```
In [5]:  import pandas as pd
         import os
         os.getcwd()
         ##os.chdir()
```

Out[5]: 'C:\\Users\\sival\\python'

```
In [6]:  amazon = pd.read_csv(r"C:\Users\sival\Documents\datasets\amazon-products.csv",sep=",")
```

```
In [38]: amazon
```

Out[38]:

	timestamp	title	seller_name	brand	description	initial_price	final_pric
0	2023-08-08 00:00:00.000	Saucony Men's Kinvara 13 Running Shoe	Orv████tor████	Saucony	When it comes to lightweight speed, nothing cr...	NaN	"57.7
1	2023-08-09 00:00:00.000	Kishigo Premium Black Series Heavy Duty Unisex...	Ama███.co███	Kishigo	The Kishigo Premium Black Series Heavy Duty Ve...	NaN	"28.
2	2024-02-04 00:00:00.000	TWINSLUXES Solar Post Cap Lights Outdoor - Wat...	Twi███uxe███	TWINSLUXES	Solar Post Cap Lights Waterproof LED Fence Pos...	"49.99"	"33.99
3	2024-06-09 00:00:00.000	Accutire MS-4021B Digital Tire Pressure Gauge ...	Cit███ran███Dir███	Accutire	About this item Heavy duty construction and ru...	1.795000000000000e+01	1.795000000000000e+0
4	2024-01-16 00:00:00.000	SAURA LIFE SCIENCE Adivasi Ayurvedic Neelgiri ...	PRA███EN███PRI███	SAURA LIFE SCIENCE	This extraordinary fusion is designed to nouri...	"1299"	"79
...	...	...	...	...	...	...	
995	2023-08-19 00:00:00.000	Madison Park Amherst Faux Silk Comforter Set-C...	Ama███.co███	Madison Park	The Madison Park Amherst 7 Piece Comforter Set...	"154.99"	"111.99
996	2023-08-15 00:00:00.000	BIC Gel-Ocity Gel Pens, Medium Point Retractab...	Ama███.co███	BIC	Gel-ocity is a smooth writing retractable gel ...	"10.99"	"9.9
997	2024-06-10 00:00:00.000	Elmer's E842L Carpenter's Interior Wood Filler...	Cer███ied███ole███████ly	Elmer's	Product Description Elmer's E842L Carpenter's ...	1.398000000000000e+01	1.398000000000000e+0
998	2024-05-28 00:00:00.000	Office Chair Mat for Carpet, 30" x 48" Transpa...	Hom███Lif███	HOMEK	HOMEK Office Chair Mat for Carpet HOMEK floo...	3.995000000000000e+01	3.995000000000000e+0
999	2024-03-03 00:00:00.000	Bavilk Kids Bike Helmet,Boys Girls Helmet Mult...	Bav███Dir███	Bavilk	TODDLER KIDS BIKE HELMETS,Boys Girls Helmet Mu...	"32.99"	"16.4

1000 rows × 55 columns

```
In [43]: amazon.shape

         nrow=amazon.shape[0]
         ncol=amazon.shape[1]
         nrow
         ncol
```

Out[43]: 55

```
In [50]: amazon.columns.tolist()
```

```
Out[50]:   ['timestamp',
            'title',
            'seller_name',
            'brand',
            'description',
            'initial_price',
            'final_price',
            'currency',
            'availability',
            'reviews_count',
            'categories',
            'asin',
            'buybox_seller',
            'number_of_sellers',
            'root_bs_rank',
            'answered_questions',
            'domain',
            'images_count',
            'url',
            'video_count',
            'image_url',
            'item_weight',
            'rating',
            'product_dimensions',
            'seller_id',
            'date_first_available',
            'discount',
            'model_number',
            'manufacturer',
            'department',
            'plus_content',
            'upc',
            'video',
            'top_review',
            'variations',
            'delivery',
            'features',
            'format',
            'buybox_prices',
            'parent_asin',
            'input_asin',
            'ingredients',
            'origin_url',
            'bought_past_month',
            'is_available',
            'root_bs_category',
            'bs_category',
            'bs_rank',
            'badge',
            'subcategory_rank',
            'amazon_choice',
            'images',
            'product_details',
            'prices_breakdown',
            'country_of_origin']
```

```
In [54]:   amazon.dtypes
```

```
timestamp                 object
title                     object
seller_name               object
brand                     object
description               object
initial_price             object
final_price               object
currency                  object
availability              object
reviews_count              int64
categories                object
asin                      object
buybox_seller             object
number_of_sellers        float64
root_bs_rank             float64
answered_questions       float64
domain                    object
images_count               int64
url                       object
video_count                int64
image_url                 object
item_weight               object
rating                   float64
product_dimensions        object
seller_id                 object
date_first_available      object
discount                  object
model_number              object
manufacturer              object
department                object
plus_content                bool
upc                       object
video                       bool
top_review                object
variations                object
delivery                  object
features                  object
format                    object
buybox_prices             object
parent_asin               object
input_asin                object
ingredients               object
origin_url                object
bought_past_month        float64
is_available              object
root_bs_category          object
bs_category               object
bs_rank                  float64
badge                     object
subcategory_rank          object
amazon_choice             object
images                    object
product_details          float64
prices_breakdown         float64
country_of_origin        float64
dtype: object
```

```python
amazon.dtypes.loc[amazon.dtypes !="object"]## all  non string columns
```

```
reviews_count              int64
number_of_sellers        float64
root_bs_rank             float64
answered_questions       float64
images_count               int64
video_count                int64
rating                   float64
plus_content                bool
video                       bool
bought_past_month        float64
bs_rank                  float64
product_details          float64
prices_breakdown         float64
country_of_origin        float64
dtype: object
```

```python
amazon._get_numeric_data()
```

Out[56]:

	reviews_count	number_of_sellers	root_bs_rank	answered_questions	images_count	video_count	rating	plus_content	video	bought_p
0	702	17.0	4502.0	0.0	6	1	4.6	True	False	
1	916	8.0	80933.0	0.0	6	1	4.6	True	False	
2	3178	1.0	38723.0	0.0	1	0	4.2	True	False	
3	8034	1.0	4176.0	0.0	1	0	4.4	True	False	
4	5	1.0	5373.0	0.0	1	0	5.0	False	False	
...	...	...	...	...	...	...	...	...	...	
995	4828	4.0	89996.0	0.0	1	0	4.4	True	False	
996	9272	21.0	3069.0	0.0	1	0	4.5	False	False	
997	1052	1.0	23700.0	0.0	1	0	4.6	True	False	
998	1039	1.0	8384.0	0.0	1	0	4.0	True	False	
999	254	1.0	18100.0	0.0	1	0	4.7	True	False	

1000 rows × 14 columns

In [57]: amazon.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1000 entries, 0 to 999
Data columns (total 55 columns):
 #   Column              Non-Null Count  Dtype
---  ------              --------------  -----
 0   timestamp           1000 non-null   object
 1   title               1000 non-null   object
 2   seller_name         826 non-null    object
 3   brand               999 non-null    object
 4   description         998 non-null    object
 5   initial_price       814 non-null    object
 6   final_price         997 non-null    object
 7   currency            1000 non-null   object
 8   availability        994 non-null    object
 9   reviews_count       1000 non-null   int64
 10  categories          1000 non-null   object
 11  asin                1000 non-null   object
 12  buybox_seller       926 non-null    object
 13  number_of_sellers   984 non-null    float64
 14  root_bs_rank        999 non-null    float64
 15  answered_questions  969 non-null    float64
 16  domain              1000 non-null   object
 17  images_count        1000 non-null   int64
 18  url                 1000 non-null   object
 19  video_count         1000 non-null   int64
 20  image_url           995 non-null    object
 21  item_weight         753 non-null    object
 22  rating              1000 non-null   float64
 23  product_dimensions  933 non-null    object
 24  seller_id           1000 non-null   object
 25  date_first_available 921 non-null   object
 26  discount            821 non-null    object
 27  model_number        892 non-null    object
 28  manufacturer        970 non-null    object
 29  department          662 non-null    object
 30  plus_content        1000 non-null   bool
 31  upc                 99 non-null     object
 32  video               1000 non-null   bool
 33  top_review          992 non-null    object
 34  variations          742 non-null    object
 35  delivery            948 non-null    object
 36  features            818 non-null    object
 37  format              445 non-null    object
 38  buybox_prices       818 non-null    object
 39  parent_asin         383 non-null    object
 40  input_asin          373 non-null    object
 41  ingredients         46 non-null     object
 42  origin_url          241 non-null    object
 43  bought_past_month   204 non-null    float64
 44  is_available        217 non-null    object
 45  root_bs_category    106 non-null    object
 46  bs_category         106 non-null    object
 47  bs_rank             106 non-null    float64
 48  badge               76 non-null     object
 49  subcategory_rank    106 non-null    object
 50  amazon_choice       106 non-null    object
 51  images              52 non-null     object
 52  product_details     0 non-null      float64
 53  prices_breakdown    0 non-null      float64
 54  country_of_origin   0 non-null      float64
dtypes: bool(2), float64(9), int64(3), object(41)
memory usage: 416.1+ KB
```

```
In [58]:  amazon.head()
```

Out[58]:

	timestamp	title	seller_name	brand	description	initial_price	final_price	currency
0	2023-08-08 00:00:00.000	Saucony Men's Kinvara 13 Running Shoe	Orv...tor...	Saucony	When it comes to lightweight speed, nothing cr...	NaN	"57.79"	USD
1	2023-08-09 00:00:00.000	Kishigo Premium Black Series Heavy Duty Unisex...	Ama...co	Kishigo	The Kishigo Premium Black Series Heavy Duty Ve...	NaN	"28.5"	USD
2	2024-02-04 00:00:00.000	TWINSLUXES Solar Post Cap Lights Outdoor - Wat...	Twi...uxe...	TWINSLUXES	Solar Post Cap Lights Waterproof LED Fence Pos...	"49.99"	"33.99"	USD
3	2024-06-09 00:00:00.000	Accutire MS-4021B Digital Tire Pressure Gauge ...	Cit...ran...Dir...	Accutire	About this item Heavy duty construction and ru...	1.795000000000000e+01	1.795000000000000e+01	USD
4	2024-01-16 00:00:00.000	SAURA LIFE SCIENCE Adivasi Ayurvedic Neelgiri ...	PRA...EN...PRI...	SAURA LIFE SCIENCE	This extraordinary fusion is designed to nouri...	"1299"	"799"	INR

5 rows × 55 columns

```
In [59]:  amazon.head(50)
```

Out[59]:

	timestamp	title	seller_name	brand	description	initial_price	
0	2023-08-08 00:00:00.000	Saucony Men's Kinvara 13 Running Shoe	Orv...tor...	Saucony	When it comes to lightweight speed, nothing cr...	NaN	
1	2023-08-09 00:00:00.000	Kishigo Premium Black Series Heavy Duty Unisex...	Ama...co...	Kishigo	The Kishigo Premium Black Series Heavy Duty Ve...	NaN	
2	2024-02-04 00:00:00.000	TWINSLUXES Solar Post Cap Lights Outdoor - Wat...	Twi...uxe...	TWINSLUXES	Solar Post Cap Lights Waterproof LED Fence Pos...	"49.99"	
3	2024-06-09 00:00:00.000	Accutire MS-4021B Digital Tire Pressure Gauge ...	Cit...ran...Dir...	Accutire	About this item Heavy duty construction and ru...	1.795000000000000e+01	1.79500
4	2024-01-16 00:00:00.000	SAURA LIFE SCIENCE Adivasi Ayurvedic Neelgiri ...	PRA...EN...PRI...	SAURA LIFE SCIENCE	This extraordinary fusion is designed to nouri...	"1299"	
5	2023-09-10 00:00:00.000	KASOTT Replacement Airpod Pro Ear Tip Premium ...	KAS...of...e	KASOTT	About this item [Exclusive Customization] Ma...	"17.88"	
6	2024-04-01 00:00:00.000	Bio-Oil Skincare Body Oil (Natural) Serum for ...	Ama...co	Bio-Oil	Give your skin a break while stuck inside! It'...	"39.24"	
7	2023-10-14 00:00:00.000	crysting 13 Inch Sewing Box Three Layers, Plas...	GDD...S	crysting	About this item High Quality Sewing Box Ma...	"22.99"	
8	2023-09-11 00:00:00.000	Ridgid 62990 T-201 5" Straight Auger	Emp...Ri...ng...	RIDGID	The product is 62990 AUGER, T201 STRAIGHT 5/8 ...	"27.38"	
9	2023-08-09 00:00:00.000	Core 10 Women's All Day Comfort High-Waist Sid...	Ama...co	Core 10	Empowering women to reach their full potential...	"28.4"	
10	2024-07-09 00:00:00.000	Barney Butter Bare Smooth Almond Butter, No Ad...	Ama...co	Barney Butter	Barney Butter Bare Smooth Almond Butter, No Ad...	9.830000000000000e+00	
11	2023-09-10 00:00:00.000	Trucker Bluetooth Headsets, Wireless Headset w...	EKS...ele...	EKSA	About this item 【Industry Leading AI-Powered E...	"89.99"	

12	2024-01-15 00:00:00.000	LOOGU Desert Netting Scarf Tactical Miliary Ca...	LOO███Hun██g G█████████	LOOGU	LOOGU was founded in 2012 which focus on outdo...	"13.99"	
13	2024-07-09 00:00:00.000	PULOTE 100PCS Pink Plastic Plates - Heavy Duty...	PUL███	PULOTE	About this item EXQUISITE DESIGN: Our pink pla...	4.499000000000000e+01	4.49900
14	2023-09-11 00:00:00.000	Stahlwille 96410704 Double Ended Ring Wrench S...	Ama███.co██	Stahlwille	Stahwhile 96410704 Double-ended Ring Wrench Se...	"149.95"	
15	2023-09-11 00:00:00.000	2Packs 18V Battery and Charger Combo for 18-Vo...	Kin███tt	Cell9102	About this item The Cell9102 Advantage : Profe...	"69.99"	
16	2023-09-11 00:00:00.000	General Tools 3-Pack Retractable Utility Knife...	Ama███.co██	General Tools	Ideal for DIYers, homeowners, handymen, and me...	"6.98"	
17	2023-05-30 00:00:00.000	DANIEL SMITH Extra Fine Watercolor Paint, 15ml...	NaN	DANIEL SMITH	DANIEL SMITH Extra Fine Watercolors - classic ...	"18.64"	
18	2023-08-03 00:00:00.000	NZND Case for At&t Motivate 3 (3rd Version)/ M...	NZND	NZND	NZND Glitter Flowing Liquid Floating Gradient ...	"13.98"	
19	2024-01-16 00:00:00.000	Braun SE5-895 Epilator, Hair Removal Device, E...	Ama███.co██	Braun	Introducing the beauty set 5, The Starter 5-in...	"99.99"	
20	2024-06-10 00:00:00.000	Aqua Select Resin Step in a Box White | Ultra ...	Sav██ore███ Po████████es	Aqua Select	The Aqua Select Resin Steps are ultra-sturdy d...	3.999900000000000e+02	3.99990
21	2022-09-19 00:00:00.000	Swanson Raw Multi-Glandular for Men 60 Capsules	NaN	Swanson	Raw Multi-Glandular for Men High quality gland...	"13.99"	
22	2023-10-04 00:00:00.000	Dingo Mens Dean Harness Pull On Casual Boots M...	Wil██est██ot ██████	Dingo	A harness and pull-on straps blend with wester...	"159.95"	
23	2022-09-18 00:00:00.000	Nature's Answer Echinacea Alcohol Free Extract...	NaN	Nature's Answer	Promotes a healthy immune system	"15.99"	
24	2023-10-07 00:00:00.000	FTL GU10 Led Bulb 5000K Daylight White Dimmabl...	FTL██ght█	FTL	About this item ✔Energy Saving: FTL dimmable g...	"15.99"	
25	2023-10-07 00:00:00.000	Car Underglow Lights,4PCs,180 LED RGB 8 Millio...	Hes███ein██ore██	H HESHECEIN	HESHECEIN Low-power Design Neon Exterior Car L...	"37.98"	
26	2022-09-06 00:00:00.000	Koolertron One Handed Programmable Mechanical ...	NaN	Koolertron	Read more Macro Keyboard Specifications: All 4...	NaN	
27	2024-04-29 00:00:00.000	Signature Fitness Rubber Coated Hex Dumbbell W...	Ama███.co██	Signature Fitness	About this item Signature Fitness Rubber Encas...	9.998999999999999e+01	
28	2024-06-24 00:00:00.000	Art3d 4-Piece Wood Slat Acoustic Panels for St...	Art██Sto██	Art3d	Transcend Your Space with Art3d Achieve acoust...	1.999900000000000e+02	1.61490
29	2024-06-24 00:00:00.000	4th of July Door Sign Independence Day Wreath ...	Lin██	FANTPK	About this item 【WARM AND LIVELY DESIGN】 Front ...	1.198000000000000e+01	7.99000
30	2022-10-05 00:00:00.000	P&G Professional Deep Clean Restroom Cleaner b...	NaN	P&G PROFESSIONAL	Comet Deep Clean removes soap scum, greasy soi...	NaN	
31	2023-05-29 00:00:00.000	OLIGHT Perun Mini LED Headlamp 1000 Lumens Rec...	NaN	OLIGHT	Product Description .aplus-v2 { display: block...	NaN	
32	2024-04-30 00:00:00.000	Posh Creations Bean Bag Chair for Kids,	Ama███.co██	Posh Creations	Premium beanbags with removable	5.174000000000000e+01	

33	2024-07-08 00:00:00.000	In The Swim Chlorine Neutralizer for Swimming ...	In █ Sw██ Poo██████████s	In The Swim	In The Swim Chlorine Neutralizer In the Swim C...	2.256000000000000e+01	1.95600...
34	2023-10-22 00:00:00.000	Fruit of the Loom Women's 5 Pack Microfiber Lo...	Omn████ran███Glo██████	Fruit of the Loom Women's IA	Smooth, sleek microfiber designed to disappear...	"14.99"	
35	2024-03-03 00:00:00.000	Idzo 100% Metal Obelisk Trellis for Climbing P...	Ama████.co██	IDZO	Garden obelisk trellis with Hammer Stone Coate...	"45.99"	
36	2023-08-03 00:00:00.000	guleek for iPhone 6 Screen Replacement White T...	gul███tec███	GULEEK	●Compatibility: iPhone 6 ●Color: White ●Packag...	"23.99"	
37	2023-08-08 00:00:00.000	ICTIVE Long Sleeve Workout Shirts for Women Lo...	ICT███	Fihapyli	Long Sleeve Cross Shirt Long Sleeve Mesh Back ...	"29.98"	
38	2023-08-16 00:00:00.000	CleanEspresso 2 Gram Espresso Machine Cleaning...	Exc████ion███Lif██████████s	CleanEspresso	About this item 2 GRAM TABLETS - Don't be fool...	"19.99"	
39	2023-05-27 00:00:00.000	Minnetonka Women's Back-Zipper Bootie	NaN	Minnetonka	From the brand /* * Used when device = desktop...	NaN	
40	2024-03-03 00:00:00.000	DJDAJIA 24" x10Pack Bungee Cords with Hooks, 9...	DAJ███TOO███	Generic	Introducing our Heavy Duty Blue Bungee Cords -...	"18.95"	
41	2023-08-16 00:00:00.000	Pirelli Night Dragon Cruiser Motorcycle Tires ...	Chr███Wo███	Pirelli	The Pirelli Night Dragon has everything a cust...	"185.64"	
42	2024-03-17 00:00:00.000	Roof and Gutter Deicing Cable - 80' Black Elec...	Mon███ect███He██████	Wrap-On	This pre-assembled cable has been designed for...	"72.08"	
43	2023-08-23 00:00:00.000	JETech Case for iPad Pro 10.5-Inch and iPad Ai...	PCA███sso███JET██████riz███	JETech	About this item Designed for iPad Air 3rd gene...	"14.99"	
44	2024-07-02 00:00:00.000	Seresto Large Dog Vet-Recommended Flea & Tick ...	Pet████nd ██	Seresto	Give your dog long-lasting protection against ...	1.463800000000000e+02	
45	2023-08-09 00:00:00.000	SAFAVIEH Lyndhurst Collection Runner Rug - 2'3...	Ama███.co███	Safavieh	Safavieh's Lyndhurst collection offers the bea...	"360"	
46	2023-08-16 00:00:00.000	Swingline Stapler, 747 Classic Desktop Stapler...	Ama███.co███	Swingline	The renowned Swingline 747 Classic all-metal, ...	"19.39"	
47	2023-10-22 00:00:00.000	Scott® High-Capacity Jumbo Roll Toilet Paper (...	A S████l	Scott	About this item 1,000'/Roll, 12 Scott High-Cap...	"62.72"	
48	2024-03-03 00:00:00.000	Kids Swim Fins,Comfortable Silicone Flippers f...	Gug██	Gugmoy	About Gugmoy High quality soft silicone,safe a...	"30.99"	
49	2024-03-03 00:00:00.000	CIYAGPOOU 3 Pcs Gold Necklace Extenders,925 St...	CIY███OOU███	CIYAGPOOU	CIYAGPOOU 3 Pcs Necklace Extenders 3 Pcs neckl...	"9.99"	

50 rows × 55 columns

```
In [60]: amazon.tail()
```

	timestamp	title	seller_name	brand	description	initial_price	final_price	curr
995	2023-08-19 00:00:00.000	Madison Park Amherst Faux Silk Comforter Set-C...	Ama▮▮▮.co▮▮▮	Madison Park	The Madison Park Amherst 7 Piece Comforter Set...	"154.99"	"111.99"	
996	2023-08-15 00:00:00.000	BIC Gel-Ocity Gel Pens, Medium Point Retractab...	Ama▮▮.co▮▮	BIC	Gel-ocity is a smooth writing retractable gel ...	"10.99"	"9.99"	
997	2024-06-10 00:00:00.000	Elmer's E842L Carpenter's Interior Wood Filler...	Cer▮▮ied▮▮ole▮▮▮▮▮▮ly	Elmer's	Product Description Elmer's E842L Carpenter's ...	1.398000000000000e+01	1.398000000000000e+01	
998	2024-05-28 00:00:00.000	Office Chair Mat for Carpet, 30" x 48" Transpa...	Hom▮▮Lif▮▮	HOMEK	HOMEK Office Chair Mat for Carpet HOMEK floo...	3.995000000000000e+01	3.995000000000000e+01	
999	2024-03-03 00:00:00.000	Bavilk Kids Bike Helmet,Boys Girls Helmet Mult...	Bav▮▮Dir▮▮	Bavilk	TODDLER KIDS BIKE HELMETS,Boys Girls Helmet Mu...	"32.99"	"16.49"	

5 rows × 55 columns

In [61]: `amazon.tail(50)`

	timestamp	title	seller_name	brand	description	initial_price
950	2024-02-04 00:00:00.000	Skull Backflow Incense Burner-Ceramic Waterfal...	Jue▮▮▮n	Jueison	Brand logo Brand type Skull Incense Burner H...	"14.98"
951	2023-09-11 00:00:00.000	Universal Adjustable Double-ended Wrench - Mul...	The▮▮rn▮▮ven▮▮	Barn Eleven	About this item ✅ 【MULTIFUNCTIONAL ADJUSTABLE W...	"21.99"
952	2023-08-23 00:00:00.000	Howard Leight by Honeywell Leightning L2F Fold...	Ama▮▮.co▮▮	Honeywell Safety Products, USA	Product Description Combining comfort with a s...	"34.11"
953	2024-02-19 00:00:00.000	All-Clad D3 3-Ply Stainless Steel Large Weekni...	Ama▮▮.co▮▮	Groupe SEB	The all-around, everyday pan for making delici...	"199.99"
954	2022-10-25 00:00:00.000	Naiveer Cool Gel Memory Foam Hybrid Mattress, ...	NaN	Naiveer	Previous page Upgrade Your Bed with Naiveer Vi...	"269.99"
955	2024-01-16 00:00:00.000	Stand for Steam Deck Console, Adjustable Wall ...	HHao	Honghao	About this item 【2023 New Design】- Wall-mounte...	"6.99"
956	2023-05-29 00:00:00.000	Nordic Pure 16x25x2 MERV 8 Pleated AC Furnace ...	NaN	Nordic Pure	Product Description Nordic Pure MERV 8 Pleated...	"32.48"
957	2024-01-21 00:00:00.000	Vesgantti Full Size Mattress, 10 Inch Innerspr...	Mei▮▮i	Vesgantti	Medium Firm Mattress Mattress in a Box Ves...	"249.99"
958	2023-08-23 00:00:00.000	Bare Home Faux Fur Blanket - Ultra-Soft Luxuri...	Bar▮▮ome▮▮	Bare Home	About this item ULTRA PLUSH SOFTNESS: Exceptio...	"103.99"
959	2024-03-17 00:00:00.000	Yes4All Kayak Wall Rack 400lbs 4 Adjustable Le...	Ama▮▮.co▮▮	Yes4All	Yes4All Wall-mount kayak rack is a versatile a...	"134.99"
960	2024-03-17	SOELDI Under Bed Storage with	SOL▮▮Ho▮▮	SOELDI	Previous page Next page 1 6 silent wheels	"42.98"

	00:00:00.000	Wheels 50L*2 pac...				2 Re...	
961	2023-08-02 00:00:00.000	HLC.ME Franklin Moroccan 100% Complete Blackou...	HLCme	HLC.ME	Looking to add a dash of elegance to your livi...	NaN	
962	2022-09-15 00:00:00.000	Avery Heavy-Duty 3 Ring Binder, 5 Inch One Tou...	NaN	AVERY	Designed to last, Avery 79786 Heavy-Duty Green...	NaN	
963	2024-04-30 00:00:00.000	HUK Kids' Icon X Hoodie Long-Sleeve Shirt with...	Ama▮▮.co▮▮	Huk	Huk: Uniting anglers through performance-engin...	50	
964	2023-08-22 00:00:00.000	Eurmax USA Rectangular Fitted Spandex Table Co...	EUR▮▮US▮▮	Eurmax	About this item DURABLE & SPANDEX: The stretch...	"15.99"	
965	2023-09-11 00:00:00.000	4 Pieces 5/8 Inch Wood Carving Chain Disc, 4 I...	Cez▮▮lif▮▮	Mudder	5/8 Inch wood carving chain disc, 4 inch 22 te...	"14.99"	
966	2023-08-19 00:00:00.000	BDK carXS Fresh Two-Tone Carpet Floor Mats, Tr...	Ama▮▮.co▮▮	BDK	carXS Fresh Two-Tone Carpet Floor Mats, Tribal...	"23.9"	
967	2023-09-11 00:00:00.000	KNIPEX Reversible Torque Wrench, 3/8" Drive-10...	Ube▮▮gen▮▮	KNIPEX	KNIPEX 98 33 50 Reversible Torque Wrench, 3/8"...	"449.13"	
968	2023-05-05 00:00:00.000	RxOmega-3 by Natural Factors, Natural Support ...	NaN	Natural Factors	Product Description .aplus-v2 { display: block...	"26.95"	
969	2024-05-13 00:00:00.000	Digital GPS Speedometer Universal Car HUD Head...	GLA▮▮	WURAWUS	Features GPS + Beidou dual-mode chip Sui...	1.899000000000000e+01	1.7990
970	2024-04-29 00:00:00.000	Collapsible Water Container Jug, 5.3 Gallon BP...	ITR▮▮WA▮▮STO▮▮	Gowithwind	Drinking Water Storage The collapsible water c...	1.599000000000000e+01	
971	2023-04-29 00:00:00.000	Zinsser 3608 Cover Stain Oil Base Primer Spray...	NaN	Rust-Oleum	From the manufacturer .aplus-v2 { display: blo...	"13.99"	
972	2023-09-11 00:00:00.000	KNIPEX Electronics Oblique Cut	Ama▮▮.co▮▮	KNIPEX	KNIPEX 62 12 120 Electronics Oblique Cut	"47.88"	
973	2023-08-25 00:00:00.000	Duralex Made In France Picardie Clear Tumbler,...	FS▮▮SEW▮▮S	Duralex	Founded in 1939, Duralex has been manufacturin...	"25.81"	
974	2023-09-11 00:00:00.000	IRWIN Impact Driver Bit Set, Assorted, Hex Hea...	Ama▮▮.co▮▮	IRWIN	IRWIN Impact Performance Series fastener drive...	"11.17"	
975	2023-09-11 00:00:00.000	Euro Tool Dual Eurocrimper, 5 3/4 Inches | PLR...	Jew▮▮yTo▮▮	EURO TOOL	Now you can crimp any crimp bead of "medium" s...	"20.16"	
976	2023-09-11 00:00:00.000	FBLFOBELI EVA Hard Carrying Case Compatible Wi...	FBL▮▮bel▮▮	FBLFOBELI	FBLFOBELI is a professional storage case suppl...	"15.99"	
977	2023-10-04 00:00:00.000	HANPOSH Mens Watches Military Watches for Men ...	BID▮▮WAT▮▮S U▮▮	BIDEN	Time is money, we must cherish every second, a...	"27.71"	
978	2022-10-23 00:00:00.000	Puroflo Tankless RO System Under sink 600GPD	NaN	PUROFLO	Tankless RO System 70% Space Saving	NaN	

		H...			Tankless D...	
979	2024-01-16 00:00:00.000	10X Magnifying Glass with Light and Clamp, KIR...	KIR___	KIRKAS	Previous page Next page 1 HEAD ROTATION BUTTON...	"69.99"
980	2024-03-17 00:00:00.000	KOAKOMI 4IN1 Candle Accessory Set, Rechargeabl...	KOA___I D___CT	KOAKOMI	【Elegant Candle Accessories Kit】 The elegant...	"23.99"
981	2024-04-29 00:00:00.000	Zippers Colorful Resin 14pcs Zippers with Ring...	【Wo___ife___lot_____sso____	Wonesifee	For boutique owners, tailors, occasional craft...	1.598000000000000e+01
982	2023-08-02 00:00:00.000	Skechers Men's GOrun Glide-Step Swirl Tech-Max...	Bea___Fl___da	Skechers	Since 1992, Skechers has built its business on...	NaN
983	2022-09-27 00:00:00.000	Spoontiques Mom's Garden Stake	NaN	Spoontiques	These resin garden stakes are a colorful welco...	"14.99"
984	2022-09-26 00:00:00.000	iGrow Laser Hair Growth Helmet: Restoration & ...	NaN	iGrow	Do you look in the mirror each morning and not...	NaN
985	2023-08-22 00:00:00.000	Loyanyy Fleece Lined Dog Vest for Winter Warm ...	Loy___y	Loyanyy	About this item 【About Size】: Back Length-10 i...	"13.99"
986	2022-09-30 00:00:00.000	SOLE Active Medium Wide Shoe Insoles - Men's S...	NaN	SOLE	Previous page SOLE insoles are clinically prov...	NaN
987	2022-09-20 00:00:00.000	The Honest Company Conditioning Hair Detangler...	NaN	HONEST	Say buh-bye to knots and tangles with this uni...	"6.99"
988	2024-04-30 00:00:00.000	Candles Gifts for Him Romantic Unique Husband ...	BFJ___E S___e	BFJLIFE	Our products are built on two principles: serv...	1.799000000000000e+01
989	2024-04-30 00:00:00.000	Fintie Hybrid Slim Case for iPad 10th Generati...	Fin___	Fintie	Previous page Next page More Products for iPad...	1.499000000000000e+01
990	2024-04-30 00:00:00.000	Powerbuilt 240093 8 Piece Zeon SAE Hex Bit Soc...	Ama___.co___	Powerbuilt	ZEON SOCKET Powerbuilt Zeon sockets are design...	2.999000000000000e+01
991	2024-04-30 00:00:00.000	Zak Designs Water Bottle for Travel and At Hom...	Ama___.co___	Zak Designs	Make hydration easy and fun with a reusable wa...	2.399000000000000e+01
992	2023-05-16 00:00:00.000	VELCRO Brand - 91302 Thin Clear Dots with Adhe...	NaN	VELCRO Brand	VELCRO Brand Thin Clear fasteners blend into g...	"11.39"
993	2022-09-17 00:00:00.000	Weruva Cats in the Kitchen, Chicken Frick 'A Z...	NaN	Weruva	Meet Weruva, Makers of Cats in the Kitchen: We...	NaN
994	2023-08-02 00:00:00.000	ASICS Women's GT-2000 7 Running Shoes	LA ___hio___eal___	ASICS	Push yourself to your limits with the GT-2000 ...	NaN
995	2023-08-19 00:00:00.000	Madison Park Amherst Faux Silk Comforter Set-C...	Ama___.co___	Madison Park	The Madison Park Amherst 7 Piece Comforter Set...	"154.99"
996	2023-08-15 00:00:00.000	BIC Gel-Ocity Gel Pens, Medium Point Retractab...	Ama___.co___	BIC	Gel-ocity is a smooth writing retractable gel ...	"10.99"
		Elmer's E842L				

997	2024-06-10 00:00:00.000	Carpenter's Interior Wood Filler...	Cer▮▮ied▮▮ole▮▮▮▮▮▮▮▮▮ly	Elmer's	Product Description Elmer's E842L Carpenter's ...	1.398000000000000e+01	1.398(
998	2024-05-28 00:00:00.000	Office Chair Mat for Carpet, 30" x 48" Transpa...	Hom▮▮Lif▮▮	HOMEK	HOMEK Office Chair Mat for Carpet HOMEK floo...	3.995000000000000e+01	3.995(
999	2024-03-03 00:00:00.000	Bavilk Kids Bike Helmet,Boys Girls Helmet Mult...	Bav▮▮Dir▮▮	Bavilk	TODDLER KIDS BIKE HELMETS,Boys Girls Helmet Mu...	"32.99"	

50 rows × 55 columns

```
In [63]: #distributions
         # quandrant distributions
         # 0%ile        25%ile          50%ile          75%ile          100%ile
         amazon.describe()   # only pick numeric columns
```

Out[63]:

	reviews_count	number_of_sellers	root_bs_rank	answered_questions	images_count	video_count	rating	bought_past_month
count	1000.000000	984.000000	9.990000e+02	969.000000	1000.000000	1000.000000	1000.000000	204.000000
mean	3248.816000	4.116870	1.548019e+05	6.684211	2.808000	0.362000	4.401900	304.656863
std	11888.210293	7.040037	3.395340e+05	34.550917	2.796955	0.832856	0.311775	875.523984
min	1.000000	1.000000	3.000000e+01	0.000000	1.000000	0.000000	2.500000	50.000000
25%	129.000000	1.000000	1.014050e+04	0.000000	1.000000	0.000000	4.300000	50.000000
50%	461.500000	2.000000	3.982700e+04	0.000000	1.000000	0.000000	4.400000	100.000000
75%	1934.250000	4.000000	1.417780e+05	0.000000	5.000000	0.000000	4.600000	300.000000
max	243907.000000	76.000000	3.931721e+06	723.000000	18.000000	6.000000	5.000000	10000.000000 1

```
In [ ]: ## make changes and clean data
            ## structural changes
          ## content based changes
```

```
In [ ]: ## structure based changes
        ## 1.how to extract columns
        ## 2. get datatypes
        ## 3.change data types
        ## 4. rename a column
        ## 5.Add a new column
        ## 6.delete a column
        ## 7.RE-arrenge a columns
```

```
In [66]: # 1. Extracting columns
         #   1.1 the  . operator
         amazon.bought_past_month   # output is series
```

```
Out[66]: 0        NaN
         1        NaN
         2        NaN
         3        400.0
         4        NaN
                 ...
         995      NaN
         996      NaN
         997      300.0
         998      100.0
         999       50.0
         Name: bought_past_month, Length: 1000, dtype: float64
```

```
In [70]: # 1.2 the []  operator
         #  . can only get one column
         #  . cannot get those columns that don't follow Python INC rules
         #          like 4Yearssalesvalues or total sales      (like spaces)
         amazon[["brand","item_weight"]]
```

```
Out[70]:
```

	brand	item_weight
0	Saucony	NaN
1	Kishigo	NaN
2	TWINSLUXES	4.66 pounds
3	Accutire	0.05 Pounds
4	SAURA LIFE SCIENCE	399 g
...	...	...
995	Madison Park	13.6 pounds
996	BIC	4.8 ounces
997	Elmer's	16 ounces
998	HOMEK	6.54 pounds
999	Bavilk	0.41 Kilograms

1000 rows × 2 columns

```python
## 1.3 The .loc[,] and .iloc[,]
# .loc[row names,col names]
# .iloc[row ix ,col ix]
# task:fetch colums
amazon.loc[5:15,["brand","item_weight"]]   # in loc upper boundry is inclusive
```

```
Out[80]:
```

	brand	item_weight
5	KASOTT	0.634 ounces
6	Bio-Oil	NaN
7	crysting	2 Pounds
8	RIDGID	3.35 ounces
9	Core 10	NaN
10	Barney Butter	7.2 Ounces
11	EKSA	1.04 pounds
12	LOOGU	0.2 Kilograms
13	PULOTE	10.01 pounds
14	Stahlwille	0.87 Kilograms
15	Cell9102	3.21 pounds

```python
# task fetch first 11 rows and columns with ix 2,5,7,9,10
amazon.iloc[0:11,[2,5,7,9,10]]
```

```
Out[81]:
```

	seller_name	initial_price	currency	reviews_count	categories
0	Orv███tor██	NaN	USD	702	["Clothing, Shoes & Jewelry","Men","Shoes","At...
1	Ama██.co	NaN	USD	916	["Tools & Home Improvement","Safety & Security...
2	Twi██uxe██	"49.99"	USD	3178	["Tools & Home Improvement","Lighting & Ceilin...
3	Cit██ran██Dir██	1.795000000000000e+01	USD	8034	["Automotive","Tools & Equipment","Tire & Whee...
4	PRA██EN██PRI██	"1299"	INR	5	["Beauty","Hair Care","Hair Oils"]
5	KAS██of██e	"17.88"	USD	67	["Electronics","Headphones, Earbuds & Accessor...
6	Ama██.co	"39.24"	USD	6095	["Beauty & Personal Care","Skin Care","Face","...
7	GDD██S	"22.99"	USD	210	["Arts, Crafts & Sewing","Organization, Storag...
8	Emp██Ri██ng██	"27.38"	USD	28	["Tools & Home Improvement","Power & Hand Tool...
9	Ama██.co	"28.4"	USD	1538	["Clothing, Shoes & Jewelry","Women","Clothing...
10	Ama██.co██	9.830000000000000e+00	USD	110	["Grocery & Gourmet Food","Pantry Staples","Nu...

```python
# task :
# 1. exclude :"brand","item_weight"
# 2.exclude :[2,5,7,9,10]
```

```python
# 2. get data types and inspect them
amazon.info()
amazon.describe()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1000 entries, 0 to 999
Data columns (total 55 columns):
 #   Column              Non-Null Count  Dtype
---  ------              --------------  -----
 0   timestamp           1000 non-null   object
 1   title               1000 non-null   object
 2   seller_name         826 non-null    object
 3   brand               999 non-null    object
 4   description         998 non-null    object
 5   initial_price       814 non-null    object
 6   final_price         997 non-null    object
 7   currency            1000 non-null   object
 8   availability        994 non-null    object
 9   reviews_count       1000 non-null   int64
 10  categories          1000 non-null   object
 11  asin                1000 non-null   object
 12  buybox_seller       926 non-null    object
 13  number_of_sellers   984 non-null    float64
 14  root_bs_rank        999 non-null    float64
 15  answered_questions  969 non-null    float64
 16  domain              1000 non-null   object
 17  images_count        1000 non-null   int64
 18  url                 1000 non-null   object
 19  video_count         1000 non-null   int64
 20  image_url           995 non-null    object
 21  item_weight         753 non-null    object
 22  rating              1000 non-null   float64
 23  product_dimensions  933 non-null    object
 24  seller_id           1000 non-null   object
 25  date_first_available 921 non-null   object
 26  discount            821 non-null    object
 27  model_number        892 non-null    object
 28  manufacturer        970 non-null    object
 29  department          662 non-null    object
 30  plus_content        1000 non-null   bool
 31  upc                 99 non-null     object
 32  video               1000 non-null   bool
 33  top_review          992 non-null    object
 34  variations          742 non-null    object
 35  delivery            948 non-null    object
 36  features            818 non-null    object
 37  format              445 non-null    object
 38  buybox_prices       818 non-null    object
 39  parent_asin         383 non-null    object
 40  input_asin          373 non-null    object
 41  ingredients         46 non-null     object
 42  origin_url          241 non-null    object
 43  bought_past_month   204 non-null    float64
 44  is_available        217 non-null    object
 45  root_bs_category    106 non-null    object
 46  bs_category         106 non-null    object
 47  bs_rank             106 non-null    float64
 48  badge               76 non-null     object
 49  subcategory_rank    106 non-null    object
 50  amazon_choice       106 non-null    object
 51  images              52 non-null     object
 52  product_details     0 non-null      float64
 53  prices_breakdown    0 non-null      float64
 54  country_of_origin   0 non-null      float64
dtypes: bool(2), float64(9), int64(3), object(41)
memory usage: 416.1+ KB
```

Out[85]:

	reviews_count	number_of_sellers	root_bs_rank	answered_questions	images_count	video_count	rating	bought_past_month	
count	1000.000000	984.000000	9.990000e+02	969.000000	1000.000000	1000.000000	1000.000000	204.000000	
mean	3248.816000	4.116870	1.548019e+05	6.684211	2.808000	0.362000	4.401900	304.656863	
std	11888.210293	7.040037	3.395340e+05	34.550917	2.796955	0.832856	0.311775	875.523984	
min	1.000000	1.000000	3.000000e+01	0.000000	1.000000	0.000000	2.500000	50.000000	
25%	129.000000	1.000000	1.014050e+04	0.000000	1.000000	0.000000	4.300000	50.000000	
50%	461.500000	2.000000	3.982700e+04	0.000000	1.000000	0.000000	4.400000	100.000000	
75%	1934.250000	4.000000	1.417780e+05	0.000000	5.000000	0.000000	4.600000	300.000000	
max	243907.000000	76.000000	3.931721e+06	723.000000	18.000000	6.000000	5.000000	10000.000000	1

In [87]:
```python
# 4. change the name of the column
amazon.head(3)
# task : rename brand to brand_mark and seller_name to producer
# amazon.rename({})
# rename take dict as input
# this dict contain the existing name as key, followed by new name as value
#amazon.rename({"existing_name1":"New_name1","existing_name2":"New_name2"})
amazon.rename(columns={"brand":"brand_mark","seller_name":"producer"})
```

Out[87]:

	timestamp	title	producer	brand_mark	description	initial_price	final_pric
0	2023-08-08 00:00:00.000	Saucony Men's Kinvara 13 Running Shoe	Orv███tor███	Saucony	When it comes to lightweight speed, nothing cr...	NaN	"57.79
1	2023-08-09 00:00:00.000	Kishigo Premium Black Series Heavy Duty Unisex...	Ama██.co██	Kishigo	The Kishigo Premium Black Series Heavy Duty Ve...	NaN	"28.5
2	2024-02-04 00:00:00.000	TWINSLUXES Solar Post Cap Lights Outdoor - Wat...	Twi██uxe██	TWINSLUXES	Solar Post Cap Lights Waterproof LED Fence Pos...	"49.99"	"33.99
3	2024-06-09 00:00:00.000	Accutire MS-4021B Digital Tire Pressure Gauge ...	Cit██ran██Dir██	Accutire	About this item Heavy duty construction and ru...	1.795000000000000e+01	1.795000000000000e+0
4	2024-01-16 00:00:00.000	SAURA LIFE SCIENCE Adivasi Ayurvedic Neelgiri ...	PRA██EN██PRI██	SAURA LIFE SCIENCE	This extraordinary fusion is designed to nouri...	"1299"	"799
...	...	...	...	...	...	...	...
995	2023-08-19 00:00:00.000	Madison Park Amherst Faux Silk Comforter Set-C...	Ama██.co██	Madison Park	The Madison Park Amherst 7 Piece Comforter Set...	"154.99"	"111.99
996	2023-08-15 00:00:00.000	BIC Gel-Ocity Gel Pens, Medium Point Retractab...	Ama██.co██	BIC	Gel-ocity is a smooth writing retractable gel ...	"10.99"	"9.99
997	2024-06-10 00:00:00.000	Elmer's E842L Carpenter's Interior Wood Filler...	Cer██ied██ole██████ly	Elmer's	Product Description Elmer's E842L Carpenter's ...	1.398000000000000e+01	1.398000000000000e+0
998	2024-05-28 00:00:00.000	Office Chair Mat for Carpet, 30" x 48" Transpa...	Hom██Lif██	HOMEK	HOMEK Office Chair Mat for Carpet HOMEK floo...	3.995000000000000e+01	3.995000000000000e+0
999	2024-03-03 00:00:00.000	Bavilk Kids Bike Helmet,Boys Girls Helmet Mult...	Bav██Dir██	Bavilk	TODDLER KIDS BIKE HELMETS,Boys Girls Helmet Mu...	"32.99"	"16.49

1000 rows × 55 columns

```
# we have disscussed something about pickel
```

```
# Adding a column
# 5.1 Use []
amazon["Newcol"] = 0
#5.2 Use DF.assign()
amazon=amazon.assign(newcol2=1,Dummy="abc")
```

```
##amazon = amazon[Discount_price] = amazon.final_price - amazon.initial_price
```

```
amazon
```

Out[100]:

	timestamp	title	seller_name	brand	description	initial_price	final_pri
0	2023-08-08 00:00:00.000	Saucony Men's Kinvara 13 Running Shoe	Orv███tor██	Saucony	When it comes to lightweight speed, nothing cr...	NaN	"57.7
1	2023-08-09 00:00:00.000	Kishigo Premium Black Series Heavy Duty Unisex...	Ama███.co██	Kishigo	The Kishigo Premium Black Series Heavy Duty Ve...	NaN	"28
2	2024-02-04 00:00:00.000	TWINSLUXES Solar Post Cap Lights Outdoor - Wat...	Twi███uxe██	TWINSLUXES	Solar Post Cap Lights Waterproof LED Fence Pos...	"49.99"	"33.9
3	2024-06-09 00:00:00.000	Accutire MS-4021B Digital Tire Pressure Gauge ...	Cit██ran██Dir██████	Accutire	About this item Heavy duty construction and ru...	1.795000000000000e+01	1.795000000000000e+
4	2024-01-16 00:00:00.000	SAURA LIFE SCIENCE Adivasi Ayurvedic Neelgiri ...	PRA███EN███PRI██	SAURA LIFE SCIENCE	This extraordinary fusion is designed to nouri...	"1299"	"79
...	...	...	...	...	...	...	
995	2023-08-19 00:00:00.000	Madison Park Amherst Faux Silk Comforter Set-C...	Ama███.co██	Madison Park	The Madison Park Amherst 7 Piece Comforter Set...	"154.99"	"111.9
996	2023-08-15 00:00:00.000	BIC Gel-Ocity Gel Pens, Medium Point Retractab...	Ama███.co██	BIC	Gel-ocity is a smooth writing retractable gel ...	"10.99"	"9.9
997	2024-06-10 00:00:00.000	Elmer's E842L Carpenter's Interior Wood Filler...	Cer██ied██ole██████████ly	Elmer's	Product Description Elmer's E842L Carpenter's ...	1.398000000000000e+01	1.398000000000000e+
998	2024-05-28 00:00:00.000	Office Chair Mat for Carpet, 30" x 48" Transpa...	Hom███Lif██	HOMEK	HOMEK Office Chair Mat for Carpet HOMEK floo...	3.995000000000000e+01	3.995000000000000e+
999	2024-03-03 00:00:00.000	Bavilk Kids Bike Helmet,Boys Girls Helmet Mult...	Bav██Dir██	Bavilk	TODDLER KIDS BIKE HELMETS,Boys Girls Helmet Mu...	"32.99"	"16.4

1000 rows × 58 columns

In [101...
```python
# dropping or deleting a column
# use del
del (amazon["Newcol"])
amazon
```

Out[101]:

	timestamp	title	seller_name	brand	description	initial_price	final_pri
0	2023-08-08 00:00:00.000	Saucony Men's Kinvara 13 Running Shoe	Orv███tor███	Saucony	When it comes to lightweight speed, nothing cr...	NaN	"57.7
1	2023-08-09 00:00:00.000	Kishigo Premium Black Series Heavy Duty Unisex...	Ama███.co███	Kishigo	The Kishigo Premium Black Series Heavy Duty Ve...	NaN	"28
2	2024-02-04 00:00:00.000	TWINSLUXES Solar Post Cap Lights Outdoor - Wat...	Twi███uxe███	TWINSLUXES	Solar Post Cap Lights Waterproof LED Fence Pos...	"49.99"	"33.9
3	2024-06-09 00:00:00.000	Accutire MS-4021B Digital Tire Pressure Gauge ...	Cit███ran███Dir███	Accutire	About this item Heavy duty construction and ru...	1.795000000000000e+01	1.795000000000000e+
4	2024-01-16 00:00:00.000	SAURA LIFE SCIENCE Adivasi Ayurvedic Neelgiri ...	PRA███EN███PRI███	SAURA LIFE SCIENCE	This extraordinary fusion is designed to nouri...	"1299"	"79
...	...	...	...	...	...	...	
995	2023-08-19 00:00:00.000	Madison Park Amherst Faux Silk Comforter Set-C...	Ama███.co███	Madison Park	The Madison Park Amherst 7 Piece Comforter Set...	"154.99"	"111.9
996	2023-08-15 00:00:00.000	BIC Gel-Ocity Gel Pens, Medium Point Retractab...	Ama███.co███	BIC	Gel-ocity is a smooth writing retractable gel ...	"10.99"	"9.9
997	2024-06-10 00:00:00.000	Elmer's E842L Carpenter's Interior Wood Filler...	Cer███ied███ole███████████ly	Elmer's	Product Description Elmer's E842L Carpenter's ...	1.398000000000000e+01	1.398000000000000e+
998	2024-05-28 00:00:00.000	Office Chair Mat for Carpet, 30" x 48" Transpa...	Hom███Lif███	HOMEK	HOMEK Office Chair Mat for Carpet HOMEK floo...	3.995000000000000e+01	3.995000000000000e+
999	2024-03-03 00:00:00.000	Bavilk Kids Bike Helmet,Boys Girls Helmet Mult...	Bav███Dir███	Bavilk	TODDLER KIDS BIKE HELMETS,Boys Girls Helmet Mu...	"32.99"	"16.4

1000 rows × 57 columns

In [106... `amazon.drop(columns=["newcol2","Dummy"])` *# drop is used to delete multiple columns*

Out[106]:

	timestamp	title	seller_name	brand	description	initial_price	final_pri
0	2023-08-08 00:00:00.000	Saucony Men's Kinvara 13 Running Shoe	Orv████tor██	Saucony	When it comes to lightweight speed, nothing cr...	NaN	"57.7
1	2023-08-09 00:00:00.000	Kishigo Premium Black Series Heavy Duty Unisex...	Ama██.co█	Kishigo	The Kishigo Premium Black Series Heavy Duty Ve...	NaN	"28
2	2024-02-04 00:00:00.000	TWINSLUXES Solar Post Cap Lights Outdoor - Wat...	Twi██uxe██	TWINSLUXES	Solar Post Cap Lights Waterproof LED Fence Pos...	"49.99"	"33.9
3	2024-06-09 00:00:00.000	Accutire MS-4021B Digital Tire Pressure Gauge ...	Cit██ran██Dir██████	Accutire	About this item Heavy duty construction and ru...	1.795000000000000e+01	1.795000000000000e+
4	2024-01-16 00:00:00.000	SAURA LIFE SCIENCE Adivasi Ayurvedic Neelgiri ...	PRA███EN███PRI██	SAURA LIFE SCIENCE	This extraordinary fusion is designed to nouri...	"1299"	"79
...	...	...	...	...	...	...	
995	2023-08-19 00:00:00.000	Madison Park Amherst Faux Silk Comforter Set-C...	Ama██.co█	Madison Park	The Madison Park Amherst 7 Piece Comforter Set...	"154.99"	"111.9
996	2023-08-15 00:00:00.000	BIC Gel-Ocity Gel Pens, Medium Point Retractab...	Ama██.co█	BIC	Gel-ocity is a smooth writing retractable gel ...	"10.99"	"9.9
997	2024-06-10 00:00:00.000	Elmer's E842L Carpenter's Interior Wood Filler...	Cer██ied███ole███████████ly	Elmer's	Product Description Elmer's E842L Carpenter's ...	1.398000000000000e+01	1.398000000000000e+
998	2024-05-28 00:00:00.000	Office Chair Mat for Carpet, 30" x 48" Transpa...	Hom███Lif██	HOMEK	HOMEK Office Chair Mat for Carpet HOMEK floo...	3.995000000000000e+01	3.995000000000000e+
999	2024-03-03 00:00:00.000	Bavilk Kids Bike Helmet,Boys Girls Helmet Mult...	Bav██Dir██	Bavilk	TODDLER KIDS BIKE HELMETS,Boys Girls Helmet Mu...	"32.99"	"16.4

1000 rows × 56 columns

In [112...
```python
# Re-arrenging columns
#amazon.iloc[:,[0,1,2,3,4,5,6,7,8,9,10]]
amazon.iloc[:,[0,3,2,6,7,5,8,4,9]]
```

	timestamp	brand	seller_name	final_price	currency	initial_price	availability	
0	2023-08-08 00:00:00.000	Saucony	Orv███tor██	"57.79"	USD	NaN	In Stock	Wh to spe
1	2023-08-09 00:00:00.000	Kishigo	Ama███.co██	"28.5"	USD	NaN	In Stock	Pre Se
2	2024-02-04 00:00:00.000	TWINSLUXES	Twi██uxe██	"33.99"	USD	"49.99"	In Stock	Sola Wate F
3	2024-06-09 00:00:00.000	Accutire	Cit██ran██Dir██	1.795000000000000e+01	USD	1.795000000000000e+01	In Stock	Ab c
4	2024-01-16 00:00:00.000	SAURA LIFE SCIENCE	PRA██ EN██PRI██	"799"	INR	"1299"	In stock	ex
...	...	...	...	...	...	...	...	
995	2023-08-19 00:00:00.000	Madison Park	Ama██.co██	"111.99"	USD	"154.99"	Only 4 left in stock (more on the way)	T Park Piece
996	2023-08-15 00:00:00.000	BIC	Ama██.co██	"9.99"	USD	"10.99"	In Stock	G sm ret
997	2024-06-10 00:00:00.000	Elmer's	Cer██ied██ole█████████ly	1.398000000000000e+01	USD	1.398000000000000e+01	In Stock	Elm Ca
998	2024-05-28 00:00:00.000	HOMEK	Hom██Lif██	3.995000000000000e+01	USD	3.995000000000000e+01	In Stock	HO C Carp
999	2024-03-03 00:00:00.000	Bavilk	Bav██Dir██	"16.49"	USD	"32.99"	NaN	HEL C

1000 rows × 9 columns

```python
# when we have multiple columns
[0,1,2,3,5,6,4,15,7,8,9,10,11,12,13,14]
colseq = list(range(0,4))+[5,6,4,15]+list(range(7,15))
```

```python
amazon1=amazon.iloc[:,colseq]
amazon1
```

	timestamp	title	seller_name	brand	initial_price	final_price	descripti
0	2023-08-08 00:00:00.000	Saucony Men's Kinvara 13 Running Shoe	Orv▉▉tor▉▉	Saucony	NaN	"57.79"	When it com to lightweig speed, nothi c
1	2023-08-09 00:00:00.000	Kishigo Premium Black Series Heavy Duty Unisex...	Ama▉.co▉	Kishigo	NaN	"28.5"	The Kishi Premium Bla Series Hea Duty V(
2	2024-02-04 00:00:00.000	TWINSLUXES Solar Post Cap Lights Outdoor - Wat...	Twi▉▉uxe▉▉	TWINSLUXES	"49.99"	"33.99"	Solar Post C Ligt Waterproof Ll Fence Po
3	2024-06-09 00:00:00.000	Accutire MS-4021B Digital Tire Pressure Gauge ...	Cit▉▉ran▉▉Dir▉▉	Accutire	1.795000000000000e+01	1.795000000000000e+01	About this ite Heavy d constructi and r(
4	2024-01-16 00:00:00.000	SAURA LIFE SCIENCE Adivasi Ayurvedic Neelgiri ...	PRA▉▉EN▉▉PRI▉	SAURA LIFE SCIENCE	"1299"	"799"	T extraordin; fusion designed nour
...	...	...	...	...	...	...	...
995	2023-08-19 00:00:00.000	Madison Park Amherst Faux Silk Comforter Set-C...	Ama▉.co▉	Madison Park	"154.99"	"111.99"	The Madis Park Amhers Piece Comfor Se
996	2023-08-15 00:00:00.000	BIC Gel-Ocity Gel Pens, Medium Point Retractab...	Ama▉.co▉	BIC	"10.99"	"9.99"	Gel-ocity i; smooth writi retractable (
997	2024-06-10 00:00:00.000	Elmer's E842L Carpenter's Interior Wood Filler...	Cer▉▉ied▉▉ole▉▉▉▉ly	Elmer's	1.398000000000000e+01	1.398000000000000e+01	Prodi Descripti Elmer's E84 Carpenter's
998	2024-05-28 00:00:00.000	Office Chair Mat for Carpet, 30" x 48" Transpa...	Hom▉▉Lif▉▉	HOMEK	3.995000000000000e+01	3.995000000000000e+01	HOMEK Off Chair Mat Carpet HOM floc
999	2024-03-03 00:00:00.000	Bavilk Kids Bike Helmet,Boys Girls Helmet Mult...	Bav▉▉Dir▉▉	Bavilk	"32.99"	"16.49"	TODDLI KIDS BII HELMETS,B(Girls Heln M(

1000 rows × 16 columns

```
## exclude rows 1:5
# there will be default argument    inplce = False(default)/True
# DF.rename(columns={"Existingname":"Newname",...}, inplce = True)
# DF.assign(newcol = "..") or Df.assign(newcol = "...",inplace = True)
#del DF["column"]
#    DF.drop(columns=[],inplace=True)
#Re-arrenge columns
#       DF.iloc[:,[1,6,4,5,8,9,7,3,10]]
```