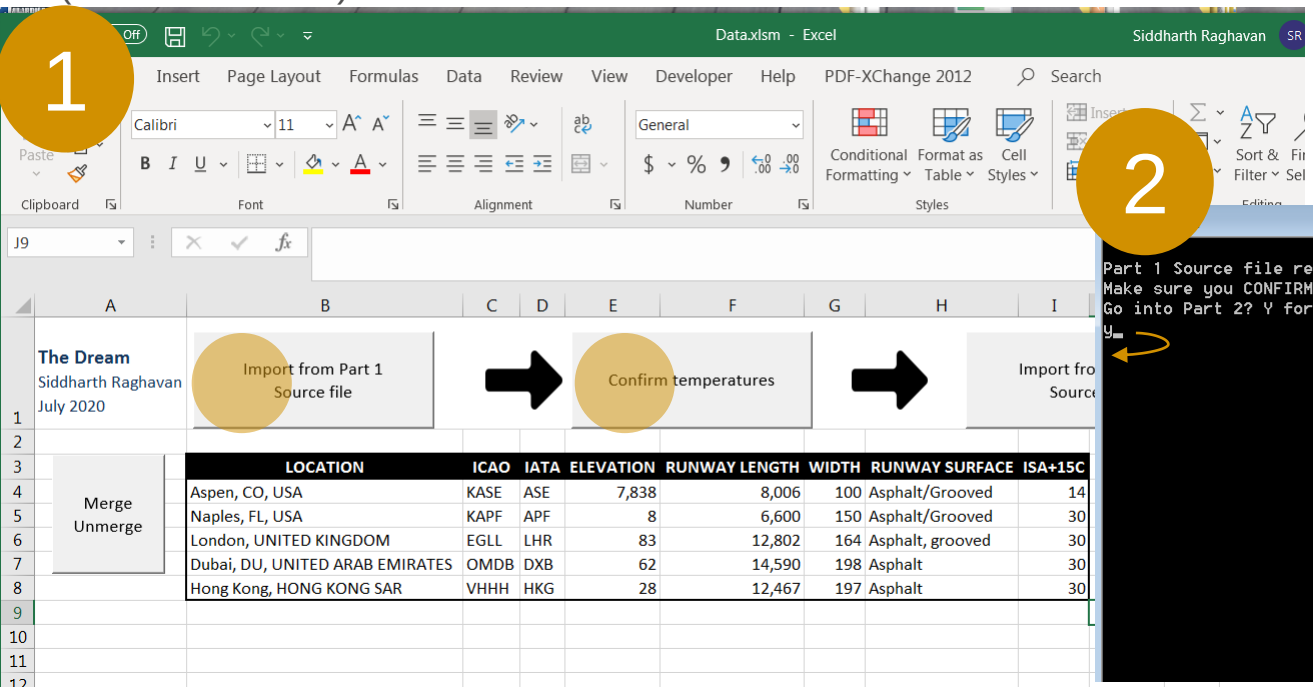
3. Using the tool - continued

Importing Part 1 source file and confirming temperatures

Before proceeding to Part 2, click on the first button (Import from Part 1 Source file) on your Excel file. This will clear what was previously on the file and fill it in with your all information for your list of airfields. By default, the temperatures are ISA+15C (rightmost column). Since the request specified ISA+15C, we don't need to change any temperatures. Click the second button (Confirm temperatures).

Now we can proceed to Part 2. Back on the prompt window, type in "y" or "yes" or anything starting with "y" (case-insensitive). Hit ENTER.



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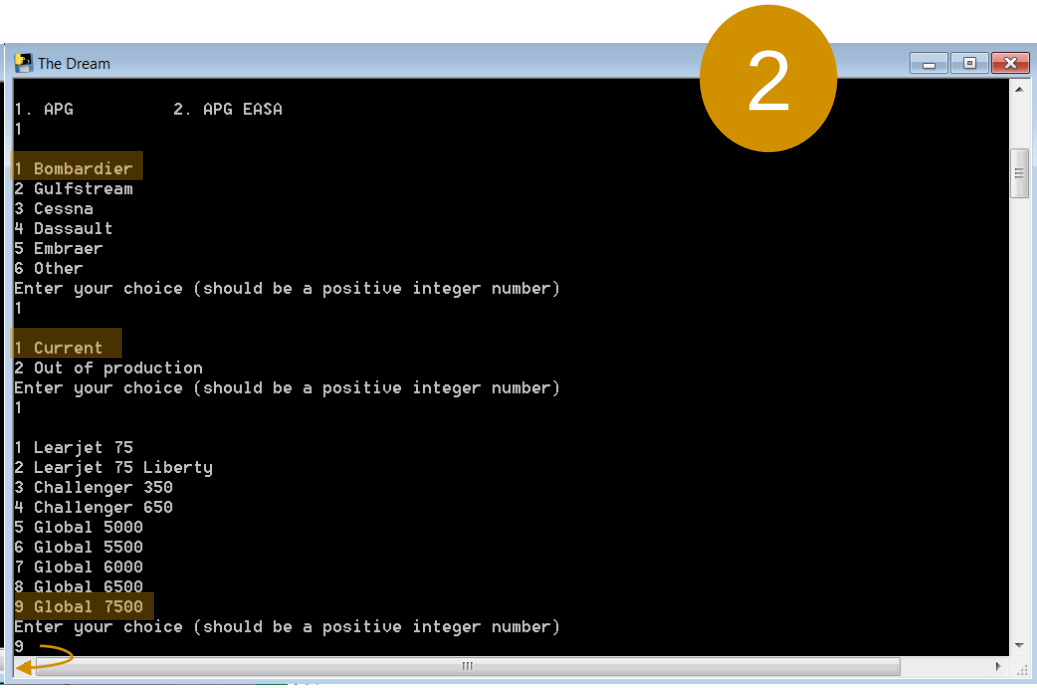
3. Using the tool - continued

Choosing aircraft

Usually we use APG (and not APG EASA) unless it is explicitly a European-based request (using EU-OPS fuel reserves). For this sample request, we choose 1 (APG) by typing 1 and hitting ENTER. A Chrome window will open. Do not minimize this browser window. It should be left alone (i.e. no clicking on the window) in the background, and you can work on other browser windows as normal.

Next, choose your first aircraft. For this request, we first choose the Global 7500. We type 1, 1, and 9 to choose this aircraft. Hit ENTER after each number input.



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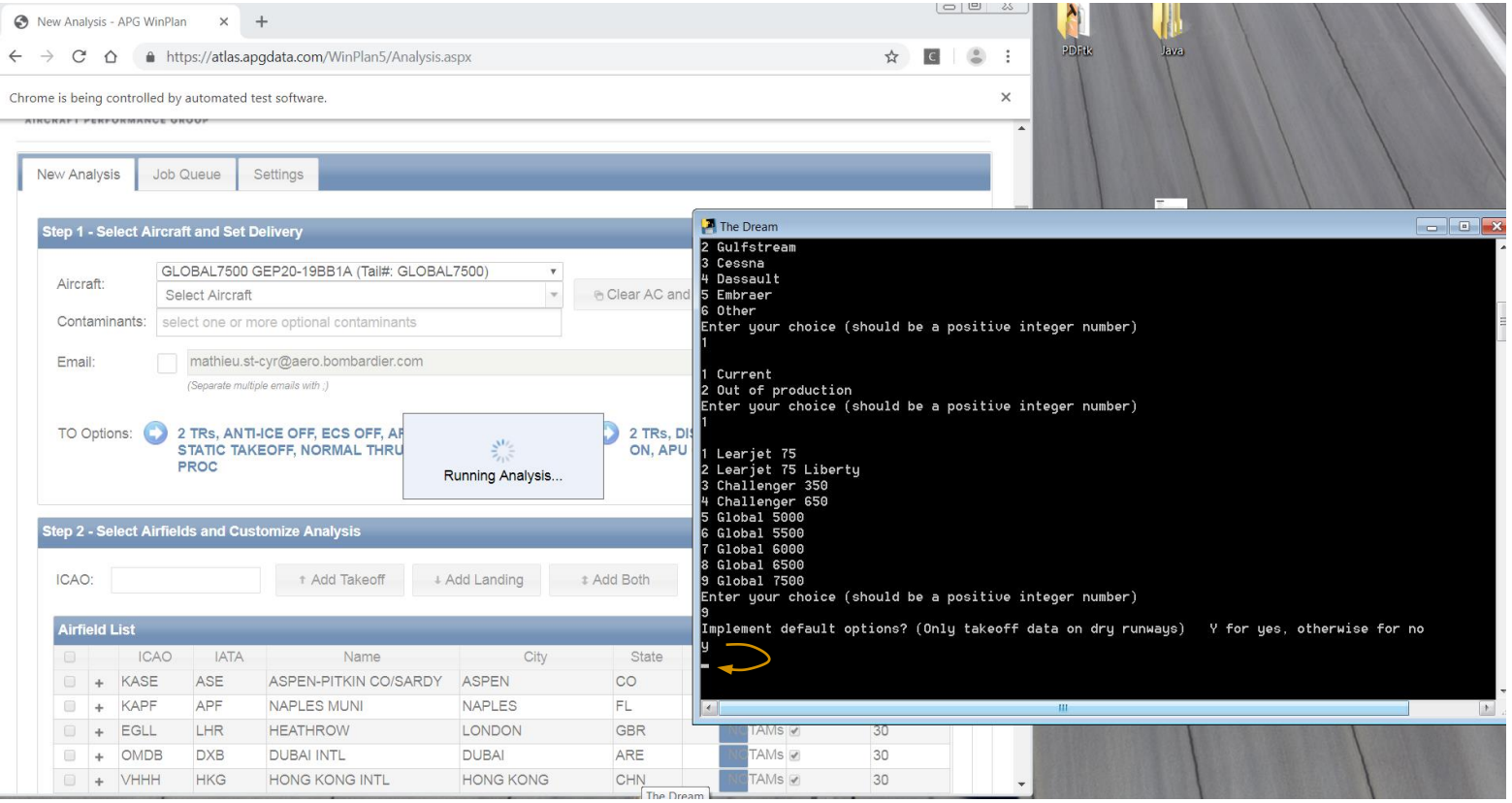
3. Using the tool - continued

Default options

This is a request for dry takeoff performance. Also, no landing performance is required. Hence, we type “y” or “Yes” or anything starting with “Y” (case-insensitive) for Default options. Hit ENTER. Wait and let magic happen!



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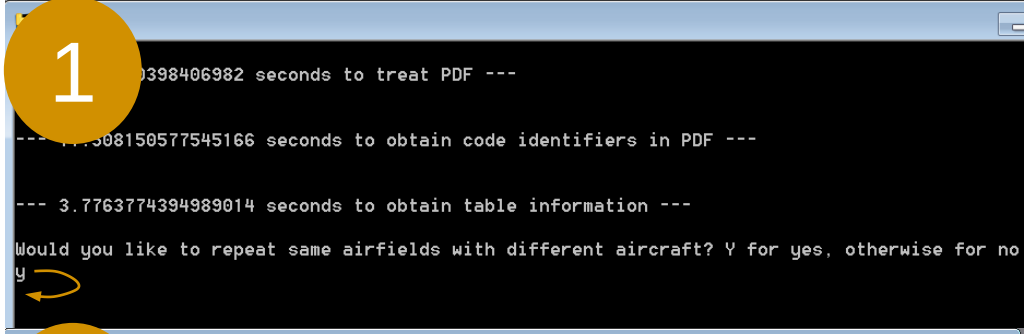
3. Using the tool - continued

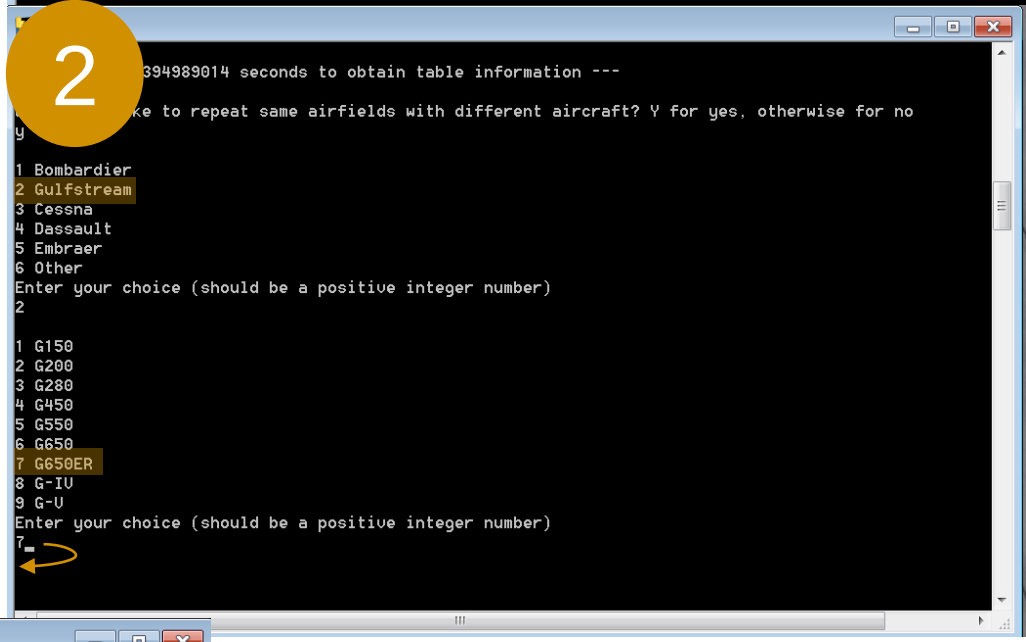
Multiple aircraft

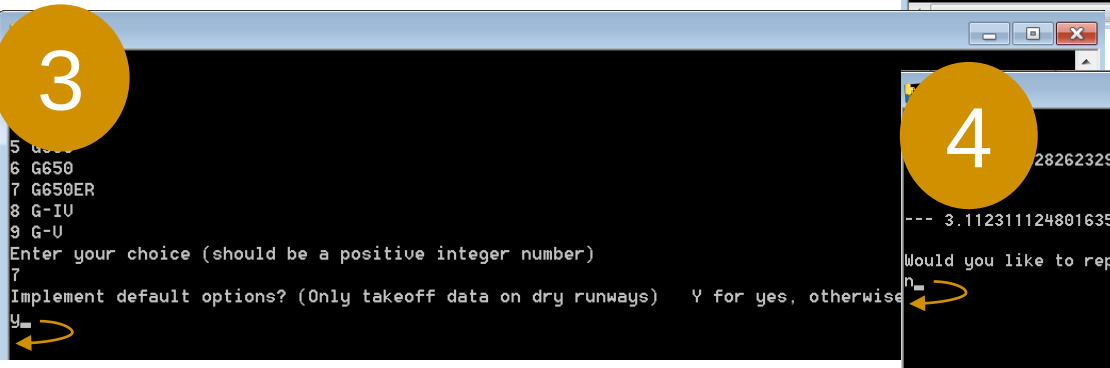
The browser windows will close automatically, and some processing of data will happen. You will be updated on what's happening through statements on your prompt. Finally, you will be asked if you want to repeat the same analysis with a different aircraft. Since our demo request is a comparison with the G650ER, we type "y" or "Yes" or anything starting with "y" (case-insensitive) and hit ENTER.

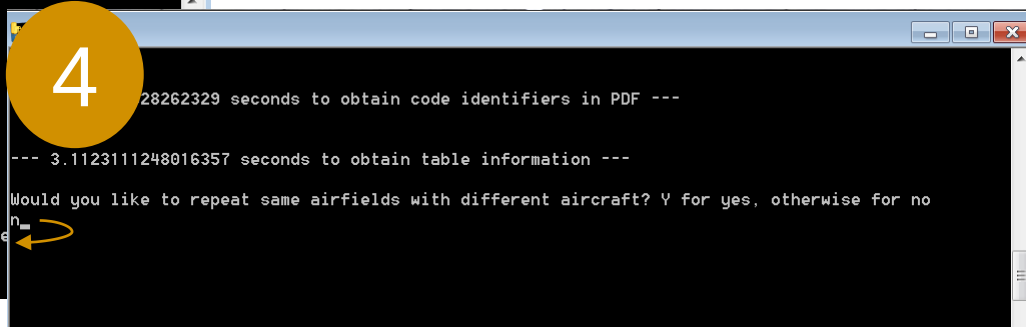
For the G650ER, we type 2 and then 7. Hit ENTER after each input. We will implement default options again, so type "y" and hit ENTER. The same automation will occur. Wait for a while for the processing to finish.

Since we have no more aircraft to analyze, we can type "n" (or anything not starting with "y") and hit ENTER.









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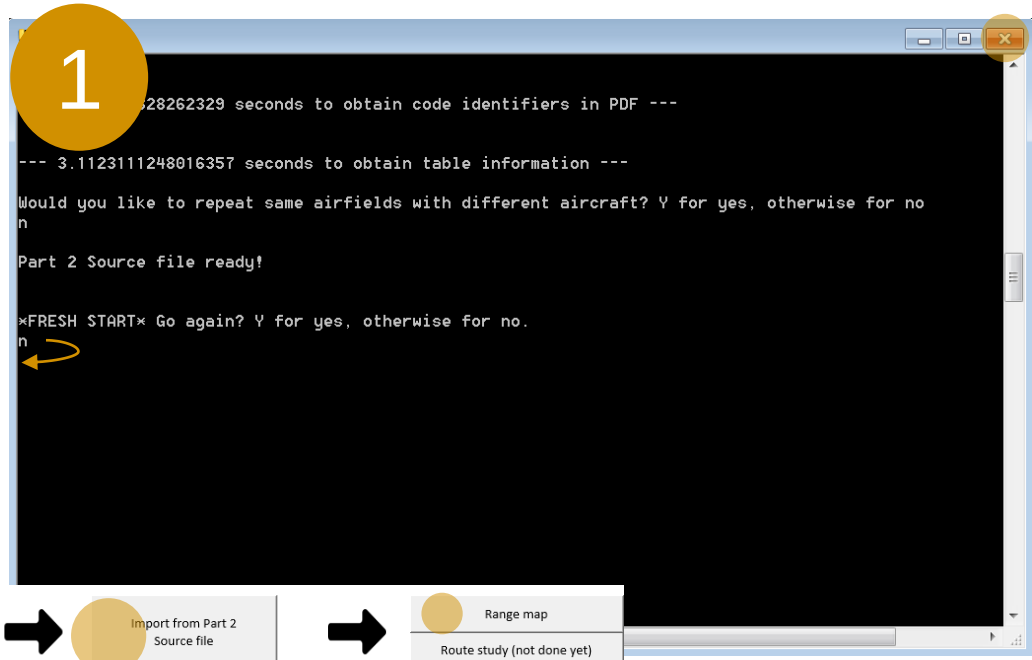
3. Using the tool - continued

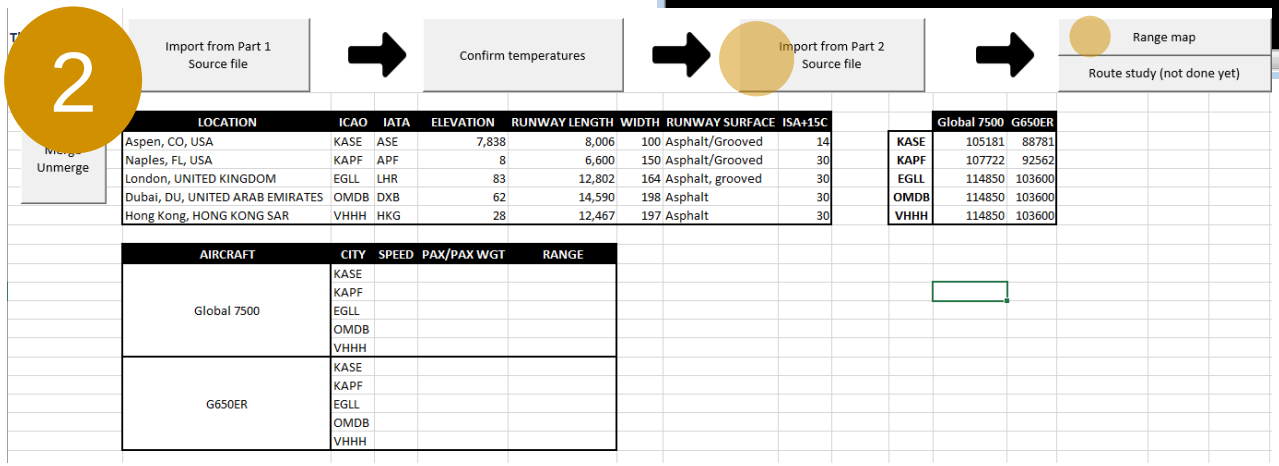
Importing from Part 2 source file, and range map table

We are done collecting and processing data! You can leave the tool as is if you have another request to do later, or you can quit the tool by exiting the program (top right 'X' button) or typing anything not starting with "y" and hitting ENTER.

To get the range map table, click the third button (Import from Part 2 Source file) on your Excel file, and then click the fourth button (Range map). At the time of writing this, the fifth button (Route study) has not been programmed yet.

With this, the TOWs are immediately computed, and you can easily fill in the table with information that later gets entered into RAPV/Flight Profiles for range calculation.





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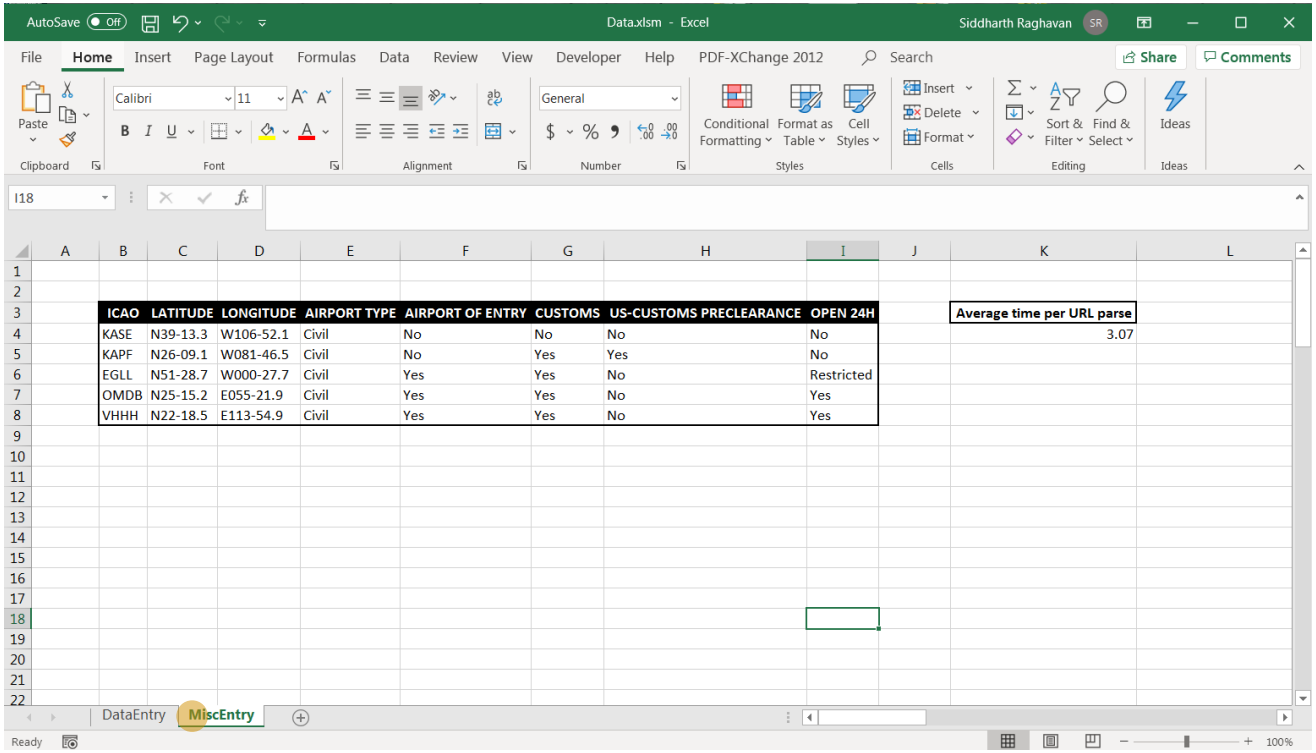
4. Extra functionalities

Excel - Miscellaneous sheet

There are many extra functionalities implemented in both the Excel and the tool itself. One is the Miscellaneous Entry sheet, titled “MiscEntry” on the Excel template. On this sheet, there are several details that are especially useful for route studies. There is also the average time (in seconds) it took to parse and obtain data for each airfield.



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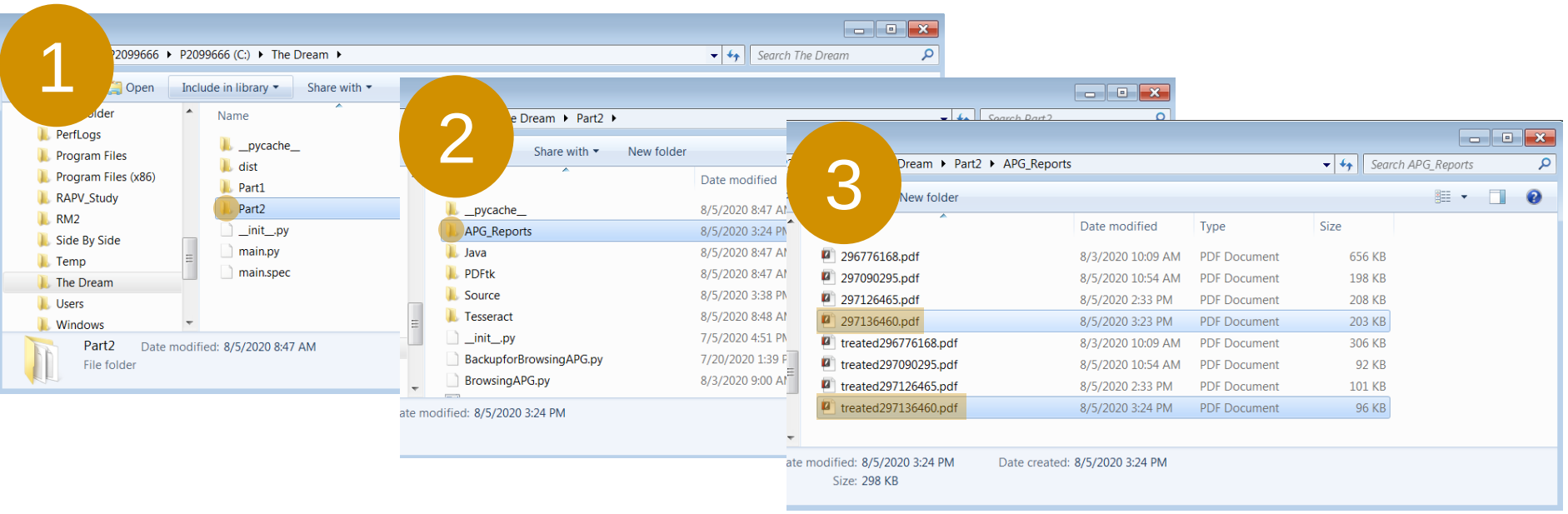
4. Extra functionalities - continued

Viewing APG reports

For proper tracking, you may want to view the downloaded APG reports yourself. You will find them in “The Dream” folder on C: drive. Navigate to Part 2, then to APG_Reports. You can view the most recent report(s), rename them, and copy/move them to new locations as desired.

There is a “treated” pdf for every APG pdf downloaded. This treated pdf is for data processing purposes. You can delete them if you wish. If the APG_Reports folder looks cluttered, you can always delete all the pdfs inside.



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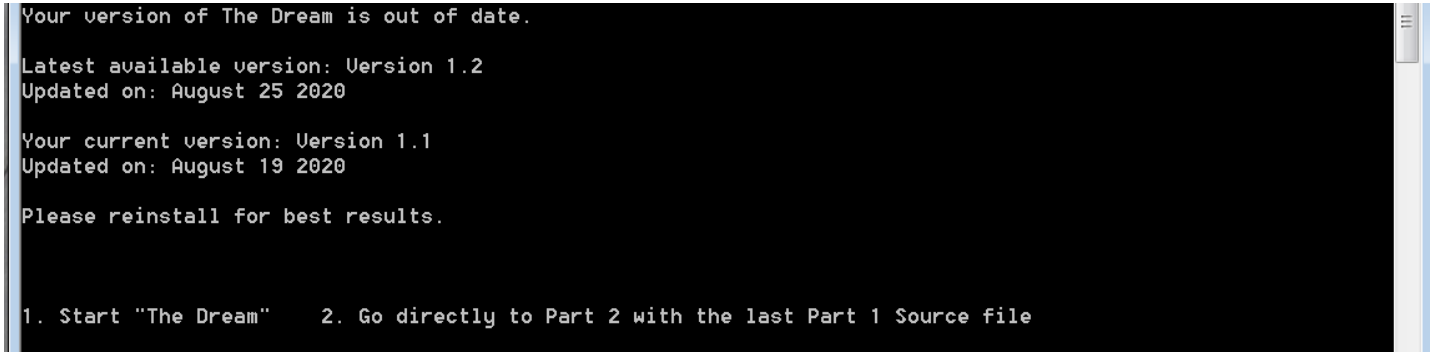
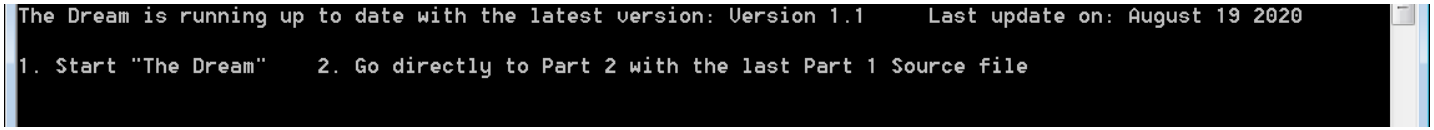
4. Extra functionalities - continued

Notification for latest version

The first prompt printed upon opening the prompt window is information of the version number. If your version is out of date, you will see something like the following. It clearly lists your current version number against the latest version number, and advices the user to re-download the zipped folder and re-extract the tool.



If your version of The Dream is up to date, you will receive the following prompt. Users with this prompt will clearly know that they have the latest version.



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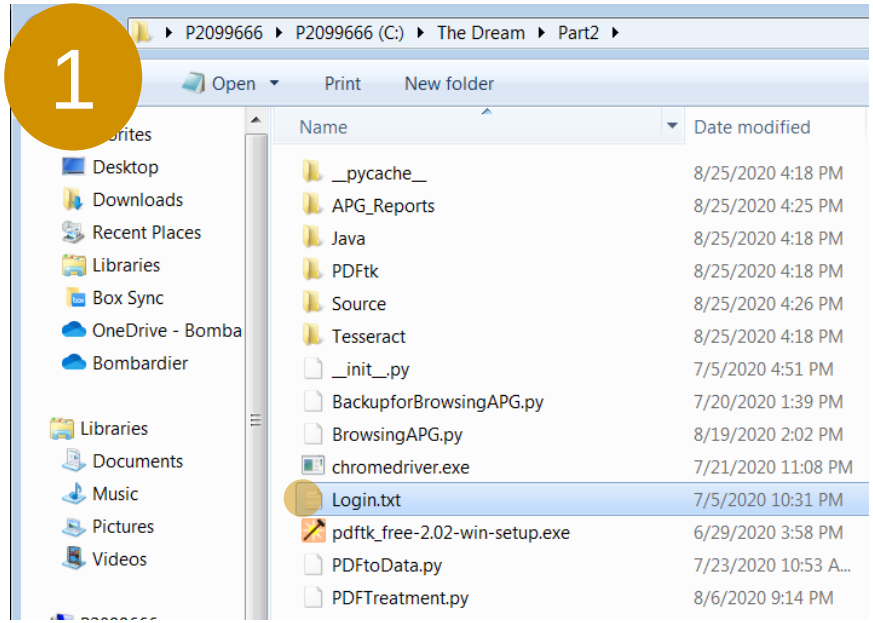
4. Extra functionalities - continued

Changing APG login username and password

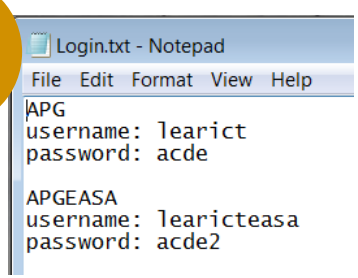
The Dream reads information from a text file to input login information for APG (or APG EASA). If ever, in the future, the username or password changes, users can easily adapt.

Navigate to The Dream on your C: drive and open the Part2 folder. Here, you will see a text file called Login.txt. Simply open the text file and make the appropriate changes. Don't forget to save after you've finished!

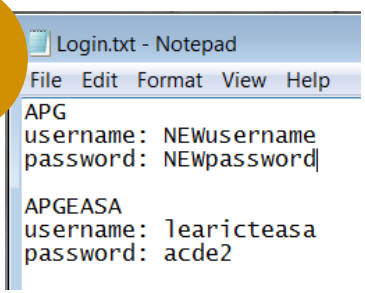
1



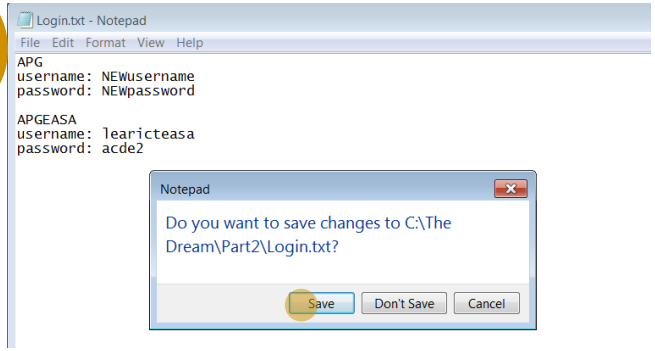
2



3



4



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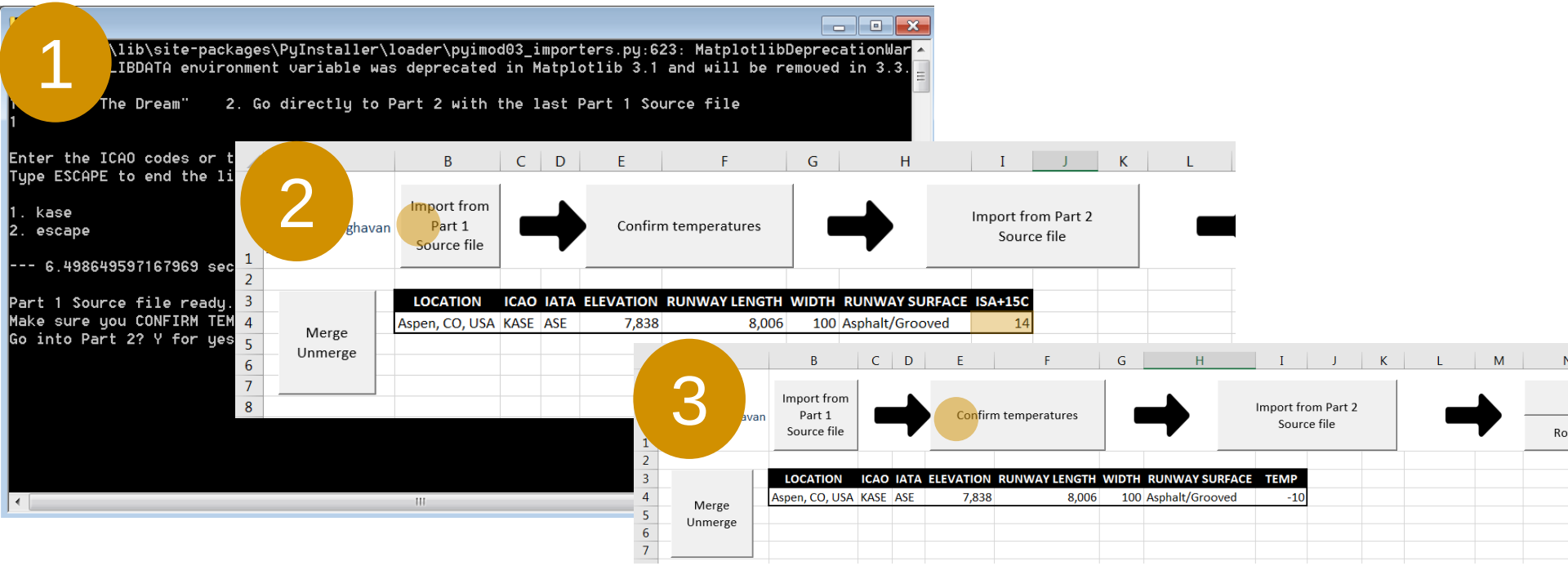
4. Extra functionalities - continued

Non-ISA+15C takeoff temperatures

Sometimes, there may be requests for which you need to compute TOW at specific temperatures. Consider,

Range map for “KASE” with Global 5500, OAT of -10C.

You will proceed with steps as described before, until clicking on the first button of the Excel file (Import from Part 1 Source file). Then, change the temperature by simply typing -10 in cell I4. You can also change the title of the column to read “TEMP”, because it is no longer ISA+15C. Then, click the second button (Confirm temperatures). Complete the request as described before. TOWs will be computed at -10C.



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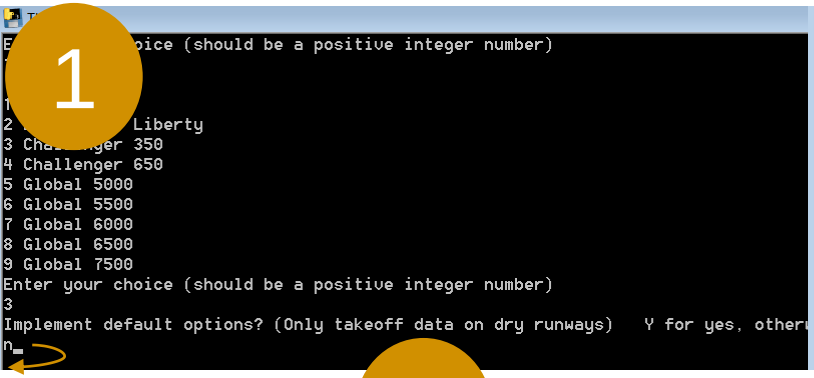
4. Extra functionalities - continued

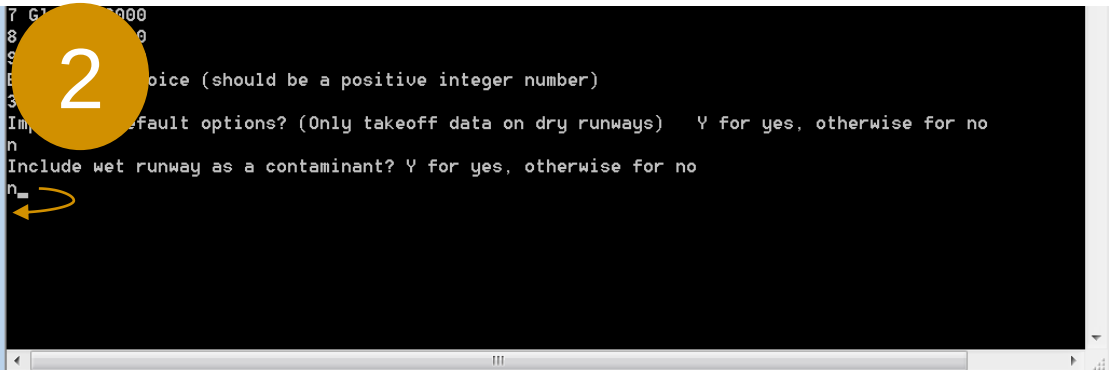
Non-default choice: Including landing performance

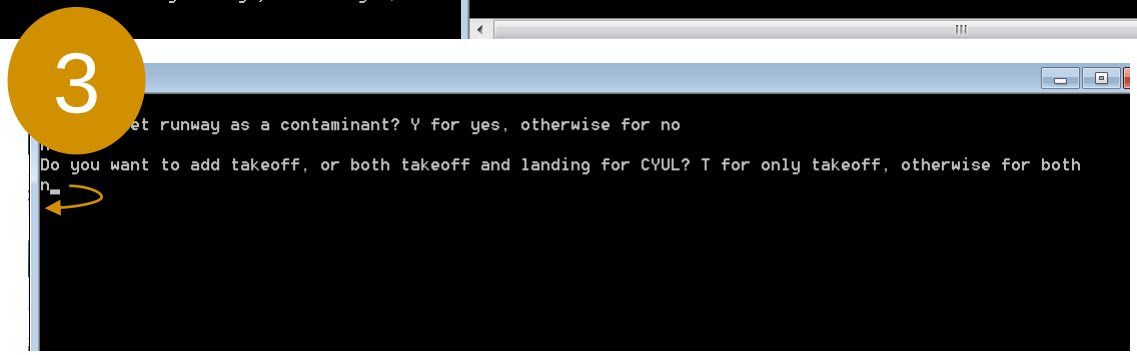
Saying “y” to the default choice prompt means that APG will consider only takeoff performance and dry runway conditions. Consider,

Need TOW and landing performance numbers for CYUL with Challenger 650.

Do the same steps as explained before, till you reach the default choice prompt. Then, type “n” and hit ENTER. For the wet runway prompt, type “n” and hit ENTER (we are not analyzing wet conditions). Finally, when prompted for takeoff or both takeoff and landing, type “n” (anything not starting with “t”) and hit ENTER. Now, the APG report will include landing performance for CYUL. Complete the request as before. Landing weights are not auto-searched and maximized. If you’re searching for optimal landing numbers, you will have to look for it manually in the APG report downloaded.







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4. Extra functionalities - continued

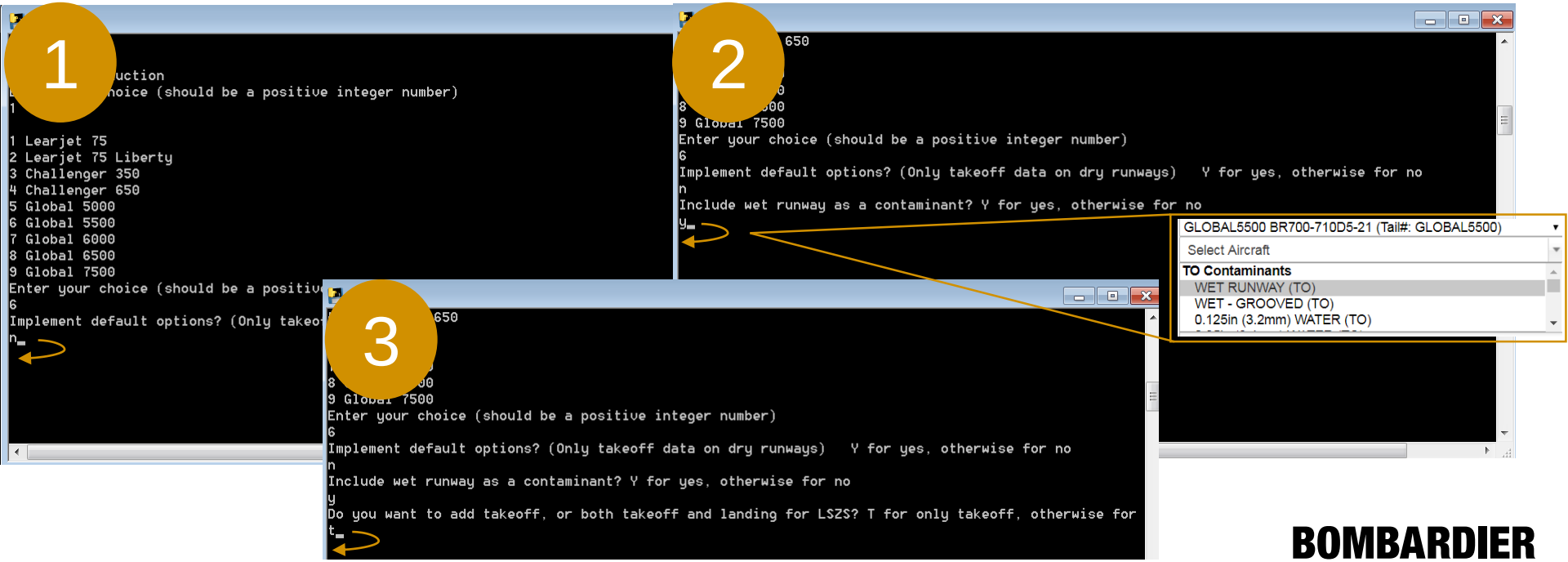
Non-default choice: Including wet conditions performance (only non-grooved or only grooved)

Now consider,

Need TOW for LSZS (Samedan) with Global 5500 in both dry and wet.

Do the same steps as explained before, till you reach the default choice prompt. Then, type “n” and hit ENTER. For the wet runway prompt, type “y” or “Yes” or anything starting with “Y” (case-insensitive) and hit ENTER. Since Samedan is not grooved, it auto-chooses the non-grooved takeoff condition. When prompted for takeoff or both takeoff and landing, type “t” (we only need TOW) and hit ENTER. Complete the request as before. If the request was instead for KJFK (New York), it would auto-choose the grooved takeoff condition.

If the request involved a list of airfields that are all grooved (or all non-grooved), this auto-condition applies to all those airfields.



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4. Extra functionalities - continued

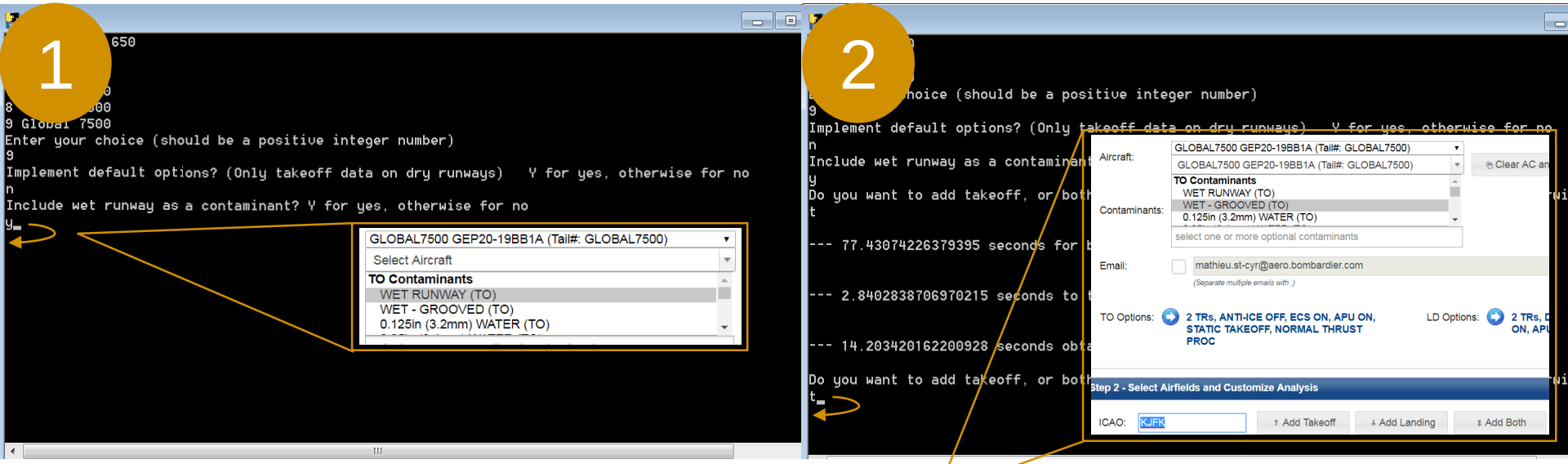
Non-default choice: Including wet conditions performance (mixed non-grooved and grooved)

Now consider,

Need TOW for LSZS (Samedan) and KJFK with Global 7500 in both dry and wet.

Do the same steps as explained before, till you reach the default choice prompt. Then, type “n” and hit ENTER. For the wet runway prompt, type “y” or “Yes” or anything starting with “Y” (case-insensitive) and hit ENTER. Since Samedan (LSZS) is not grooved, it auto-chooses the non-grooved takeoff condition and only analyzes for LSZS. When prompted for takeoff or both takeoff and landing, type “t” (we only need TOW) and hit ENTER. It will produce a pdf and process data for the non-grooved airfield(s).

After, it will automatically re-open APG and repeat the aircraft for wet conditions for grooved airfield(s) (KJFK in this case). You will need to type “t” again (only need TOW) for the grooved airfield(s) and hit ENTER. Complete the request as before.



Automated APG choice, aircraft choice, and appropriate wet condition chosen if there are “mixed” airfields

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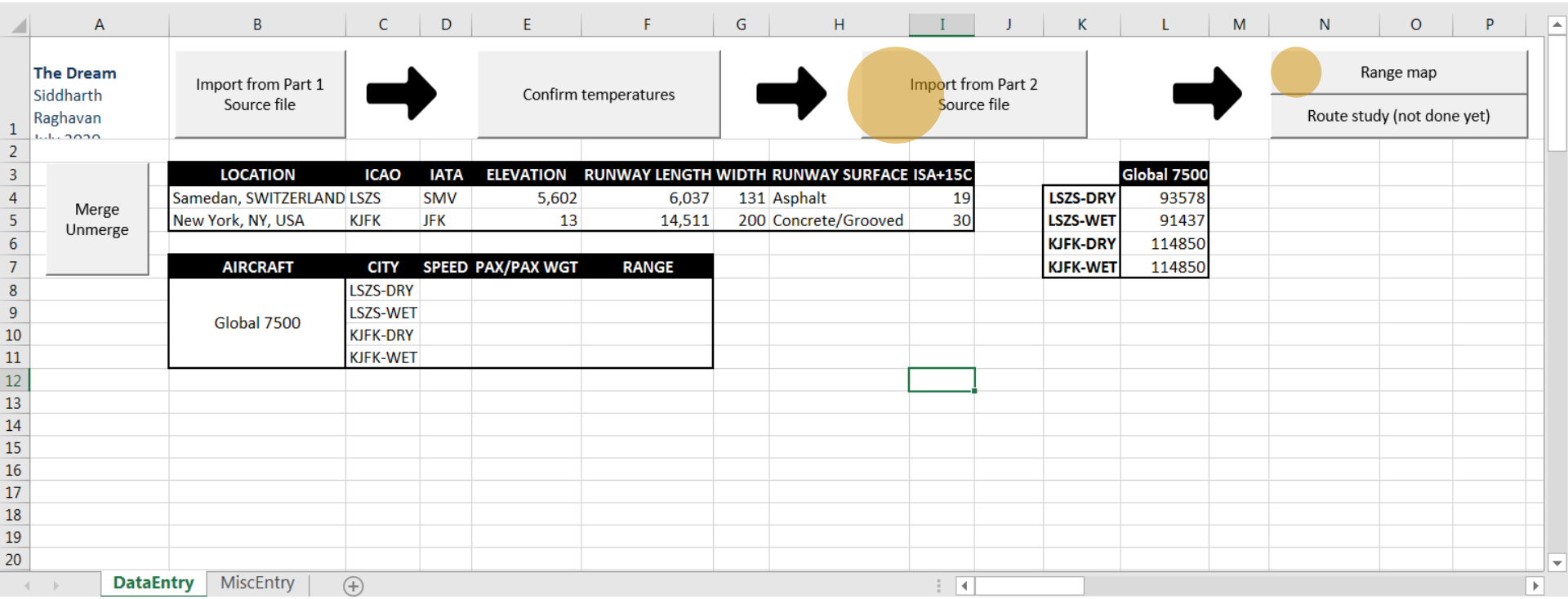
4. Extra functionalities - continued

Excel - Wet conditions

If wet conditions are chosen with the tool, upon clicking the third button (Import from Part 2 Source file) on the Excel file, you will obtain a clear TOW list in the following form seen in the picture. You can then click on the fourth button (Range map). Again, the final result is a clear range map table.



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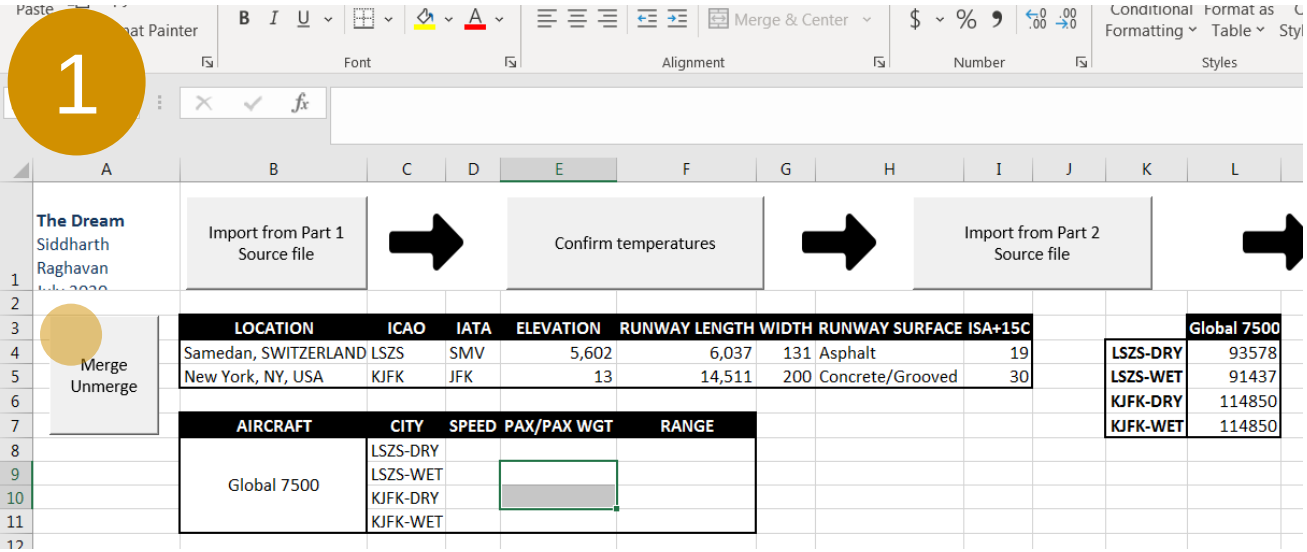
4. Extra functionalities - continued

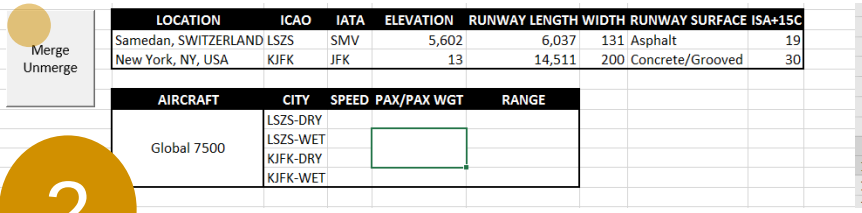
Excel - Merge/unmerge button

Because the Excel file is protected, you cannot use the normal Excel merge/unmerge button in the toolbar. Instead, you can use the button on the side. Select whichever cells you want and click the button. To unmerge, select the merged cells, and click the button again.

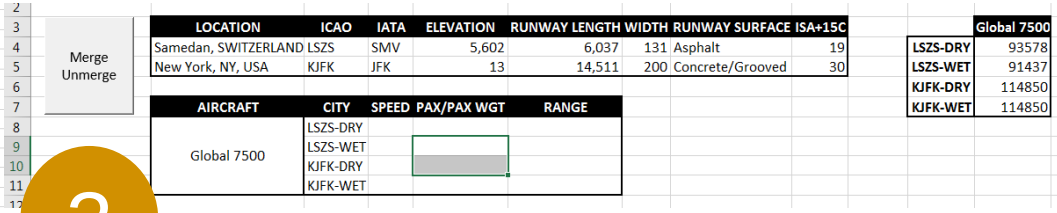
1



2



3



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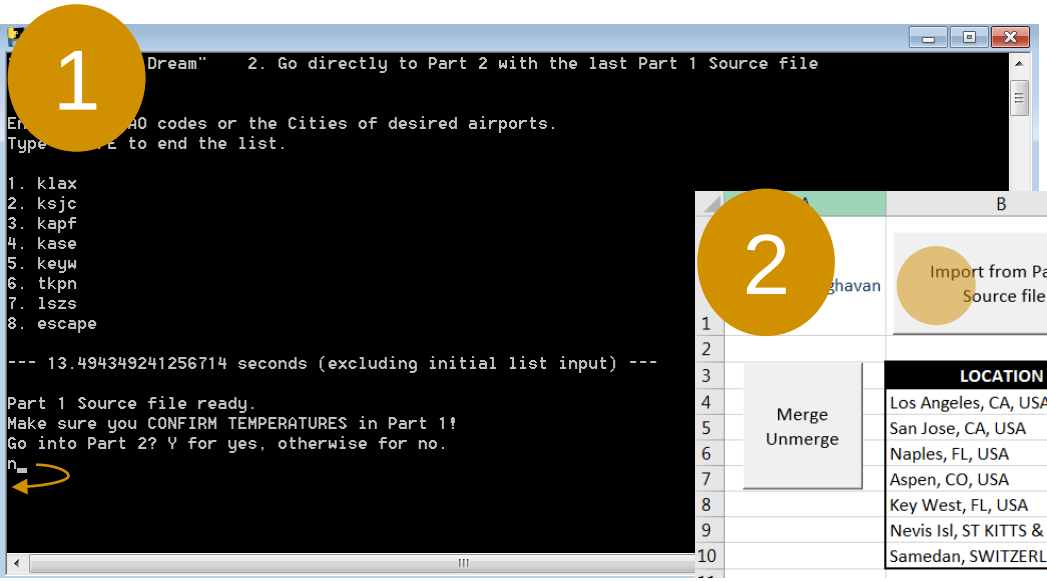
4. Extra functionalities - continued

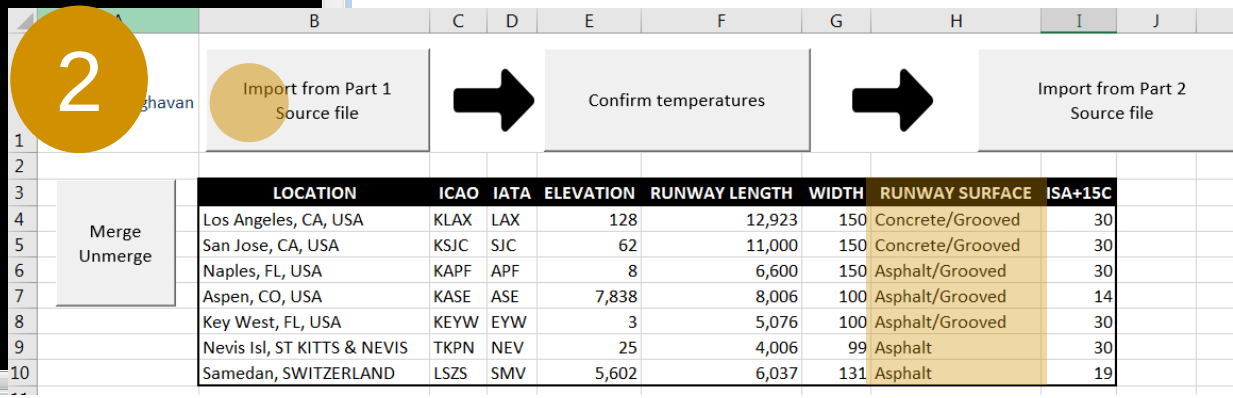
Modular programming – Part 1 only

Once the tool is started, you need not necessarily run through it from start to finish. That is, it is very modular. What if a request was,

I need info on type of surface for KLAX,KSJC,KAPF,KASE,KEYW,TKPN,LSZS.

Clearly Part 2 (computing TOW) is not required. You need to only run Part 1 of the program! Once prompted to go into Part 2, you can type “n” or anything not starting with “y” and hit ENTER. When you click the first button (Import from Part 1 Source file) on the Excel file, you’ll have the required information to complete this request. The rest of the buttons should not be pressed as Part 2 is not being used.





LOCATION	ICAO	IATA	ELEVATION	RUNWAY LENGTH	WIDTH	RUNWAY SURFACE	ISA+15C
Los Angeles, CA, USA	KLAX	LAX	128	12,923	150	Concrete/Grooved	30
San Jose, CA, USA	KSJC	SJC	62	11,000	150	Concrete/Grooved	30
Naples, FL, USA	KAPF	APF	8	6,600	150	Asphalt/Grooved	30
Aspen, CO, USA	KASE	ASE	7,838	8,006	100	Asphalt/Grooved	14
Key West, FL, USA	KEYW	EYW	3	5,076	100	Asphalt/Grooved	30
Nevis Isl, ST KITTS & NEVIS	TKPN	NEV	25	4,006	99	Asphalt	30
Samedan, SWITZERLAND	LSZS	SMV	5,602	6,037	131	Asphalt	19

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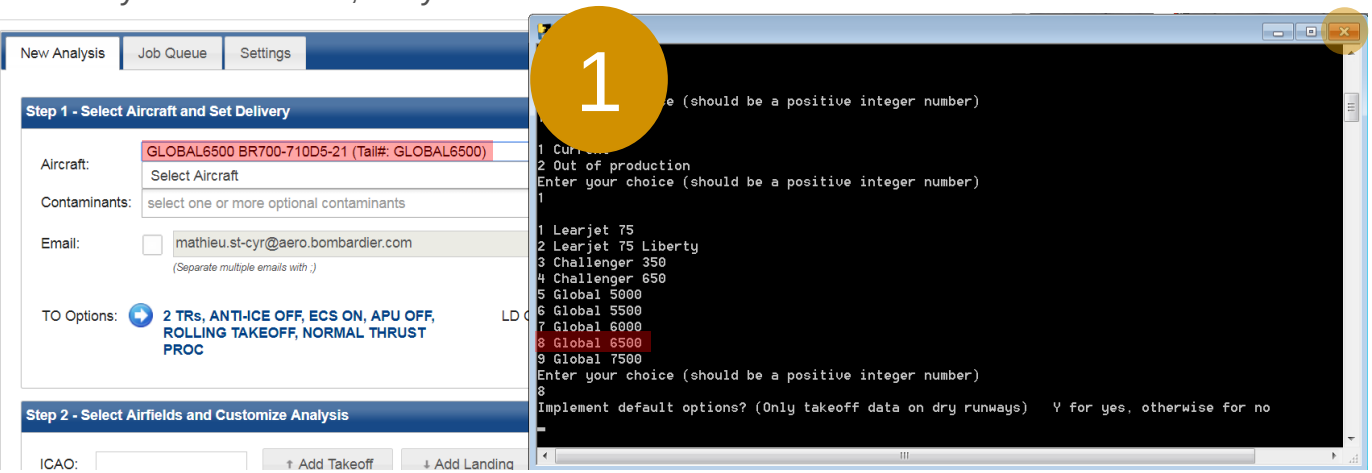
4. Extra functionalities - continued

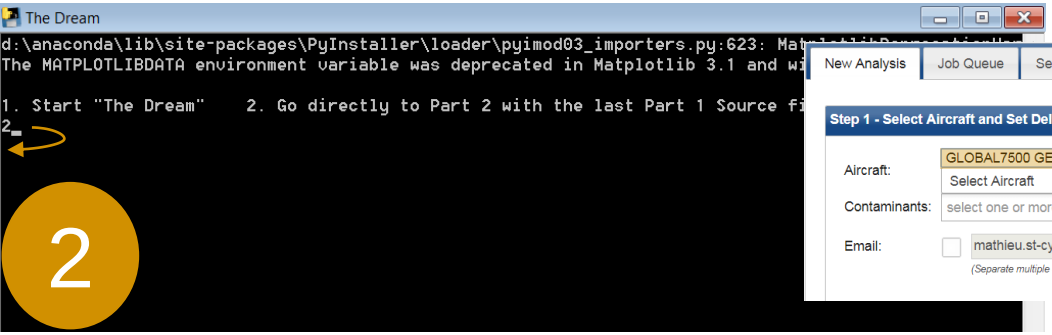
Modular programming – Part 2 only

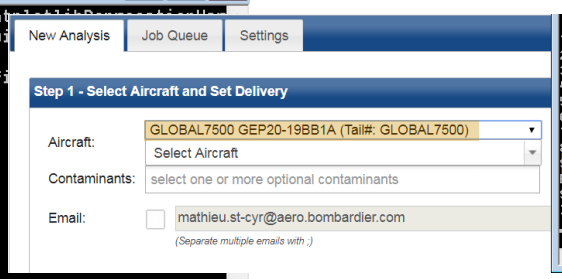
You can also directly jump to Part 2. This is useful when you accidentally choose a wrong aircraft. Say you are meant to analyze Global 7500, but you chose Global 6500 instead.

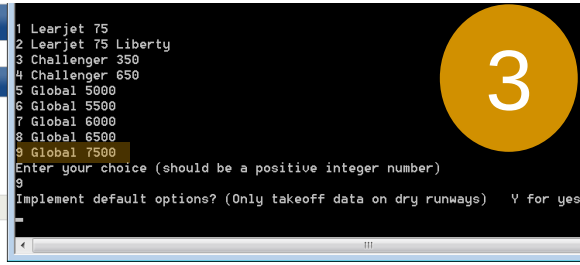


Exit the tool ('X' on top right), close the browser window, and relaunch the tool.

Once relaunched, you don't need to go through Part 1 again (entering all your airfields). You can directly proceed to Part 2 provided you did go through Part 1 at some point prior. To do this, type 2 and hit ENTER for the very first prompt. Proceed as normal and enter the correct aircraft choice!







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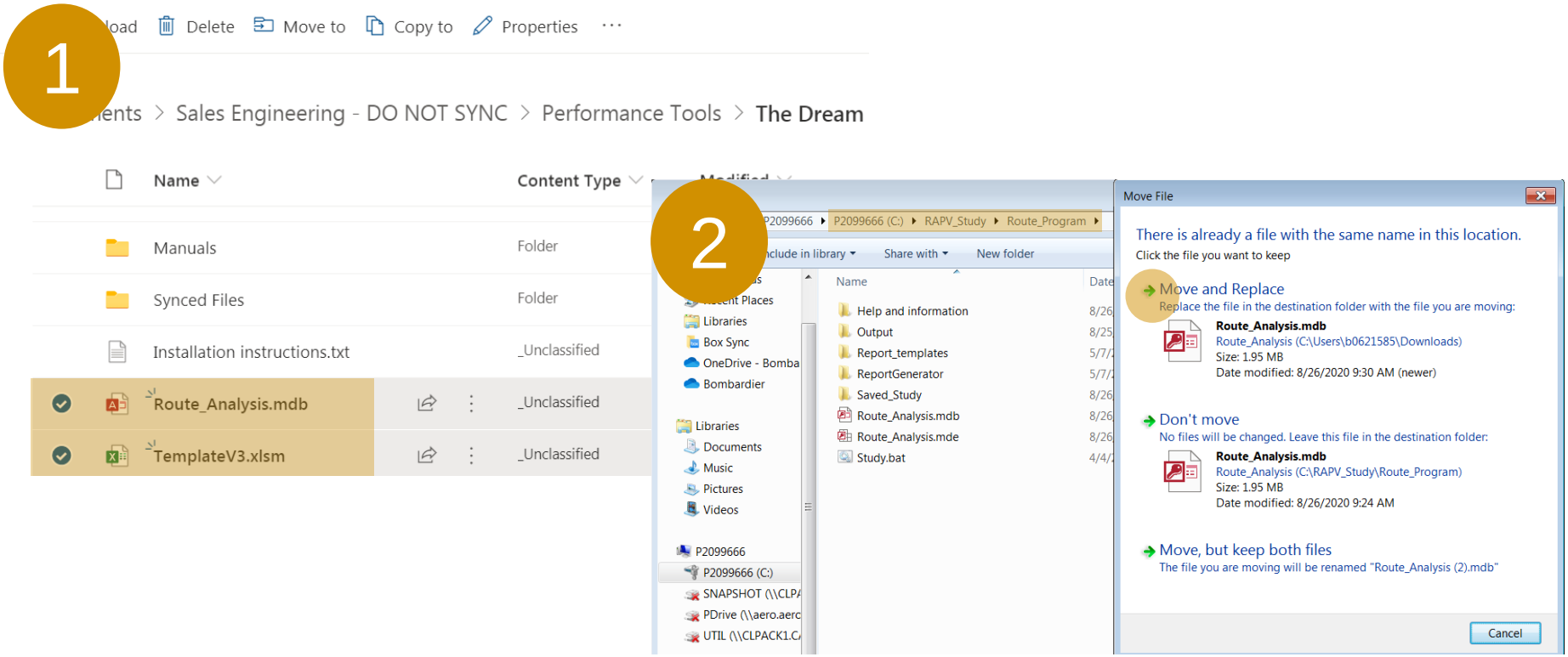
5. Link to RAPV

Pre-requirements

Make sure you have downloaded the latest version of the template Excel file (from Sharepoint). This has the Range Calculator RAPV button. Then, make sure that you download the .mdb file on The Dream in Sharepoint. Then, move the Route_Analysis.mdb file to the Route_Program folder. Choose the Move and Replace option. To navigate to the Route_Program folder, go on your C: drive, click RAPV_Study, and then on Route_Program.



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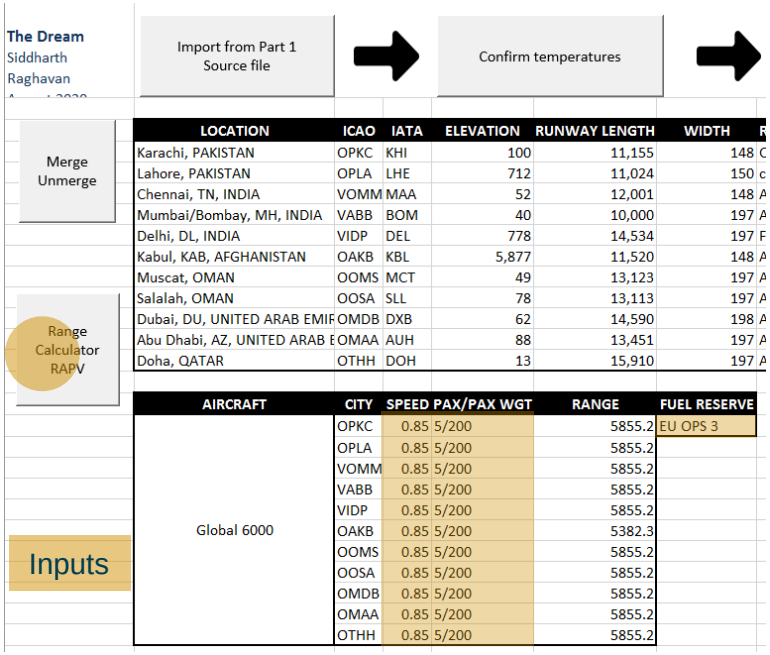
5. Link to RAPV - continued

Inputs required and sanity checks

After downloading and placing the .mdb file in the correct location, you are ready to use this newest functionality! Notice the inclusion of the Range calculator RAPV button on the Excel file. After filling up the inputs, and clicking on the button, simply keep clicking OK (or Open) and hitting ENTER on RAPV. RAPV will automatically close after finishing.



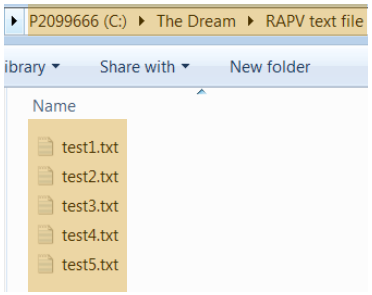
LOCATION	ICAO	IATA	ELEVATION	RUNWAY LENGTH	WIDTH
Karachi, PAKISTAN	OPKC	KHI	100	11,155	148
Lahore, PAKISTAN	OPLA	LHE	712	11,024	150
Chennai, TN, INDIA	VOMM	MAA	52	12,001	148
Mumbai/Bombay, MH, INDIA	VABB	BOM	40	10,000	197
Delhi, DL, INDIA	VIDP	DEL	778	14,534	197
Kabul, KAB, AFGHANISTAN	OAKB	KBL	5,877	11,520	148
Muscat, OMAN	OOMS	MCT	49	13,123	197
Salalah, OMAN	OOSA	SLL	78	13,113	197
Dubai, DU, UNITED ARAB EMIR	OMDB	DXB	62	14,590	198
Abu Dhabi, AZ, UNITED ARAB E	OMAA	AUH	88	13,451	197
Doha, QATAR	OTHH	DOH	13	15,910	197

AIRCRAFT	CITY	SPEED PAX/PAX WGT		RANGE	FUEL RESERVE
Global 6000	OPKC	0.85	5/200	5855.2	EU OPS 3
	OPLA	0.85	5/200	5855.2	
	VOMM	0.85	5/200	5855.2	
	VABB	0.85	5/200	5855.2	
	VIDP	0.85	5/200	5855.2	
	OAKB	0.85	5/200	5382.3	
	OOMS	0.85	5/200	5855.2	
	OOSA	0.85	5/200	5855.2	
	OMDB	0.85	5/200	5855.2	
	OMAA	0.85	5/200	5855.2	
	OTHH	0.85	5/200	5855.2	

For any group of 2 cells of speed and payload, if there isn't a filled value, the code skips those airfields.

AIRCRAFT	CITY	SPEED PAX/PAX WGT		RANGE	FUEL RESERVE
Global 6000	OPKC	0.85	5/200	5855.2	EU OPS 3
	OPLA	0.85			
	VOMM	0.85	5/200	5855.2	
	VABB	0.85			
	VIDP	0.85	5/200	5855.2	
	OAKB		5/200		
	OOMS		5/200		
	OOSA		5/200		
	OMDB		5/200		
	OMAA	0.85	5/200	5855.2	
	OTHH		5/200		

If you want to verify these ranges, you can refer to the text files that automatically pop up during the running of RAPV. These can also be accessed at The Dream under the RAPV text file folder.



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5. Link to RAPV - continued

Disclaimers

Upon clicking the Range Calculator RAPV button for the first time, the code may break. This is because when the RAPV file opens, it will prompt you to “Enable macros”. Click OK on “Enable macros” and close the RAPV window. Re-try clicking on the Range Calculator RAPV button, and it should work. It is important to note that the code behind this functionality is semi-stable (i.e. it will not work for any and all aircraft).

Currently, it works for 1 or more aircrafts if the aircrafts are:

1. Challenger 300
2. Challenger 350
3. Challenger 650
4. Global 5000
5. Global 6000

It may or may not work for other aircraft (more testing is required).

Valid TOW table from Part 2

	Global 6000	Global 5000	Challenger 300	Challenger 350	Challenger 650
OPKC	99500	92500	38850	40600	48200
OPLA	99500	92500	38850	40600	48200
VOMM	99500	92500	38850	40600	48200

Ranges **can be computed**

AIRCRAFT	CITY	SPEED	PAX/PAX WGT	RANGE	FUEL RESERVE
Global 6000	OPKC	0.82	12/200	5830.1	EU OPS 5
	OPLA	0.82	11/200	5842.4	
	VOMM	0.82	10/200	5854.9	
Global 5000	OPKC	0.82	12/200	5154	
	OPLA	0.82	11/200	5165.9	
	VOMM	0.82	10/200	5177.8	
Challenger 300	OPKC	0.78	12/200	2777.3	
	OPLA	0.78	11/200	2835.7	
	VOMM	0.78	10/200	2894.2	
Challenger 350	OPKC	0.78	12/200	2995.8	
	OPLA	0.78	11/200	3053.9	
	VOMM	0.78	10/200	3111.3	
Challenger 650	OPKC	0.74	12/200	3532.9	
	OPLA	0.74	11/200	3582.9	
	VOMM	0.74	10/200	3633.2	

However, if the TOW table has improper TOWs (because the user altered the table) then the button (macro) may fail or give wrong results. Also, the button may fail if the aircrafts involved are any but the ones listed above. For example, the button gives **wrong ranges** for Global 5500 and Global 6500. The button also is not able to run Global 7500 at a speed below M 0.85. This is because the Global 5500, Global 6500 and Global 7500 use slightly different programs and the link established has not properly included those programs.

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6. Troubleshooting/FAQ

Installation and pre-requirements

Q. After downloading, I clicked on the shortcut I had, and the prompt window briefly pops up and disappears.

A. You likely had a previous version of “The Dream” which that shortcut was linked to. You need to delete all previous versions of “The Dream” on your C: drive before extraction. You will also need to delete previous shortcuts. You will need to create a new shortcut after extracting the new version. See Installation for proper guidance.

Q. In Part 1, after typing my ICAO codes and city names, and ending the list by typing “escape” and hitting ENTER, a quick error message shows up and closes the prompt window.

A. This is likely because you did not properly link the shared database. Make sure you have the database synced as explained here. If the database is properly synced, make sure your name and ID number are entered in the text doc as explained here.

Q. In Part 2, after my browser window closes, and data is processing, a long error message shows up and closes the prompt window.

A. This is likely because you did not properly set the path to Java. You may be missing a semicolon ‘;’ before the path to-be-pasted. See setting Java path for proper guidance.

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6. Troubleshooting/FAQ - continued

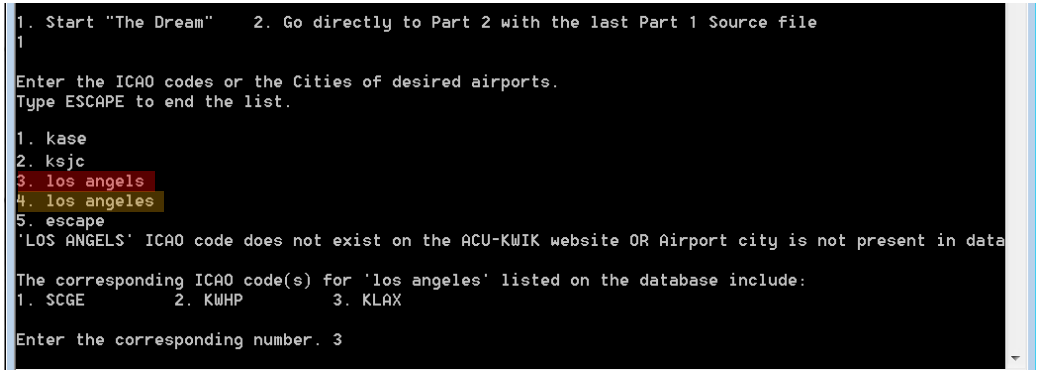
Part 1

Q. The following message shows up *"*entered code/city* ICAO code does not exist on the ACU-KWIK website OR Airport city is not present in database".*

A. When this message pops up, it means the ICAO code you typed in does not have a webpage on ACU-KWIK. Unfortunately, such ICAO code(s) will not be processed by the tool, meaning you won't be able to obtain TOWs from those airfields. For the adventurous, there is a workaround for this problem that involves altering Part 1's Source file.
If you entered a city name (not an ICAO code) and you receive this message, this means that the city is not yet on the database. If you type in this city's ICAO code once into the tool, for all future requests, you will be able to enter the city name and receive the option for the corresponding ICAO code!
The last possibility is that the code/city name was incorrectly entered (typo).

Q. I mistyped an ICAO code/city name. Do I need to close the program and relaunch?

A. No need! If you mistyped an ICAO code/city name, you can just enter the correct code/city on the next line. The program automatically disregards any codes/cities that are invalid.



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6. Troubleshooting/FAQ - continued

Part 2 and Excel options

Q. Once part 2 begins, and I input my choices, nothing is happening!

A. Make sure that the browser window that opened is not minimized and is not clicked on. It should simply be in the background.

Q. Once part 2 begins, and the prompt 2 window suddenly closes and the tool stops working.

A. This is most likely because the Chromedriver.exe file in the Part 2 folder is not corresponding with the current version of your Chrome browser. To rectify this, check the current version of your Chrome browser, and then download a Chromedriver file of this specific version (just google search Chromedriver download). Then, copy this Chromedriver.exe file into the Part 2 folder of The Dream and select copy and replace file option. Part 2 should now be functional.

Q. I cannot delete cells in the Excel template file.

A. This is because it is a protected sheet. The workaround to this is selecting the cells you want to delete, format them as a blank cell, and then manually move your cell blocks to wherever you want. It takes slightly longer but is not cumbersome. However, you can still delete rows and columns as normal.

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7. Goals

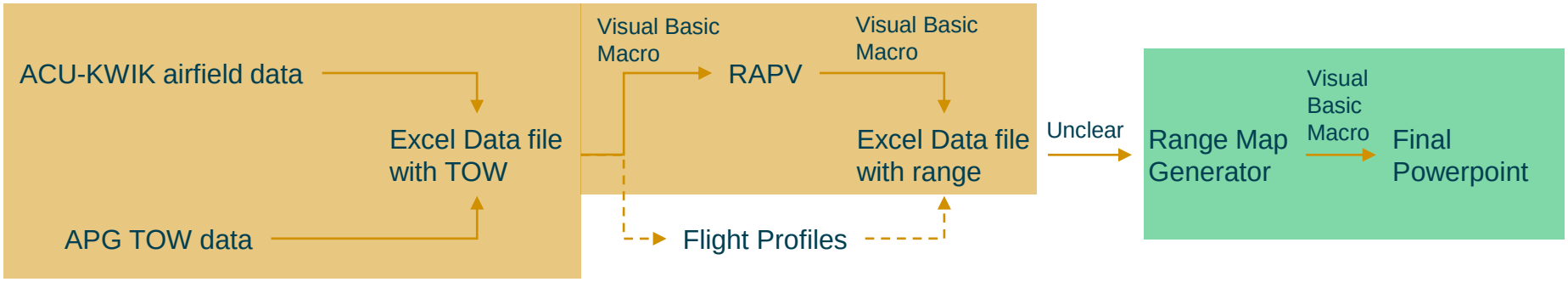
Current and future

Current

1. To reduce human error and increase time savings in all general performance requests.
2. To make the job easier.

Future

1. Automated range maps. First, the data on the template Excel should be linked to RAPV (and Flight Profiles). More macros can be programmed, and a connection can be established at least to RAPV (because we can access the Visual Basic code behind RAPV). No research has been done into linking the Excel to Flight Profiles yet. After obtaining range values, some link can hopefully be made to the Range Map generator tool. After, this can be programmed through a PowerPoint template to directly give the final result – a range map with correct title, legend, assumptions and a pretty range map png.



Automated | Can definitely be automated

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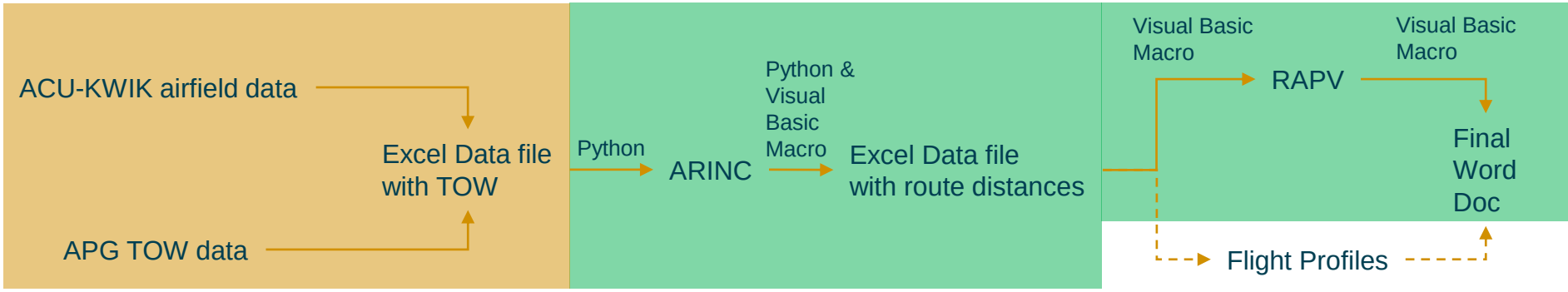
7. Goals - continued

Future

2. To include additional information along with the maximum TOW obtained, like the Flap setting used and the weight limitation type (Structural – ST, Field Length – FL, etc.).
3. To fully stabilize the code for the Link to RAPV (i.e. the macro behind the Range calculator RAPV button on the Excel template file).
4. Automated route studies. This involves slightly different steps. After obtaining TOW, users have to input information on ARINC and obtain route distances. This could be automated in the same way APG was automated (via Python's Selenium module for web control). After, it would send the distances to the Excel data file, and after inputting some assumptions, a link would have to be made to RAPV (and Flight Profiles). These tools already generate the final report word docs conveniently. The automation of route studies in RAPV/Flight Profiles would be hard, because route studies sometimes require a lot of decisions. Still, the straightforward routes could potentially be completely automated.



Automated | Can definitely be automated

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8. Author

Contact details

This project was undertaken by Siddharth Raghavan. All instruction manuals, technical documents, Visual Basic code for Excel, and underlying Python executable files are written by me. Please feel free to contact me for any questions you may have concerning the project. I will be happy to answer them if I can, even long after my internship ends (end of August 2020).

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