Automation Report

By Luis Parra

Business Problem

This report outlines the automation process implemented in Python utilizing Tkinter, Pandas, and datetime libraries. The automation aims to process CSV files, aggregate data, and export the results in Excel format, with the primary goal of addressing repetitive and time-consuming reporting tasks. The implementation significantly reduces processing time to a matter of seconds, simply requiring the user to double-click the program and select the desired file for transformation.

Creating the GUI Interface

This program is executable by anyone with the necessary permissions for the folder location. Users can initiate the program by double-clicking and conveniently selecting the file through the graphical user interface (GUI).
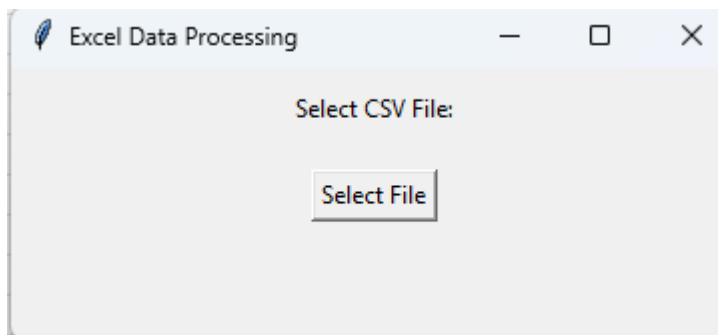

Figure 1 – GUI Interface

Before and After

The Python script is configured to locate and extract specific columns from the dataset. In cases where the influx of files is consistent, the script can effectively transform messy data into a standardized format, encompassing both data and formatting.

_id	merchant_code	first_name	balance	date	gender	age	merchant_suburb	merchant_state	extraction	amount	transaction_id	country	customer_id	merchant_long_lat	movement
73be-44a7-befa-d053f48ce7cd		Diana	35.39	8/1/2018	F	26	Ashmore	QLD	2018-08-01T01:01:15.000+0000	16.25	a623070bfead4541a6b0fff8a09e706c	Australia	CUS-2487424745	153.38 -27.99	debit
-316e-4a6a-bf25-e37caedca49e		Diana	21.2	8/1/2018	F	26	Sydney	NSW	2018-08-01T01:13:45.000+0000	14.19	13270a2a902145da9db4c951e04b51b9	Australia	CUS-2487424745	151.21 -33.87	debit
-8cdf-4e96-859d-e9d571760cf0		Michael	5.71	8/1/2018	M	38	Sydney	NSW	2018-08-01T01:26:15.000+0000	6.42	feb79e7ecd7048a5a36ec889d1a94270	Australia	CUS-2142601169	151.21 -33.87	debit
c78a-4a88-b0da-2d6302e64673		Rhonda	2117.22	8/1/2018	F	40	Buderim	QLD	2018-08-01T01:38:45.000+0000	40.9	2698170da3704fd981b15e64a006079e	Australia	CUS-1614226872	153.05 -26.68	debit
-0852-4273-b8fd-7b3395e32eb0		Diana	17.95	8/1/2018	F	26	Mermaid Beach	QLD	2018-08-01T01:51:15.000+0000	3.25	329adf79878c4cf0aeb4168b4691c266	Australia	CUS-2487424745	153.44 -28.06	debit
		Robert	1705.43	8/1/2018	M	20			2018-08-01T02:00:00.000+0000	163	1005b48a6eda4ffd85a9b649dc9467d3	Australia	CUS-2688605418		debit
-a0a9-4190-a117-b7caaf4d07e3		Kristin	1248.36	8/1/2018	F	43	Kalkallo	VIC	2018-08-01T23:04.000+0000	61.06	b79ca208099c4c26aa5dae966096d842	Australia	CUS-4123612273	144.95 -37.53	debit
-26e8-4b01-9cd9-62378014f21d		Kristin	1232.75	8/1/2018	F	43	Melbourne	VIC	2018-08-01T04:11:25.000+0000	15.61	e1c4a50d6a0549cbb3710a62a2fa00d5	Australia	CUS-4123612273	144.96 -37.81	debit
caa8-499f-9d41-bbdc2b836d85		Tonya	213.16	8/1/2018	F	27	Yokine	WA	2018-08-01T04:40:00.000+0000	19.25	799e39eb2c1b411185424b0f2cd18bda	Australia	CUS-3026014945	115.85 -31.9	debit
		Michael	466.58	8/1/2018	M	40			2018-08-01T06:00:00.000+0000	21	798a77869014441b840a7a8a23408332	Australia	CUS-2031327464		debit
		Fernando	4348.5	8/1/2018	M	19			2018-08-01T06:00:00.000+0000	27	baff17b27b2643c48c84fca7129efe61	Australia	CUS-2317998716		debit
		Kristin	1203.75	8/1/2018	F	43			2018-08-01T06:00:00.000+0000	29	78a1b6c3a5534d48828dbed266ba9c2e	Australia	CUS-4123612273		debit
-859c-4c0a-8b1d-813a5f6b444c		Tonya	207.08	8/1/2018	F	27	Cockburn Central	WA	2018-08-01T06:40.000+0000	6.08	9ba4928260b24fbb8fb00f1f8d86b868	Australia	CUS-3026014945	115.86 -32.13	debit
		Isaiah	4438.16	8/1/2018	M	23			2018-08-01T07:00:00.000+0000	25	eaafa602902b4f4194efb96a105dd7ab	Australia	CUS-1462656821		debit
		Ricky	173.66	8/1/2018	M	43			2018-08-01T07:00:00.000+0000	39	243dcea5fb1846ffb89671edf45f157d	Australia	CUS-3142625864		debit
959c-4d9a-aee5-930689a2f8cd		Jeffrey	2.85	8/1/2018	M	30	Mount Ommaney	QLD	2018-08-01T07:20:48.000+0000	10.79	28347ba260d84f8d81ab70d9e901ea8e	Australia	CUS-860700529	152.94 -27.55	debit
		Patrick	260514.83	8/1/2018	M	46			2018-08-01T08:00:00.000+0000	22	ae8124d2e33547bdb605d9a51581457f	Australia	CUS-2370108457		debit
		Karen	3117.94	8/1/2018	F	26			2018-08-01T08:00:00.000+0000	55	0b0bc166b6da49b1ac64d3bb9c4ef550	Australia	CUS-2630892467		debit
		Ruth	38.31	8/1/2018	F	47			2018-08-01T08:00:00.000+0000	58	c24ca89f7aba4ab4b8d3e9ac0c5f4fab	Australia	CUS-3716701010		debit
333-4c74-a61a-56a074d0ec0f		Kimberly	708.28	8/1/2018	F	24	Brunswick	VIC	2018-08-01T08:00:11.000+0000	7.37	2f77c3cbe847468bbf99f7f0cead69f9	Australia	CUS-3378712515	144.96 -37.78	debit
f91-409f-a6a2-fbd6735ea500		Diana	3.85	8/1/2018	F	26	Byron Bay	NSW	2018-08-01T08:09:42.000+0000	14.1	1c12c9ad77894ef8b507fb091e41e928	Australia	CUS-2487424745	153.6 -28.63	debit
e724-4359-a406-3538a3e27b4e		Joseph	275.93	8/1/2018	M	37	Lismore	NSW	2018-08-01T08:19:14.000+0000	24.77	1f12467d33ce4609890f0b64978ebbcbb	Australia	CUS-2699611575	153.28 -28.81	debit
c666-41a4-857b-9aaea10c008d		Tiffany	259.37	8/1/2018	F	25	Fremantle	WA	2018-08-01T08:28:45.000+0000	13.67	daaa632bc1114ffc8f6fca277f049a397	Australia	CUS-1669695324	115.76 -32.06	debit
55bc-4a81-a00d-c7faede29f8b		Emily	30583.15	8/1/2018	F	43	Mordialloc	VIC	2018-08-01T08:47:48.000+0000	12.08	49417bad35f4f137971a954c26657e2d	Australia	CUS-3255104878	145.09 -38.01	debit
6feb-46b0-b755-115ce31678c1		Joseph	793.64	8/1/2018	M	21	Chatswood	NSW	2018-08-01T08:57:20.000+0000	72.12	800005b7231a045ff9b7d48b6f2b63615	Australia	CUS-537508723	151.18 -33.8	debit
		Christine	4474.38	8/1/2018	F	39			2018-08-01T09:00:00.000+0000	25	f8cbe524608649f5fa77728f4a9e08997	Australia	CUS-2376382098		debit
		Ryan	586.2	8/1/2018	M	31			2018-08-01T09:00:00.000+0000	36	2addbcee343d4406bfd5f17fb8d40dee	Australia	CUS-3129499595		debit
4efb-41e2-a569-29346eb6c9de		Michelle	1636.91	8/1/2018	F	19	Granville	NSW	2018-08-01T09:02:54.000+0000	17.96	455044b17a8648a2945d7c39e8274351	Australia	CUS-883482547	151 -33.83	debit
d6e6-43fb-896a-84faa162d544		Richard	11525.54	8/1/2018	M	24	Pacific Paradise	QLD	2018-08-01T09:06:57.000+0000	14.49	221c4f7cd532d0a18ceab43e1b879a62	Australia	CUS-51506836	153.08 -26.61	debit
a1a4-4688-90b5-240d790e6332		Michelle	1625.34	8/1/2018	F	19	Alexandria	NSW	2018-08-01T09:11:00.000+0000	11.57	82ac037908447776b4587fd6e6f526c5	Australia	CUS-883482547	151.19 -33.92	debit
-6f65-4f52-9a33-0b242dd7a078		Rhonda	2072.1	8/1/2018	F	40	North Lakes	QLD	2018-08-01T09:15:03.000+0000	45.12	acd101b96b9d44b968b2519e2bb26a649	Australia	CUS-1614226872	152.99 -27.21	debit
-99a8-49f0-b73a-f8de81ca0abd		Jessica	12529.59	8/1/2018	F	34	Findon	SA	2018-08-01T09:19:06.000+0000	33.89	89050ee5c5aa4e79b03e717518236bf9	Australia	CUS-1196156254	138.53 -34.9	debit
11a0-4c11-af28-a31a40931a90		Kimberly	698.61	8/1/2018	F	24	Doncaster	VIC	2018-08-01T09:23:09.000+0000	9.67	d79653456df54a20a564af7069156f60	Australia	CUS-3378712515	145.13 -37.78	debit
c231-4458-a4e0-43a3f6953954		Ronald	2086.31	8/1/2018	M	25	Smithfield	QLD	2018-08-01T09:27:12.000+0000	4.38	7c855689bafb457084fbe8e42824a36e	Australia	CUS-2178051368	145.7 -16.81	debit
fca8-40b5-a738-8e1d4aa98322		Kaitlyn	1689.89	8/1/2018	F	21	Alstonville	NSW	2018-08-01T09:39:21.000+0000	28.49	4c299aa143c94a03bee6fba9db884567	Australia	CUS-809013380	153.44 -28.84	debit
-486e-43f1-a0a3-1130709e4c0f		Kaitlyn	1675.46	8/1/2018	F	21	Leonora	WA	2018-08-01T09:43:24.000+0000	14.43	e25a2c80035844a4846625adb43d893a	Australia	CUS-809013380	121.33 -28.9	debit
9082-4179-b287-3c927eed1be9		Richard	11438.51	8/1/2018	M	24	Greenslopes	QLD	2018-08-01T09:47:26.000+0000	87.03	e06884699c114da592c8dcde6d30cab3	Australia	CUS-51506836	153.05 -27.51	debit
717c-4e96-ab82-1580ec58a612		Lori	38.42	8/1/2018	F	18	Browns Plains	QLD	2018-08-01T09:51:29.000+0000	36.28	bad454ebe43940e2aaa0e8a013f49a91	Australia	CUS-3702001629	153.05 -27.66	debit
-344e-4084-a102-4ca6bf82b25b		Virginia	1089.59	8/1/2018	F	20	West Perth	WA	2018-08-01T09:55:32.000+0000	15.91	303ab7bca5764bb3863758b3142b74bb	Australia	CUS-127297539	115.84 -31.95	debit
-5b0e-403c-b1bc-71e6a2bcdc0f		Andrew	49756.21	8/1/2018	M	78	Preston	VIC	2018-08-01T09:59:35.000+0000	25.7	431119a28af748cbb12920804a7fcda3	Australia	CUS-1646183815	145.03 -37.74	debit
		Rhonda	2040.1	8/1/2018	F	40			2018-08-01T10:00:00.000+0000	32	94622881419c44e1b799a52d82572207	Australia	CUS-1614226872		debit
		Susan	137.14	8/1/2018	F	20			2018-08-01T10:00:00.000+0000	39	b5974280c54a45479696de686002d7	Australia	CUS-164374203		debit
		Richard	292.77	8/1/2018	M	22			2018-08-01T10:00:00.000+0000	34	60f6a3a91b974bd783a46c24bf7dc94	Australia	CUS-2283904812		debit
		Luis	28.04	8/1/2018	M	27			2018-08-01T10:00:00.000+0000	29	2bf5dc421b144a6d9f80c71d9750bbb9	Australia	CUS-3180318393		debit
		Gregory	754.2	8/1/2018	M	42			2018-08-01T10:00:00.000+0000	150	f0f8a22361d54153a8ff90da73e5e351	Australia	CUS-3904958894		debit
		Joseph	763.64	8/1/2018	M	21			2018-08-01T10:00:00.000+0000	30	6d12e9e1c9fe4f899b04c2e1f40fb790	Australia	CUS-537508723		debit
64fb-4c25-8734-47f7409fa7c1		Barry	301.65	8/1/2018	M	38	Bomaderry	NSW	2018-08-01T10:12:51.000+0000	20.43	06df75936c564067b220a0660ad8b455	Australia	CUS-1604596597	150.6 -34.84	debit
-363c-46ab-b398-ca517347829a		Daniel	1290.08	8/1/2018	F	22	Sydney	NSW	2018-08-01T10:27:08.000+0000	31.62	826f09d26da04b7282f597cabfecaf81	Australia	CUS-1617121891	151.21 -33.87	debit
-65da-4718-aa78-679daba791fb		Renee	18784.07	8/1/2018	F	38	Doncaster	VIC	2018-08-01T10:41:25.000+0000	16.13	0a0aaf7ca4894fbeb41e69a69545f8fa1	Australia	CUS-2206365095	145.13 -37.78	debit
c4aa-479b-a7c2-1952aafbc6bb		Emily	29645.42	8/1/2018	F	43	Dandenong South	VIC	2018-08-01T10:55:42.000+0000	937.73	44806f4994f249e9a7411776530e0ff6	Australia	CUS-3255104878	145.21 -38.03	debit
	0	Isaiah	8342.11	8/1/2018	M	23			2018-08-01T11:00:00.000+0000	3903.95	9ca281650e5d482d9e53f85e959baa66	Australia	CUS-1462656821		credit

Figure 2 – Before Processing

customer_id	month_year	amount
CUS-1005756958	08-2018	6,139.40
CUS-1005756958	09-2018	4,663.22
CUS-1005756958	10-2018	5,466.35
CUS-1117979751	08-2018	8,703.30
CUS-1117979751	09-2018	13,257.61
CUS-1117979751	10-2018	12,023.46
CUS-1140341822	08-2018	4,424.26
CUS-1140341822	09-2018	6,113.75
CUS-1140341822	10-2018	6,472.59
CUS-1147642491	10-2018	11,201.11
CUS-1147642491	08-2018	8,855.53
CUS-1147642491	09-2018	8,924.18
CUS-1196156254	08-2018	14,695.73
CUS-1196156254	09-2018	11,124.71
CUS-1196156254	10-2018	10,230.28
CUS-1220154422	10-2018	6,038.86
CUS-1220154422	08-2018	7,556.43
CUS-1220154422	09-2018	7,000.82
CUS-1233833708	10-2018	4,524.03
CUS-1233833708	08-2018	3,042.21
CUS-1233833708	09-2018	2,819.30
CUS-1271030853	08-2018	7,314.10
CUS-1271030853	09-2018	6,454.23
CUS-1271030853	10-2018	15,311.45

Figure 3 – After Running Script

What's Next?

With the successful completion of data transformation, the next steps include exploring automation for visualization in Tableau based on the processed data. Additionally, further enhancements could involve scheduling the automation to run autonomously at specific days and times. Another feature could be implementing an automatic email dispatch with the transformed file attached to relevant stakeholders. Both the GUI and the final product can be customized according to visual and formatting preferences

Conclusion

Visualize the potential—this entire pipeline can be automated, leading to increased efficiency. Automation streamlines work processes, allowing more time for projects that propel the workflow into new areas, while routine ad-hoc tasks become a matter of simple review.

Code

For access to the code, please contact [**checoparraluis@gmail.com**].