In [ ]:
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Nurhsanov Dias IT3-2208
python 8 lab
```

In [1]:
```
import pandas as pd

customers=pd.read_excel("customers.xlsx")
phone_data=pd.read_csv("phone_data.csv")
items_ordered=pd.read_excel("items_ordered.xlsx") #['customerid', 'order_date', 'item', 'quantity', 'price']

items_ordered.price = pd.to_numeric(items_ordered.price, errors='coerce')
items_ordered.order_date = pd.to_datetime(items_ordered.order_date, errors='coerce')
```

In [2]:
```
# 1 Find the maximum price of any item ordered in the items_ordered. //1250.00
items_ordered_max_price = items_ordered["price"].max()

# 2 Calculate the average price of all of the items ordered that were purchased in the month of Dec. //174.3125
items_ordered_mean_price_december = items_ordered[items_ordered.order_date.dt.month==12].price.mean()

# 3 What are the total number of rows in the items_ordered table? //32
total_rows_items_ordered = len(items_ordered)

# 4 For all of the tents that were ordered in the items_ordered table, what is the price of the lowest tent? //1
min_for_tent = items_ordered[items_ordered.item=='Tent'].price.min()

#5 How many people are in each unique state in the customers.xlsx? Indicate the state and display the number of
states = customers.groupby("state").size()

# 6From the items_ordered table, select the item, maximum price, and minimum price
#for each specific item in the table. Hint: The items will need to be broken
#up into separate groups.
items = items_ordered.groupby("item")["price"].agg(['max','mean'])

#7 How many orders did each customer make? Use the items_ordered.
#Find the customerid, number of orders they made, and the sum of their orders.
customer_order_stats = items_ordered.groupby('customerid').agg(
    number_of_orders=('order_date', 'size'),
    total_order_sum=('price', 'sum')
)

print(
    "First task - Maximum price of any item ordered:",
    items_ordered_max_price,
    "\nSecond task - Average price of items ordered in December:",
    items_ordered_mean_price_december,
    "\nThird task - Total number of rows in items_ordered table:",
    total_rows_items_ordered,
    "\nFourth task - Lowest price of a tent ordered:",
    min_for_tent,
    "\nFifth task - Number of people in each unique state:",
    states,
    "\nSixth task - Item, maximum price, and minimum price for each specific item:",
    items,
    "\nSeventh task - Number of orders and total order sum for each customer:",
    customer_order_stats,
    sep='\n'
)
```

```
First task - Maximum price of any item ordered:
1250.0

Second task - Average price of items ordered in December:
174.3125

Third task - Total number of rows in items_ordered table:
32

Fourth task - Lowest price of a tent ordered:
79.99

Fifth task - Number of people in each unique state:
state
Arizona           6
Colorado          2
Hawaii            1
Idaho             1
North Carolina    1
Oregon            2
South Carolina    1
Washington        2
Wisconsin         1
dtype: int64

Sixth task - Item, maximum price, and minimum price for each specific item:
                         max      mean
item
Bicycle               380.50   380.500
Canoe                 280.00   280.000
Canoe paddle           40.00    40.000
Compass                 8.00     8.000
Ear Muffs                NaN       NaN
Flashlight             28.00    28.000
Helmet                 22.00    22.000
Hoola Hoop             14.75    14.750
Inflatable Mattress    38.00    38.000
Lantern                29.00    22.500
Lawnchair              32.00    32.000
Life Vest             125.00   125.000
Parachute            1250.00  1250.000
Pillow                   NaN       NaN
Pocket Knife           22.38    22.380
Pogo stick             28.00    28.000
Raft                   58.00    58.000
Rain Coat              18.30    18.300
Shovel                 16.75    16.750
Skateboard             33.00    33.000
Ski Poles              25.50    25.500
Sleeping Bag           89.22    88.960
Snow Shoes             45.00    45.000
Tent                   88.00    83.995
Umbrella                 NaN       NaN
Unicycle              192.50   186.645

Seventh task - Number of orders and total order sum for each customer:
            number_of_orders  total_order_sum
customerid
10101                      6           320.75
10298                      5           106.38
10299                      2          1288.00
10315                      1             8.00
10330                      3            72.75
10339                      1             0.00
10410                      2           281.72
10413                      1            32.00
10438                      3            79.99
10439                      2           113.50
10449                      6           926.29
```