```
import numpy as np
In [2]: # Handling null values
         df = pd.read csv(r"C:\Users\RYAN\Downloads\orders.csv",na values=['Not Available', 'unknown'])
In [3]: df.head()
Out[3]:
            Order Order
                             Ship
                                                                            Postal
                                                                                                            Sub
                                                                                                                  Product
                                                                                                                           cost
                                                                                                                                   List
                                    Segment Country
                                                             City
                                                                      State
                                                                                    Region Category
                    Date
                                                                                                       Category
                                                                                                                           price
                                                                                                                                 Price
               ld
                             Mode
                                                                             Code
                                                                                                                       ld
                   2023-
                                                                                                                  FUR-BO-
                           Second
                                                United
         0
                1
                                   Consumer
                                                       Henderson
                                                                   Kentucky
                                                                             42420
                                                                                     South
                                                                                             Furniture
                                                                                                      Bookcases
                                                                                                                             240
                                                                                                                                   260
                   03-01
                             Class
                                                                                                                 10001798
                                                States
                   2023-
                           Second
                                                United
                                                                                                                  FUR-CH-
                                                                             42420
         1
                                   Consumer
                                                       Henderson
                                                                   Kentucky
                                                                                     South
                                                                                             Furniture
                                                                                                          Chairs
                                                                                                                             600
                                                                                                                                   730
                   08-15
                             Class
                                                                                                                 10000454
                                                States
                   2023-
                           Second
                                                United
                                                             Los
                                                                                               Office
                                                                                                                  OFF-LA-
         2
                3
                                                                  California
                                                                             90036
                                                                                      West
                                                                                                                             10
                                                                                                                                    10
                                    Corporate
                                                                                                          Labels
                                                                                                                 10000240
                   01-10
                             Class
                                                States
                                                          Angeles
                                                                                             Supplies
                   2022-
                          Standard
                                                United
                                                             Fort
                                                                                                                  FUR-TA-
         3
                                                                     Florida
                                                                             33311
                                                                                     South
                                                                                             Furniture
                                                                                                          Tables
                                                                                                                             780
                                                                                                                                   960
                                   Consumer
                   06-18
                             Class
                                                States
                                                       Lauderdale
                                                                                                                 10000577
                                                                                               Office
                                                                                                                  OFF-ST-
                                                             Fort
                   2022-
                          Standard
                                                United
         4
                                    Consumer
                                                                     Florida
                                                                             33311
                                                                                     South
                                                                                                         Storage
                                                                                                                              20
                                                                                                                                    20
                                                                                                                 10000760
                   07-13
                             Class
                                                States
                                                      Lauderdale
                                                                                             Supplies
         4
In [4]: df.columns
Out[4]: Index(['Order Id', 'Order Date', 'Ship Mode', 'Segment', 'Country', 'City',
                  'State', 'Postal Code', 'Region', 'Category', 'Sub Category',
                  'Product Id', 'cost price', 'List Price', 'Quantity',
                 'Discount Percent'],
                dtype='object')
In [5]: df['Ship Mode'].unique()
         array(['Second Class', 'Standard Class', nan, 'First Class', 'Same Day'],
                dtype=object)
In [6]:
        df.shape
Out[6]: (9994, 16)
In [7]:
         df.describe()
                    Order Id
                              Postal Code
                                              cost price
                                                            List Price
                                                                          Quantity Discount Percent
         count 9994.000000
                              9994.000000
                                            9994.000000
                                                          9994.000000
                                                                       9994.000000
                                                                                        9994.000000
         mean 4997.500000
                             55190.379428
                                             201.189714
                                                           229.756854
                                                                          3.789574
                                                                                           3.484090
            std 2885.163629
                             32063.693350
                                             537.743203
                                                           623.245839
                                                                          2.225110
                                                                                           1 114211
           min
                   1.000000
                              1040.000000
                                               0.000000
                                                             0.000000
                                                                          1.000000
                                                                                           2.000000
          25% 2499.250000
                             23223.000000
                                              20.000000
                                                            20.000000
                                                                          2.000000
                                                                                           2.000000
          50%
                4997.500000
                             56430.500000
                                              50.000000
                                                            50.000000
                                                                          3.000000
                                                                                           3.000000
          75% 7495.750000
                             90008.000000
                                             180.000000
                                                           210.000000
                                                                          5.000000
                                                                                           4.000000
          max 9994.000000
                             99301.000000 18110.000000
                                                        22640.000000
                                                                         14.000000
                                                                                           5.000000
In [8]: df.isnull().sum()
Out[8]: Order Id
                                0
         Order Date
                                0
         Ship Mode
                                6
         Segment
         Country
                                0
                                0
         City
         State
                                0
         Postal Code
                                0
         Region
                                0
         Category
         Sub Category
                                0
         Product Id
                                0
                                0
         cost price
         List Price
                                0
                                0
         Quantity
         Discount Percent
         dtype: int64
```

In [1]:

import pandas as pd

```
In [9]: df.head()
 Out[9]:
             Order Order
                               Ship
                                                                                                              Sub
                                                                                                                     Product
                                                                                                                                      List
                                                                               Postal
                                                                                                                              cost
                                      Segment Country
                                                               City
                                                                        State
                                                                                      Region Category
                                                                                                          Category
                                                                                                                                     Price
                      Date
                               Mode
                                                                                Code
                                                                                                                              price
                 ld
                                                                                                                          ld
                     2023-
                                                                                                                     FUR-BO-
                             Second
                                                  United
          0
                  1
                                     Consumer
                                                         Henderson
                                                                     Kentucky
                                                                               42420
                                                                                        South
                                                                                               Furniture
                                                                                                         Bookcases
                                                                                                                                240
                                                                                                                                      260
                     03-01
                               Class
                                                                                                                    10001798
                                                  States
                     2023-
                                                                                                                     FUR-CH-
                             Second
                                                  United
           1
                  2
                                                                               42420
                                                                                               Furniture
                                                                                                                                600
                                     Consumer
                                                         Henderson
                                                                     Kentucky
                                                                                        South
                                                                                                             Chairs
                                                                                                                                      730
                     08-15
                                                                                                                    10000454
                               Class
                                                  States
                     2023-
                                                                                                  Office
                                                                                                                     OFF-LA-
                             Second
                                                  United
                                                                Los
          2
                  3
                                                                               90036
                                      Corporate
                                                                     California
                                                                                        West
                                                                                                            Labels
                                                                                                                                 10
                                                                                                                                       10
                     01-10
                               Class
                                                  States
                                                            Angeles
                                                                                                Supplies
                                                                                                                    10000240
                     2022-
                            Standard
                                                  United
                                                               Fort
                                                                                                                     FUR-TA-
          3
                  4
                                                                       Florida
                                                                               33311
                                                                                                                                780
                                                                                                                                      960
                                     Consumer
                                                                                        South
                                                                                               Furniture
                                                                                                            Tables
                     06-18
                               Class
                                                  States
                                                         Lauderdale
                                                                                                                    10000577
                                                                                                  Office
                                                                                                                     OFF-ST-
                     2022-
                            Standard
                                                  United
                                                               Fort
           4
                                      Consumer
                                                                       Florida
                                                                               33311
                                                                                        South
                                                                                                           Storage
                                                                                                                                 20
                                                                                                                                       20
                     07-13
                               Class
                                                  States
                                                         Lauderdale
                                                                                                Supplies
                                                                                                                    10000760
          4
                                                                                                                                       Þ
In [10]: df.columns
Out[10]: Index(['Order Id', 'Order Date', 'Ship Mode', 'Segment', 'Country', 'City',
                   'State', 'Postal Code', 'Region', 'Category', 'Sub Category',
                   'Product Id', 'cost price', 'List Price', 'Quantity',
                   'Discount Percent'],
                  dtype='object')
In [11]: # changing datatype
          df['Order Date'] = pd.to datetime(df['Order Date'], format="%Y-%m-%d")
In [12]: df.dtypes
          Order Id
                                            int64
           Order Date
                                  datetime64[ns]
           Ship Mode
                                           object
           Segment
                                           object
           Country
                                           object
           City
                                           object
           State
                                           object
           Postal Code
                                            int64
           Region
                                           object
           Category
                                           object
           Sub Category
                                           object
           Product Id
                                           object
           cost price
                                            int64
           List Price
                                            int64
           Quantity
                                            int64
           Discount Percent
                                            int64
           dtype: object
          # Renaming columns using str function
          df.columns=df.columns.str.lower()
          df.columns=df.columns.str.replace(' ','_')
In [14]: df.head()
Out[14]:
             order_id
                      order_date ship_mode
                                                segment country
                                                                         city
                                                                                 state
                                                                                       postal_code region category sub_category
                                                                                                                                    produ
                                       Second
                                                           United
                                                                                                                                       FUF
          0
                       2023-03-01
                                               Consumer
                                                                  Henderson
                                                                              Kentucky
                                                                                              42420
                                                                                                      South
                                                                                                             Furniture
                                                                                                                          Bookcases
                    1
                                        Class
                                                           States
                                                                                                                                      1000
                                                                                                                                       FUE
                                       Second
                                                           United
                       2023-08-15
                                               Consumer
                                                                   Henderson
                                                                              Kentucky
                                                                                              42420
                                                                                                      South
                                                                                                             Furniture
                                                                                                                             Chairs
                                        Class
                                                           States
                                                                                                                                      1000
                                                                                                               Office
                                                                                                                                       OFI
                                                           United
                                       Second
                                                                         Los
          2
                       2023-01-10
                                               Corporate
                                                                              California
                                                                                              90036
                                                                                                      West
                                                                                                                             Labels
                                                                                                             Supplies
                                        Class
                                                           States
                                                                     Angeles
                                                                                                                                      1000
                                                           United
                                                                         Fort
                                                                                                                                       FUF
                                     Standard
          3
                       2022-06-18
                                               Consumer
                                                                                Florida
                                                                                              33311
                                                                                                      South
                                                                                                             Furniture
                                                                                                                             Tables
                                                                                                                                      1000
                                        Class
                                                           States
                                                                  Lauderdale
                                                                                                                                       OFF
                                     Standard
                                                           United
                                                                         Fort
                                                                                                               Office
           4
                    5 2022-07-13
                                               Consumer
                                                                                Florida
                                                                                              33311
                                                                                                      South
                                                                                                                            Storage
                                                                  Lauderdale
                                                                                                             Supplies
                                                                                                                                      1000
                                        Class
                                                           States
In [15]: # To create a new column discount
          df['discount']=df['list price'] * (df['discount percent'] / 100)
          df['discount']
```

```
5.2
Out[15]:
           0
           1
                    21.9
           2
                     0.5
           3
                    19.2
           4
                     1.0
           9989
                     1.2
           9990
                     3.6
           9991
                     5.2
           9992
                     0.9
           9993
                     7.2
           Name: discount, Length: 9994, dtype: float64
In [16]: df.head()
Out[16]:
              order_id
                      order_date ship_mode
                                                segment country
                                                                         city
                                                                                  state
                                                                                         postal_code
                                                                                                      region category sub_category
                                                                                                                                      produ
                                                                                                                                        FUR
                                       Second
                                                            United
           0
                       2023-03-01
                                                                                               42420
                                               Consumer
                                                                   Henderson
                                                                               Kentucky
                                                                                                       South
                                                                                                              Furniture
                                                                                                                           Bookcases
                                        Class
                                                            States
                                                                                                                                        1000
                                                                                                                                        FUF
                                                            United
                                       Second
           1
                       2023-08-15
                                                                   Henderson
                                                                               Kentucky
                                                                                               42420
                                                                                                       South
                                                                                                              Furniture
                                                                                                                               Chairs
                                               Consumer
                                         Class
                                                                                                                                        1000
                                                            States
                                                                                                                                         OFI
                                                            United
                                                                                                                 Office
                                       Second
                                                                          Los
          2
                       2023-01-10
                                                                                               90036
                                                Corporate
                                                                               California
                                                                                                       West
                                                                                                                              Labels
                                                                                                              Supplies
                                                                                                                                        1000
                                         Class
                                                            States
                                                                      Angeles
                                      Standard
                                                            United
                                                                         Fort
                                                                                                                                        FUF
           3
                       2022-06-18
                                                                                               33311
                                                                                                       South
                                                                                                                              Tables
                                               Consumer
                                                                                 Florida
                                                                                                              Furniture
                                                                                                                                        1000
                                         Class
                                                            States
                                                                   Lauderdale
                                      Standard
                                                            United
                                                                         Fort
                                                                                                                 Office
                                                                                                                                         OFF
           4
                    5 2022-07-13
                                               Consumer
                                                                                 Florida
                                                                                               33311
                                                                                                       South
                                                                                                                             Storage
                                         Class
                                                            States
                                                                   Lauderdale
                                                                                                               Supplies
                                                                                                                                        1000
In [17]: # To find selling price
          df['selling_price']=df['list_price']-df['discount']
In [18]:
          # To find the profit made
          df['profit']=df['selling_price']-df['cost_price']
In [19]: df.head()
Out[19]:
              order_id order_date ship_mode
                                                                         city
                                                segment country
                                                                                  state postal_code region category sub_category
                                                                                                                                      produ
                                                                                                                                        FUF
                                                            United
                                       Second
          0
                       2023-03-01
                                               Consumer
                                                                   Henderson
                                                                               Kentucky
                                                                                               42420
                                                                                                       South
                                                                                                              Furniture
                                                                                                                           Bookcases
                                                                                                                                        1000
                                        Class
                                                            States
                                                            United
                                                                                                                                        FUF
                                       Second
           1
                    2 2023-08-15
                                               Consumer
                                                                   Henderson
                                                                               Kentucky
                                                                                               42420
                                                                                                       South
                                                                                                              Furniture
                                                                                                                               Chairs
                                         Class
                                                                                                                                        1000
                                                            States
                                       Second
                                                            United
                                                                                                                                         OFI
                                                                          Los
                                                                                                                 Office
          2
                       2023-01-10
                                                                               California
                                                                                               90036
                                                Corporate
                                                                                                       West
                                                                                                                              Labels
                                                                                                              Supplies
                                                                                                                                        1000
                                         Class
                                                            States
                                                                      Angeles
                                      Standard
                                                            United
                                                                         Fort
                                                                                                                                        FUE
           3
                       2022-06-18
                                                                                               33311
                                                                                                       South
                                               Consumer
                                                                                 Florida
                                                                                                              Furniture
                                                                                                                              Tables
                                         Class
                                                            States
                                                                   Lauderdale
                                                                                                                                        1000
                                                                         Fort
                                                                                                                                         OF
                                      Standard
                                                            United
                                                                                                                 Office
           4
                    5 2022-07-13
                                                                                               33311
                                               Consumer
                                                                                 Florida
                                                                                                       South
                                                                                                                              Storage
                                         Class
                                                            States
                                                                  Lauderdale
                                                                                                              Supplies
                                                                                                                                        1000
In [20]: df.dtypes
Out[20]:
          order id
                                             int64
                                  datetime64[ns]
           order_date
           ship_mode
                                           object
           segment
                                           object
           country
                                           object
           city
                                           object
                                           object
           state
           postal_code
                                            int64
           region
                                           object
           category
                                           object
           sub_category
                                           object
           product_id
                                           object
           cost_price
                                            int64
                                            int64
           list_price
           quantity
                                            int64
                                            int64
           {\tt discount\_percent}
           discount
                                          float64
                                          float64
           selling_price
           profit
                                          float64
           dtype: object
In [21]: df['ship_mode'].isnull().sum()
Out[21]: np.int64(6)
```

```
In [22]: df[df['ship mode'].isnull()]
Out[22]:
                order_id order_date ship_mode
                                                   segment country
                                                                         city
                                                                                    state postal_code
                                                                                                                 category sub_category
                                                                                                        region
                                                                                                                                          pro
                                                              United
                                                                         Los
             5
                          2022-03-13
                                            NaN
                                                  Consumer
                                                                                California
                                                                                                90032
                                                                                                         West
                                                                                                                  Furniture
                                                                                                                              Furnishings
                                                              States
                                                                      Angeles
                                                                                                                                            1
                                                                                                                     Office
                                                              United
                                                                         Los
             8
                      9 2023-03-23
                                                                                California
                                                                                                90032
                                            NaN Consumer
                                                                                                         West
                                                                                                                                  Binders
                                                                      Angeles
                                                                                                                  Supplies
                                                              States
                                                              United
                                                                          Los
            10
                          2023-03-31
                                            NaN
                                                 Consumer
                                                                                California
                                                                                                90032
                                                                                                         West
                                                                                                                                  Tables
                      11
                                                                                                                  Furniture
                                                              States
                                                                      Angeles
                                                              United
                                                                          Los
            11
                      12
                         2023-12-25
                                            NaN
                                                 Consumer
                                                                                California
                                                                                                90032
                                                                                                         West
                                                                                                               Technology
                                                                                                                                  Phones
                                                              States
                                                                      Angeles
                                                              United
                                                                         Fort
                                                                                                                     Office
                                                     Home
            14
                      15
                          2023-11-09
                                            NaN
                                                                                   Texas
                                                                                                76106
                                                                                                       Central
                                                                                                                               Appliances
                                                      Office
                                                              States
                                                                        Worth
                                                                                                                  Supplies
                                                                                                                                            1
                                                                                                                     Office
                                                              United
           118
                    119 2023-07-19
                                            NaN
                                                  Corporate
                                                                       Bristol Tennessee
                                                                                                37620
                                                                                                         South
                                                                                                                                  Binders
                                                              States
                                                                                                                  Supplies
           # Dropping unwanted columns
In [23]:
           df.drop(columns=['list_price', 'discount_percent'],inplace=True)
In [24]: df.head()
Out[24]:
              order_id order_date ship_mode
                                                 segment country
                                                                          city
                                                                                                                                       produ
                                                                                   state
                                                                                         postal_code region category sub_category
                                                                                                                                         FUF
                                       Second
                                                            United
           0
                       2023-03-01
                                                Consumer
                                                                    Henderson
                                                                               Kentucky
                                                                                               42420
                                                                                                       South
                                                                                                               Furniture
                                                                                                                            Bookcases
                                         Class
                                                            States
                                                                                                                                         1000
                                                                                                                                         FUF
                                       Second
                                                            United
                    2 2023-08-15
           1
                                                Consumer
                                                                    Henderson
                                                                               Kentucky
                                                                                               42420
                                                                                                        South
                                                                                                               Furniture
                                                                                                                               Chairs
                                         Class
                                                            States
                                                                                                                                         1000
                                       Second
                                                            United
                                                                                                                 Office
                                                                                                                                          OFI
                                                                          Los
           2
                    3 2023-01-10
                                                                               California
                                                                                               90036
                                                                                                        West
                                                Corporate
                                                                                                                               Labels
                                         Class
                                                                      Angeles
                                                                                                               Supplies
                                                                                                                                         1000
                                                            States
                                      Standard
                                                            United
                                                                          Fort
                                                                                                                                         FUF
           3
                       2022-06-18
                                                Consumer
                                                                                  Florida
                                                                                               33311
                                                                                                        South
                                                                                                               Furniture
                                                                                                                               Tables
                                         Class
                                                            States
                                                                    Lauderdale
                                                                                                                                         1000
                                                                                                                 Office
                                      Standard
                                                                                                                                          OF
                                                            United
                                                                          Fort
                                                                                                        South
           4
                    5 2022-07-13
                                                Consumer
                                                                                  Florida
                                                                                               33311
                                                                                                                              Storage
                                         Class
                                                            States
                                                                   Lauderdale
                                                                                                               Supplies
                                                                                                                                         1000
In [35]:
           import sqlalchemy as sal
           engine = sal.create_engine('mysql+mysqldb://root:Ryanantony%4007@localhost:3306/shop')
           conn=engine.connect()
In [36]:
          df.to sql(
               name='sales',
               con=conn,
               index=False,
               if_exists='append' # or 'append', 'fail'
Out[36]: 9994
```

Loading [MathJax]/jax/output/CommonHTML/fonts/TeX/fontdata.js

In []: