

```
1 from google.colab import files
2 uploaded = files.upload()
3
4 import pandas as pd
5 import seaborn as sns
6 import matplotlib.pyplot as plt
7
8 df = pd.read_csv("avocado.csv")
9 df.head()
10
11 print(df)
12
13 num_objetos = len(df)
14 print("Número de objetos:", num_objetos)
15
16 valor = df.iloc[14, 1]
17 print("Valor de la variable 2 del objeto 15:", valor)
18
19 min_val = df.iloc[:, 2].min()
20 max_val = df.iloc[:, 2].max()
21
22 print("Mínimo de la variable 3:", min_val)
23 print("Máximo de la variable 3:", max_val)
24
25 plt.figure(figsize=(6, 6))
26 sns.boxplot(data=df, y="AveragePrice", showfliers=False) # Esta opción oculta los outliers
27 plt.title("Boxplot del Precio Promedio de Aguacates (sin outliers)")
28 plt.ylabel("Precio Promedio")
29 plt.grid(True)
30 plt.show()
31
32 plt.figure(figsize=(10, 6))
33 plt.hist(df['AveragePrice'], bins=20, color='green', edgecolor='black') # Menos bins
34 plt.title('Distribución del Precio Promedio de Aguacates')
35 plt.xlabel('Precio Promedio')
36 plt.ylabel('Frecuencia')
37 plt.grid(True)
38 plt.show()
39
40 # Seleccionar solo columnas numéricas
41 numeric_df = df.select_dtypes(include=['float64', 'int64'])
42
43 # Calcular matriz de correlación
44 correlation_matrix = numeric_df.corr()
45
46 print("Matriz de Correlación:")
47 print(correlation_matrix)
48
49 plt.figure(figsize=(12, 8))
50 sns.heatmap(correlation_matrix, annot=True, cmap='coolwarm', center=0)
51 plt.title('Mapa de Calor de Correlación entre Variables')
52 plt.show()
53
54 print("Medias:")
55 print(numeric_df.mean())
56
57 print("\nMedianas:")
58 print(numeric_df.median())
59
60 print("\nDesviaciones estándar:")
61 print(numeric_df.std())
62
63 print(numeric_df.describe())
64
```

Elegir archivos avocado.csv

- avocado.csv(text/csv) - 1989197 bytes, last modified: 5/5/2025 - 100% done

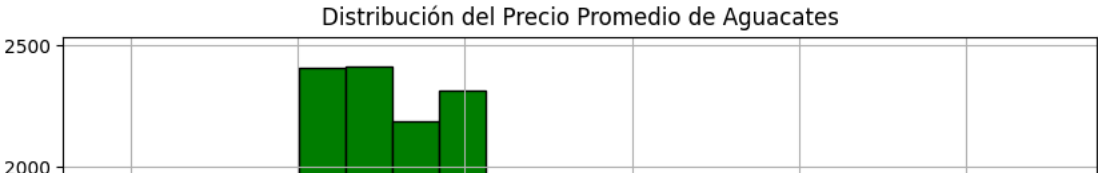
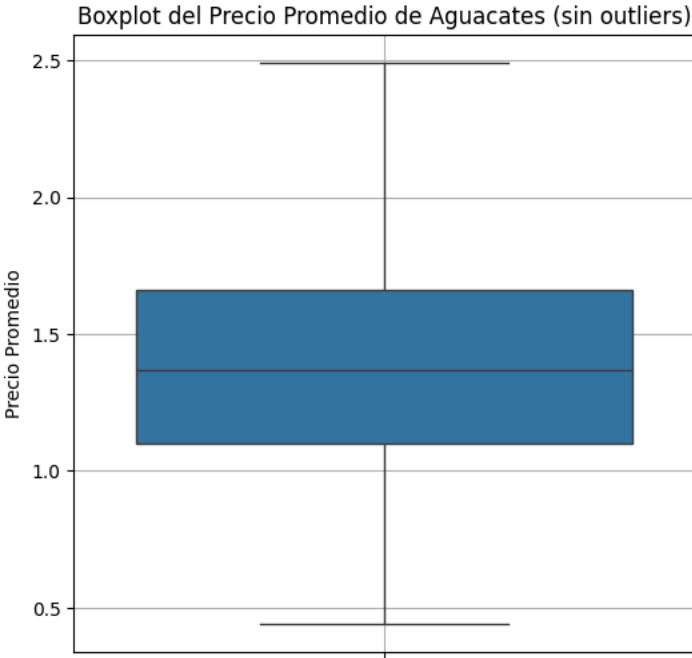
Saving avocado.csv to avocado (2).csv

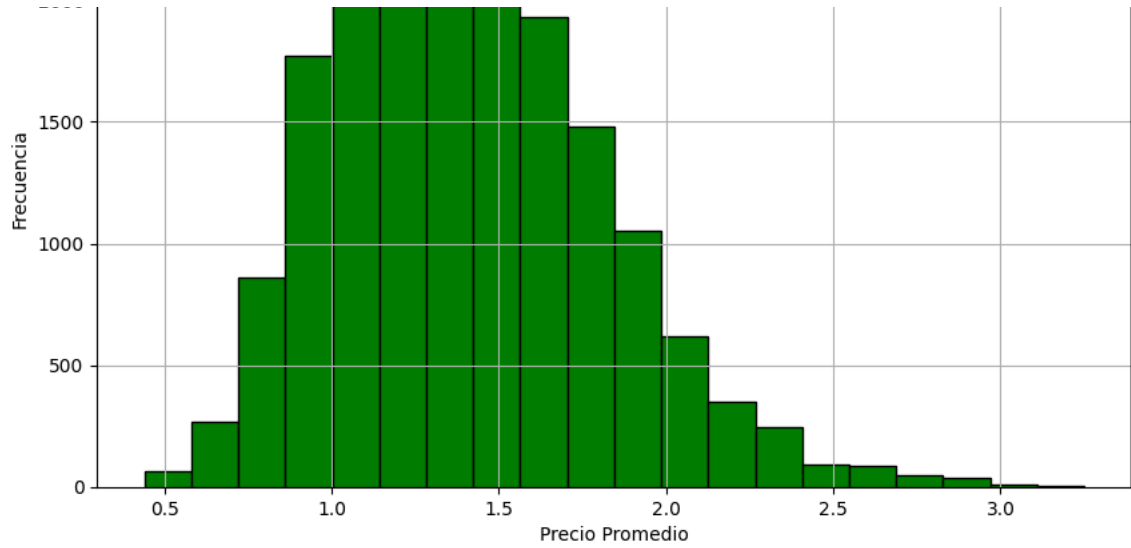
Unnamed: 0	Date	AveragePrice	Total Volume	4046	4225
0	0 2015-12-27	1.33	64236.62	1036.74	54454.85
1	1 2015-12-20	1.35	54876.98	674.28	44638.81
2	2 2015-12-13	0.93	118220.22	794.70	109149.67
3	3 2015-12-06	1.08	78992.15	1132.00	71976.41
4	4 2015-11-29	1.28	51039.60	941.48	43838.39
...
18244	7 2018-02-04	1.63	17074.83	2046.96	1529.20
18245	8 2018-01-28	1.71	13888.04	1191.70	3431.50
18246	9 2018-01-21	1.87	13766.76	1191.92	2452.79
18247	10 2018-01-14	1.93	16205.22	1527.63	2981.04
18248	11 2018-01-07	1.62	17489.58	2894.77	2356.13

	4770	Total Bags	Small Bags	Large Bags	XLarge Bags	type
0	48.16	8696.87	8603.62	93.25	0.0	conventional
1	58.33	9505.56	9408.07	97.49	0.0	conventional
2	130.50	8145.35	8042.21	103.14	0.0	conventional
3	72.58	5811.16	5677.40	133.76	0.0	conventional
4	75.78	6183.95	5986.26	197.69	0.0	conventional
...
18244	0.00	13498.67	13066.82	431.85	0.0	organic
18245	0.00	9264.84	8940.04	324.80	0.0	organic
18246	727.94	9394.11	9351.80	42.31	0.0	organic
18247	727.01	10969.54	10919.54	50.00	0.0	organic
18248	224.53	12014.15	11988.14	26.01	0.0	organic

	year	region
0	2015	Albany
1	2015	Albany
2	2015	Albany
3	2015	Albany
4	2015	Albany
...
18244	2018	WestTexNewMexico
18245	2018	WestTexNewMexico
18246	2018	WestTexNewMexico
18247	2018	WestTexNewMexico
18248	2018	WestTexNewMexico

[18249 rows x 14 columns]
Número de objetos: 18249
Valor de la variable 2 del objeto 15: 2015-09-20
Mínimo de la variable 3: 0.44
Máximo de la variable 3: 3.25





Matriz de Correlación:

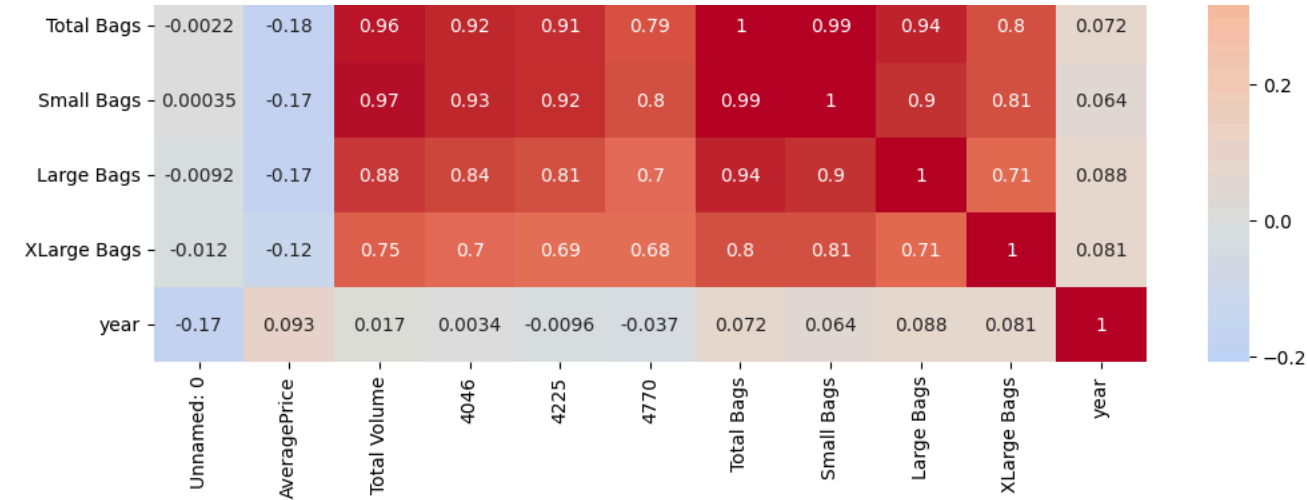
	Unnamed: 0	AveragePrice	Total Volume	4046	4225	4770
Unnamed: 0	1.000000	-0.133008	0.014035	0.017628	0.019829	
AveragePrice	-0.133008	1.000000	-0.192752	-0.208317	-0.172928	
Total Volume	0.014035	-0.192752	1.000000	0.977863	0.974181	
4046	0.017628	-0.208317	0.977863	1.000000	0.926110	
4225	0.019829	-0.172928	0.974181	0.926110	1.000000	
4770	0.041752	-0.179446	0.872202	0.833389	0.887855	
Total Bags	-0.002219	-0.177088	0.963047	0.920057	0.905787	
Small Bags	0.000347	-0.174730	0.967238	0.925280	0.916031	
Large Bags	-0.009196	-0.172940	0.880640	0.838645	0.810015	
XLarge Bags	-0.011546	-0.117592	0.747157	0.699377	0.688809	
year	-0.171667	0.093197	0.017193	0.003353	-0.009559	

	4770	Total Bags	Small Bags	Large Bags	XLarge Bags
Unnamed: 0	0.041752	-0.002219	0.000347	-0.009196	-0.011546
AveragePrice	-0.179446	-0.177088	-0.174730	-0.172940	-0.117592
Total Volume	0.872202	0.963047	0.967238	0.880640	0.747157
4046	0.833389	0.920057	0.925280	0.838645	0.699377
4225	0.887855	0.905787	0.916031	0.810015	0.688809
4770	1.000000	0.792314	0.802733	0.698471	0.679861
Total Bags	0.792314	1.000000	0.994335	0.943009	0.804233
Small Bags	0.802733	0.994335	1.000000	0.902589	0.806845
Large Bags	0.698471	0.943009	0.902589	1.000000	0.710858
XLarge Bags	0.679861	0.804233	0.806845	0.710858	1.000000
year	-0.036531	0.071552	0.063915	0.087891	0.081033

	year
Unnamed: 0	-0.171667
AveragePrice	0.093197
Total Volume	0.017193
4046	0.003353
4225	-0.009559
4770	-0.036531
Total Bags	0.071552
Small Bags	0.063915
Large Bags	0.087891
XLarge Bags	0.081033
year	1.000000

Mapa de Calor de Correlación entre Variables





Medias:
Unnamed: 0 24.232232
AveragePrice 1.405978
Total Volume 850644.013009
4046 293008.424531
4225 295154.568356
4770 22839.735993
Total Bags 239639.202060
Small Bags 182194.686696
Large Bags 54338.088145
XLarge Bags 3106.426507
year 2016.147899
dtype: float64

Medianas:
Unnamed: 0 24.00
AveragePrice 1.37
Total Volume 107376.76
4046 8645.30
4225 29061.02
4770 184.99
Total Bags 39743.83
Small Bags 26362.82
Large Bags 2647.71
XLarge Bags 0.00
year 2016.00
dtype: float64


Desviaciones estándar:
Unnamed: 0 1.548104e+01
AveragePrice 4.026766e-01
Total Volume 3.453545e+06
4046 1.264989e+06
4225 1.204120e+06
4770 1.074641e+05
Total Bags 9.862424e+05
Small Bags 7.461785e+05
Large Bags 2.439660e+05
XLarge Bags 1.769289e+04
year 9.399385e-01
dtype: float64

	Unnamed: 0	AveragePrice	Total Volume	4046	4225
count	18249.000000	18249.000000	1.824900e+04	1.824900e+04	1.824900e+04
mean	24.232232	1.405978	8.506440e+05	2.930084e+05	2.951546e+05
std	15.481045	0.402677	3.453545e+06	1.264989e+06	1.204120e+06
min	0.000000	0.440000	8.456000e+01	0.000000e+00	0.000000e+00
25%	10.000000	1.100000	1.083858e+04	8.540700e+02	3.008780e+03
50%	24.000000	1.370000	1.073768e+05	8.645300e+03	2.906102e+04
75%	38.000000	1.660000	4.329623e+05	1.110202e+05	1.502069e+05
max	52.000000	3.250000	6.250565e+07	2.274362e+07	2.047057e+07

	4770	Total Bags	Small Bags	Large Bags	XLarge Bags
count	1.824900e+04	1.824900e+04	1.824900e+04	1.824900e+04	18249.000000
mean	2.283974e+04	2.396392e+05	1.821947e+05	5.433809e+04	3106.426507
std	1.074641e+05	9.862424e+05	7.461785e+05	2.439660e+05	17692.894652
min	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000
25%	0.000000e+00	5.088640e+03	2.849420e+03	1.274700e+02	0.000000
50%	1.849900e+02	3.974383e+04	2.636282e+04	2.647710e+03	0.000000
75%	6.243420e+03	1.107834e+05	8.333767e+04	2.202925e+04	132.500000
max	2.546439e+06	1.937313e+07	1.338459e+07	5.719097e+06	551693.650000

	year
count	18249.000000

```
mean    2016.147899
std      0.939938
min     2015.000000
25%     2015.000000
50%     2016.000000
75%     2017.000000
max     2018.000000
```



El precio promedio del aguacate tiende a disminuir con mayores volúmenes de venta

El tipo de empaque más común es la bolsa pequeña

Los tipos de aguacate 4046 y 4225 dominan las ventas.