

# FLIPKART PRODUCT DATASET

## ANALYSIS

### ➤ Import Libraries and Load Data:

```
▶ #Import libraries
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

#Import csv file
Prod= pd.read_csv("/content/drive/MyDrive/Data analytics and reporting(DAR)/Flipkart Product Dataset.csv")
```

### ➤ Data Overview:

```
▶ #View dimensions of data sets
print(Prod.shape)
```

→ (12041, 11)

```
▶ #Head of the data set
Prod.head()
```

	category_1	category_2	category_3	title	product_rating	selling_price	mrp	seller_name	seller_rating	description	highlights
0	Sports, Books and More	Sports	Cricket	ITWOSERVICES CRICKET NET 100X10 CRICKET NET NY...	4.4	₹1,615	₹4,000	I2SERVICES	4.4	NaN	Cricket Practice Net NYLON HDPE Material W x H...
1	Sports, Books and More	Sports	Cricket	ITWOSERVICES CRICKET NET GROUND BOUNDARY NET 1...	4.4	₹152	₹600	I2SERVICES	4.4	10 X 10 GREEN CRICKET NET HDPE NYLON.	Cricket HDPE NYLON Material W x H x D: 3.048 x...
2	Sports, Books and More	Sports	Cricket	VICTORY Medium Weight ( Pack of 1 ) Rubber Cri...	3.7	₹59	₹199	VictoryOutlets	4.7	NaN	Cricket Rubber Ball Weight: 110 g
3	Sports, Books and More	Sports	Cricket	VICTORY Cricket Wind Ball (Pack of 1) - Made i...	3.8	₹75	₹299	VictoryOutlets	4.7	NaN	Cricket Synthetic Ball Weight: 110 g
4	Sports, Books and More	Sports	Cricket	CEAT Hitman Full Size Double Blade Poplar Cric...	3.4	₹329	₹1,399	IndiaFit	4.7	The Ceat Poplar Willow Cricket Bat has been de...	Age Group 15+ Yrs Blade Made of Poplar Willow ...

```
▶ #View summary of data  
print(Prod.info())
```

```
→ <class 'pandas.core.frame.DataFrame'>  
RangeIndex: 12041 entries, 0 to 12040  
Data columns (total 11 columns):  
 #   Column           Non-Null Count  Dtype     
---  --    
 0   category_1      12041 non-null   object    
 1   category_2      12041 non-null   object    
 2   category_3      12041 non-null   object    
 3   title            12023 non-null   object    
 4   product_rating   11961 non-null   float64   
 5   selling_price    12013 non-null   object    
 6   mrp              11666 non-null   object    
 7   seller_name     11825 non-null   object    
 8   seller_rating    11827 non-null   float64   
 9   description      5021 non-null   object    
 10  highlights       6560 non-null   object    
dtypes: float64(2), object(9)  
memory usage: 1.0+ MB  
None
```

```
▶ #Data Description  
print(Prod.describe())
```

```
→      product_rating  seller_rating  
count      11961.000000  11827.000000  
mean        4.061617    4.394538  
std         0.345575    0.404288  
min         1.000000    3.000000  
25%        3.900000    4.100000  
50%        4.100000    4.400000  
75%        4.300000    4.700000  
max         5.000000    5.000000
```

```
▶ #Display column names of the data set  
Prod.columns
```

```
→ Index(['category_1', 'category_2', 'category_3', 'title', 'product_rating',  
        'selling_price', 'mrp', 'seller_name', 'seller_rating', 'description',  
        'highlights'],  
       dtype='object')
```

## ➤ Missing Values Analysis:

▶ #Check missing values  
print(Prod.isnull().sum())

```
→ category_1      0
category_2      0
category_3      0
title          18
product_rating  80
selling_price   28
mrp            375
seller_name    216
seller_rating   214
description    7020
highlights     5481
dtype: int64
```

▶ #Drop row with missing values and check the first few rows  
Prod\_dropped=Prod.dropna()  
print(Prod\_dropped.head())

```
→      category_1 category_2 category_3 \
1 Sports, Books and More    Sports Cricket
4 Sports, Books and More    Sports Cricket
7 Sports, Books and More    Sports Cricket
8 Sports, Books and More    Sports Cricket
10 Sports, Books and More   Sports Cricket

                           title  product_rating \
1 ITWOSERVICES CRICKET NET GROUND BOUNDARY NET 1...      4.4
4 CEAT Hitman Full Size Double Blade Poplar Cric...      3.4
7 VECTOR X Cricket Bat Grip Handle Chevron Extra...      4.1
8 LYCAN Full Size Pvc/ Hard Plastic Cricket Bat ...      4.0
10 Star X Thrill Fox Heavy Duty First Grade HD Pl...      4.0

      selling_price      mrp      seller_name seller_rating \
1        ₹152      ₹600      I2SERVICES      4.4
4        ₹329     ₹1,399    IndiaFit      4.7
7        ₹369     ₹396  SOCCERINTERNATIONAL      4.1
8        ₹249     ₹1,099    sellguru      4.8
10       ₹349     ₹749      STARX      4.5

                           description \
1  10 X 10 GREEN CRICKET NET HDPE NYLON.
4  The Ceat Poplar Willow Cricket Bat has been de...
7  Vector X Cricket Ring Chevron bat protection 6...
8  Lycan hard plastic full size cricket bat , sui...
10 StarX Brings you "Thrill Fox Heavy Duty First ...

                           highlights
1  Cricket HDPE NYLON Material W x H x D: 3.048 x...
4  Age Group 15+ Yrs Blade Made of Poplar Willow ...
7  Type: Replacement Grip Material: Premium Rubbe...
8  Age Group 15+ Yrs Blade Made of PVC/Plastic Ad...
10 Age Group 15+ Yrs Blade Made of PVC/Plastic Be...
```

```
▶ #Fill missing values in 'product_rating' with the mean of the column
Prod['product_rating'] = Prod['product_rating'].fillna(Mean)
## Check how many missing values remain in each column
Prod.isnull().sum()
```

	0
category_1	0
category_2	0
category_3	0
title	18
product_rating	0
selling_price	28
mrp	375
seller_name	216
seller_rating	214
description	7020
highlights	5481

**dtype:** int64

```
▶ #Forward fill missing values
New_prod=Prod.fillna(method='ffill')
#print the first 5 rows
print(New_prod.head())

▶ category_1 category_2 category_3 \
0 Sports, Books and More Sports Cricket
1 Sports, Books and More Sports Cricket
2 Sports, Books and More Sports Cricket
3 Sports, Books and More Sports Cricket
4 Sports, Books and More Sports Cricket

title product_rating \
0 ITWOSERVICES CRICKET NET 10X10 CRICKET NET NY... 4.4
1 ITWOSERVICES CRICKET NET GROUND BOUNDARY NET 1... 4.4
2 VICTORY Medium Weight ( Pack of 1 ) Rubber Cri... 3.7
3 VICTORY Cricket Wind Ball (Pack of 1) - Made i... 3.8
4 CEAT Hitman Full Size Double Blade Poplar Cric... 3.4

selling_price mrp seller_name seller_rating \
0 1615.0 4000.0 I2SERVICES 4.4
1 152.0 600.0 I2SERVICES 4.4
2 59.0 199.0 VictoryOutlets 4.7
3 75.0 299.0 VictoryOutlets 4.7
4 329.0 1399.0 IndiaFit 4.7

description \
0 NAN
1 10 X 10 GREEN CRICKET NET HDPE NYLON.
2 10 X 10 GREEN CRICKET NET HDPE NYLON.
3 10 X 10 GREEN CRICKET NET HDPE NYLON.
4 The Ceat Poplar Willow Cricket Bat has been de...

highlights
0 Cricket Practice Net NYLON HDPE Material W x H...
1 Cricket HDPE NYLON Material W x H x D: 3.048 x...
2 Cricket Rubber Ball Weight: 110 g
3 Cricket Synthetic Ball Weight: 110 g
4 Age Group 15+ Yrs Blade Made of Poplar Willow ...
/tmppython-input-130456385.py:2: FutureWarning: DataFrame.fillna with 'method' is deprecated and will raise in a future version. Use obj.ffill() or obj.bfill() instead.
New_prod=Prod.fillna(method='ffill')
```

```

▶ #Backward fill missing values
New_prod=Prod.fillna(method='bfill')
##Print the first 5 rows
print(New_prod.head())

category_1 category_2 category_3 \
0 Sports, Books and More Sports Cricket
1 Sports, Books and More Sports Cricket
2 Sports, Books and More Sports Cricket
3 Sports, Books and More Sports Cricket
4 Sports, Books and More Sports Cricket

title product_rating \
0 ITWOSERVICES CRICKET NET 100X10 CRICKET NET NY... 4.4
1 ITWOSERVICES CRICKET NET GROUND BOUNDARY NET 1... 4.4
2 VICTORY Medium Weight ( Pack of 1 ) Rubber Cri... 3.7
3 VICTORY Cricket Wind Ball (Pack of 1) - Made i... 3.8
4 CEAT Hitman Full Size Double Blade Poplar Cric... 3.4

selling_price mrp seller_name seller_rating \
0 1615.0 4000.0 I2SERVICES 4.4
1 152.0 600.0 I2SERVICES 4.4
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3 75.0 299.0 VictoryOutlets 4.7
4 329.0 1399.0 IndiaFit 4.7

description \
0 10 X 10 GREEN CRICKET NET HDPE NYLON.
1 10 X 10 GREEN CRICKET NET HDPE NYLON.
2 The Ceat Poplar Willow Cricket Bat has been de...
3 The Ceat Poplar Willow Cricket Bat has been de...
4 The Ceat Poplar Willow Cricket Bat has been de...

highlights
0 Cricket Practice Net NYLON HDPE Material W x H...
1 Cricket HDPE NYLON Material W x H x D: 3.048 x...
2 Cricket Rubber Ball Weight: 110 g
3 Cricket Synthetic Ball Weight: 110 g
4 Age Group 15+ Yrs Blade Made of Poplar Willow ...
/tmipython-input-39877387.py:2: FutureWarning: DataFrame.fillna with 'method' is deprecated and will raise in a future version. Use obj.ffill() or obj.bfill() instead.
New_prod=Prod.fillna(method='bfill')

```

## ➤ Data Cleaning:

```

▶ #Remove ₹ and commas, convert to numeric
Prod['selling_price'] = Prod['selling_price'].replace('₹,]', '', regex=True).astype(float)
Prod['mrp'] = Prod['mrp'].replace('₹,]', '', regex=True).astype(float)
# Display first few rows
print(Prod[['selling_price', 'mrp']].head())

```

	selling_price	mrp
0	1615.0	4000.0
1	152.0	600.0
2	59.0	199.0
3	75.0	299.0
4	329.0	1399.0

## ➤ Basic Statistics:

▶ #Mean

```

Mean=Prod['product_rating'].mean()
print(Mean)

```

▶ 4.061616921662068

▶ #Median  
Median=Prod['product\_rating'].median()  
print(Median)

→ 4.1

▶ #Mode  
Mode=Prod['product\_rating'].mode()  
print(Mode)

→ 0 4.0  
Name: product\_rating, dtype: float64

## ➤ Data Filtering and Sorting:

▶ #Filtering data  
filtered\_product\_rating= Prod['product\_rating'] >= 4  
filtered\_product\_rating

	product_rating
0	True
1	True
2	False
3	False
4	False
...	...
12036	False
12037	True
12038	True
12039	True
12040	False

12041 rows × 1 columns

dtype: bool

```
#Filter by category
filtered_cricket_items = Prod['category_3'].str.contains("Cricket", na=False)
filtered_cricket_items
```

#### category\_3

0	True
1	True
2	True
3	True
4	True
...	...
12036	False
12037	False
12038	False
12039	False
12040	False

12041 rows × 1 columns

**dtype:** bool

```
#Sort by price descending
sorted_Prod = Prod.sort_values(by='selling_price', ascending=False)
sorted_Prod
```

#### category\_1

	category_1	category_2	category_3	title	product_rating	selling_price	mp	seller_name	seller_rating	description	highlights
2328	Electronics	Laptops	Gaming Laptops	DELL Alienware Core i7 12th Gen - (32 GB/1 TB...	4.800000	300490.0	1174131.0	PETILANTE Online	4.8	NaN	17.3 Inch Full HD, Comfortview Plus NVIDIA G-S...
2683	Electronics	Camera Accessories	Lens	SONY SEL100400GMC Lens (White, 100 - 400 mm)	4.800000	199690.0	229490.0	RetailNet	4.8	NaN	Lens Mount: E-mount Designed For: ILCE-7M2K, I...
2337	Electronics	Desktop PCs	Desktop PCs	APPLE iMac Core i5 (7th Gen) (8 GB DDR4/1 TB M...	4.400000	189990.0	194400.0	OmniTechRetail	4.4	NaN	Mac OS X Sierra Intel Core i5 (7th Gen) HDD Capa...
2334	Electronics	Desktop PCs	Desktop PCs	APPLE All-in-One Core i5 (6th Gen) (8 GB DDR3/1 TB...	4.400000	180990.0	188900.0	OmniTechRetail	4.4	NaN	Mac OS X Lion Intel Core i5 (6th Gen) HDD Capa...
2703	Electronics	Camera Accessories	Lens	SONY SEL200600G Lens (White, 200 - 600 mm)	4.700000	154890.0	177990.0	RetailNet	4.8	NaN	Lens Mount: E-mount Designed For: ILCE-7M2K, I...
...	...	...	...	...	...	...	...	...	...	...	...
9967	Home and Furniture	Kitchen_Cookware and Serveware	Tawas	NIRLON Casting Coated Nonstick Aluminium Uttap...	5.000000	NaN	NaN	NaN	NaN	Nirlon Uttapam / Snack maker is a useful addit...	Made of: Aluminum Type: Tawa Non-stick, Dishw...
10379	Home and Furniture	Kitchen Storage	Casseroles		NaN	4.061617	NaN	NaN	NaN	NaN	NaN
11548	Home and Furniture	Home Décor	Clocks	BAREPEPE Digital Black Clock	4.061617	NaN	NaN	NaN	NaN	NaN	Alarm Height x Width 100 mm x 160 mm Digital
11817	Home and Furniture	Home Lighting	Ceiling Lamp		NaN	4.061617	NaN	NaN	NaN	NaN	NaN
12001	Home and Furniture	Pet Supplies	Fish and Aquatics		NaN	4.061617	NaN	NaN	NaN	NaN	NaN

12041 rows × 11 columns

```
#Sort by price ascending
sorted_Prod = Prod.sort_values(by='selling_price')
sorted_Prod
```

#### category\_1

	category_1	category_2	category_3	title	product_rating	selling_price	mp	seller_name	seller_rating	description	highlights
656	Sports, Books and More	Food Essentials	Snacks and beverages	BRITANNIA Gold Marie Biscuit (68 g)	4.400000	10.0	NaN	SuperComNet	4.6	NaN	Type: Marie Biscuit Quantity: 68 g Base Flavor: ...
1264	Sports, Books and More	Auto Accessories	Helmets and Riding Gears	Pidilite Motomax Car & Bike 2K Rubbing Compoun...	3.600000	51.0	65.0	BTPLD	4.4	NaN	Removes minor bike and car scratches, paint de... Pack Type: Bottle Pack of 1 Form: Wax Quantity: ...
1304	Sports, Books and More	Auto Accessories	Car Audio /Video	Pidilite Motomax Car & Bike 2K Rubbing Compoun...	3.600000	51.0	65.0	BTPLD	4.4	NaN	Removes minor bike and car scratches, paint de... Pack Type: Bottle Pack of 1 Form: Wax Quantity: ...
2	Sports, Books and More	Sports	Cricket	VICTORY Medium Weight (Pack of 1 ) Rubber Cr...	3.700000	59.0	199.0	VictoryOutlets	4.7	NaN	Cricket Rubber Ball Weight: 110 g
10055	Home and Furniture	Kitchen_Cookware and Serveware	Kitchen tools	KVG Whisk Beater Steel Coll Whisk	3.600000	59.0	75.0	MYTHANGLORYRetail	4.9	NaN	KVG Stainless Steel Egg Beater Lassi / Butter ...
...	...	...	...	...	...	...	...	...	...	...	...
9967	Home and Furniture	Kitchen_Cookware and Serveware	Tawas	NIRLON Casting Coated Nonstick Aluminium Uttap...	5.000000	NaN	NaN	NaN	NaN	Nirlon Uttapam / Snack maker is a useful addit...	Made of: Aluminum Type: Tawa Non-stick, Dishw...
10379	Home and Furniture	Kitchen Storage	Casseroles		NaN	4.061617	NaN	NaN	NaN	NaN	NaN
11548	Home and Furniture	Home Décor	Clocks	BAREPEPE Digital Black Clock	4.061617	NaN	NaN	NaN	NaN	NaN	Alarm Height x Width 100 mm x 160 mm Digital
11817	Home and Furniture	Home Lighting	Ceiling Lamp		NaN	4.061617	NaN	NaN	NaN	NaN	NaN
12001	Home and Furniture	Pet Supplies	Fish and Aquatics		NaN	4.061617	NaN	NaN	NaN	NaN	NaN

12041 rows × 11 columns

## ➤ Group By Statistical Analysis:

```
▶ #Group by  
#Mean  
mean_stats = Prod.groupby('category_1')[['selling_price', 'mrp', 'product_rating']].mean()  
print(mean_stats)
```

category_1	selling_price	mrp	product_rating
Body and Kids	507.073599	1232.446476	4.082332
Electronics	7246.622313	10499.896767	4.125469
Home and Furniture	2278.016076	4436.169516	4.042148
Men's wear	899.822354	2122.377778	4.017302
Sports, Books and More	1536.490369	3159.177281	4.077219
Women's wear	1199.926263	1914.987075	4.064255

```
▶ #Group by  
#Median  
median_stats = Prod.groupby('category_1')[['selling_price', 'mrp', 'product_rating']].median()  
print(median_stats)
```

category_1	selling_price	mrp	product_rating
Body and Kids	359.0	999.0	4.1
Electronics	799.0	1950.0	4.2
Home and Furniture	529.0	1299.0	4.1
Men's wear	498.0	1499.0	4.0
Sports, Books and More	399.0	899.0	4.1
Women's wear	399.0	1299.0	4.1

```
▶ #Group by  
#Standard deviation  
std_stats = Prod.groupby('category_1')[['selling_price', 'mrp', 'product_rating']].std()  
print(std_stats)
```

category_1	selling_price	mrp	product_rating
Body and Kids	1154.353676	1479.543958	0.329574
Electronics	22811.164889	45089.746323	0.382444
Home and Furniture	5153.493842	8871.914503	0.350573
Men's wear	1331.089363	2510.037129	0.302392
Sports, Books and More	5501.466016	10773.566055	0.416056
Women's wear	5226.618267	3275.015396	0.307685

## ➤ Pivot Table Analysis:

```
▶ #Pivot table - Average Selling Price by Category
pivot_price = pd.pivot_table(Prod, values='selling_price',index='category_1',columns='category_2',aggfunc='mean')
print(pivot_price)

category_2          Accessories Auto Accessories Baby Boy Clothing \
category_1
Baby and Kids           NaN           NaN      372.975
Electronics             NaN           NaN        NaN
Home and Furniture       NaN           NaN        NaN
Men's wear              929.323741     NaN        NaN
Sports, Books and More   NaN           879.075     NaN
Women's wear            847.489028     NaN        NaN

category_2          Baby Care Baby Girl Clothing Beauty and Grooming \
category_1
Baby and Kids          533.453125    330.825      NaN
Electronics             NaN           NaN        NaN
Home and Furniture       NaN           NaN        NaN
Men's wear              NaN           NaN        NaN
Sports, Books and More   NaN           NaN        NaN
Women's wear            NaN           NaN      288.879397

category_2          Bed Room Furniture Books Bottom Wear \
category_1
Baby and Kids           NaN           NaN        NaN
Electronics             NaN           NaN        NaN
Home and Furniture       7949.525      NaN        NaN
Men's wear              NaN           NaN      537.086022
Sports, Books and More   NaN           338.170732     NaN
Women's wear            NaN           NaN        NaN

category_2          Boys Clothing ... Suits, Blazers and waistcoats \
category_1
Baby and Kids           392.65      ...
Electronics             NaN           ...
Home and Furniture       NaN           ...
Men's wear              NaN           ...
Sports, Books and More   NaN           ...
Women's wear            NaN           ...

category_2          Swim and Beachwear Tablets \
category_1
Baby and Kids           NaN           NaN
Electronics             NaN           38313.4
Home and Furniture       NaN           NaN
Men's wear              NaN           NaN
Sports, Books and More   NaN           NaN
Women's wear            419.4        NaN

category_2          Tableware and Dinnerware Ties, socks, caps and more \
category_1
Baby and Kids           NaN           NaN
Electronics             NaN           NaN
Electronics             NaN           NaN
Home and Furniture       844.058333     NaN
Men's wear              NaN           319.5
Sports, Books and More   NaN           NaN
Women's wear            NaN           NaN

category_2          Top Wear Toys Watches \
category_1
Baby and Kids           NaN      724.89083     NaN
Electronics             NaN           NaN        NaN
Home and Furniture       NaN           NaN        NaN
Men's wear              410.758333     NaN      2941.386935
Sports, Books and More   NaN           NaN        NaN
Women's wear            NaN           NaN      1345.500000

category_2          Western and maternity Wear Winter Wear
category_1
Baby and Kids           NaN           NaN
Electronics             NaN           NaN
Home and Furniture       NaN           NaN
Men's wear              NaN           950.83125
Sports, Books and More   NaN           NaN
Women's wear            473.566308     872.75000
```

[6 rows x 77 columns]

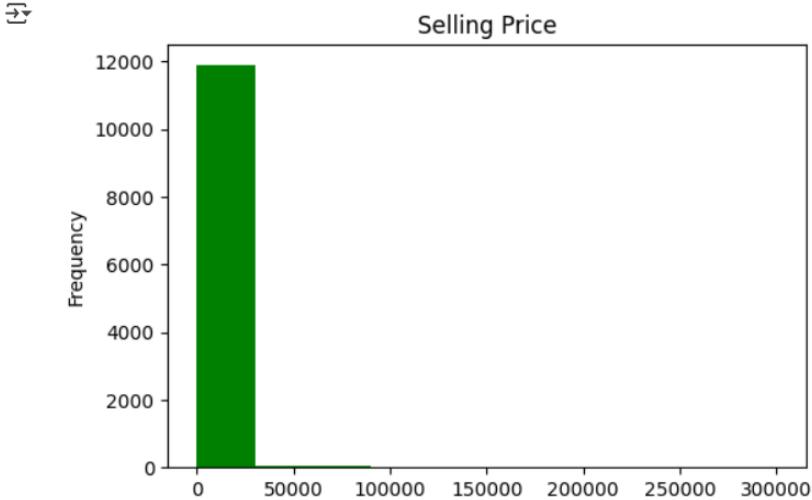
```
▶ #Pivot table - Average Product Rating by Category
pivot_rating = pd.pivot_table(Prod,values='product_rating',index='category_1',columns='category_2',aggfunc='mean')
print(pivot_rating)
```

category_2	Accessories	Auto Accessories	Baby	Boy Clothing
category_1				
Body and Kids	NaN	NaN	4.038333	
Electronics	NaN	NaN	NaN	
Home and Furniture	NaN	NaN	NaN	
Men's wear	4.084946	NaN	NaN	
Sports, Books and More	NaN	4.07	NaN	
Women's wear	4.111780	NaN	NaN	
category_2	Baby Care	Baby Girl Clothing	Beauty and Grooming	\
category_1				
Body and Kids	4.173906	3.985707	NaN	
Electronics	NaN	NaN	NaN	
Home and Furniture	NaN	NaN	NaN	
Men's wear	NaN	NaN	NaN	
Sports, Books and More	NaN	NaN	NaN	
Women's wear	NaN	NaN	4.318	
category_2	Bed Room Furniture	Books	Bottom Wear	\
category_1				
Body and Kids	NaN	NaN	NaN	
Electronics	NaN	NaN	NaN	
Home and Furniture	3.888333	NaN	NaN	
Men's wear	NaN	NaN	3.86382	
Sports, Books and More	NaN	4.4	NaN	
Women's wear	NaN	NaN	NaN	
category_2	Boys Clothing	... Suits, Blazers and waistcoats		\
category_1				
Body and Kids	4.061808	...	NaN	
Electronics	NaN	...	NaN	
Home and Furniture	NaN	...	NaN	
Men's wear	NaN	...	3.925	
Sports, Books and More	NaN	...	NaN	
Women's wear	NaN	...	NaN	
category_2	Swim and Beachwear	Tablets		\
category_1				
Body and Kids	NaN	NaN		
Electronics	NaN	4.48		
Home and Furniture	NaN	NaN		
Men's wear	NaN	NaN		
Sports, Books and More	NaN	NaN		
Women's wear	3.915	NaN		
category_2	Tableware and Dinnerware	Ties, socks, caps and more		\
category_1				
Body and Kids	NaN	NaN		
Electronics	NaN	NaN		
Home and Furniture	4.215833	NaN		
Men's wear	NaN	4.1475		
Sports, Books and More	NaN	NaN		
Women's wear	NaN	NaN		
category_2	Top Wear	Toys	Watches	\
category_1				
Body and Kids	NaN	4.05215	NaN	
Electronics	NaN	NaN	NaN	
Electronics		NaN	NaN	
Home and Furniture		4.215833	NaN	
Men's wear		NaN	4.1475	
Sports, Books and More		NaN	NaN	
Women's wear		NaN	NaN	
category_2	Top Wear	Toys	Watches	\
category_1				
Body and Kids	NaN	4.05215	NaN	
Electronics	NaN	NaN	NaN	
Home and Furniture	NaN	NaN	NaN	
Men's wear	3.92	NaN	4.303888	
Sports, Books and More	NaN	NaN	NaN	
Women's wear	NaN	NaN	4.131818	
category_2	Western and maternity Wear	Winter Wear		
category_1				
Body and Kids	NaN	NaN		
Electronics	NaN	NaN		
Home and Furniture	NaN	NaN		
Men's wear	NaN	3.986875		
Sports, Books and More	NaN	NaN	NaN	
Women's wear	4.051429	4.127500		

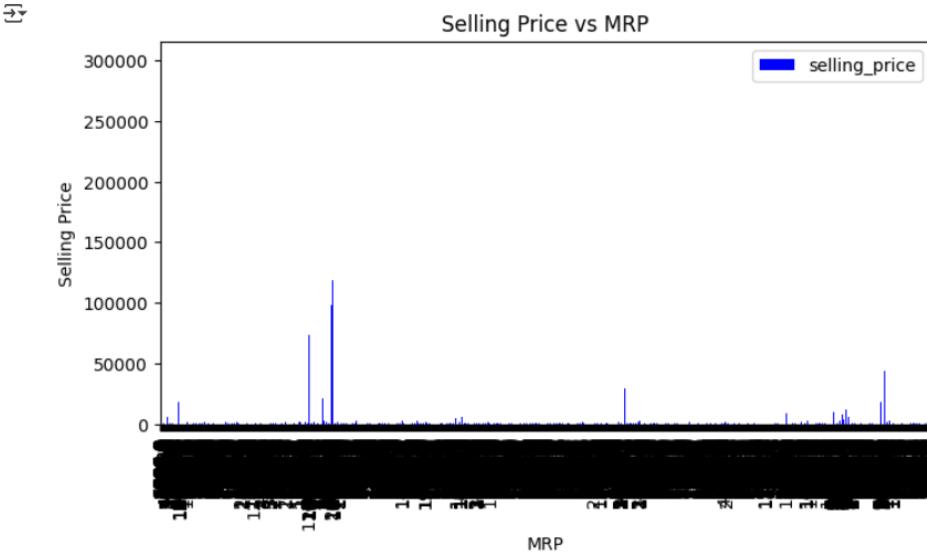
[6 rows x 77 columns]

## ➤ Data Visualization:

```
▶ #Creates a histogram for the column selling_price  
Prod['selling_price'].plot(kind="hist", figsize=(6,4), color="green")  
# Adds a title  
plt.title("Selling Price")  
# Displays the plot  
plt.show()
```



```
▶ #Create a bar plot of selling_price vs mrp  
Prod.plot(kind='bar', x='mrp', y='selling_price', figsize=(8,4), color='blue')  
#Add labels and title  
plt.xlabel("MRP")  
plt.ylabel("Selling Price")  
plt.title("Selling Price vs MRP")  
#Display the plot  
plt.show()
```



```

▶ #Create a line plot of selling_price vs product_rating
Prod.plot(kind='line', x='mrp', y='selling_price', figsize=(8,4),marker="*", color='red', markersize=6)
# Add labels and title
plt.xlabel("MRP")
plt.ylabel("Selling Price")
plt.title("Selling Price vs MRP")
# Display the plot
plt.show()

```



```

▶ #Create a scatter plot of seller_rating vs product_rating
Prod.plot(kind='scatter', x='product_rating', y='seller_rating', figsize=(8,4), color='blue', s=100)
#Add labels and title
plt.xlabel("Product Rating")
plt.ylabel("Seller Rating")
plt.title("Seller Rating vs Product Rating Scatter Plot")
# Display the plot
plt.show()

```



## **PRESENTED BY:**

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