

```
In [2]: import pandas as pd

In [3]: df=pd.read_csv('amazon.csv')

In [4]: df.head(2)

Out[4]:
```

	product_id	product_name	category	discounted_price	actual_price	discount_percentage	rating	rating_count	about_product	user
0	B07JW9H4J1	Wayona Nylon Braided USB to Lightning Fast Cha...	Computers&Accessories Accessories&Peripherals ...	₹399	₹1,099	64%	4.2	24,269	High Compatibility : Compatible With iPhone 12...	AG3D6O4STAQKAY2UVGEUUV46KN35Q.AHMY5CWJMMKSBJRBE...
1	B098NS6PVG	Ambrane Unbreakable 60W / 3A Fast Charging 1.5...	Computers&Accessories Accessories&Peripherals ...	₹199	₹349	43%	4.0	43,994	Compatible with all Type C enabled devices, be...	AECPPFYFQVRUWC3KGNLJIOREFP5LQ.AGYIYVPDD7YG7FYNB3...
df										

```
Out[5]:
```

	product_id	product_name	category	discounted_price	actual_price	discount_percentage	rating	rating_count	about_product		
0	B07JW9H4J1	Wayona Nylon Braided USB to Lightning Fast Cha...	Computers&Accessories Accessories&Peripherals ...	₹399	₹1,099		64%	4.2	24,269	High Compatibility : Compatible With iPhone 12...	AG3D6O4STAQKAY2UVGEUUV46KN35Q.AHMY5CWJMMKSBJRBE...
1	B098NS6PVG	Ambrane Unbreakable 60W / 3A Fast Charging 1.5...	Computers&Accessories Accessories&Peripherals ...	₹199	₹349		43%	4.0	43,994	Compatible with all Type C enabled devices, be...	AECPPFYFQVRUWC3KGNLJIOREFP5LQ.AGYIYVPDD7YGT7YC...
2	B096MSW6CT	Source Fast Phone Charging Cable & Data Sync U...	Computers&Accessories Accessories&Peripherals ...	₹199	₹1,899		90%	3.9	7,928	[ Fast Charger& Data Sync ] -With built-in salet...	AGU3BBQ2V2DDAMOAKGFAWDQ6QHA.AESFLDV2PT...
3	B08HDJ86NZ	boAt Deuce USB 300 2 in 1 Type-C & Micro USB S...	Computers&Accessories Accessories&Peripherals ...	₹329	₹699		53%	4.2	94,363	The boAt Deuce USB 300 2 in 1 cable is compati...	AEWAZDZJLQJYVVOVGBEUKSLXHQ5A.AG5HTSFREGL3M5S...
4	B08CF3B7N1	Portronics Connect L 1.2M Fast Charging 3A & P...	Computers&Accessories Accessories&Peripherals ...	₹154	₹399		61%	4.2	16,905	[CHARGE & SYNC FUNCTION]- This cable comes wit...	AE3Q6KSUKSP75DSHFYHCRAOLODSA.AFUGIFH5ZAF...
...	...	...	...	...	...	...	...	...	...	...	...
1460	B08L7J3T31	Noir Aqua - 5pcs PP Spun Filter + 1 Spanner   ...	Home&Kitchen Kitchen&HomeAppliances WaterPurif...	₹379	₹919		59%	4	1,090	SUPREME QUALITY 90 GRAM 3 LAYER THIK PP.SPUN F...	AHITFY6AHALOFHOZEOC6XB4FEA.AFRABBDZJ2JQ86Z4U...
1461	B01M6453MB	Prestige Delight PRWO Electric Rice Cooker (1 ...	Home&Kitchen Kitchen&HomeAppliances SmallKitch...	₹2,280	₹3,045		25%	4.1	4,118	230 Volts, 400 watts, 1 Year	AFG5FM3NEMOL6BNFRV2NK5FNJCHQ.AGEINTRN6Z563RMLH...
1462	B009P2LIL4	Bajaj Majesty RX10 2000 Watts Heat Convector R...	Home&Kitchen Heating,Cooling&AirQuality RoomHe...	₹2,219	₹3,080		28%	3.6	468	International design and styling Two heat sett...	AGVPWCMAHYQWJOQKMUJN4DW3KMSQ.AF4Q3E66MY4...
1463	B0035DYCCA	Havells Ventil Air DSP 230mm Exhaust Fan (Pist...	Home&Kitchen Heating,Cooling&AirQuality Fans E...	₹1,399	₹1,890		26%	4	8,031	Fan sweep area: 230 MM ; Noise level: (40 - 45...	AF2JQCLSCY3QJATWUNNHUSVUPNQ.AFDMULXC5LS...
1464	B01486F4G6	Borosil Jumbo 1000-Watt Grill Sandwich Maker (...)	Home&Kitchen Kitchen&HomeAppliances SmallKitch...	₹2,863	₹3,690		22%	4.3	6,987	Brand-Borosil, Specification 86" 23V - 5Hz;1 W...	AFGW5PT3R6ZAVQR4V5MMWAKBZAYA.AG7QNJ25CS5SV5VY...

1465 rows x 16 columns

```
In [6]: df.duplicated()

Out[6]:
0      False
1      False
2      False
3      False
4      False
...
1460    False
1461    False
1462    False
1463    False
1464    False
Length: 1465, dtype: bool

In [7]: df.duplicated(keep=False)

Out[7]:
0      False
1      False
2      False
3      False
4      False
...
1460    False
1461    False
1462    False
1463    False
1464    False
Length: 1465, dtype: bool

In [8]: df.describe()

Out[8]:
```

	product_id	product_name	category	discounted_price	actual_price	discount_percentage	rating	rating_count	about_product	user
count	1465	1465	1465	1465	1465	1465	1465	1465	1465	1465
unique	1351	1337	211	550	449	92	28	1143	1293	1
top	B07JW9H4J1	Fire-Boltz Ninja Call Pro Plus 1.85' Smart Wat...	Computers&Accessories Accessories&Peripherals ...	₹199	₹999	50%	4.1	9,378	[CHARGE & SYNC FUNCTION]- This cable comes with...	AHIKJUDTVJ4T6DV6IUGFYZ5LXMPA.AE5SKTFVNXYPD5FP...
freq	3	5	233	53	120	56	244	9	6	

```
In [9]: df.isna()

Out[9]:
```

	product_id	product_name	category	discounted_price	actual_price	discount_percentage	rating	rating_count	about_product	user_id	user_name	review_id	review_title	review_content	img_link	product_link
0	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1460	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
1461	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
1462	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
1463	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
1464	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False

1465 rows x 16 columns

```
In [11]: df.all()

Out[11]:
```

	product_id	product_name	category	discounted_price	actual_price	discount_percentage	rating	rating_count	about_product	user_id	user_name	review_id	review_title	review_content	img_link	product_link
0	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
1	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
2	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
3	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
4	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1460	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
1461	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
1462	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
1463	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
1464	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True

1465 rows x 16 columns

```
In [13]: df.all

Out[13]:
```

```
<bound method NDFrame.add_numeric_operations.<locals>.all of
0      B07JW9H4J1      Wayona Nylon Braided USB to Lightning Fast Cha...
1      B098NS6PVG      Ambrane Unbreakable 60W / 3A Fast Charging 1.5...
2      B096MSW6CT      Source Fast Phone Charging Cable & Data Sync U...
3      B08HDJ86NZ      boAt Deuce USB 300 2 in 1 Type-C & Micro USB S...
4      B08CF3B7N1      Portronics Connect L 1.2M Fast Charging 3A & P...
...
1460     B08L7J3T31      Noir Aqua - 5pcs PP Spun Filter + 1 Spanner | ...
1461     B01M6453MB      Prestige Delight PRWO Electric Rice Cooker (1 ...
1462     B009P2LIL4      Bajaj Majesty RX10 2000 Watts Heat Convector R...
1463     B0035DYCCA      Havells Ventil Air DSP 230mm Exhaust Fan (Pist...
1464     B01486F4G6      Borosil Jumbo 1000-Watt Grill Sandwich Maker (...

category discounted_price \
0      Computers&Accessories|Accessories&Peripherals|...      ₹399
1      Computers&Accessories|Accessories&Peripherals|...      ₹199
2      Computers&Accessories|Accessories&Peripherals|...      ₹199
3      Computers&Accessories|Accessories&Peripherals|...      ₹329
4      Computers&Accessories|Accessories&Peripherals|...      ₹154
...
1460     Home&Kitchen|Kitchen&HomeAppliances|WaterPurif...      ₹379
1461     Home&Kitchen|Kitchen&HomeAppliances|SmallKitch...      ₹2,280
1462     Home&Kitchen|Heating,Cooling&AirQuality|RoomHe...      ₹2,219
1463     Home&Kitchen|Heating,Cooling&AirQuality|Fans|E...      ₹1,399
1464     Home&Kitchen|Kitchen&HomeAppliances|SmallKitch...      ₹2,863

actual_price discount_percentage rating rating_count \
0      ₹1,099      64%      4.2      24,269
1      ₹349      43%      4.0      43,994
2      ₹1,899      90%      3.9      7,928
3      ₹699      53%      4.2      94,363
4      ₹399      61%      4.2      16,905
...
1460      ₹919      59%      4      1,090
1461      ₹3,045      25%      4.1      4,118
1462      ₹3,080      28%      3.6      468
1463      ₹1,890      26%      4      8,031
1464      ₹3,690      22%      4.3      6,987

about_product \
0      High Compatibility : Compatible With iPhone 12...
1      Compatible with all Type C enabled devices, be...
2      [ Fast Charger& Data Sync ] -With built-in safet...
3      The boAt Deuce USB 300 2 in 1 cable is compati...
4      [CHARGE & SYNC FUNCTION]- This cable comes wit...
...
1460     SUPREME QUALITY 90 GRAM 3 LAYER THIK PP.SPUN F...
1461      230 Volts, 400 watts, 1 Year
1462     International design and styling|Two heat sett...
1463     Fan sweep area: 230 MM ; Noise level: (40 - 45...
1464     Brand-Borosil, Specification 86" 23V - 5Hz;1 W...

user_id \
0      AG3D6O4STAQKAY2UVGEUUV46KN35Q.AHMY5CWJMMKSBJRBB...
1      AECPPFYFQVRUWC3KGNLJIOREFP5LQ.AGYIYVPDD7YG7FYNB...
2      AGU3BBQ2V2DDAMOAKGFAWDQ6QHA.AESFLDV2F363T2A6...
3      AEWAZDZJLQJYVVOVGBEUKSLXHQ5A.AG5HTSFREGL3M5S...
4      AE3Q6KSUKSP75DSHFYHCRAOLODSA.AFUGIFH5ZAFXR05Z...
...
1460     AHITFY6AHALOFHOZEOC6XB4FEA.AFRABBDZJ2JQ86Z4U...
1461     AFG5FM3NEMOL6BNFRV2NK5FNJCHQ.AGEINTRN6Z563RMLH...
1462     AGVPWCMAHYQWJOQKMUJN4DW3KMSQ.AF4Q3E66MY4...
1463     AF2JQCLSCY3QJATWUNNHUSVUPNQ.AFDMULXC5LS...
1464     AFGW5PT3R6ZAVQR4V5MMWAKBZAYA.AG7QNJ25CS5SV5VY...

user_name \
0      Manav, Adarsh gupta,Sundeep,S.Sayed Ahmed,jasp...
1      Ardkn,Nirbhay kumar,Sagar Viswanathan,Asp,Plac...
2      Kunal,Himanshu,viswanath,sai niharka,saqib mai...
3      Omkar dhale,JD,HEMALATHA,Ajwadh a.,amar singh ...
4      rahuls6099,Swasat Borah,Ajay Wadke,Prana1i,RVK...
...
1460     Prabha ds,Raghuram bk,Real Deal,Amazon Custome...
1461     Manu Bhai,Naveenpittu,Evatira Sangma,JAGANWADI...
1462     Nehal Desai,Danish Parwez,Amazon Customer,Amaz...
1463     Shubham Dubey,E.GURUBARAN,Mayank S.,eusuf khan...
1464     Rajib,Ajay B,Vikas Kahol,PARDEEP,Anindya Prama...

review_id \
0      R3HXWTLRP0NMFF,R2AJM3LFTLZHFO,R6AQ3IUP6P66,R1K...
1      RG1QEG0T7R9HS2,R1SMWZ08X1N8U,R2J3Y1MLZ9GWDE,RY...
2      R3J3EQ9T715ZJ,R3E7WB6K7ID0KV,RWU79XK06I1QF,R2...
3      R3EEUZZK9J36I,R3HJVYCLYOV55A,REDECAZ7AMPQC,R1...
4      R1BP4L2HH9TFUP,R16PV3EXKV6QZS,R2UP0B81N6GT4P,R...
...
1460     R3G3XFHPBF0E8,R3C0BZCD32EIGW,R2EBVBCN9QPD9R,...
1461     R3DDL2UPK02CK9,R2SYYU1OATVIUS,R1VMH93161IYRW,R...
1462     R1TLRJVM4STY5I,R20455KRN493R1,R3Q5MVGBRIAS26,R...
1463     R39Q2Y79MH9SMK,R3079BG1NIHGMB,R29A31ZELTZNJM,R...
1464     R20RBRZ9WEUJT9,R0K1FK9R21SSE,R30EEG2FJ3NS1,R2...

review_title \
0      Satisfied,Charging is really fast,Value for mo...
1      A Good Braided Cable for Your Type C Device,Go...
2      Good speed for earlier versions,Good Product,W...
3      Good product,Good one,Nice,Really nice product...
4      As good as original,Decent,Good one for second...
...
1460     Received the product without spanner,Excellent...
1461     ok,everything was good couldn't return bcoz I ...
1462     very good,Work but front melt after 2 month,Go...
1463     Fan Speed is slow,Good quality,Good product,go...
1464     Works perfect,Ok good product,Nice Product.

review_content \
0      Looks durable Charging is fine tooNo complains...
1      I ordered this cable to connect my phone to An...
2      Not quite durable and sturdy,https://m.media-a...
3      Good product,long wire,Charges good,Nice,I bou...
4      Bought this instead of original apple, does th...
...
1460     I received product without spanner,Excellent p...
1461     ok,got everything as mentioned but the measuri...
1462     plastic but cool body ,u have to find sturdy fi...
1463     I have installed this in my kitchen working fi...
1464     If does it job perfectly..only issue is temp c...

img_link \
0      https://m.media-amazon.com/images/W/WEBP_40237...
1      https://m.media-amazon.com/images/W/WEBP_40237...
2      https://m.media-amazon.com/images/W/WEBP_40237...
3      https://m.media-amazon.com/images/I/41V5FtEWPk...
4      https://m.media-amazon.com/images/W/WEBP_40237...
...
1460     https://m.media-amazon.com/images/I/41fDdRTjfx...
1461     https://m.media-amazon.com/images/I/41gzDx4dk...
1462     https://m.media-amazon.com/images/W/WEBP_40237...
1463     https://m.media-amazon.com/images/W/WEBP_40237...
1464     https://m.media-amazon.com/images/W/WEBP_40237...

product_link
0      https://www.amazon.in/Wayona-Braided-USB-to-Li...
1      https://www.amazon.in/Ambrane-Unbreakable-Cha...
2      https://www.amazon.in/Source-iPhone-Charging-C...
3      https://www.amazon.in/Deuce-300-Resistant-Tang...
4      https://www.amazon.in/Portronics-Resistant-POR-1...
...
1460     https://www.amazon.in/Noir-Aqua-Spanner-Purifi...
1461     https://www.amazon.in/Prestige-Delight-PRWO-1-...
1462     https://www.amazon.in/Bajaj-RX-10-2000-Watt-Co...
1463     https://www.amazon.in/Havells-Ventilair-230mm-...
1464     https://www.amazon.in/Borosil-Jumbo-1000-Watt-...
```

```
In [17]: df['product_price'].hist()

-----
KeyError: 'product_price'
Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_18676\3956054529.py in <module>
----> 1 df['product_price'].hist()

~\anaconda3\lib\site-packages\pandas\core\indexes\base.py in get_loc(self, key, method, tolerance)
    3628         try:
    3629             return self._engine.get_loc(casted_key)
    3630         except KeyError as err:
~\anaconda3\lib\site-packages\pandas\_libs\index.pyx in pandas._libs.index.IndexEngine.get_loc()
~\anaconda3\lib\site-packages\pandas\_libs\index.pyx in pandas._libs.index.IndexEngine.get_loc()
pandas._libs\hashtable_class_helper.pxi in pandas._libs.hashtable.PyObjectHashTable.get_item()
pandas._libs\hashtable_class_helper.pxi in pandas._libs.hashtable.PyObjectHashTable.get_item()
KeyError: 'product_price'

The above exception was the direct cause of the following exception:

KeyError: 'product_price'
Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_18676\3956054529.py in <module>
----> 1 df['product_price'].hist()

~\anaconda3\lib\site-packages\pandas\core\indexes\base.py in get_loc(self, key)
    3593         if self._columns.levels > 1:
    3594             return self._getitem_multilevel(key)
    3595         indexer = self._columns.get_loc(key)
    3596         if is_integer(indexer):
    3597             indexer = [indexer]
~\anaconda3\lib\site-packages\pandas\core\indexes\base.py in get_loc(self, key, method, tolerance)
    3628         try:
    3629             return self._engine.get_loc(casted_key)
    3630         except KeyError as err:
    3631             raise KeyError(key) from err
    3632         except TypeError:
    3633             # If we have a listlike key, _check_indexing_error will raise
KeyError: 'product_price'
```