

```


import os
# Find the latest version of spark 3.0 from http://www.apache.org/dist/spark/ and enter as the spark version
# For example:
# spark_version = 'spark-3.0.3'
spark_version = 'spark-3.2.1'
os.environ['SPARK_VERSION']=spark_version

# Install Spark and Java
!apt-get update
!apt-get install openjdk-11-jdk-headless -qq > /dev/null
!wget -q http://www.apache.org/dist/spark/\$SPARK\_VERSION/\$SPARK\_VERSION-bin-hadoop2.7.tgz
!tar xf $SPARK_VERSION-bin-hadoop2.7.tgz
!pip install -q findspark

# Set Environment Variables
import os
os.environ["JAVA_HOME"] = "/usr/lib/jvm/java-11-openjdk-amd64"
os.environ["SPARK_HOME"] = f"/content/{spark_version}-bin-hadoop2.7"

# Start a SparkSession
import findspark
findspark.init()

```

 Hit:1 https://developer.download.nvidia.com/compute/cuda/repos/ubuntu1804/x86_64 InRelease
 Ign:2 https://developer.download.nvidia.com/compute/machine-learning/repos/ubuntu1804/x86_64 InRelease
 Hit:3 https://developer.download.nvidia.com/compute/machine-learning/repos/ubuntu1804/x86_64 Release
 Hit:4 <https://cloud.r-project.org/bin/linux/ubuntu> bionic-cran40/ InRelease
 Get:5 <http://security.ubuntu.com/ubuntu> bionic-security InRelease [88.7 kB]
 Hit:6 <http://ppa.launchpad.net/c2d4u.team/c2d4u4.0+/ubuntu> bionic InRelease
 Hit:7 <http://archive.ubuntu.com/ubuntu> bionic InRelease
 Get:8 <http://archive.ubuntu.com/ubuntu> bionic-updates InRelease [88.7 kB]
 Hit:10 <http://ppa.launchpad.net/cran/libgit2/ubuntu> bionic InRelease
<http://ppa.launchpad.net/deadsnakes/ppa/ubuntu> bionic InRelease
<http://ppa.launchpad.net/graphics-drivers/ppa/ubuntu> bionic InRelease
 Fetching 252 kB in 3s (98.5 kB/s)
 Reading package lists... Done

Saving...



```
!pip install pyspark
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Requirement already satisfied: pyspark in /usr/local/lib/python3.7/dist-packages (3.2.1)
Requirement already satisfied: py4j==0.10.9.3 in /usr/local/lib/python3.7/dist-packages (from pyspark) (0.10.9.3)
```

```
!wget https://jdbc.postgresql.org/download/postgresql-42.3.6.jar
```

```
--2022-05-29 21:23:53-- https://jdbc.postgresql.org/download/postgresql-42.3.6.jar
Resolving jdbc.postgresql.org (jdbc.postgresql.org)... 72.32.157.228, 2001:4800:3e1:1::228
Connecting to jdbc.postgresql.org (jdbc.postgresql.org)|72.32.157.228|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1041072 (1017K) [application/java-archive]
Saving to: 'postgresql-42.3.6.jar.1'
```

```
postgresql-42.3.6.j 100%[=====>] 1017K 6.23MB/s in 0.2s
```

```
2022-05-29 21:23:53 (6.23 MB/s) - 'postgresql-42.3.6.jar.1' saved [1041072/1041072]
```

```
from pyspark.sql import SparkSession
spark = SparkSession.builder.appName("M16-Amazon-Challenge").config("spark.driver.extraClassPath", "/content/postgresql-42.3.6.jar.1").getOrCreate()
```

```
from pyspark import SparkFiles
url = "https://s3.amazonaws.com/amazon-reviews-pds/tsv/amazon_reviews_us_Furniture_v1_00.tsv.gz"
spark.sparkContext.addFile(url)
df = spark.read.option("encoding", "UTF-8").csv(SparkFiles.get("amazon_reviews_us_Furniture_v1_00.tsv.gz"), sep="\t")
df.show()
```

review_id	product_id	product_parent	product_title	product_category	star_rating
R960AHLFKDV	B004HB5E0E	488241329	Shoal Creek Compu...	Furniture	5
R16LGVFMFKIUTOG	B0042TNMMS	205864445	Dorel Home Produc...	Furniture	5
R1AIMEEPYHMOE4	B0030MPBZ4	124663823	Bathroom Vanity T...	Furniture	5
R1892CCSZWZ9SR	B005G02ESA	382367578	Sleep Master Ulti...	Furniture	5
R285P679YWKD1	B005JS8AUA	309497463	1 1/4" GashGuards...	Furniture	5

US	18311821	RLB33HJBXHZHU	B00AVUQQGQ	574537906	Serta Bonded Leat...	Furniture
US	42943632	R1VGTZ94DBAD6A	B00CFY20GQ	407473883	Prepac Shoe Stora...	Furniture
US	43157304	R168KF82ICSOHD	B00FKC48QA	435120460	HomCom PU Leather...	Furniture
US	51918480	R20DIYIJ0OCMOG	B00N9IAL9K	356495985	Folding Step Stool	Furniture
US	14522766	RD46RNV0HNZSC	B001T4XU1C	243050228	Ace Bayou Adult V...	Furniture
US	43054112	R2JDOCETTM3AXS	B002HRFLBC	93574483	4D Concepts Audio...	Furniture
US	26622950	R33YMW36IDZ6LE	B006MISZOC	941823468	Zinus SC-SBBK-14N...	Furniture
US	17988940	R30ZGGUHZ04C1S	B008BMGABC	460567746	Poundex Marble Di...	Furniture
US	18444952	RS2EZU76IK2BT	B00CO2VH5Y	829613894	Safavieh Lyndhurs...	Furniture
US	16937084	R1GJC1BP028X09	B00LI4RJQ0	816478187	Sauder Boone Moun...	Furniture
US	23665632	R2VKJPGXXEK5GP	B0046EC1D0	358594389	Winsome Wood Brea...	Furniture
US	4110125	R17KS83G3KLT97	B00DQQPL36	312571325	HODEDAAH IMPORT Me...	Furniture
US	107621	R3PQL8SR4NEHWL	B003X7RWB2	402665054	Flash Furniture H...	Furniture
US	2415090	R2F5WW7WNO5RRG	B001TJYPJ8	854989315	Sleep Revolution ...	Furniture
US	48285966	R3UDJKVWQCFIC9	B000TMHX9A	814079288	Flash Furniture V...	Furniture

only showing top 20 rows

```
# check df for data types
df
```

```
DataFrame[marketplace: string, customer_id: int, review_id: string, product_id: string, product_parent: int,
```

```
# Filter df total_votes for greater than or equal to 20
totalvotes_df = df.filter("total_votes>=20")
totalvotes_df.show()
```

marketplace	customer_id	review_id	product_id	product_parent	product_title	product_category	star_
		8D0KJ0J9L00	B00BWC1X3S	328960153	Zinus 14 Inch Eli...	Furniture	
US	18808840	R1BEINAIQFBRJC	B007I81A60	68465765	8" Night Therapy ...	Furniture	
US	17820936	R2L59KIJH302P9	B007QULII0	812343799	LexMod Stencil Di...	Furniture	
US	50476494	RR99CPG695T0I	B013L4ZWWW	124365349	Arctic Dreams 10"...	Furniture	
US	21846903	R1XQNKKUPCMWVO	B00IPN64CC	867520220	Upholstered Platf...	Furniture	
US	36021042	R3JUXVCT1NSK2A	B003PSNAI8	219454481	Fashion Bed Group...	Furniture	

US	2067832	R3GNSIFV1J2Y2B	B008RKOL9G	589861187	Big Joe Media Lou...	Furniture
US	15624624	RTCRZARYY4LXX	B00E97HPLW	132456290	Flash Furniture M...	Furniture
US	13214979	R3OFB4P7Y8WR27	B00QBZ25R4	637686095	Tuft & Needle Mat...	Furniture
US	37722720	R3MTAYGQM25N63	B007J0E7WQ	562508640	Target Marketing ...	Furniture
US	31278317	RJNDSWES5ISZ7	B00HTUOoba	995797488	Chrome Metal Bar ...	Furniture
US	21515203	R15R7STOZZP2A4	B002V1Q65Y	320882925	Coaster Company P...	Furniture
US	48672213	R33V5WV529NK8E	B00MULXWMU	491669252	Modway Annabel Tw...	Furniture
US	50914859	RIR9ZI3L80P7P	B00T3MUB4Q	76857765	WinkBeds - Mattre...	Furniture
US	7691605	R10P6SDC1D6C3I	B00LZM5IOK	420170495	Modway Lily Twin ...	Furniture
US	46509642	R110G9UVLI2MLS	B00OKIPS0A	415535727	Milton Greens Sta...	Furniture
US	47359106	R1I4LN1WR3YVJX	B00NUS5D4C	148579574	AmazonBasics 5-Sh...	Furniture
US	23511203	R1B76MPCS05UX9	B00P7RWWM0	259554464	Mega Motion Easy ...	Furniture
US	6407891	R17PJIKAZ3U6BG	B00DW7LB0G	366981061	Simpli Home Lared...	Furniture
US	8113934	R2T3TLCX42RWLY	B009V5YVT6	598492986	AVE SIX Reflectio...	Furniture

only showing top 20 rows

```
#Filter the new df created above and creates a new df to retrieve all the rows where the number of helpful_votes d
helpful_v_50_df = totalvotes_df.filter("helpful_votes/total_votes>=0.5")
helpful_v_50_df.show()
```

marketplace	customer_id	review_id	product_id	product_parent	product_title	product_category	star_
US	41681546	RL8D0KJ0J9L00	B00BWC1X3S	328960153	Zinus 14 Inch Eli...	Furniture	
US	16806846	R1BEINAIQFBRJC	B007I81A60	68465765	8" Night Therapy ...	Furniture	
US	17820936	R2L59KIJH302P9	B007QULII0	812343799	LexMod Stencil Di...	Furniture	
US	50476494	RR99CPG695T0I	B013L4ZWWW	124365349	Arctic Dreams 10"...	Furniture	
US	21846903	R1XQNKKUPCMWVO	B00IPN64CC	867520220	Upholstered Platf...	Furniture	
US	36021042	R3JUXVCT1NSK2A	B003PSNAI8	219454481	Fashion Bed Group...	Furniture	
US	15624624	RTCRZARYY4LXX	B00E97HPLW	132456290	Flash Furniture M...	Furniture	
US	13214979	R3OFB4P7Y8WR27	B00QBZ25R4	637686095	Tuft & Needle Mat...	Furniture	
US	37722720	R3MTAYGQM25N63	B007J0E7WQ	562508640	Target Marketing ...	Furniture	
US	31278317	RJNDSWES5ISZ7	B00HTUOoba	995797488	Chrome Metal Bar ...	Furniture	
US	21515203	R15R7STOZZP2A4	B002V1Q65Y	320882925	Coaster Company P...	Furniture	
US	48672213	R33V5WV529NK8E	B00MULXWMU	491669252	Modway Annabel Tw...	Furniture	
US	50914859	RIR9ZI3L80P7P	B00T3MUB4Q	76857765	WinkBeds - Mattre...	Furniture	
US	7691605	R10P6SDC1D6C3I	B00LZM5IOK	420170495	Modway Lily Twin ...	Furniture	

US	46509642	R110G9UVLI2MLS	B00OKIPS0A	415535727	Milton Greens Sta...	Furniture
US	47359106	R1I4LN1WR3YVJX	B00NUS5D4C	148579574	AmazonBasics 5-Sh...	Furniture
US	23511203	R1B76MPCS05UX9	B00P7RWWM0	259554464	Mega Motion Easy ...	Furniture
US	6407891	R17PJIKAZ3U6BG	B00DW7LB0G	366981061	Simpli Home Lared...	Furniture
US	8113934	R2T3TLCX42RWLY	B009V5YVT6	598492986	AVE SIX Reflectio...	Furniture
US	48960668	R39YWJ09ZCPW7P	B00UXRSDF4	949941628	2xhome - Black - ...	Furniture

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only showing top 20 rows

```
# print count
print(helpful_v_50_df.count())
```

18155

```
Total_Helpfull_reviews = helpful_v_50_df.count()
```

```
#Filter the df created above and creates a new df or table that retrieves all the rows where a review was written
vine_review_df = helpful_v_50_df.filter(helpful_v_50_df["vine"] == "Y")
vine_review_df_paid = vine_review_df.filter(vine_review_df["verified_purchase"] == "Y")
vine_review_df_nonPaid = vine_review_df.filter(vine_review_df["verified_purchase"] == "N")
```

```
# Retrieve all the rows where the review was not part of the Vine program not paid, vine == 'N' and verified_purch
nonvine_review_df = helpful_v_50_df.filter(helpful_v_50_df["vine"] == "N")
nonvine_review_df_paid = nonvine_review_df.filter(nonvine_review_df["verified_purchase"] == "Y")
nonvine_review_df_nonPaid = nonvine_review_df.filter(nonvine_review_df["verified_purchase"] == "N")
```

Saving...



count

```
#Total Number of reviews
```

```
print("Total Number of Helpful Vine and Non Vine Reviews Paid and Not Paid: %.0f" % Total_Helpfull_reviews)
```

```
# Total number of reviews for each dataframe:
# Vine Paid
vine_review_paid_count = vine_review_df_paid.count()
print("Total Number of Helpful Vine Reviews Paid: %.0f" % vine_review_paid_count)

# Vine Not Paid
vine_review_nonPaid_count = vine_review_df_nonPaid.count()
print("Total Number of Helpful Vine Reviews Not Paid: %.0f" % vine_review_nonPaid_count)

# Not Vine Paid
nonvine_review_paid_count = nonvine_review_df_paid.count()
print("Total Number of Helpful Non Vine Reviews Paid: %.0f" % nonvine_review_paid_count)

# not Vine Not Paid
nonvine_review_nonPaid_count = nonvine_review_df_nonPaid.count()
print("Total Number of Helpful Non Vine Reviews Not Paid: %.0f" % nonvine_review_nonPaid_count)
```

```
Total Number of Helpful Vine and Non Vine Reviews Paid and Not Paid: 18155
Total Number of Helpful Vine Reviews Paid: 3
Total Number of Helpful Vine Reviews Not Paid: 133
Total Number of Helpful Non Vine Reviews Paid: 15080
Total Number of Helpful Non Vine Reviews Not Paid: 2939
```

```
# Number of Five Star Reviews for above Vine and Non Vine Paid and Not Paid dataframes
from pyspark.sql.functions import round, col
```

```
fivestars_all_df = helpful_v_50_df.filter(helpful_v_50_df["star_rating"]=="5")
print("Total Number of Helpful Five Star Reviews: %.0f" % fivestars_all_df.count())
```

```
fivestars_vine_paid_df = vine_review_df_paid.filter(vine_review_df_paid["star_rating"]=="5")
print("Total Number of Helpful Five Star Vine Reviews Paid: %.0f" % fivestars_vine_paid_df.count())
```

```
vine_review_df_nonPaid.filter(vine_review_df_nonPaid["star_rating"]=="5")
print("Total Number of Helpful Five Star Vine Reviews Not Paid: %.0f" % fivestars_vine_nonPaid_df.count())
```

```
fivestars_nonvine_paid_df = nonvine_review_df_paid.filter(nonvine_review_df_paid["star_rating"]=="5")
print("Total Number of Helpful Five Star Non-Vine Reviews Paid: %.0f" % fivestars_nonvine_paid_df.count())
```

Saving...



```
fivestars_nonvine_nonPaid_df = nonvine_review_df_nonPaid.filter(nonvine_review_df_nonPaid["star_rating"]=="5")
print("Total Number of Helpful Five Star Non_Vine Reviews Not Paid: %.0f" % fivestars_nonvine_nonPaid_df.count())
```

```
Total Number of Helpful Five Star Reviews: 8556
Total Number of Helpful Five Star Vine Reviews Paid: 2
Total Number of Helpful Five Star Vine Reviews Not Paid: 72
Total Number of Helpful Five Star Non-Vine Reviews Paid: 7323
Total Number of Helpful Five Star Non_Vine Reviews Not Paid: 1159
```

```
# Percentage of five star Reviews for above Paid and Not Paid dataframes
```

```
fivestars_vine_paid_pct = (fivestars_vine_paid_df.count()/vine_review_paid_count)*100
print("Percent of Five Star Vine Reviews Paid: %.0f" % fivestars_vine_paid_pct)
```

```
fivestars_vine_nonPaid_pct = (fivestars_vine_nonPaid_df.count()/vine_review_nonPaid_count)*100
print("Percent of Five Star Vine Reviews Not Paid: %.0f" % fivestars_vine_nonPaid_pct)
```

```
fivestars_nonvine_paid_pct = (fivestars_nonvine_paid_df.count()/nonvine_review_paid_count)*100
print("Percent of Five Star Vine Reviews Paid: %.0f" % fivestars_nonvine_paid_pct)
```

```
fivestars_nonvine_nonPaid_pct = (fivestars_nonvine_nonPaid_df.count()/nonvine_review_nonPaid_count)*100
print("Percent of Five Star Vine Reviews Not Paid: %.0f" % fivestars_nonvine_nonPaid_pct)
```

```
Percent of Five Star Vine Reviews Paid: 67
Percent of Five Star Vine Reviews Not Paid: 54
Percent of Five Star Vine Reviews Paid: 49
Percent of Five Star Vine Reviews Not Paid: 39
```

Saving...



```
# Total number of reviews
total_reviews_count = df.count()
print("Total Number of Reviews: %.0f" % total_reviews_count)
```

```
Total_Helpfull_reviews = helpful_v_50_df.count()
print("Total Number of 'Helpful' Reviews: %.0f" % Total_Helpfull_reviews)
```

```
Total Number of Reviews: 792113
Total Number of 'Helpful' Reviews: 18155
```

```
#Total number of All Five Star reviews
fivestars_df = df.filter(df["star_rating"] == '5')
fivestars_df.show()
```

```
fivestars_count = fivestars_df.count()
print("Total Number of Five Star Reviews: %.0f" % fivestars_count)
```

marketplace	customer_id	review_id	product_id	product_parent	product_title	product_category	star_
US	34731776	R16LGVMFKIUT0G	B0042TNMMS	205864445	Dorel Home Produc...	Furniture	
US	1272331	R1AIMEEPYHMOE4	B0030MPBZ4	124663823	Bathroom Vanity T...	Furniture	
US	18311821	RLB33HJBXHZHU	B00AVUQQGQ	574537906	Serta Bonded Leat...	Furniture	
US	42943632	R1VGTZ94DBAD6A	B00CFY20GQ	407473883	Prepac Shoe Stora...	Furniture	
US	43157304	R168KF82ICSOHD	B00FKC48QA	435120460	HomCom PU Leather...	Furniture	
US	51918480	R20DIYIJ0OCMOG	B00N9IAL9K	356495985	Folding Step Stool	Furniture	
US	14522766	RD46RNV0HNZSC	B001T4XU1C	243050228	Ace Bayou Adult V...	Furniture	
US	43054112	R2JDOCETTM3AXS	B002HRFLBC	93574483	4D Concepts Audio...	Furniture	
US	26622950	R33YMW36IDZ6LE	B006MISZOC	941823468	Zinus SC-SBBK-14N...	Furniture	
US	17988940	R30ZGGUHZ04C1S	B008BMGABC	460567746	Poundex Marble Di...	Furniture	
US	18444952	RS2EZU76IK2BT	B00CO2VH5Y	829613894	Safavieh Lyndhurs...	Furniture	
US	16937084	R1GJC1BP028XO9	B00LI4RJQ0	816478187	Sauder Boone Moun...	Furniture	
US	2415090	R2F5WW7WNO5RRG	B001TJYPJ8	854989315	Sleep Revolution ...	Furniture	
US	48285966	R3UDJKVWQCFIC9	B000TMHX9A	814079288	Flash Furniture V...	Furniture	
US	33228559	R1MLGVJH3J5W6N	B005MZBB20	523675277	Amelia Floral Mut...	Furniture	
US	11600823	R38JYICG7ESAZP	B00JITHL9C	403803724	Classic Brands Lo...	Furniture	
		M7LJ7CY0840	B007EEG7M0	336731383	Range Kleen SS2 D...	Furniture	
		G4UWGK123C3	B004LQ1RJ2	999119538	Signature Sleep C...	Furniture	
		DEOSEMAITN6	B000RPVKPC	269111919	Coaster Home Furn...	Furniture	
US	26511421	R38HR07J1KN5TE	B009QDA1LA	119886213	Universal Bed Sla...	Furniture	

Saving...



only showing top 20 rows

Total Number of Five Star Reviews: 447716

```
#Dataframe of Vine and Non Vine Reviews
```

```
import pandas as pd
```

```
Total_Num_Reviews_H = pd.DataFrame({
    "Vine Paid": vine_review_paid_count,
    "Vine Not Paid": vine_review_nonPaid_count,
    "Not Vine Paid": nonvine_review_paid_count,
    "Not Vine Not Paid": nonvine_review_nonPaid_count,
    "Total Helpful Reviews": Total_Helpfull_reviews}, index=[0])
```

```
Total_Num_Reviews_H
```

	Vine Paid	Vine Not Paid	Not Vine Paid	Not Vine Not Paid	Total Helpful Reviews
0	3	133	15080	2939	18155



```
Total_Num_Reviews_HS = Total_Num_Reviews_H.astype(float)
```

```
import matplotlib.pyplot as plt
```

```
from matplotlib.ticker import FormatStrFormatter
```

```
Total_Num_Reviews_HS.plot(kind="bar", figsize=(20,10))
```

```
# Set a title for the chart
```

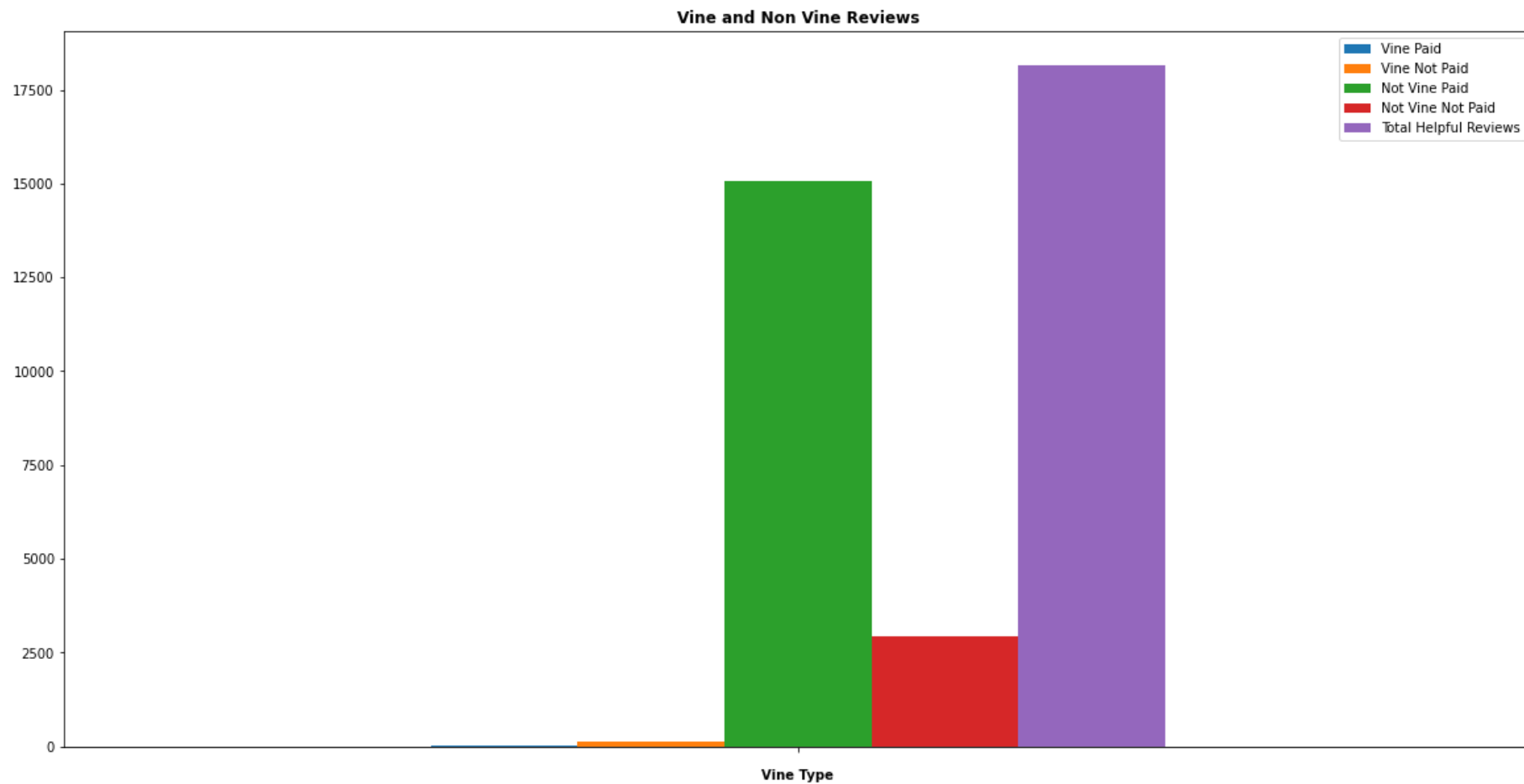
```
plt.title("Vine and Non Vine Reviews", fontweight='bold')
```

```
plt.xlabel("Vine Type", fontweight='bold')
```

```
plt.xticks(color='w')
```

Saving...





<Figure size 432x288 with 0 Axes>

#Formatted Dataframe of Vine and Non Vine Reviews

Saving...



```
Total_Num_Reviews_H["Vine Paid"] = Total_Num_Reviews_H["Vine Paid"].map("{:,}".format)
```

```
Total_Num_Reviews_H["Vine Not Paid"] = Total_Num_Reviews_H["Vine Not Paid"].map("{:,}".format)
```

```
Total_Num_Reviews_H["Not Vine Paid"] = Total_Num_Reviews_H["Not Vine Paid"].map("{:,}".format)
```

```
Total_Num_Reviews_H["Not Vine Not Paid"] = Total_Num_Reviews_H["Not Vine Not Paid"].map("{:,.}").format)

Total_Num_Reviews_H["Total Helpful Reviews"] = Total_Num_Reviews_H["Total Helpful Reviews"].map("{:,.}").format)

Total_Num_Reviews_H
```

	Vine Paid	Vine Not Paid	Not Vine Paid	Not Vine Not Paid	Total Helpful Reviews
0	3	133	15,080	2,939	18,155



```
#Dataframe of Percentage of Five Star Vine and Non Vine Reviews
import pandas as pd
Total_Num_FIVES_Reviews_H = pd.DataFrame({
    "Vine Paid Five Star Reviews": fivestars_vine_paid_pct,
    "Vine Not Paid Five Star Reviews": fivestars_vine_nonPaid_pct,
    "Not Vine Paid Five Star Reviews": fivestars_nonvine_paid_pct,
    "Not Vine Not Paid Five Star Reviews": fivestars_nonvine_nonPaid_pct}, index=[0])
```

```
Total_Num_FIVES_Reviews_HS = Total_Num_FIVES_Reviews_H.astype(float)
Total_Num_FIVES_Reviews_HS
```

	Vine Paid Five Star Reviews	Vine Not Paid Five Star Reviews	Not Vine Paid Five Star Reviews	Not Vine Not Paid Five Star Reviews
0	66.666667	54.135338	48.561008	39.435182

```
import matplotlib.pyplot as plt
from matplotlib.ticker import FormatStrFormatter

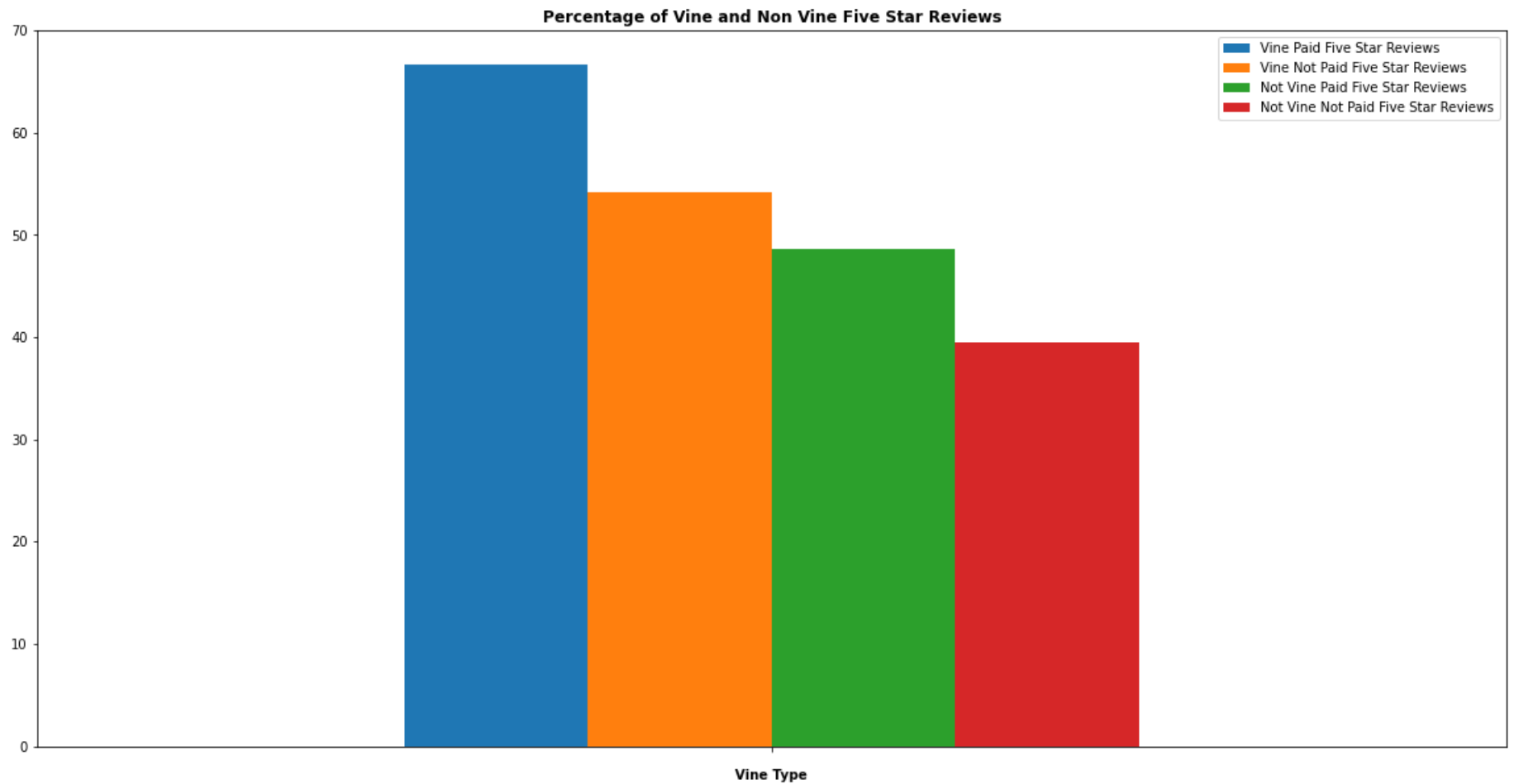
plt.bar(index="bar", figsize=(20,10))
```

Saving...



```
# Set a title for the chart
plt.title("Percentage of Vine and Non Vine Five Star Reviews", fontweight='bold')
plt.xlabel("Vine Type", fontweight='bold')
plt.xticks(color='w')
```

```
plt.show()  
plt.tight_layout()
```



<Figure size 432x288 with 0 Axes>

Saving...



```
#Dataframe of Percentage of Five Star Vine and Non Vine Reviews

Total_Num_FIVEs_Reviews_H["Vine Paid Five Star Reviews"] = Total_Num_FIVEs_Reviews_H["Vine Paid Five Star Reviews"]
Total_Num_FIVEs_Reviews_H["Vine Not Paid Five Star Reviews"] = Total_Num_FIVEs_Reviews_H["Vine Not Paid Five Star
Total_Num_FIVEs_Reviews_H["Not Vine Paid Five Star Reviews"] = Total_Num_FIVEs_Reviews_H["Not Vine Paid Five Star
Total_Num_FIVEs_Reviews_H["Not Vine Not Paid Five Star Reviews"] = Total_Num_FIVEs_Reviews_H["Not Vine Not Paid Fi

Total_Num_FIVEs_Reviews_H
```

	Vine Paid Five Star Reviews	Vine Not Paid Five Star Reviews	Not Vine Paid Five Star Reviews	Not Vine Not Paid Five Star Reviews
0	67	54	49	39

Saving...×

✓ 0s completed at 3:02 PM



Saving...

