

```
import pandas as pd
import matplotlib.pyplot as plt
df=pd.read_csv("100_Sales_Records.csv")
df

In [15]:
df

Out[15]:
   Order ID  Region  Country  Item Type  Sales Channel  Order Priority  Order Date  Order ID  Ship Date  Units Sold  Unit Price  Unit Cost  Total Revenue  Total Cost  Total Profit
0          0  Oceania  Australia  Baby Food  Offline  H  5/28/2010  60165933  6/27/2010  9925  255.28  159.42  253564.00  158243.50  95140.50
1          1  Central America and the Caribbean  Grenada  Cereal  Offline  C  8/22/2012  963881480  9/15/2012  2804  205.70  117.11  576782.80  328376.44  248406.36
2          2  Europe  Russia  Office Supplies  Offline  L  5/2/2014  341417157  5/8/2014  1779  651.21  524.96  1158502.59  833903.84  224598.75
3          3  Sub-Saharan Africa  Sao Tome and Principe  Fruits  Offline  C  6/20/2014  514321792  7/5/2014  8102  9.33  6.92  75591.66  56055.84  19525.82
4          4  Sub-Saharan Africa  Rwanda  Office Supplies  Offline  L  2/1/2013  115456712  2/6/2013  5062  651.21  524.96  3296425.02  2657347.52  639077.50
...
95          95  Sub-Saharan Africa  Mali  Clothes  Offline  M  7/26/2011  512878119  9/3/2011  888  109.28  35.84  97040.64  31825.92  65214.72
96          96  Sub-Saharan Africa  Asia  Malaysia  Fruits  Offline  L  11/1/2011  810711038  12/28/2011  6267  9.33  6.92  58471.11  43367.64  15103.47
97          97  Sub-Saharan Africa  Sierra Leone  Vegetables  Offline  C  6/1/2016  128812527  6/29/2016  1485  154.06  90.93  228779.10  135031.05  93748.05
98          98  North America  Mexico  Personal Care  Offline  M  7/8/2015  559427106  8/6/2015  5767  81.73  56.67  471336.91  326615.89  144521.02
99          99  Sub-Saharan Africa  Mozambique  Household  Offline  L  2/10/2012  665095412  2/15/2012  5367  668.27  502.54  3586605.09  2697132.18  889472.91
100 rows x 14 columns

In [15]:
df["Region"]

Out[15]:
0      Oceania
1  Central America and the Caribbean
2      Europe
3      Sub-Saharan Africa
4      Sub-Saharan Africa
...
95  Sub-Saharan Africa
96  Sub-Saharan Africa
97  Sub-Saharan Africa
98  North America
99  Sub-Saharan Africa
Name: Region, Length: 100, dtype: object

In [16]:
df["Units Sold"].max()

Out[16]:
9925

In [17]:
df.describe()

Out[17]:
   Order ID  Units Sold  Unit Price  Unit Cost  Total Revenue  Total Cost  Total Profit
count  1.000000e+02  100.000000  100.000000  1.000000e+02  1.000000e+02  1.000000e+02
mean    5.550204e+08  5128.710000  276.761300  191.048000  1.3734488e+06  9.318057e+05  4.416820e+05
std     2.606153e+08  2794.484562  235.592241  180.208181  1.460226e+06  1.083939e+06  4.385379e+05
min     1.146066e+08  124.000000  9.330000  6.920000  4.870260e+03  3.612240e+03  1.258020e+03
25%    1.389252e+08  2836.250000  81.730000  35.840000  6.267212e+05  1.688006e+05  1.214456e+05
50%    5.570864e+08  5320.500000  179.880000  107.275000  7.523144e+06  6.315664e+06  2.907680e+06
75%    7.507515e+08  7360.000000  437.200000  263.330000  2.212045e+06  1.613870e+06  6.358288e+06
max     9.940222e+08  9925.000000  668.270000  524.960000  5.509705e+06  4.509794e+06  1.719926e+06

In [18]:
df.head(20)

Out[18]:
   Order ID  Region  Country  Item Type  Sales Channel  Order Priority  Order Date  Order ID  Ship Date  Units Sold  Unit Price  Unit Cost  Total Revenue  Total Cost  Total Profit
0          0  Oceania  Australia  Baby Food  Offline  H  5/28/2010  60165933  6/27/2010  9925  255.28  159.42  253564.00  158243.50  95140.50
1          1  Central America and the Caribbean  Grenada  Cereal  Offline  C  8/22/2012  963881480  9/15/2012  2804  205.70  117.11  576782.80  328376.44  248406.36
2          2  Europe  Russia  Office Supplies  Offline  L  5/2/2014  341417157  5/8/2014  1779  651.21  524.96  1158502.59  833903.84  224598.75
3          3  Sub-Saharan Africa  Sao Tome and Principe  Fruits  Offline  C  6/20/2014  514321792  7/5/2014  8102  9.33  6.92  75591.66  56055.84  19525.82
4          4  Sub-Saharan Africa  Rwanda  Office Supplies  Offline  L  2/1/2013  115456712  2/6/2013  5062  651.21  524.96  3296425.02  2657347.52  639077.50
...
11         11  Oceania  Australia  Baby Food  Offline  H  8/2/2014  539825713  8/7/2014  4168  109.28  35.84  454579.04  149381.12  306097.92
12         12  Central America and the Caribbean  Honduras  Household  Offline  H  2/8/2017  522804087  2/13/2017  8263  668.27  502.54  5997054.96  4509793.96  1487261.00
13         13  Europe  Bulgaria  Clothes  Offline  C  2/19/2014  632401311  2/25/2014  4901  81.73  56.67  400555.73  277719.67  122836.06
14         14  Europe  Sri Lanka  Cosmetics  Offline  M  4/23/2012  972282029  6/3/2012  1073  109.28  35.84  108255.44  59963.22  12865.22
15         15  Sub-Saharan Africa  Sri Lanka  Cosmetics  Offline  M  11/9/2016  419120971  12/16/2016  6952  437.20  263.33  3039414.40  183676.16  120474.24
16         16  Sub-Saharan Africa  Cameroon  Beverages  Offline  C  4/1/2015  519823964  4/16/2015  5430  47.45  31.79  257653.50  17319.70  86933.80
17         17  Sub-Saharan Africa  Asia  Turkmenistan  Household  Offline  L  12/30/2010  441619336  1/20/2011  3830  668.27  502.54  2554614.10  1044128.20  63476.90
18         18  Oceania  Australia  East Timor  Meat  Offline  L  7/9/12/2012  322067916  9/1/2012  5988  421.89  364.69  2495256.12  2154585.52  337937.60

In [19]:
df.tail(10)

Out[19]:
   Order ID  Region  Country  Item Type  Sales Channel  Order Priority  Order Date  Order ID  Ship Date  Units Sold  Unit Price  Unit Cost  Total Revenue  Total Cost  Total Profit
90          90  Sub-Saharan Africa  Sierra Leone  Office Supplies  Offline  H  12/6/2016  621388563  12/14/2016  948  651.21  524.96  617943.95  429762.08  198187.87
91          91  Oceania  Australia  Beverages  Offline  H  7/7/2014  248470397  7/11/2014  9389  47.45  31.79  445508.05  296476.31  149031.74
92          92  Middle East and North Africa  Azerbaijan  Office Supplies  Offline  M  6/13/2012  423331391  7/24/2012  2021  651.21  524.96  1316095.41  1060944.16  255111.25
93          93  Europe  Romania  Cosmetics  Offline  H  11/26/2010  660643374  12/25/2010  7910  437.20  263.33  348252.00  208240.90  137511.10
94          94  Central America and the Caribbean  Nicaragua  Beverages  Offline  C  2/8/2011  963302674  3/21/2011  8156  47.45  31.79  387002.20  252729.34  12722.86
95          95  Sub-Saharan Africa  Mali  Clothes  Offline  M  7/26/2011  512878119  9/3/2011  888  109.28  35.84  97040.64  31825.92  65214.72
96          96  Asia  Malaysia  Fruits  Offline  L  11/1/2011  810711038  12/28/2011  6267  9.33  6.92  58471.11  43367.64  15103.47
97          97  Sub-Saharan Africa  Sierra Leone  Vegetables  Offline  C  6/1/2016  128812527  6/29/2016  1485  154.06  90.93  228779.10  135031.05  93748.05
98          98  North America  Mexico  Personal Care  Offline  M  7/8/2015  559427106  8/6/2015  5767  81.73  56.67  471336.91  326615.89  144521.02
99          99  Sub-Saharan Africa  Mozambique  Household  Offline  L  2/10/2012  665095412  2/15/2012  5367  668.27  502.54  3586605.09  2697132.18  889472.91

In [19]:
x=df.head(10)
x.tail(10)

Out[19]:
   Order ID  Region  Country  Item Type  Sales Channel  Order Priority  Order Date  Order ID  Ship Date  Units Sold  Unit Price  Unit Cost  Total Revenue  Total Cost  Total Profit
25          25  Europe  France  Cosmetics  Offline  H  5/22/2017  896523128  6/5/2017  1815  437.20  263.33  793518.00  477943.95  315574.05
26          26  Oceania  Oceania  Kibabii  Fruits  Offline  M  10/13/2014  347140347  11/7/2014  5398  9.33  6.92  50363.34  37354.16  13009.18
27          27  Sub-Saharan Africa  Mali  Fruits  Offline  L  5/7/2010  686046400  5/10/2010  5822  9.33  6.92  54191.26  40208.24  14011.02
28          28  Europe  Norway  Beverages  Offline  C  7/18/2014  435608613  7/30/2014  5124  47.45  31.79  243133.80  162891.96  80241.84
29          29  Sub-Saharan Africa  The Gambia  Household  Offline  L  5/26/2012  886494815  6/9/2012  2370  668.27  502.54  1583799.90  1191019.80  392780.10

In [121]:
type(df["Region"])

Out[121]:
pandas.core.series.Series

In [131]:
df["Region"].shape

Out[131]:
(100,)

In [141]:
x=df[["Region","Country"]]
x.head()

Out[141]:
   Region  Country
0  Oceania  Australia
1  Central America and the Caribbean  Grenada
2      Europe  Russia
3      Sub-Saharan Africa  Sao Tome and Principe
4      Sub-Saharan Africa  Rwanda

In [131]:
type(df[["Region","Country"]])

Out[131]:
pandas.core.frame.DataFrame

In [161]:
df[["Region","Country"]].shape

Out[161]:
(100, 2)

In [171]:
df["Units Sold"]>9000

Out[171]:
0      True
1      False
2      False
3      True
4      True
...
95     False
96     True
97     False
98     True
99     True
Name: Units Sold, Length: 100, dtype: bool

In [181]:
x=df[(df["Units Sold"]>9000)&(df["Total Profit"]>90000)]

Out[181]:
   Region  Country  Item Type  Sales Channel  Order Priority  Order Date  Order ID  Ship Date  Units Sold  Unit Price  Unit Cost  Total Revenue  Total Cost  Total Profit
0  Oceania  Australia  Baby Food  Offline  H  5/28/2010  60165933  6/27/2010  9925  255.28  159.42  253564.00  158243.50  95140.50
4  Sub-Saharan Africa  Rwanda  Office Supplies  Offline  L  2/1/2013  115456712  2/6/2013  5062  651.21  524.96  3296425.02  2657347.52  639077.50
7  Sub-Saharan Africa  Burkina Faso  Vegetables  Offline  H  7/17/2012  871543967  7/27/2012  8082  154.06  90.93  1245112.92  734896.26  510216.66
8  Sub-Saharan Africa  Republic of the Congo  Personal Care  Offline  M  7/14/2015  770463311  8/25/2015  6070  81.73  56.67  496101.10  343986.90  152134.20
9  Sub-Saharan Africa  Senegal  Cereal  Offline  H  4/18/2014  616607081  5/30/2014  6593  205.70  117.11  1356180.10  772106.23  584073.87
12  Oceania  Asia  Bangladesh  Clothes  Offline  L  1/3/2017  187310731  3/1/2017  8263  109.28  35.84  90280.64  296145.92  606834.72
13  Central America and the Caribbean  Honduras  Household  Offline  H  2/8/2017  522804087  2/13/2017  8263  668.27  502.54  5997054.96  4509793.96  1487261.00
16  Oceania  Asia  Sri Lanka  Cosmetics  Offline  M  11/9/2016  419120971  12/16/2016  6952  437.20  263.33  3039414.40  183676.16  120474.24
19  Oceania  Australia  East Timor  Meat  Offline  L  7/3/2012  322067916  9/1/2012  5988  421.89  364.69  2495256.12  2154585.52  337937.60
20  Europe  Norway  Baby Food  Offline  L  5/14/2014  819028031  6/28/2014  7450  255.28  159.42  190186.00  118767.00  71457.00
24  Europe  Moldova  Personal Care  Offline  L  5/7/2016  740147912  5/10/2016  5070  81.73  56.67  414371.10  251458.52  373937.60
30  Europe  Switzerland  Cosmetics  Offline  M  9/17/2012  249693334  10/20/2012  8661  437.20  263.33  378669.20  228070.13  150588.07
33  Oceania  Asia  Myanmar  Household  Offline  H  1/16/2015  177713572  3/1/2015  8205  668.27  502.54  5513227.50  409793.96  512472.50
34  Sub-Saharan Africa  Djibouti  Snacks  Offline  M  2/25/2017  756274640  2/25/2017  7327  152.58  97.44  1117953.66  713942.88  404010.78
35  Central America and the Caribbean  Costa Rica  Personal Care  Offline  L  5/8/2017  456767165  5/21/2017  6409  81.73  56.67  523807.57  363198.03  160650.54
38  Oceania  Asia  Brunei  Office Supplies  Offline  L  4/1/2012  320092627  5/8/2012  6708  651.21  524.96  4368316.68  3521431.68  846885.00
41  Middle East and North Africa  Azerbaijan  Cosmetics  Offline  M  2/6/2010  382392299  2/25/2010  7234  437.20  263.33  3162704.80  194829.22  125777.58
44  Oceania  Asia  Myanmar  Clothes  Offline  H  11/14/2015  223359620  11/18/2015  1059  109.28  35.84  648030.40  234941.20  435499.20
46  Europe  Iceland  Cosmetics  Offline  C  12/31/2016  314348481  12/31/2016  8867  437.20  263.33  3876652.40  2334947.11  1541705.29
48  Europe  Macedonia  Clothes  Offline  C  10/14/2014  787399443  11/14/2014  7942  109.28  35.84  856973.76  281057.28  575916.48
49  Oceania  Australia  Fiji  Clothes  Offline  C  6/30/2010  647874489  8/1/2010  9805  109.28  35.84  1082418.40  354995.20  727423.20
59  Sub-Saharan Africa  Djibouti  Cosmetics  Offline  H  4/7/2014  259353148  4/19/2014  7215  437.20  263.33  3154588.00  1899025.95  1254720.05
62  Sub-Saharan Africa  Cameroon  Office Supplies  Offline  M  11/7/2011  177636784  11/15/2011  5518  651.21  524.96  3593376.78  2896729.28  696647.50
63  Middle East and North Africa  Libya  Clothes  Offline  H  10/30/2010  705784308  11/7/2010  6116  109.28  35.84  668356.48  219357.44  449159.04
66  Sub-Saharan Africa  Gabon  Personal Care  Offline  L  7/8/2012  129844623  7/9/2012  8656  81.73  56.67  707454.88  490533.52  216919.36
67  Central America and the Caribbean  Belize  Clothes  Offline  M  7/25/2016  867025039  9/7/2016  1488  154.06  90.93  228779.10  135031.05  93748.05
68  Europe  Lithuania  Office Supplies  Offline  H  10/24/2010  160400450  11/17/2010  8287  651.21  524.96  5395777.22  4304343.52  1064333.72
69  Sub-Saharan Africa  Madagascar  Cosmetics  Offline  L  4/25/2015  610425555  5/28/2015  7342  109.28  35.84  802333.26  263137.28  539196.48
70  Oceania  Asia  Turkmenistan  Office Supplies  Offline  M  4/23/2013  462405812  5/20/2013  5010  651.21  524.96  326262.10  263049.60  632512.50
73  Sub-Saharan Africa  Djibouti  Cereal  Offline  H  5/20/2017  555990166  6/17/2017  8656  205.70  117.11  1780539.20  1017304.16  766833.04
74  Middle East and North Africa  Pakistan  Cosmetics  Offline  L  7/5/2013  21145322  8/16/2013  9892  437.20  263.33  4324782.40  2640860.36  1719922.04
75  North America  Mexico  Household  Offline  C  11/6/2014  886435210  12/12/2014  6954  668.27  502.54  4647149.58  3494663.16  1152486.42
76  Oceania  Australia  Federated States of Micronesia  Beverages  Offline  C  10/28/2014  217221009  11/15/2014  9379  47.45  31.79  445033.55  298158.41  146875.14
78  Europe  Monaco  Baby Food  Offline  H  5/29/2012  688388152  6/2/2012  8614  255.28  159.42  2198981.92  1372453.88  825738.04
79  Oceania  Australia  Samoa  Cosmetics  Offline  H  7/20/2013  670854651  8/7/2013  9654  437.20  263.33  4220728.80  2542187.82  1685430.98
81  Middle East and North Africa  Lebanon  Clothes  Offline  H  9/18/2012  663110148  10/8/2012  7884  109.28  35.84  861363.52  282562.56  579000.96
82  Middle East and North Africa  Iran  Cosmetics  Offline  H  1/15/2016  289595982  12/6/2016  6489  437.20  263.33  2839960.80  1704748.37  1135242.43
84  Sub-Saharan Africa  Kenya  Beverages  Offline  L  6/30/2016  795469602  7/26/2016  2225  154.06  90.93  339490.52  218404.00  121086.50
87  Sub-Saharan Africa  Mexico  Personal Care  Offline  L  2/17/2012  420915620  3/20/2012  6422  81.73  56.67  524076.05  303594.74  160935.32
91  Sub-Saharan Africa  Sao Tome and Principe  Beverages  Offline  C  1/16/2011  180239712  1/23/2011  8829  47.45  31.79  418565.65  268715.91  138632.74
97  Sub-Saharan Africa  The Gambia  Baby Food  Offline  M  2/3/2014  494747465  3/20/2014  5559  255.28  159.42  141901.52  86425.78  53265.74
97  Australia  Oceania  Australia  Beverages  Offline  H  7/3/2014  240430397  7/31/2014  9389  47.45  31.79  445508.05  296476.31  149031.74
93  Australia  Europe  Romania  Cosmetics  Offline  H  11/06/2010  660643374  12/25/2010  7910  437.20  263.33  348252.00  208240.90  137511.10
94  Central America and the Caribbean  Nicaragua  Beverages  Offline  C  2/8/2011  963302674  3/21/2011  8156  47.45  31.79  387002.20  252729.34  12722.86
98  North America  Mexico  Personal Care  Offline  M  7/8/2015  559427106  8/6/2015  5767  81.73  56.67  471336.91  326615.89  144521.02
99  Sub-Saharan Africa  Mozambique  Household  Offline  L  2/10/2012  665095412  2/15/2012  5367  668.27  502.54  3586605.09  2697132.18  889472.91

In [221]:
x=df[("Sales Channel"]=="Online")
x

Out[221]:
   Region  Country  Item Type  Sales Channel  Order Priority  Order Date  Order ID  Ship Date  Units Sold  Unit Price  Unit Cost  Total Revenue  Total Cost  Total Profit
1  Central America and the Caribbean  Grenada  Cereal  Offline  C  8/22/2012  963881480  9/15/2012  2804  205.70  117.11  576782.80  328376.44  248406.36
3  Sub-Saharan Africa  Sao Tome and Principe  Fruits  Offline  C  6/20/2014  514321792  7/5/2014  8102  9.33  6.92  75591.66  56055.84  19525.82
5  Oceania  Australia  Solomon Islands  Baby Food  Offline  C  2/4/2015  547995746  2/21/2015  2974  255.28  159.42  759202.72  474115.08  285087.64
7  Sub-Saharan Africa  Burkina Faso  Vegetables  Offline  H  7/17/2012  871543967  7/27/2012  8082  154.06  90.93  1245112.92  734896.26  510216.66
9  Sub-Saharan Africa  Senegal  Cereal  Offline  H  4/18/2014  616607081  5/30/2014  6593  205.70  117.11  1356180.10  772106.23  584073.87
10  Oceania  Asia  Kyrgyzstan  Vegetables  Offline  H  4/24/2011  814711038  12/28/2011  6267  9.33  6.92  58471.11  43367.64  15103.47
12  Oceania  Asia  Bangladesh  Clothes  Offline  L  1/3/2017  187310731  3/1/2017  8263  109.28  35.84  90280.64  296145.92  606834.72
15  Europe  Bulgaria  Clothes  Offline  M  4/23/2012  972282029  6/3/2012  1073  109.28  35.84  108255.44  59963.22  12865.22
19  Oceania  Australia  East Timor  Meat  Offline  L  7/3/2012  322067916  9/1/2012  5988  421.89  364.69  2495256.12  2154585.52  337937.60
20  Europe  Norway  Baby Food  Offline  L  5/14/2014  819028031  6/28/2014  7450  255.28  159.42  190186.00  118767.00  71457.00
24  Europe  Moldova  Personal Care  Offline  L  5/7/2016  740147912  5/10/2016  5070  81.73  56.67  414371.10  251458.52  373937.60
30  Europe  Switzerland  Cosmetics  Offline  M  9/17/2012  249693334  10/20/2012  8661  437.20  263.33  378669.20  228070.13  150588.07
33  Oceania  Asia  Myanmar  Household  Offline  H  1/16/2015  177713572  3/1/2015  8205  668.27  502.54  5513227.50  409793.96  512472.50
34  Sub-Saharan Africa  Djibouti  Snacks  Offline  M  2/25/2017  756274640  2/25/2017  7327  152.58  97.44  1117953.66  713942.88  404010.78
35  Central America and the Caribbean  Costa Rica  Personal Care  Offline  L  5/8/2017  456767165  5/21/2017  6409  81.73  56.67  523807.57  363198.03  160650.54
38  Oceania  Asia  Brunei  Office Supplies  Offline  L  4/1/2012  320092627  5/8/2012  6708  651.21  524.96  4368316.68  3521431.68  846885.00
41  Middle East and North Africa  Azerbaijan  Cosmetics  Offline  M  2/6/2010  382392299  2/25/2010  7234  437.20  263.33  3162704.80  194829.22  125777.58
44  Oceania  Asia  Myanmar  Clothes  Offline  H  11/14/2015  223359620  11/18/2015  1059  109.28  35.84  648030.40  234941.20  435499.20
46  Europe  Iceland  Cosmetics  Offline  C  12/31/2016  314348481  
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