```
import pandas as pd
pd. version
'2.2.2'
store = pd.read csv(r"D:\Naresh\19th, 20th - Pandas\Sample -
Superstore Orders.csv")
store
                        City Country/Region
                                                       Customer
             Category
Name
                            Houston United States
0
      Office Supplies
                                                       Darren
Powers
      Office Supplies Naperville United States
                                                       Phillina
0ber
      Office Supplies
                         Naperville United States
                                                       Phillina
2
0ber
                                                       Phillina
3
      Office Supplies Naperville United States
0ber
      Office Supplies
                       Philadelphia United States
                                                          Mick
Brown
10189 Office Supplies New York City United States Patrick
0'Donnell
10190 Office Supplies
                          Fairfield United States
                                                          Erica
Bern
10191 Office Supplies Loveland United States
Matthias
           Technology New York City United States Patrick
10192
0'Donnell
     Office Supplies Charlottetown
10193
                                           Canada
                                                         Harry
Olson
      Manufacturer
                   Order Date
                                     Order ID Postal Code \
                   03-01-2020
0
      Message Book
                               US-2020-103800
                                                   77015
                   04-01-2020
1
               GBC
                               US-2020-112326
                                                   60540
2
                   04-01-2020
             Averv
                               US-2020-112326
                                                   60540
3
                   04-01-2020
                               US-2020-112326
             SAFC0
                                                   60540
4
                   05-01-2020 US-2020-141817
             Avery
                                                   19143
      Wilson Jones
                   30-12-2023
                               US-2023-143259
                                                   10009
10189
10190
               GBC
                   30-12-2023
                               US-2023-115427
                                                   94533
                    30-12-2023
10191
             0ther
                               US-2023-156720
                                                   80538
             0ther
                   30-12-2023
                               US-2023-143259
                                                   10009
10192
10193 Wilson Jones 30-12-2023
                               CA-2023-143500
                                                     C<sub>0</sub>A
                                         Product Name
                                                        Region \
      Message Book, Wirebound, Four 5 1/2" X 4" Form...
0
                                                       Central
```

1 2 3 4		Standard Plastic Binding Systems Combs Central Avery 508 Central SAFCO Boltless Steel Shelving Central eer EverBold Pen Style Fluorescent East	
10189 10190 10191 10192 10193	Avery in Lie	Wilson Jones Legal Size Ring Binders East GBC Binding covers West Bagged Rubber Bands West Gear Head AU3700S Headset East Wilson Jones Impact Binders East	
	Segment	Ship Date Ship Mode	
State/ 0	Province \ Consumer	07-01-2020 Standard Class Texas	
1	Home Office	08-01-2020 Standard Class Illinois	
2	Home Office	08-01-2020 Standard Class Illinois	
3	Home Office	08-01-2020 Standard Class Illinois	
4	Consumer	12-01-2020 Standard Class Pennsylvania	
10189	Consumer	03-01-2024 Standard Class New York	
10190	Corporate	03-01-2024 Standard Class California	
10191	Consumer	03-01-2024 Standard Class Colorado	
10192	Consumer	03-01-2024 Standard Class New York	
10193	Consumer	03-01-2024 Standard Class Prince Edward Island	
0 1 2 3 4	Sub-Category Paper Binders Labels Storage Art	Discount Profit Quantity Sales 0.2 5.5512 2 16.448 0.8 -5.4870 2 3.540 0.2 4.2717 3 11.784 0.2 -64.7748 3 272.736 0.2 4.8840 3 19.536	
10189 10190 10191 10192 10193	Binders Binders Fasteners Phones Binders	0.2 19.7910 3 52.776 0.2 6.4750 2 20.720 0.2 -0.6048 3 3.024 0.0 2.7279 7 90.930 0.2 -0.6048 3 3.024	
[10131	. 5.1.5 % 15 60		

```
id(store)
1841695091808
len(store)
10194
store.shape
(10194, 19)
store.columns
Index(['Category', 'City', 'Country/Region', 'Customer Name',
'Manufacturer',
       'Order Date', 'Order ID', 'Postal Code', 'Product Name',
'Region'
       'Segment', 'Ship Date', 'Ship Mode', 'State/Province', 'Sub-
Category',
       'Discount', 'Profit', 'Quantity', 'Sales'],
      dtype='object')
len(store.columns)
19
store.isnull()
       Category
                City
                        Country/Region Customer Name
                                                        Manufacturer \
0
          False False
                                  False
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                                                               False
1
          False False
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2
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10189
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10192
10193
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       Order Date Order ID Postal Code Product Name Region
Segment \
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1
False
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2
False
            False
                      False
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False
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4 False	False	e False	False	False F	alse
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10189	False	e False	False	False F	alse
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10190	False	e False	False	False F	alse
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10191	False	e False	False	False F	alse
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10193	False	e False	False	False F	alse
False					
D £ : +	Ship Date	Ship Mode	State/Province	Sub-Category	Discount
Profit	\ False	False	False	False	False
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False					
2	False	False	False	False	False
False	_	_	_	_	
3	False	False	False	False	False
False 4	False	False	False	False	False
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10189	False	False	False	False	False
False	- 1	- 1	- 1	- 1	- 1
10190	False	False	False	False	False
False 10191	False	False	False	False	False
False	14636	Tatsc	14130	14130	racsc
10192	False	False	False	False	False
False					
10193	False	False	False	False	False
False					
	Quantity	Sales			
0	False	False			
1	False	False			
1 2 3 4	False	False			
3	False	False			
4	False	False			
10100	 Falsa	 [-]			
10189 10190	False False	False False			
10190	Tatse	lacse			

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10191
          False
                 False
10192
                 False
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10193
          False False
[10194 rows x 19 columns]
store.isnull().sum()
                  0
Category
                  0
City
Country/Region
                  0
Customer Name
                  0
Manufacturer
                  0
Order Date
                  0
                  0
Order ID
Postal Code
                  0
Product Name
                  0
                  0
Region
Segment
                  0
Ship Date
                  0
Ship Mode
                  0
State/Province
                  0
                  0
Sub-Category
Discount
                  0
Profit
                  0
Quantity
                  0
Sales
dtype: int64
store[:]
              Category
                                  City Country/Region
                                                            Customer
Name
       Office Supplies
                               Houston United States
                                                            Darren
Powers
       Office Supplies
                            Naperville United States
                                                            Phillina
1
0ber
       Office Supplies
                            Naperville United States
                                                            Phillina
2
0ber
       Office Supplies
                            Naperville United States
                                                            Phillina
0ber
4
       Office Supplies
                         Philadelphia United States
                                                               Mick
Brown
10189 Office Supplies
                        New York City United States Patrick
0'Donnell
10190
      Office Supplies
                             Fairfield United States
                                                               Erica
Bern
10191 Office Supplies
                              Loveland United States
                                                            Jill
```

Matthia 10192 O'Donne	Te	echnolo	ogy N	ew Yor	k City	United	States	Patri	ck	
10193	Office	Suppli	Les C	harlot	tetown		Canada		Harry	
0lson										
0 1 2 3 4	Manufac Message	Book GBC Avery SAFCO Avery	03-0 04-0 04-0 04-0	r Date 1-2020 1-2020 1-2020 1-2020 1-2020	US-20 US-20 US-20 US-20 US-20	20 - 1038 20 - 1123 20 - 1123 20 - 1123 20 - 1418	26 26 26 17	77015 60540 60540 60540 19143	\	
10189 10190 10191 10192 10193	Wilson Wilson	GBC Other Other	30-1 30-1 30-1	2 - 2023 2 - 2023 2 - 2023 2 - 2023 2 - 2023	US-20 US-20 US-20 US-20	23 - 1432 23 - 1154 23 - 1567 23 - 1432 23 - 1435	27 20 59	10009 94533 80538 10009 C0A		
						Р	roduct N	ame l	Region	\
0 1 2 3 4	_	GBC St	andar	d Plas SAFC	tic Bin	1/2" X ding Sy ess Ste	4" Form stems Co Avery el Shelv rescent	mbs Ce 508 Ce ing Ce	entral entral entral entral East	· ·
10189 10190 10191 10192 10193			Wilso		B Gear He	GBC Bindagged Road AU37	ing Bind ding cov ubber Ba 00S Head act Bind	ers nds set	East West West East East	
		ment	Ship	Date	S	hip Mod	e			
-	Province Cons	-	07-01	-2020	Standa	rd Clas	S		Tex	as
1	Home Of	fice	08-01	-2020	Standa	rd Clas	S		Illino	is
2	Home Of	fice	08-01	-2020	Standa	rd Clas	S		Illino	is
3	Home Of	fice	08-01	-2020	Standa	rd Clas	S		Illino	is
4	Cons	sumer	12-01	-2020	Standa	rd Clas	S	Peni	nsylvan	ia
10189	Cons	umer	03-01	-2024	Standa	rd Clas	S		New Yo	rk
10190	Corpo	rate	03-01	-2024	Standa	rd Clas	S	Ca	aliforn	ia

10191	Consumer	03-01-2024	Standard	Class		Colorado
10192	Consumer	03-01-2024	Standard	Class		New York
10193	Consumer	03-01-2024	Standard	Class	Prince Edv	vard Island
0 1 2 3 4	Sub-Category Paper Binders Labels Storage Art	0.2	`	uantity 2 2 3 3 3	Sales 16.448 3.540 11.784 272.736 19.536	
10189 10190 10191 10192 10193	Binders Binders Fasteners Phones Binders	0.2 0.2 0.0	 19.7910 6.4750 0.6048 2.7279	3 2 3 7 3	52.776 20.720 3.024 90.930 3.024	

[10194 rows x 19 columns]

store[0:0]

Empty DataFrame

Columns: [Category, City, Country/Region, Customer Name, Manufacturer, Order Date, Order ID, Postal Code, Product Name, Region, Segment, Ship Date, Ship Mode, State/Province, Sub-Category, Discount, Profit, Quantity, Sales]

Index: []

store[0:10]

Category	City	Country/Region	Customer Name
Manufacturer \	0_1,	554,,g_5	
O Office Supplies	Houston	United States	Darren Powers
Message Book			
1 Office Supplies	Naperville	United States	Phillina Ober
GBC			
2 Office Supplies	Naperville	United States	Phillina Ober
Avery			
3 Office Supplies	Naperville	United States	Phillina Ober
SAFC0			
4 Office Supplies	Philadelphia	United States	Mick Brown
Avery			
5 Furniture	Henderson	United States	Maria Etezadi
Global			
6 Office Supplies	Henderson	United States	Maria Etezadi
Rogers			
7 Office Supplies	Athens	United States	Jack O'Briant
Dixon			

	Office ico	Supp	lies	Henderson	United	States	Maria	Etezadi		
9	Office	Supp	lies	Henderson	United	States	Maria	Etezadi		
Al	liance									
	0 1		0	ada a TD Daa	1 - 1 - C I -					
0	Order [rder ID Pos		-				
0 1	03-01-2 04-01-2		US-2020 US-2020		77015 60546					
2	04-01-2		US-2020		60540					
3	04-01-2		US-2020		60540					
4	05-01-2		US-2020		19143					
5	06-01-2		US-2020		42420					
6	06-01-2		US-2020		42420					
7	06-01-2		US - 2020		30605					
8	06-01-2		US - 2020		42420					
9	06-01-2		US-2020		42420					
					F	Product I	Name	Region		
Seg	gment \	-								
0		e Bool	k, Wireb	ound, Four	5 1/2" >	4" Fori	m (Central		
	nsumer									
1	c ·	GBC S	Standard	Plastic Bi	nding Sy	stems C	ombs (Central	Home	
	fice					A	F00 (·	Hama	
2	fice					Avery	508 (Central	Home	
3	iice			SAFCO Bolt	10cc S+6	al Shal	vina (Central	Home	
	fice			SAI CO BOLL	ress ste	et sliet	ving (Lentrat	Home	
4		4i -1 i1	ter Everl	Bold Pen St	vle Fluc	rescent		East		
	nsumer		CCI EVCII	bota ren st	y cc i cac) Cocciic		Last		
5		G ¹	lobal De	luxe High-B	ack Mana	ager's Cl	hair	South	Home	
	fice			· · J		J	-			
6		Ro	ogers Hai	ndheld Barr	el Penci	ll Sharp	ener	South	Home	
0f	fice					•				
7	Dixon F	Prang	Waterco	lor Pencils	, 10-Col	or Set v	W	South		
Co	rporate									
8			Ibico	Hi-Tech Ma	nual Bir	nding Sys	stem	South	Home	
	fice									
9	<i>c</i> .	ALL:	iance Su	per-Size Ba	nds, Ass	sorted Si	izes	South	Home	
01	fice									
	Ship [)a+o	Ch:	ip Mode Sta	to/Provi	inco Sub	Catori	ory Dic	count	
Pro	ofit \	Jace	311.	ip houe sta	re/FIOV	LIICE Jub	-catego	лу отз	Count	
0	07-01-2	2020	Standard	d Class	Te	exas	Par	per	0.2	
_	5512	2020	Jeandard	a ctass	10	ZAUS	ı uş)C1	0.2	
1	08-01-2	2020	Standard	d Class	Illir	nois	Binde	ers	0.8	
_	.4870	_0_0	Scandar	a c ca55	1001	.013	Dilla	313	0.0	
2	08-01-2	2020	Standard	d Class	Illir	nois	Labe	els	0.2	
4.2	2717									
3	08-01-2	2020	Standard	d Class	Illir	nois	Stora	age	0.2	-
64	.7748									

4 12-01-2020 4.8840	Standard	Class	Pennsylvania	Art	0.2
5 10-01-2020	Standard	Class	Kentucky	Chairs	0.0
746.4078 6 10-01-2020	Standard	Class	Kentucky	Art	0.0
1.4796 7 07-01-2020	First	Class	Georgia	Art	0.0
5.2398 8 10-01-2020	Standard	Class	Kentucky	Binders	0.0
274.4910 9 10-01-2020	Standard	Class	Kentucky	Fasteners	0.0
0.3112	Standard	Ctass	Refredery	r as teller s	0.0
4 3 5 9 2 6 2 7 3	Sales 16.448 3.540 11.784 272.736 19.536 573.820 5.480 12.780 609.980 31.120				
store[0:20:5]					
0 Office Sup	iture He		United States	Customer N Darren Pow Maria Etez Maria Etez Vivek Sundare	ers adi adi
10 Southwor	ok 03-01- al 06-01- th 06-01-	- 2020 U - 2020 U - 2020 U	Order ID Po S-2020-103800 S-2020-167199 S-2020-167199 S-2020-105417	stal Code \ 77015 42420 42420 77340	
			Produc	t Name Regio	n
_	ok, Wirebo	ound, Fo	ur 5 1/2" X 4" F	orm Centra	l
Consumer 5	Global Del	luxe Hig	h-Back Manager's	Chair Sout	h Home
Office		_	nite Paper & Env		
Office 15 Acco Four	Pocket Pol	lv Rina	Binder with Labe	l H Centra	1
Consumer	. Jones I O	.,	DELIGOT WITH LODG	z comera	

Dic	•	Date \	Sh	ip Mode	State/Prov	/ince Su	ıb-Cate	egory	
0	07-01	•	Standar	d Class		Гexas	F	aper	0.2
5	10-01	-2020	Standar	d Class	Kent	tucky	Ch	nairs	0.0
10	10-01	-2020	Standar	d Class	Kent	tucky	F	aper	0.0
15	12-01	-2020	Standar	d Class	٦	Гexas	Bir	iders	0.8
0 5 10 15	Pro 5.55 746.40 3.00 -18.25	512 978 984	uantity 2 9 1 7	Sale 16.44 2573.82 6.54 10.43	8 0 0				
sto	re.head	d()							
Man	ufactu	Categ	ory	Cit	y Country,	/Region	Custo	omer Name	
0	ufactu Office	Suppl	ies	Housto	n United	States	Darre	n Powers	
1	sage Bo Office		ies N	apervill	e United	States	Phill	ina Ober	
	Office	Suppl	ies N	apervill	e United	States	Phill	ina Ober	
Ave 3	ry Office	Suppl	ies N	apervill	e United	States	Phill	ina Ober	
SAF 4 Ave	Office	Suppl.	ies Phi	ladelphi	a United	States	Mi	.ck Brown	i
0 1 2 3	Order I 03-01-2 04-01-2 04-01-2 04-01-2	2020 2020 2020 2020	0r JS-2020 - JS-2020 - JS-2020 - JS-2020 -	103800 112326 112326 112326	ostal Code 77015 60540 60540 60540 19143	5 9 9			
C					F	Product	Name	Region	
0	_		, Wirebo	und, Fou	r 5 1/2" >	< 4" For	~m	Central	
1	sumer	GBC S	tandard	Plastic	Binding Sy	/stems C	Combs	Central	Home
Off 2						Avery	/ 508	Central	Home
Off 3				SAFCO Bo	ltless Ste	eel Shel	ving	Central	Home
Off 4		Hi-Lit	er EverB	old Pen	Style Fluo	orescent		East	

Consumer				
Ship Date Profit \	Ship Mode S	State/Province	Sub-Category	Discount
0 07-01-2020 5.5512	Standard Class	Texas	Paper	0.2
1 08-01-2020 5.4870	Standard Class	Illinois	Binders	0.8 -
2 08-01-2020 4.2717	Standard Class	Illinois	Labels	0.2
3 08-01-2020 64.7748	Standard Class	Illinois	Storage	0.2 -
4 12-01-2020 4.8840	Standard Class	Pennsylvania	Art	0.2
0 2 1 2 2 3	Sales 16.448 3.540 11.784 72.736 19.536			
store.head(3)				
Cate Manufacturer O Office Supp	\	Country/Region United States		
Book 1 Office Supp	lies Naperville	United States	Phillina Ob	er
GBC 2 Office Supp Avery	lies Naperville	United States	Phillina Obo	er
Order Date 0 03-01-2020 1 04-01-2020 2 04-01-2020	US-2020-103800 US-2020-112326	Postal Code \ 77015 60540 60540		
Cogmont \		Produ	ct Name Reg	ion
Segment \ 0 Message Boo Consumer	k, Wirebound, Fo	ur 5 1/2" X 4"	Form Cent	ral
	Standard Plastic	Binding System	s Combs Cent	ral Home
2 Office		Av	ery 508 Cent	ral Home
Ship Date Profit \	Ship Mode S	State/Province	Sub-Category	Discount
0 07-01-2020	Standard Class	Texas	Paper	0.2

5.5512 1 08-01-2020	Standard	Class	Illinois	Binders	0.8 -
5.4870	Standard	Class	10015	DITIGET 5	0.0 -
2 08-01-2020	Standard	Class	Illinois	Labels	0.2
4.2717					
Quantity	Sales				
	16.448				
1 2 2 3	3.540 11.784				
_	11.704				
store.tail()					
Name \	Category		City Country	/Region	Customer
-	Supplies	New York	City United	States Pat	rick
O'Donnell	Supplies	Enint	field United	States	Erica
10190 Office Bern	Supplies	rali	iteta unitea	States	Erica
10191 Office	Supplies	Love	eland United	States	Jill
Matthias 10192 T	echnology	New York	City United	States Pat	ri ek
0'Donnell	echnology	New TOTK	city united	States Pat	TICK
10193 Office	Supplies	Charlotte	etown	Canada	Harry
Olson					
Manufa	cturer Ord	der Date	0rder	ID Postal Co	de \
		-12-2023	US-2023-1432		
10190 10191		-12-2023 -12-2023	US-2023-1154 US-2023-1567		
10191		-12-2023	US-2023-1307		
10193 Wilson	Jones 30	-12-2023	CA-2023-1435	00 C	0A
		Pı	roduct Name R	eaion Sea	ment Ship
Date \					•
10189 Wilson 2024	Jones Lega	al Size Ri	ing Binders	East Cons	umer 03-01-
10190		GBC Bind	ding covers	West Corpo	rate 03-01-
2024				.,	
10191 2024		Bagged Ru	ubber Bands	West Cons	umer 03-01-
10192	Gear I	Head AU370	00S Headset	East Cons	umer 03-01-
2024	William I] T	at Diados		02 01
10193 2024	Wilson .	Jones Impa	act Binders	East Cons	umer 03-01-
			(0)		D
S Profit \	hip Mode	Stat	te/Province S	ub-Category	Discount
_	rd Class		New York	Binders	0.2
19.7910					

10190 6.4750	Standard	Class		Califor	nia	Binder	S	0.2	
10191 0.6048	Standard	Class		Color	ado F	astener	S	0.2	-
10192	Standard	Class		New Y	ork	Phone	S	0.0	
2.7279 10193 0.6048	Standard	Class	Prince	Edward Isl	and	Binder	S	0.2	-
10189 10190 10191 10192 10193	Quantity 3 2 3 7 3	Sales 52.776 20.720 3.024 90.930 3.024							
store.	isna()								
0 1 2 3 4 10189 10190 10191 10192	Category False	City False False False False False False False False False	Count	ry/Region False	Customer	Name I False False False False False False False False		turer False	
10193	False	False		False		False		False	
C	Order Dat	te Orde	r ID l	Postal Code	Produc	t Name	Region		
Segment	t \ Fals	se F	alse	False		False	False		
False 1	Fals	se F	alse	False		False	False		
False 2	Fals	se F	alse	False		False	False		
False 3	Fals	se F	alse	False		False	False		
False 4	Fals	se F	alse	False		False	False		
False 									
10189	Fals	se F	alse	False		False	False		
False 10190	Fals	se F	alse	False		False	False		
False 10191	Fals	se F	alse	False		False	False		

False 10192	Eal c	e False	False	Falso	False
False	False	e ratse	ratse	False	ratse
10193	False	e False	False	False	False
False					
D 4: 4	Ship Date	Ship Mode	State/Province	Sub-Category	Discount
Profit 0	\ False	False	False	False	False
False	Tatse	racse	Tatse	ratse	Tacse
1	False	False	False	False	False
False					
2	False	False	False	False	False
False	F-1	F.1	F-1	5 -1	F-1
3 False	False	False	False	False	False
4	False	False	False	False	False
False	. 4.50	. 4.50	. 4.55	. 4150	
10189	False	False	False	False	False
False 10190	False	False	False	False	False
False	1 4 6 5 6	1 4 1 3 6	1 a c s c	racse	10036
10191	False	False	False	False	False
False					
10192	False	False	False	False	False
False	Годоо	Годоо	Годоо	Годоо	Годоо
10193 False	False	False	False	False	False
Tacsc					
	Quantity				
0		False			
1	False	False			
2	False False	False False			
3 4	False	False			
10189	False	False			
10190	False	False			
10191 10192	False False	False False			
10192	False	False			
_0_0	. 4 . 5 .	. 3. 1.0.0			
[10194	rows x 19	columns]			

Introudce statistical concept in pandas ==>

store.describe()

		. .	D 611		6.1
		Discount	Profit	Quantity	Sales
	count	10194.000000	10194.000000	10194.000000	10194.000000
	mean	0.155385	28.673417	3.791838	228.225854
	std	0.206249	232.465115	2.228317	619.906839
	min	0.000000	-6599.978000	1.000000	0.444000
	25%	0.000000	1.760800	2.000000	17.220000
	50%	0.200000	8.690000	3.000000	53.910000
	75%	0.200000	29.297925	5.000000	209.500000
	max	0.80000	8399.976000	14.000000	22638.480000