In [1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

In [5]:
```
data =pd.read_excel("C:\\Users\\autocad\\Downloads\\Adventure-Works-Inventory.xlsx")
```

In [6]:
```
data.head()#starting 65 rows
```

Out[6]:

	Category	Date Entered	Product Name	Supplier	Unit Price	Units In Stock	Units On Order	Reorder Level	Discontinued
0	Frames	2022-01-23	14City	Imortadores Neptuno	4.5	200	0	0	Yes
1	Frames	2022-01-23	Rac564	Imortadores Neptuno	4.5	200	0	0	Yes
2	Frames	2025-01-31	Rac325	Imortadores Neptuno	9.5	360	0	0	No
3	Frames	2025-01-31	A2Mountain	Imortadores Neptuno	9.5	360	0	0	No
4	Tyres	2025-01-16	Clincher	Tyresaz	12.0	950	0	0	No

In [7]:
```
data.shape
```

Out[7]:
```
(151, 9)
```

In [8]:
```
data.dtypes#data types
```

Out[8]:
```
Category                  object
Date Entered      datetime64[ns]
Product Name              object
Supplier                  object
Unit Price               float64
Units In Stock             int64
Units On Order             int64
Reorder Level              int64
Discontinued              object
dtype: object
```

In [9]:
```
data.info#starting and ending 5-5 values
```

Out[9]:
```
<bound method DataFrame.info of          Category Date Entered Product Name  \
Supplier  Unit Price  \
0           Frames   2022-01-23       14City  Imortadores Neptuno        4.50
1           Frames   2022-01-23       Rac564  Imortadores Neptuno        4.50
2           Frames   2025-01-31       Rac325  Imortadores Neptuno        9.50
3           Frames   2025-01-31   A2Mountain  Imortadores Neptuno        9.50
4            Tyres   2025-01-16     Clincher               Tyresaz       12.00
..             ...          ...          ...                  ...         ...
146  Brake System   2022-01-09       Levers             Cyclesaz       38.00
147  Brake System   2022-01-09       Cables             Cyclesaz       38.00
148         Frames   2021-12-13    Zelectric  Imortadores Neptuno       43.90
149         Frames   2021-12-13   A1Mountain  Imortadores Neptuno       43.90
150            NaN          NaT          NaN                  NaN     4385.42

     Units In Stock  Units On Order  Reorder Level Discontinued
0               200               0              0          Yes
1               200               0              0          Yes
2               360               0              0           No
3               360               0              0           No
4               950               0              0           No
..              ...             ...            ...          ...
146             210              10             30           No
147             210              10             30           No
148             490               0             30           No
149             490               0             30           No
150           56920            1560           1820          NaN

[151 rows x 9 columns]>
```

In [10]:
```
data.describe()#describe and gives us 5 points summary count,percentile,max. and min,s
```

Out[10]:

	Unit Price	Units In Stock	Units On Order	Reorder Level
count	151.000000	151.000000	151.000000	151.000000
mean	58.085033	753.907285	20.662252	24.105960
std	356.123006	4614.059380	128.227240	147.518458
min	2.500000	0.000000	0.000000	0.000000
25%	13.625000	150.000000	0.000000	0.000000
50%	19.500000	260.000000	0.000000	10.000000
75%	34.000000	530.000000	0.000000	20.000000
max	4385.420000	56920.000000	1560.000000	1820.000000

In [14]:
```
data.isnull().sum()#sum of null values
```

Out[14]:
```
Category          1
Date Entered      1
Product Name      1
Supplier          1
Unit Price        0
Units In Stock    0
Units On Order    0
Reorder Level     0
Discontinued      1
dtype: int64
```

In [19]:
```
print("Mean value= ",data['Units In Stock'].mean())#mean value
```
```
Mean value=  753.9072847682119
```

In [20]:
```
print("Mean value= ",data['Unit Price'].mean())#mean value
```
```
Mean value=  58.08503311258276
```

In [21]:
```
print("Mean value= ",data['Units On Order'].mean())#mean value
```
```
Mean value=  20.662251655629138
```

In [24]:
```
print("Mean value= ",data['Reorder Level'].mean())#mean value
```
```
Mean value=  24.105960264900663
```

In [25]:
```
print("Median value= ",data['Unit Price'].mean())#median value
```
```
Median value=  58.08503311258276
```

In [26]:
```
print("Median value= ",data['Reorder Level'].mean())#median value
```
```
Median value=  24.105960264900663
```

In [27]:
```
print("Median value= ",data['Units On Order'].mean())#median value
```
```
Median value=  20.662251655629138
```

In [28]:
```
print("Median value= ",data['Units In Stock'].mean())#median value
```
```
Median value=  753.9072847682119
```

In [29]:
```
print("Mode value= ",data['Units On Order'].mean())#median value
```
```
Mode value=  20.662251655629138
```

In [30]:
```
print("Mode value= ",data['Units In Stock'].mean())
```
```
Mode value=  753.9072847682119
```

In [31]:
```
print("Mode value= ",data['Reorder Level'].mean())
```
```
Mode value=  24.105960264900663
```

In [32]:
```
print("Mode value= ",data['Unit Price'].mean())
```
```
Mode value=  58.08503311258276
```

In [33]:
```
print("Minimum= ",data['Units On Order'].min())
```
```
Minimum=  0
```

In [34]:
```
print("Minimum= ",data['Unit Price'].min())
```
```
Minimum=  2.5
```

In [35]:
```
print("Minimum= ",data['Reorder Level'].min())
```
```
Minimum=  0
```

In [36]:
```
print("Minimum= ",data['Units In Stock'].min())
```
```
Minimum=  0
```

In [37]:
```
print("Max value= ",data['Units In Stock'].max())
```

```
Max value=  56920
```

In [38]:
```
print("Max value= ",data['Unit Price'].max())
```

```
Max value=  4385.419999999998
```

In [39]:
```
print("Max value= ",data['Units On Order'].max())
```

```
Max value=  1560
```

In [40]:
```
print("Max value= ",data['Reorder Level'].max())
```

```
Max value=  1820
```

In [41]:
```
print("range value= ",data['Reorder Level'].max()-data['Reorder Level'].min())
```

```
range value=  1820
```

In [43]:
```
print("Variance = ",data['Units In Stock'].var())
```

```
Variance =  21289543.96467991
```

In [44]:
```
print("Standard Deviation = ",data['Units In Stock'].std())
```

```
Standard Deviation =  4614.059380272421
```

In [45]:
```
print("Skewness = ",data['Units In Stock'].skew())
```

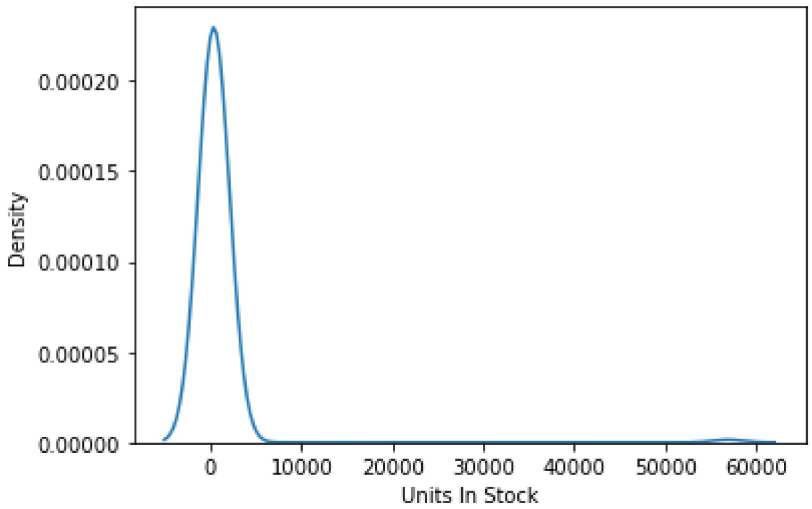
```
Skewness =  12.184884164326837
```

In [46]:
```
print("Kurtosis = ",data['Units In Stock'].kurt())
```

```
Kurtosis =  149.29031033666743
```

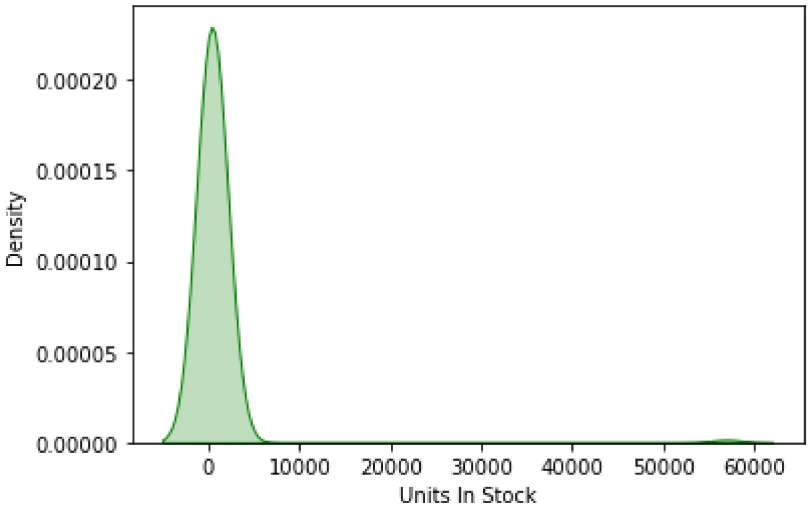
In [48]:
```
sns.kdeplot(data['Units In Stock'])
```

Out[48]:
```
<AxesSubplot:xlabel='Units In Stock', ylabel='Density'>
```



In [50]:
```
sns.kdeplot(data['Units In Stock'],color='green',fill=True)
```

Out[50]:
```
<AxesSubplot:xlabel='Units In Stock', ylabel='Density'>
```


0.00020
0.00015
0.00010
0.00005
0.00000
Density
0
10000
20000
30000
40000
50000
60000
Units In Stock

In [ ]: