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CPE22S3

Code:

Assignment_DataCleaning.py X

VsCode > Python > Assignment_DataCleaning.py > ...

```
1 import pandas as pd
2
3 df = pd.read_csv(r"D:\VsCode\Python\VSFs.csv")
4 df.isnull().sum()
5 df.dropna(inplace=True)
6 df = df.drop_duplicates()
7 df['EFFECTIVE_DATE'] = pd.to_datetime(df['EFFECTIVE_DATE'], errors='coerce')
8 df = df[~((df['EFFECTIVE_DATE'] == '11/01/2023 0:00') & (df['EFFECTIVE_DATE'].dt.strftime('%p') != 'AM'))]
9 df['CUSTOMER_NAME'] = df['CUSTOMER_NAME'].str.upper()
10 df = df.drop(columns="CANCEL_EFF_DATE")
11 df = df.drop(columns="VEH_COUNT")
12 df = df.drop(columns="COVERAGE_AMOUNT")
13 df = df.dropna(subset=['EFFECTIVE_DATE'])
14 df['EFFECTIVE_DATE'] = df['EFFECTIVE_DATE'].fillna('')
15 df["CUSTOMER_DBA_NAME"] = df["CUSTOMER_DBA_NAME"].str.replace('Nan', '')
16 df["CUSTOMER_DBA_NAME"] = df["CUSTOMER_DBA_NAME"].str.replace('Na', '')
17 df["MAIL_ADDR_LINE2"] = df["MAIL_ADDR_LINE2"].str.replace('Nan', '')
18 df["MAIL_ADDR_LINE2"] = df["MAIL_ADDR_LINE2"].str.replace('Na', '')
19 for x in df.index:
20     if df.loc[x, "CUSTOMER_DBA_NAME"] == "":
21         df.drop(x, inplace=True)
22 print(df)
```

Dataset:

CERTIFIC	LICENS	CUSTOMER_NAME	CUSTOM	PHONE	MAIL_AC	MAIL_AC	MAIL_C1	MAIL_ST	MAIL_ZIP	SITE_AI	SITE_AI	SITE_C1	SITE_CO	SITE_ST	SITE_ZIP	TOL_COM	INSURE_POLICY	COVERA	EFFECTR	CANCEL	VEH_COUNT						
0660196	Vehicle	BRAZOS COUNTY TOWING AND RECOVERY, LLC	Nan	832-728 5523	BC	Nan		HOUSTC	TX	77023	805	S	TE	Nan			BRYAN	BRAZOS	TX	77803	67940	PROGRE	18	Nan	10/17/202	Nan	Nan
0660259	Vehicle	DALLAS VEHICLE STORAGE LLC	Nan	214-797-STE 100-25	HIGH	DALLAS	TX		75205	3406	EA	Nan					DALLAS	DALLAS	TX	75247	101272	CENTUR	18	Nan	*****	Nan	Nan
0660091	Vehicle	FLEX SERVICES OF NTX, LLC	Nan	940-435 2827	W F	Nan		GAINES	TX	76240	2827	W F	Nan				GAINES	COOKE	TX	76240	95859	AMGUAF	18	Nan	9/28/202	Nan	Nan
0660613	Vehicle	GS INDUSTRIAL HOLDINGS, LLC	Nan	844-366 420	S ME	Nan		ODESSA	TX	79761	2625	S H	Nan				ODESSA	ECTOR	TX	79766	93805	NATIONA	18	Nan	*****	Nan	Nan
0660177	Vehicle	INTERSTATE TOWING LLC	Nan	281-592-4603		Nan		CLEVELA	TX	77328	15356	H	Nan				SPLENDI	MONTGT	TX	77372	94527	BENCHM	18	Nan	*****	Nan	Nan
0660495	Vehicle	J&J'S TOWING & RECOVERY, LLC	Nan	956-272 710	EL W	Nan		WESLAC	TX	78589	15715	E H	Nan				EDINBUR	HIDALGT	TX	78542	94527	BENCHM	18	Nan	*****	7/18/202	Nan
0660122	Vehicle	JUAN MEDINA	Nan	915-478-1708	BE	Nan		EL PASC	TX	79336	13754	GL	Nan				EL PASC	TX		79328	67940	PROGCT	18	Nan			
0655324	Vehicle	1010 TOWING AND TRANSPORT LLC	Nan	ROUND F 512-218-PO BOX		Nan		ROUND F	TX	78680	1520	SAI	Nan				ROUND F	WILLIAM	TX	78681	95859	AMGUAF	18	Nan	1/19/202	Nan	Nan
0642789	Vehicle	1ST CHOICE TOWING & RECOVERY LLC	Nan	214-544-311	TALT	Nan		MCKINNE	TX	75700	5610	N M	Nan				MELISSA	COLLIN	TX	75454	1E+07	OBSDIAI	18	Nan	1/16/202	Nan	Nan
0612137	Vehicle	1ST CHOICE WRECKER SERVICE	Nan	972-524 311	TALT	Nan		TERRELL	TX	75160	311	TALT	Nan				TERRELL	Nan	TX	75160	95779	INTREPIE	18	Nan	2/23/202	Nan	Nan
0655000	Vehicle	1ST CHOICE WRECKER SERVICE LLC	Nan	409-373 2235	HIC	Nan		SILSBEE	TX	77656	8140	ANI	Nan				SILSBEE	HARDIN	TX	77656	95859	AMGUAF	18	Nan	2/21/202	Nan	Nan
0652337	Vehicle	1ST CHOICE WRECKER SERVICE LLC	Nan	409-225 2235	HIC	Nan		SILSBEE	TX	77656	2235	HIC	Nan				SILSBEE	HARDIN	TX	77656	95859	AMGUAF	18	Nan	2/21/202	Nan	Nan
0654581	Vehicle	1ST CHOICE WRECKER SERVICE LLC	Nan	409-373 2235	HIC	Nan		SILSBEE	TX	77656	135	W M	Nan				KOUNTZ	HARDIN	TX	77625	95859	AMGUAF	18	Nan	2/21/202	Nan	Nan
0514204	Vehicle	24 HOUR WRECKER SERVICE, INC	Nan	972-227 PO BOX		Nan		LANCAS	TX	75146	616	NOR	Nan				LANCAS	DALLAS	TX	75146	1E+07	TesuraIn	18	Nan	*****	Nan	Nan
0655702	Vehicle	2477 TOWING, LLC	Nan	ANYTIME 254-444 8231	W F	UNIT B		BELTON	TX	78513	321	W VE	# 10				KILLEEN	BELL	TX	78541	95859	AMGUAF	18	Nan	*****	Nan	Nan
0659323	Vehicle	2477 TOWING, LLC	Nan	ANYTIME 254-444 8231	W F	Nan		BELTON	TX	78513	8231	W F	Nan				BELTON	BELL	TX	78513	95859	AMGUAF	18	Nan	*****	Nan	Nan
0651932	Vehicle	2477 WRECKER SERVICE LLC	Nan	956-434 901	S WIL	Nan		SAN BEN	TX	78586	213	JACK	Nan				PORT ISV	CAMERC	TX	78578	95859	AMGUAF	18	Nan	3/30/202	Nan	Nan
0654479	Vehicle	2477 TOWING AND RECOVERY LLC	Nan	MIDLANE 432-557 3601	N C	Nan		MIDLANE	TX	79705	3601	N C	Nan				MIDLANE	MIDLANE	TX	79705	10350	ATLANTI	18	Na	7/23/202	Nan	Nan
0642881	Vehicle	271 VREI	Nan	903-845 1825	EAS	Na		GLADEW	TX	75647	1825	EAS	Nan				GLADEW	GREGG	TX	75647	101350	ATLANTI	18	Nan	10/23/20	Nan	Na
0656637	Vehicle	230 WRECKER SERVICE INC	Nan	HWY 29C 281-230 18619	BE	Na		HOCKLE	TX	77447	13548	US	Nan				SPLENDI	MONTGT	TX	77372	67940	PROGRE	18	Na	*****	Nan	Nan
0650616	Vehicle	230 WRECKER SERVICE INC	Nan	HWY 29C 281-230 18619	BE	Na		HOCKLE	TX	77447	23152	W	Nan				WALLER	WALLER	TX	77484	67940	PROGRE	18	Nan	*****	Na	Na
0657711	Vehicle	3 ACES WRECKER SERVICE, LLC	Nan	281-972-24015	IN	Nan		WALLIS	TX	77537	24015	IN	STE C				WALLIS	TX	TX	77537	95859	AMGUAF	18	Nan	*****	Nan	Nan
0657712	Vehicle	3 ACES WRECKER SERVICE, LLC	Nan	281-972-24015	IN	STE C		WALLIS	TX	77537	10204	QL	SUITE C				BAYNOT	TX	TX	77521	95859	AMGUAF	18	Na	*****	Nan	Nan
0655395	Vehicle	3 BROTHERS ENTERPRISES LLC	Na	713-797-201	HOL	Nan		HOUSTC	TX	77045	201	HOL	Nan				HOUSTC	HARRIS	TX	77045	101213	BURLING	18	Nan	10/30/20	Na	Nan
0655234	Vehicle	3 C'S AND S, LLC	Nan	S & W TC 903-685	PO BOX		Nan		TX	75657	601	S W	NA	Nan			JEFFERS	MARION	TX	75657	67940	PROGRE	18	Nan	11/22/201	Na	Nan
0653897	Vehicle	Storage Facilities	Nan	817-573 6701	GLE	Nan		GRANDE	TX	76048	6701	GLE	Nan				GRANDE	Nan	TX	76048	95859	AMGUAF	18	Na	7/14/202	Nan	Nan
0650523	Vehicle	365 TOWING & RECOVERY	Nan	254-383 2303	S F	Nan		KILLEEN	TX	76542	2303	S F	Na				KILLEEN	BELL	TX	76542	95859	AMGUAF	18	Nan	*****	Nan	Nan
0660818	Vehicle	3H TOWING, LLC	Na	915-255-14288	TIL	Na		EL PASC	TX	79336	12851	AZ	Nan				EL PASC	EL PASC	TX	79336	67940	PROGRE	18	Nan	*****	Na	Nan
0656258	Vehicle	3S TOWING LLC	Nan	956-542 1284	DR I	Nan		BROWN	TX	78526	1284	DR I	Nan				BROWN	CAMERC	TX	78526	95859	AMGUAF	18	Nan	1/13/202	Na	Nan
0000569	Vehicle	4 LAMP PTR	Nan	GORDOP 806-238 1111	WES	Nan		ABERNA	TX	79311	1111	WES	Na				ABERNA	Na	TX	79311	47950		18	Nan	8/31/201	Na	Nan
0606248	Vehicle	4A'S ENTERPRISES, INC	Na	H 8110 361-854	PO BOX		Nan	CORPUS	TX	78427	2530	HO	Na				CORPUS	Nan	TX	78415	1E+07	TesuraIn	18	Na	1/5/202	Nan	Nan
0606250	Vehicle	4A'S ENTERPRISES, INC	Na	ERKAT'S 361-854	PO BOX		Na	CORPUS	TX	78427	2528	HO	Nan				CORPUS	Na	TX	78415	1E+07	TesuraIn	18	Nan	1/5/202	Na	Nan
0654762	Vehicle	4AM STORAGE & RECOVERY INC	Nan	713-269 3622	N G	Na		FORT W	TX	76106	3622	N G	Nan				FORT W	TARRAN	TX	76106	101213	BURLING	18	Nan	*****	Nan	Na
0656564	Vehicle	512 ADJUSTERS INC	Nan	512-394 PO BOX		Nan		PFLUGER	TX	78691	3610	BR I	Na				AUSTIN	TRAVIS	TX	78754	22380	CUMISIN	18	Nan	*****	Nan	Na
0643300	Vehicle	5151 STREET TOWING	Na	409-744 PO BOX		Nan		GALVES	TX	77552	4328	W	NA				GALVES	TX		77550	95859	AMGUAF	18	Nan	8/25/202	Na	Nan
0650232	Vehicle	620 LAKESIDE TOWING LLC	Nan	512-266 PO BOX		Nan		CEDAR F	TX	78630	12228	R I	Nan				AUSTIN	WILLIAM	TX	78729	93816	ACUTY	18	Nan	*****	Na	Nan
0655537	Vehicle	67 TOWING & SERVICES, LLC	Nan	254-978 PO BOX		Nan		IREDELL	TX	76649	209	HW Y	Na				IREDELL	Nan	TX	76649	101036	COLONY	18	Nan	*****	Nan	Na
0660765	Vehicle	67 TOWING & SERVICES, LLC	Nan	254-978 PO BOX		Nan		IREDELL	TX	76649	33811	B S	Nan				HICO	EPATH	TX	76457	101036	COLONY	18	Nan	3/19/202	Na	Nan
0657458	Vehicle	915 TOWING AND RECOVERY, LLC	Nan	915-232 10712	SC	Nan		EL PASC	TX	79335	7264	AL	Na				EL PASC	EL PASC	TX	79375	67940	PROGRE	18	Na	8/30/202	Nan	Nan
0640857	Vehicle	956 TOWING & RECOVERY	Na	956-240 15	WES	Nan		MISSION	TX	78573	1515	WES	Nan				MISSION	Nan	TX	78573	95859	AMGUAF	18	Nan	*****	Nan	Nan
0000031	Vehicle	A & A AUTO & WRECKER SERVICE	Nan	ALFONS 956-383 8025	E H	Na		EDINBUR	TX	78539	4	MILES I	Nan				EDINBUR	HIDALGT	TX	78542	95859	AMGUAF	18	Na	*****	Nan	Nan
0549186	Vehicle	A & A REPAIR	Na	432-283 PO BOX		Nan		VAN HOF	TX	79855	806	E BF	Nan				VAN HOF	CULBER	TX	79855	67940	PROGRE	18	Na	4/24/202	Nan	Nan
0643405	Vehicle	A & A TOWING AND RECOVERY LLC	Na	A & A TO 956-233 101	S ARI	Nan		LOS FRE	TX	78566	101	S ARI	Nan				LOS FRE	CAMERC	TX	78566	95859	AMGUAF	18	Na		Nan	Nan
0653350	Vehicle	A & A WRECKER AND RECOVERY L.L.C.	Nan	512-670 2963	MA	Na		AUSTIN	TX	78722	2905	HC	STE A				AUSTIN	TRAVIS	TX	78728	95859	AMGUAF	18	Nan	6/17/202	Nan	Nan
0655845	Vehicle	A & A WRECKER AND RECOVERY L.L.C.	Na	512-670 2963	MA	Na		AUSTIN	TX	78722	2963	MA	Na				AUSTIN	TRAVIS	TX	78722	95859	AMGUAF	18	Na	6/17/202	Nan	Nan
0655383	VSF	A & E TOWS LLC	Nan	972-557 PO BOX		Nan		KAUFMA	TX	75142	103	GRIC	Na				MESQUIT	DALLAS	TX	75149	1E+07	TesuraIn	18	Nan	10/31/202	Nan	Nan
0515235	Vehicle	A & L DELGADO'S CORPORATION	Nan	DELGAD 979-234 3219	FM	Na		EAGLE L	TX	77434	3219	FM	Nan				EAGLE L	COLORA	TX	77434	95859	AMGUAF	18	Na	8/17/202	Na	Nan
0643569	Vehicle	A & L DELGADO'S CORPORATION	Nan	DELGAD 979-234 3219	FM	Nan		EAGLE L	TX	77434	1332	FM	Na				SEALY	COLORA	TX	77474	95859	AMGUAF	18	Nan	8/17/202	Nan	Nan

Output:

```
PS D:\VsCode> python -u "d:\VsCode\Python\Assignment_DataCleaning.py"
```

CERTIFICATE_NUMBER	"LICENSE_TYPE"	CUSTOMER_NAME	CUSTOMER_DBA_NAME	PHONE	...	SITE_ZIP_PREFIX	TDI_COMPANY_NBR	"INSURER"	POLICY_TYPE	EFFECTIVE_DATE	
3	0650613VSF	Vehicle Storage Facilities	GS INDUSTRIAL HOLDINGS, LLC	GULF STATES TOWING	844-366-4853	...	79766	93885	NATIONAL LIABILITY & FIRE INSURANCE COMPANY	18	2024-02-06
14	0655782VSF	Vehicle Storage Facilities	24/7 TOWING, LLC	ANYTIME TOWING	254-444-1786	...	76541	95859	ANGUARD INSURANCE COMPANY	18	2023-10-03
15	0659922VSF	Vehicle Storage Facilities	24/7 TOWING, LLC	ANYTIME TOWING	254-444-1786	...	76513	95859	ANGUARD INSURANCE COMPANY	18	2023-10-03
19	0656637VSF	Vehicle Storage Facilities	290 WRECKER SERVICE INC.	HAY 290 WRECKER	281-290-9290	...	77372	67940	PROGRESSIVE COUNTY MUTUAL INSURANCE COMPANY	18	2023-04-10
20	0650619VSF	Vehicle Storage Facilities	290 WRECKER SERVICE INC.	HAY 290 WRECKER	281-290-9290	...	77484	67940	PROGRESSIVE COUNTY MUTUAL INSURANCE COMPANY	18	2023-04-10
36	0650232VSF	Vehicle Storage Facilities	620 LAKESIDE TOWING LLC	LAKESIDE CITY IMPOUND VSF	512-266-8620	...	78729	93816	ACUTY, A MUTUAL INSURANCE COMPANY	18	2019-08-01
41	0000031VSF	Vehicle Storage Facilities	A & A AUTO & WRECKER SERVICE	ALFONSO FLORES	956-383-7362	...	78542	95859	ANGUARD INSURANCE COMPANY	18	2024-02-03

[7 rows x 20 columns]

Conclusion: Data Cleaning is confusing since it is up to the user for what the output would be especially if the data set from user inputs which a lot of problems could occur. But Data cleaning is important since it simplifies the output to be easily usable.