Paidy_Data_Analysis

August 15, 2023

[156]:
```
import pandas as pd
```

[157]:
```
import os
```

[158]:
```
print(os.getcwd()) # Location
```

```
C:\Users\ddaya\OneDrive\Documents\R
```

[159]:
```
pd.read_csv("Paidy_Data.csv") # current working directory
```

[159]:

	api_key	logo_url	closed	metadata	\
0	abc123	https://example.com/logo1	0	{}	
1	xyz789	https://example.com/logo2	1	{\key\": \"value\"}"	
2	mno456	https://example.com/logo3	0	{\key\": \"another_value\"}"	
3	pqr789	https://example.com/logo4	1	{\key\": \"different_value\"}"	
4	lmn123	https://example.com/logo5	0	{}	
5	efg456	https://example.com/logo6	1	{\key\": \"new_value\"}"	
6	hij789	https://example.com/logo7	0	{}	
7	xyz123	https://example.com/logo8	1	{\key\": \"unique_value\"}"	
8	uvw456	https://example.com/logo9	0	{\key\": \"sample_value\"}"	
9	rst789	https://example.com/logo10	1	{}	

	PAYLOAD_ID	AMOUNT	CURRENCY	STORE_NAME	BUYER_ID	ORDER_ID	\
0	1	100.00	USD	Store A	1	101	
1	2	200.50	EUR	Store B	2	102	
2	3	50.25	GBP	Store C	3	103	
3	4	300.75	USD	Store D	4	104	
4	5	150.50	EUR	Store E	5	105	
5	6	75.00	GBP	Store F	6	106	
6	7	500.25	USD	Store G	7	107	
7	8	250.75	EUR	Store H	8	108	
8	9	120.00	GBP	Store I	9	109	
9	10	350.25	USD	Store J	10	110	

	DESCRIPTION	METADATA	buyer_id	Email	name1	name2	\
0	First payload	Meta 1	1	buyer1@example.com	John	Doe	
1	Second payload	Meta 2	2	buyer2@example.com	Jane	Smith	
2	Third payload	Meta 3	3	buyer3@example.com	Michael	Johnson	

```
3   Fourth payload   Meta 4         4   buyer4@example.com    Emily  Williams
4    Fifth payload   Meta 5         5   buyer5@example.com    David     Brown
5    Sixth payload   Meta 6         6   buyer6@example.com    Sarah     Jones
6  Seventh payload   Meta 7         7   buyer7@example.com   Robert    Miller
7   Eighth payload   Meta 8         8   buyer8@example.com     Lisa     Davis
8    Ninth payload   Meta 9         9   buyer9@example.com  William    Taylor
9    Tenth payload  Meta 10        10  buyer10@example.com   Olivia  Anderson

        phone         dob  buyer_data_id  buyer_id.1  user_id  age  \
0  1234567890   5/15/1990              1           1      123   31
1  9876543210  10/22/1985              2           2      456   38
2  5551234567   3/10/1978              3           3      789   45
3  8889876543   12/1/1995              4           4      101   29
4  4445678901    7/8/1982              5           5      202   41
5  3332345678   9/25/1998              6           1      303   26
6  2223456789  11/12/1972              7           2      404   29
7  7774567890   6/18/1989              8           3      505   56
8  6663456789   4/30/1993              9           4      606   33
9  1112345678    2/5/2000             10           5      707   28

  age_platform account_reg_date  days_since_1st_tx   ltv  order_count  \
0      Android        8/15/2015                120   500           10
1          iOS        3/22/2018                 60   800           15
2      Android        12/5/2012                180  1000           20
3          iOS        7/20/2020                 30   300            5
4      Android        4/18/2017                 90   700           12
5          iOS       10/10/2019                 45   400            8
6      Android        2/28/2016                150   900           18
7          iOS        7/15/2013                300  1200           24
8      Android         4/3/2021                 15   200            4
9          iOS         9/9/2018                 75   600           14

   last_order_amt  last_order_at last_order_date  order_amt_last3m  \
0              50            NaN       6/28/2023               300
1              75            NaN        7/8/2023               200
2             100            NaN       6/12/2023               350
3              30            NaN        7/2/2023               150
4              80            NaN       6/18/2023               250
5              40            NaN        7/6/2023               180
6              90            NaN       6/22/2023               300
7             120            NaN       7/12/2023               400
8              20            NaN       6/28/2023               100
9              70            NaN        7/3/2023               220

   order_count_last3m  additional_ship_ad    billing_address  \
0                   5  Shipping Address 1  Billing Address 1
1                   4  Shipping Address 2  Billing Address 2
```

```
2                   7  Shipping Address 3  Billing Address 3
3                   3  Shipping Address 4  Billing Address 4
4                   6  Shipping Address 5  Billing Address 5
5                   4  Shipping Address 1  Billing Address 1
6                   7  Shipping Address 2  Billing Address 2
7                   8  Shipping Address 3  Billing Address 3
8                   2  Shipping Address 4  Billing Address 4
9                   5  Shipping Address 5  Billing Address 5

  delivery_locn_type  gender  subscription_count prev_payment_meth  \
0              Urban    Male                   3       Credit Card
1           Suburban  Female                   5            PayPal
2              Rural    Male                   2        Debit Card
3              Urban  Female                   1            PayPal
4           Suburban    Male                   4       Credit Card
5              Urban  Female                   2            PayPal
6           Suburban    Male                   3        Debit Card
7              Rural  Female                   5            PayPal
8              Urban    Male                   1       Credit Card
9           Suburban  Female                   3        Debit Card

   number_of_points order_item_categ  order_id order_ref  shipping   tax  \
0               200      Electronics         1     OR123      10.0  5.00
1               150         Clothing         2     OR456       7.0  3.50
2               300      Electronics         3     OR789      12.0  6.00
3                50         Clothing         4     OR101       8.0  4.00
4               180      Electronics         5     OR202      15.0  7.50
5               120         Clothing         6     OR303       6.0  3.00
6               250      Electronics         7     OR404       9.0  4.50
7               450         Clothing         8     OR505      11.0  5.50
8                75      Electronics         9     OR606       7.5  3.75
9               200         Clothing        10     OR707      13.0  6.50

   item_id  order_id.1  quantity      title  unit_price description  \
0        1           1         2  Product A          25      Item A
1        2           1         3  Product B          15      Item B
2        3           2         1  Product C          20      Item C
3        4           2         2  Product D          10      Item D
4        5           3         3  Product E          30      Item E
5        6           3         1  Product F          40      Item F
6        7           4         2  Product G          15      Item G
7        8           4         1  Product H          50      Item H
8        9           5         2  Product I          35      Item I
9       10           5         4  Product J          12      Item J

   shipping_addr_id  buyer_id.2          line1         line2           city  \
0                 1           1    123 Main St        Apt 4B       New York
```

```
1                2           2     456 Elm Rd      Unit 202    Los Angeles
2                3           3     789 Oak Ave      Suite 5        Chicago
3                4           4    101 Maple St          NaN        Houston
4                5           5     202 Pine Rd  Apartment 10          Miami
5                6           1    303 Cedar St          NaN        Seattle
6                7           2    404 Birch Ln      Unit 15         Boston
7                8           3     505 Elm St          NaN         Denver
8                9           4     606 Oak Rd          NaN        Atlanta
9               10           5  707 Maple Ave          NaN  San Francisco

  state    zip
0    NY  10001
1    CA  90001
2    IL  60601
3    TX  77002
4    FL  33101
5    WA  98101
6    MA   2201
7    CO  80201
8    GA  30301
9    CA  94101
```

[160]:
```
pd.read_csv("C:\\Users\\ddaya\\OneDrive\\Documents\\R\\Paidy_Data.csv") #␣
↪Manual directory
```

[160]:
```
  api_key                    logo_url  closed                        metadata  \
0  abc123   https://example.com/logo1       0                              {}
1  xyz789   https://example.com/logo2       1             {\key\": \"value\"}"
2  mno456   https://example.com/logo3       0    {\key\": \"another_value\"}"
3  pqr789   https://example.com/logo4       1  {\key\": \"different_value\"}"
4  lmn123   https://example.com/logo5       0                              {}
5  efg456   https://example.com/logo6       1        {\key\": \"new_value\"}"
6  hij789   https://example.com/logo7       0                              {}
7  xyz123   https://example.com/logo8       1     {\key\": \"unique_value\"}"
8  uvw456   https://example.com/logo9       0     {\key\": \"sample_value\"}"
9  rst789  https://example.com/logo10       1                              {}

   PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  BUYER_ID  ORDER_ID  \
0           1  100.00      USD    Store A         1       101
1           2  200.50      EUR    Store B         2       102
2           3   50.25      GBP    Store C         3       103
3           4  300.75      USD    Store D         4       104
4           5  150.50      EUR    Store E         5       105
5           6   75.00      GBP    Store F         6       106
6           7  500.25      USD    Store G         7       107
7           8  250.75      EUR    Store H         8       108
8           9  120.00      GBP    Store I         9       109
```

```
9          10  350.25      USD    Store J        10       110

       DESCRIPTION METADATA  buyer_id               Email    name1     name2  \
0    First payload   Meta 1         1   buyer1@example.com     John       Doe
1   Second payload   Meta 2         2   buyer2@example.com     Jane     Smith
2    Third payload   Meta 3         3   buyer3@example.com  Michael   Johnson
3   Fourth payload   Meta 4         4   buyer4@example.com    Emily  Williams
4    Fifth payload   Meta 5         5   buyer5@example.com    David     Brown
5    Sixth payload   Meta 6         6   buyer6@example.com    Sarah     Jones
6  Seventh payload   Meta 7         7   buyer7@example.com   Robert    Miller
7   Eighth payload   Meta 8         8   buyer8@example.com     Lisa     Davis
8    Ninth payload   Meta 9         9   buyer9@example.com  William    Taylor
9    Tenth payload  Meta 10        10  buyer10@example.com   Olivia  Anderson

        phone         dob  buyer_data_id  buyer_id.1  user_id  age  \
0  1234567890   5/15/1990              1           1      123   31
1  9876543210  10/22/1985              2           2      456   38
2  5551234567   3/10/1978              3           3      789   45
3  8889876543   12/1/1995              4           4      101   29
4  4445678901    7/8/1982              5           5      202   41
5  3332345678   9/25/1998              6           1      303   26
6  2223456789  11/12/1972              7           2      404   29
7  7774567890   6/18/1989              8           3      505   56
8  6663456789   4/30/1993              9           4      606   33
9  1112345678    2/5/2000             10           5      707   28

  age_platform account_reg_date  days_since_1st_tx   ltv  order_count  \
0      Android        8/15/2015                120   500           10
1          iOS        3/22/2018                 60   800           15
2      Android        12/5/2012                180  1000           20
3          iOS        7/20/2020                 30   300            5
4      Android        4/18/2017                 90   700           12
5          iOS       10/10/2019                 45   400            8
6      Android        2/28/2016                150   900           18
7          iOS        7/15/2013                300  1200           24
8      Android         4/3/2021                 15   200            4
9          iOS         9/9/2018                 75   600           14

   last_order_amt  last_order_at last_order_date  order_amt_last3m  \
0              50            NaN       6/28/2023               300
1              75            NaN        7/8/2023               200
2             100            NaN       6/12/2023               350
3              30            NaN        7/2/2023               150
4              80            NaN       6/18/2023               250
5              40            NaN        7/6/2023               180
6              90            NaN       6/22/2023               300
7             120            NaN       7/12/2023               400
```

```
8              20            NaN       6/28/2023               100
9              70            NaN        7/3/2023               220

   order_count_last3m  additional_ship_ad    billing_address  \
0                   5  Shipping Address 1  Billing Address 1
1                   4  Shipping Address 2  Billing Address 2
2                   7  Shipping Address 3  Billing Address 3
3                   3  Shipping Address 4  Billing Address 4
4                   6  Shipping Address 5  Billing Address 5
5                   4  Shipping Address 1  Billing Address 1
6                   7  Shipping Address 2  Billing Address 2
7                   8  Shipping Address 3  Billing Address 3
8                   2  Shipping Address 4  Billing Address 4
9                   5  Shipping Address 5  Billing Address 5

  delivery_locn_type  gender  subscription_count prev_payment_meth  \
0              Urban    Male                   3       Credit Card
1           Suburban  Female                   5            PayPal
2              Rural    Male                   2        Debit Card
3              Urban  Female                   1            PayPal
4           Suburban    Male                   4       Credit Card
5              Urban  Female                   2            PayPal
6           Suburban    Male                   3        Debit Card
7              Rural  Female                   5            PayPal
8              Urban    Male                   1       Credit Card
9           Suburban  Female                   3        Debit Card

   number_of_points order_item_categ  order_id order_ref  shipping   tax  \
0               200      Electronics         1     OR123      10.0  5.00
1               150         Clothing         2     OR456       7.0  3.50
2               300      Electronics         3     OR789      12.0  6.00
3                50         Clothing         4     OR101       8.0  4.00
4               180      Electronics         5     OR202      15.0  7.50
5               120         Clothing         6     OR303       6.0  3.00
6               250      Electronics         7     OR404       9.0  4.50
7               450         Clothing         8     OR505      11.0  5.50
8                75      Electronics         9     OR606       7.5  3.75
9               200         Clothing        10     OR707      13.0  6.50

   item_id  order_id.1  quantity      title  unit_price description  \
0        1           1         2  Product A          25      Item A
1        2           1         3  Product B          15      Item B
2        3           2         1  Product C          20      Item C
3        4           2         2  Product D          10      Item D
4        5           3         3  Product E          30      Item E
5        6           3         1  Product F          40      Item F
6        7           4         2  Product G          15      Item G
```

```
7        8           4         1  Product H          50      Item H
8        9           5         2  Product I          35      Item I
9       10           5         4  Product J          12      Item J

   shipping_addr_id  buyer_id.2         line1         line2          city  \
0                 1           1    123 Main St        Apt 4B      New York
1                 2           2     456 Elm Rd      Unit 202   Los Angeles
2                 3           3    789 Oak Ave       Suite 5       Chicago
3                 4           4   101 Maple St           NaN       Houston
4                 5           5    202 Pine Rd  Apartment 10         Miami
5                 6           1   303 Cedar St           NaN       Seattle
6                 7           2   404 Birch Ln       Unit 15        Boston
7                 8           3     505 Elm St           NaN        Denver
8                 9           4     606 Oak Rd           NaN       Atlanta
9                10           5  707 Maple Ave           NaN  San Francisco

  state    zip
0    NY  10001
1    CA  90001
2    IL  60601
3    TX  77002
4    FL  33101
5    WA  98101
6    MA   2201
7    CO  80201
8    GA  30301
9    CA  94101
```

[161]:
```
os.chdir("C:\\Users\\ddaya\\OneDrive\\Documents\\R")
```

[162]:
```
print(os.getcwd())
```

```
C:\Users\ddaya\OneDrive\Documents\R
```

[163]:
```
stats=pd.read_csv("Paidy_Data.csv")
```

[164]:
```
stats
```

[164]:
```
  api_key                    logo_url  closed                        metadata  \
0  abc123   https://example.com/logo1       0                              {}
1  xyz789   https://example.com/logo2       1             {\key\": \"value\"}"
2  mno456   https://example.com/logo3       0    {\key\": \"another_value\"}"
3  pqr789   https://example.com/logo4       1  {\key\": \"different_value\"}"
4  lmn123   https://example.com/logo5       0                              {}
5  efg456   https://example.com/logo6       1         {\key\": \"new_value\"}"
6  hij789   https://example.com/logo7       0                              {}
7  xyz123   https://example.com/logo8       1      {\key\": \"unique_value\"}"
8  uvw456   https://example.com/logo9       0      {\key\": \"sample_value\"}"
```

```
9  rst789  https://example.com/logo10       1                                {}

   PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  BUYER_ID  ORDER_ID  \
0           1  100.00      USD    Store A         1       101
1           2  200.50      EUR    Store B         2       102
2           3   50.25      GBP    Store C         3       103
3           4  300.75      USD    Store D         4       104
4           5  150.50      EUR    Store E         5       105
5           6   75.00      GBP    Store F         6       106
6           7  500.25      USD    Store G         7       107
7           8  250.75      EUR    Store H         8       108
8           9  120.00      GBP    Store I         9       109
9          10  350.25      USD    Store J        10       110

       DESCRIPTION METADATA  buyer_id                Email    name1     name2  \
0    First payload   Meta 1         1   buyer1@example.com     John       Doe
1   Second payload   Meta 2         2   buyer2@example.com     Jane     Smith
2    Third payload   Meta 3         3   buyer3@example.com  Michael   Johnson
3   Fourth payload   Meta 4         4   buyer4@example.com    Emily  Williams
4    Fifth payload   Meta 5         5   buyer5@example.com    David     Brown
5    Sixth payload   Meta 6         6   buyer6@example.com    Sarah     Jones
6  Seventh payload   Meta 7         7   buyer7@example.com   Robert    Miller
7   Eighth payload   Meta 8         8   buyer8@example.com     Lisa     Davis
8    Ninth payload   Meta 9         9   buyer9@example.com  William    Taylor
9    Tenth payload  Meta 10        10  buyer10@example.com   Olivia  Anderson

        phone         dob  buyer_data_id  buyer_id.1  user_id  age  \
0  1234567890   5/15/1990              1           1      123   31
1  9876543210  10/22/1985              2           2      456   38
2  5551234567   3/10/1978              3           3      789   45
3  8889876543   12/1/1995              4           4      101   29
4  4445678901    7/8/1982              5           5      202   41
5  3332345678   9/25/1998              6           1      303   26
6  2223456789  11/12/1972              7           2      404   29
7  7774567890   6/18/1989              8           3      505   56
8  6663456789   4/30/1993              9           4      606   33
9  1112345678    2/5/2000             10           5      707   28

  age_platform account_reg_date  days_since_1st_tx   ltv  order_count  \
0      Android        8/15/2015                120   500           10
1          iOS        3/22/2018                 60   800           15
2      Android        12/5/2012                180  1000           20
3          iOS        7/20/2020                 30   300            5
4      Android        4/18/2017                 90   700           12
5          iOS       10/10/2019                 45   400            8
6      Android        2/28/2016                150   900           18
7          iOS        7/15/2013                300  1200           24
```

```
8      Android         4/3/2021                 15   200            4
9          iOS         9/9/2018                 75   600           14

   last_order_amt  last_order_at last_order_date  order_amt_last3m  \
0              50            NaN       6/28/2023               300
1              75            NaN        7/8/2023               200
2             100            NaN       6/12/2023               350
3              30            NaN        7/2/2023               150
4              80            NaN       6/18/2023               250
5              40            NaN        7/6/2023               180
6              90            NaN       6/22/2023               300
7             120            NaN       7/12/2023               400
8              20            NaN       6/28/2023               100
9              70            NaN        7/3/2023               220

   order_count_last3m  additional_ship_ad    billing_address  \
0                   5  Shipping Address 1  Billing Address 1
1                   4  Shipping Address 2  Billing Address 2
2                   7  Shipping Address 3  Billing Address 3
3                   3  Shipping Address 4  Billing Address 4
4                   6  Shipping Address 5  Billing Address 5
5                   4  Shipping Address 1  Billing Address 1
6                   7  Shipping Address 2  Billing Address 2
7                   8  Shipping Address 3  Billing Address 3
8                   2  Shipping Address 4  Billing Address 4
9                   5  Shipping Address 5  Billing Address 5

  delivery_locn_type  gender  subscription_count prev_payment_meth  \
0              Urban    Male                   3       Credit Card
1           Suburban  Female                   5            PayPal
2              Rural    Male                   2        Debit Card
3              Urban  Female                   1            PayPal
4           Suburban    Male                   4       Credit Card
5              Urban  Female                   2            PayPal
6           Suburban    Male                   3        Debit Card
7              Rural  Female                   5            PayPal
8              Urban    Male                   1       Credit Card
9           Suburban  Female                   3        Debit Card

   number_of_points order_item_categ  order_id order_ref  shipping   tax  \
0               200      Electronics         1     OR123      10.0  5.00
1               150         Clothing         2     OR456       7.0  3.50
2               300      Electronics         3     OR789      12.0  6.00
3                50         Clothing         4     OR101       8.0  4.00
4               180      Electronics         5     OR202      15.0  7.50
5               120         Clothing         6     OR303       6.0  3.00
6               250      Electronics         7     OR404       9.0  4.50
```

```
7              450         Clothing         8     OR505      11.0  5.50
8               75      Electronics         9     OR606       7.5  3.75
9              200         Clothing        10     OR707      13.0  6.50

   item_id  order_id.1  quantity      title  unit_price description  \
0        1           1         2  Product A          25      Item A
1        2           1         3  Product B          15      Item B
2        3           2         1  Product C          20      Item C
3        4           2         2  Product D          10      Item D
4        5           3         3  Product E          30      Item E
5        6           3         1  Product F          40      Item F
6        7           4         2  Product G          15      Item G
7        8           4         1  Product H          50      Item H
8        9           5         2  Product I          35      Item I
9       10           5         4  Product J          12      Item J

   shipping_addr_id  buyer_id.2         line1         line2           city  \
0                 1           1   123 Main St        Apt 4B       New York
1                 2           2    456 Elm Rd      Unit 202    Los Angeles
2                 3           3   789 Oak Ave       Suite 5        Chicago
3                 4           4  101 Maple St           NaN        Houston
4                 5           5   202 Pine Rd  Apartment 10          Miami
5                 6           1  303 Cedar St           NaN        Seattle
6                 7           2  404 Birch Ln       Unit 15         Boston
7                 8           3    505 Elm St           NaN         Denver
8                 9           4    606 Oak Rd           NaN        Atlanta
9                10           5  707 Maple Ave           NaN  San Francisco

  state    zip
0    NY  10001
1    CA  90001
2    IL  60601
3    TX  77002
4    FL  33101
5    WA  98101
6    MA   2201
7    CO  80201
8    GA  30301
9    CA  94101
```

[165]:
```
len(stats)
```

[165]: 10

[166]:
```
stats.columns
```

[166]:
```
Index(['api_key', 'logo_url', 'closed', 'metadata', 'PAYLOAD_ID', 'AMOUNT',
       'CURRENCY', 'STORE_NAME', 'BUYER_ID', 'ORDER_ID', 'DESCRIPTION',
       'METADATA', 'buyer_id', 'Email', 'name1', 'name2', 'phone', 'dob',
       'buyer_data_id', 'buyer_id.1', 'user_id', 'age', 'age_platform',
       'account_reg_date', 'days_since_1st_tx', 'ltv', 'order_count',
       'last_order_amt', 'last_order_at', 'last_order_date',
       'order_amt_last3m', 'order_count_last3m', 'additional_ship_ad',
       'billing_address', 'delivery_locn_type', 'gender', 'subscription_count',
       'prev_payment_meth', 'number_of_points', 'order_item_categ', 'order_id',
       'order_ref', 'shipping', 'tax', 'item_id', 'order_id.1', 'quantity',
       'title', 'unit_price', 'description', 'shipping_addr_id', 'buyer_id.2',
       'line1', 'line2', 'city', 'state', 'zip'],
      dtype='object')
```

[167]:
```
len(stats.columns)
```

[167]:
```
57
```

[168]:
```
stats.tail()
```

[168]:

	api_key	logo_url	closed	metadata	\
5	efg456	https://example.com/logo6	1	{\key\": \"new_value\"}"	
6	hij789	https://example.com/logo7	0	{}	
7	xyz123	https://example.com/logo8	1	{\key\": \"unique_value\"}"	
8	uvw456	https://example.com/logo9	0	{\key\": \"sample_value\"}"	
9	rst789	https://example.com/logo10	1	{}	

	PAYLOAD_ID	AMOUNT	CURRENCY	STORE_NAME	BUYER_ID	ORDER_ID	\
5	6	75.00	GBP	Store F	6	106	
6	7	500.25	USD	Store G	7	107	
7	8	250.75	EUR	Store H	8	108	
8	9	120.00	GBP	Store I	9	109	
9	10	350.25	USD	Store J	10	110	

	DESCRIPTION	METADATA	buyer_id	Email	name1	name2	\
5	Sixth payload	Meta 6	6	buyer6@example.com	Sarah	Jones	
6	Seventh payload	Meta 7	7	buyer7@example.com	Robert	Miller	
7	Eighth payload	Meta 8	8	buyer8@example.com	Lisa	Davis	
8	Ninth payload	Meta 9	9	buyer9@example.com	William	Taylor	
9	Tenth payload	Meta 10	10	buyer10@example.com	Olivia	Anderson	

	phone	dob	buyer_data_id	buyer_id.1	user_id	age	\
5	3332345678	9/25/1998	6	1	303	26	
6	2223456789	11/12/1972	7	2	404	29	
7	7774567890	6/18/1989	8	3	505	56	
8	6663456789	4/30/1993	9	4	606	33	
9	1112345678	2/5/2000	10	5	707	28	

```
  age_platform account_reg_date  days_since_1st_tx   ltv  order_count  \
5          iOS       10/10/2019                 45   400            8
6      Android        2/28/2016                150   900           18
7          iOS        7/15/2013                300  1200           24
8      Android         4/3/2021                 15   200            4
9          iOS         9/9/2018                 75   600           14

   last_order_amt  last_order_at last_order_date  order_amt_last3m  \
5              40            NaN        7/6/2023               180
6              90            NaN       6/22/2023               300
7             120            NaN       7/12/2023               400
8              20            NaN       6/28/2023               100
9              70            NaN        7/3/2023               220

   order_count_last3m  additional_ship_ad    billing_address  \
5                   4  Shipping Address 1  Billing Address 1
6                   7  Shipping Address 2  Billing Address 2
7                   8  Shipping Address 3  Billing Address 3
8                   2  Shipping Address 4  Billing Address 4
9                   5  Shipping Address 5  Billing Address 5

  delivery_locn_type  gender  subscription_count prev_payment_meth  \
5              Urban  Female                   2            PayPal
6           Suburban    Male                   3        Debit Card
7              Rural  Female                   5            PayPal
8              Urban    Male                   1       Credit Card
9           Suburban  Female                   3        Debit Card

   number_of_points order_item_categ  order_id order_ref  shipping   tax  \
5               120         Clothing         6     OR303       6.0  3.00
6               250      Electronics         7     OR404       9.0  4.50
7               450         Clothing         8     OR505      11.0  5.50
8                75      Electronics         9     OR606       7.5  3.75
9               200         Clothing        10     OR707      13.0  6.50

   item_id  order_id.1  quantity      title  unit_price description  \
5        6           3         1  Product F          40      Item F
6        7           4         2  Product G          15      Item G
7        8           4         1  Product H          50      Item H
8        9           5         2  Product I          35      Item I
9       10           5         4  Product J          12      Item J

   shipping_addr_id  buyer_id.2          line1    line2           city state  \
5                 6           1   303 Cedar St      NaN        Seattle    WA
6                 7           2   404 Birch Ln  Unit 15         Boston    MA
7                 8           3     505 Elm St      NaN         Denver    CO
```

```
8                9           4     606 Oak Rd      NaN        Atlanta    GA
9               10           5  707 Maple Ave      NaN  San Francisco    CA

     zip
5  98101
6   2201
7  80201
8  30301
9  94101
```

[169]:
```
stats.head(6)
```

[169]:
```
  api_key                   logo_url  closed                        metadata  \
0  abc123  https://example.com/logo1       0                              {}
1  xyz789  https://example.com/logo2       1              {\key\": \"value\"}"
2  mno456  https://example.com/logo3       0     {\key\": \"another_value\"}"
3  pqr789  https://example.com/logo4       1  {\key\": \"different_value\"}"
4  lmn123  https://example.com/logo5       0                              {}
5  efg456  https://example.com/logo6       1         {\key\": \"new_value\"}"

   PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  BUYER_ID  ORDER_ID     DESCRIPTION  \
0           1  100.00      USD    Store A         1       101   First payload
1           2  200.50      EUR    Store B         2       102  Second payload
2           3   50.25      GBP    Store C         3       103   Third payload
3           4  300.75      USD    Store D         4       104  Fourth payload
4           5  150.50      EUR    Store E         5       105   Fifth payload
5           6   75.00      GBP    Store F         6       106   Sixth payload

  METADATA  buyer_id               Email    name1     name2       phone  \
0   Meta 1         1  buyer1@example.com     John       Doe  1234567890
1   Meta 2         2  buyer2@example.com     Jane     Smith  9876543210
2   Meta 3         3  buyer3@example.com  Michael   Johnson  5551234567
3   Meta 4         4  buyer4@example.com    Emily  Williams  8889876543
4   Meta 5         5  buyer5@example.com    David     Brown  4445678901
5   Meta 6         6  buyer6@example.com    Sarah     Jones  3332345678

         dob  buyer_data_id  buyer_id.1  user_id  age age_platform  \
0   5/15/1990              1           1      123   31      Android
1  10/22/1985              2           2      456   38          iOS
2   3/10/1978              3           3      789   45      Android
3   12/1/1995              4           4      101   29          iOS
4    7/8/1982              5           5      202   41      Android
5   9/25/1998              6           1      303   26          iOS

  account_reg_date  days_since_1st_tx   ltv  order_count  last_order_amt  \
0        8/15/2015                120   500           10              50
1        3/22/2018                 60   800           15              75
```

```
2        12/5/2012                180  1000           20             100
3        7/20/2020                 30   300            5              30
4        4/18/2017                 90   700           12              80
5       10/10/2019                 45   400            8              40

   last_order_at last_order_date  order_amt_last3m  order_count_last3m  \
0            NaN       6/28/2023               300                   5
1            NaN        7/8/2023               200                   4
2            NaN       6/12/2023               350                   7
3            NaN        7/2/2023               150                   3
4            NaN       6/18/2023               250                   6
5            NaN        7/6/2023               180                   4

   additional_ship_ad    billing_address delivery_locn_type  gender  \
0  Shipping Address 1  Billing Address 1              Urban    Male
1  Shipping Address 2  Billing Address 2           Suburban  Female
2  Shipping Address 3  Billing Address 3              Rural    Male
3  Shipping Address 4  Billing Address 4              Urban  Female
4  Shipping Address 5  Billing Address 5           Suburban    Male
5  Shipping Address 1  Billing Address 1              Urban  Female

   subscription_count prev_payment_meth  number_of_points order_item_categ  \
0                   3       Credit Card               200      Electronics
1                   5            PayPal               150         Clothing
2                   2        Debit Card               300      Electronics
3                   1            PayPal                50         Clothing
4                   4       Credit Card               180      Electronics
5                   2            PayPal               120         Clothing

   order_id order_ref  shipping  tax  item_id  order_id.1  quantity  \
0         1     OR123      10.0  5.0        1           1         2
1         2     OR456       7.0  3.5        2           1         3
2         3     OR789      12.0  6.0        3           2         1
3         4     OR101       8.0  4.0        4           2         2
4         5     OR202      15.0  7.5        5           3         3
5         6     OR303       6.0  3.0        6           3         1

       title  unit_price description  shipping_addr_id  buyer_id.2  \
0  Product A          25      Item A                 1           1
1  Product B          15      Item B                 2           2
2  Product C          20      Item C                 3           3
3  Product D          10      Item D                 4           4
4  Product E          30      Item E                 5           5
5  Product F          40      Item F                 6           1

          line1         line2         city state    zip
0   123 Main St        Apt 4B     New York    NY  10001
```

```
1    456 Elm Rd      Unit 202  Los Angeles    CA  90001
2    789 Oak Ave      Suite 5      Chicago    IL  60601
3  101 Maple St          NaN      Houston    TX  77002
4   202 Pine Rd  Apartment 10        Miami    FL  33101
5  303 Cedar St          NaN      Seattle    WA  98101
```

[170]:
```
stats.tail(6)
```

[170]:
```
  api_key                   logo_url  closed                     metadata  \
4  lmn123   https://example.com/logo5       0                           {}
5  efg456   https://example.com/logo6       1     {\key\": \"new_value\"}"
6  hij789   https://example.com/logo7       0                           {}
7  xyz123   https://example.com/logo8       1  {\key\": \"unique_value\"}"
8  uvw456   https://example.com/logo9       0  {\key\": \"sample_value\"}"
9  rst789  https://example.com/logo10       1                           {}

   PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  BUYER_ID  ORDER_ID  \
4           5  150.50      EUR    Store E         5       105
5           6   75.00      GBP    Store F         6       106
6           7  500.25      USD    Store G         7       107
7           8  250.75      EUR    Store H         8       108
8           9  120.00      GBP    Store I         9       109
9          10  350.25      USD    Store J        10       110

       DESCRIPTION METADATA  buyer_id               Email    name1     name2  \
4    Fifth payload   Meta 5         5   buyer5@example.com    David     Brown
5    Sixth payload   Meta 6         6   buyer6@example.com    Sarah     Jones
6  Seventh payload   Meta 7         7   buyer7@example.com   Robert    Miller
7   Eighth payload   Meta 8         8   buyer8@example.com     Lisa     Davis
8    Ninth payload   Meta 9         9   buyer9@example.com  William    Taylor
9    Tenth payload  Meta 10        10  buyer10@example.com   Olivia  Anderson

        phone         dob  buyer_data_id  buyer_id.1  user_id  age  \
4  4445678901    7/8/1982              5           5      202   41
5  3332345678   9/25/1998              6           1      303   26
6  2223456789  11/12/1972              7           2      404   29
7  7774567890   6/18/1989              8           3      505   56
8  6663456789   4/30/1993              9           4      606   33
9  1112345678    2/5/2000             10           5      707   28

  age_platform account_reg_date  days_since_1st_tx   ltv  order_count  \
4      Android        4/18/2017                 90   700           12
5          iOS       10/10/2019                 45   400            8
6      Android        2/28/2016                150   900           18
7          iOS        7/15/2013                300  1200           24
8      Android         4/3/2021                 15   200            4
9          iOS         9/9/2018                 75   600           14
```

	last_order_amt	last_order_at	last_order_date	order_amt_last3m	\
4	80	NaN	6/18/2023	250	
5	40	NaN	7/6/2023	180	
6	90	NaN	6/22/2023	300	
7	120	NaN	7/12/2023	400	
8	20	NaN	6/28/2023	100	
9	70	NaN	7/3/2023	220	

	order_count_last3m	additional_ship_ad	billing_address	\
4	6	Shipping Address 5	Billing Address 5	
5	4	Shipping Address 1	Billing Address 1	
6	7	Shipping Address 2	Billing Address 2	
7	8	Shipping Address 3	Billing Address 3	
8	2	Shipping Address 4	Billing Address 4	
9	5	Shipping Address 5	Billing Address 5	

	delivery_locn_type	gender	subscription_count	prev_payment_meth	\
4	Suburban	Male	4	Credit Card	
5	Urban	Female	2	PayPal	
6	Suburban	Male	3	Debit Card	
7	Rural	Female	5	PayPal	
8	Urban	Male	1	Credit Card	
9	Suburban	Female	3	Debit Card	

	number_of_points	order_item_categ	order_id	order_ref	shipping	tax	\
4	180	Electronics	5	OR202	15.0	7.50	
5	120	Clothing	6	OR303	6.0	3.00	
6	250	Electronics	7	OR404	9.0	4.50	
7	450	Clothing	8	OR505	11.0	5.50	
8	75	Electronics	9	OR606	7.5	3.75	
9	200	Clothing	10	OR707	13.0	6.50	

	item_id	order_id.1	quantity	title	unit_price	description	\
4	5	3	3	Product E	30	Item E	
5	6	3	1	Product F	40	Item F	
6	7	4	2	Product G	15	Item G	
7	8	4	1	Product H	50	Item H	
8	9	5	2	Product I	35	Item I	
9	10	5	4	Product J	12	Item J	

	shipping_addr_id	buyer_id.2	line1	line2	city	\
4	5	5	202 Pine Rd	Apartment 10	Miami	
5	6	1	303 Cedar St	NaN	Seattle	
6	7	2	404 Birch Ln	Unit 15	Boston	
7	8	3	505 Elm St	NaN	Denver	
8	9	4	606 Oak Rd	NaN	Atlanta	

```
9                10           5  707 Maple Ave           NaN  San Francisco

  state    zip
4    FL  33101
5    WA  98101
6    MA   2201
7    CO  80201
8    GA  30301
9    CA  94101
```

[171]:
```
stats.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 10 entries, 0 to 9
Data columns (total 57 columns):
 #   Column              Non-Null Count  Dtype
---  ------              --------------  -----
 0   api_key             10 non-null     object
 1   logo_url            10 non-null     object
 2   closed              10 non-null     int64
 3   metadata            10 non-null     object
 4   PAYLOAD_ID          10 non-null     int64
 5   AMOUNT              10 non-null     float64
 6   CURRENCY            10 non-null     object
 7   STORE_NAME          10 non-null     object
 8   BUYER_ID            10 non-null     int64
 9   ORDER_ID            10 non-null     int64
 10  DESCRIPTION         10 non-null     object
 11  METADATA            10 non-null     object
 12  buyer_id            10 non-null     int64
 13  Email               10 non-null     object
 14  name1               10 non-null     object
 15  name2               10 non-null     object
 16  phone               10 non-null     int64
 17  dob                 10 non-null     object
 18  buyer_data_id       10 non-null     int64
 19  buyer_id.1          10 non-null     int64
 20  user_id             10 non-null     int64
 21  age                 10 non-null     int64
 22  age_platform        10 non-null     object
 23  account_reg_date    10 non-null     object
 24  days_since_1st_tx   10 non-null     int64
 25  ltv                 10 non-null     int64
 26  order_count         10 non-null     int64
 27  last_order_amt      10 non-null     int64
 28  last_order_at       0 non-null      float64
 29  last_order_date     10 non-null     object
 30  order_amt_last3m    10 non-null     int64
```

```
 31  order_count_last3m  10 non-null     int64
 32  additional_ship_ad  10 non-null     object
 33  billing_address     10 non-null     object
 34  delivery_locn_type  10 non-null     object
 35  gender              10 non-null     object
 36  subscription_count  10 non-null     int64
 37  prev_payment_meth   10 non-null     object
 38  number_of_points    10 non-null     int64
 39  order_item_categ    10 non-null     object
 40  order_id            10 non-null     int64
 41  order_ref           10 non-null     object
 42  shipping            10 non-null     float64
 43  tax                 10 non-null     float64
 44  item_id             10 non-null     int64
 45  order_id.1          10 non-null     int64
 46  quantity            10 non-null     int64
 47  title               10 non-null     object
 48  unit_price          10 non-null     int64
 49  description         10 non-null     object
 50  shipping_addr_id    10 non-null     int64
 51  buyer_id.2          10 non-null     int64
 52  line1               10 non-null     object
 53  line2               5 non-null      object
 54  city                10 non-null     object
 55  state               10 non-null     object
 56  zip                 10 non-null     int64
dtypes: float64(4), int64(26), object(27)
memory usage: 4.6+ KB
```

[172]:
```
stats.describe()
```

[172]:

	closed	PAYLOAD_ID	AMOUNT	BUYER_ID	ORDER_ID	buyer_id	\
count	10.000000	10.00000	10.000000	10.00000	10.00000	10.00000	
mean	0.500000	5.50000	209.825000	5.50000	105.50000	5.50000	
std	0.527046	3.02765	141.964982	3.02765	3.02765	3.02765	
min	0.000000	1.00000	50.250000	1.00000	101.00000	1.00000	
25%	0.000000	3.25000	105.000000	3.25000	103.25000	3.25000	
50%	0.500000	5.50000	175.500000	5.50000	105.50000	5.50000	
75%	1.000000	7.75000	288.250000	7.75000	107.75000	7.75000	
max	1.000000	10.00000	500.250000	10.00000	110.00000	10.00000	

	phone	buyer_data_id	buyer_id.1	user_id	age	\
count	1.000000e+01	10.00000	10.000000	10.000000	10.000000	
mean	5.110407e+09	5.50000	3.000000	419.600000	35.600000	
std	3.156104e+09	3.02765	1.490712	238.766367	9.453982	
min	1.112346e+09	1.00000	1.000000	101.000000	26.000000	
25%	2.500679e+09	3.25000	2.000000	227.250000	29.000000	

```
50%    4.998457e+09        5.50000    3.000000  430.000000  32.000000
75%    7.496790e+09        7.75000    4.000000  580.750000  40.250000
max    9.876543e+09       10.00000    5.000000  789.000000  56.000000

       days_since_1st_tx          ltv  order_count  last_order_amt  \
count          10.000000    10.000000    10.000000       10.000000
mean          106.500000   660.000000    13.000000       67.500000
std            85.863263   320.416396     6.497863       32.080628
min            15.000000   200.000000     4.000000       20.000000
25%            48.750000   425.000000     8.500000       42.500000
50%            82.500000   650.000000    13.000000       72.500000
75%           142.500000   875.000000    17.250000       87.500000
max           300.000000  1200.000000    24.000000      120.000000

       last_order_at  order_amt_last3m  order_count_last3m  \
count            0.0         10.000000           10.000000
mean             NaN        245.000000            5.100000
std              NaN         93.124767            1.911951
min              NaN        100.000000            2.000000
25%              NaN        185.000000            4.000000
50%              NaN        235.000000            5.000000
75%              NaN        300.000000            6.750000
max              NaN        400.000000            8.000000

       subscription_count  number_of_points  order_id   shipping        tax  \
count           10.000000         10.000000  10.00000  10.000000  10.000000
mean             2.900000        197.500000   5.50000   9.850000   4.925000
std              1.449138        116.601172   3.02765   2.887232   1.443616
min              1.000000         50.000000   1.00000   6.000000   3.000000
25%              2.000000        127.500000   3.25000   7.625000   3.812500
50%              3.000000        190.000000   5.50000   9.500000   4.750000
75%              3.750000        237.500000   7.75000  11.750000   5.875000
max              5.000000        450.000000  10.00000  15.000000   7.500000

        item_id  order_id.1   quantity  unit_price  shipping_addr_id  \
count  10.00000   10.000000  10.000000    10.00000          10.00000
mean    5.50000    3.000000   2.100000    25.20000           5.50000
std     3.02765    1.490712   0.994429    13.30664           3.02765
min     1.00000    1.000000   1.000000    10.00000           1.00000
25%     3.25000    2.000000   1.250000    15.00000           3.25000
50%     5.50000    3.000000   2.000000    22.50000           5.50000
75%     7.75000    4.000000   2.750000    33.75000           7.75000
max    10.00000    5.000000   4.000000    50.00000          10.00000

       buyer_id.2           zip
count   10.000000     10.000000
mean     3.000000  57561.100000
```

```
std      1.490712  35899.339023
min      1.000000   2201.000000
25%      2.000000  31001.000000
50%      3.000000  68801.500000
75%      4.000000  87551.000000
max      5.000000  98101.000000
```

[173]:
```
stats.describe().transpose()
```

[173]:

	count	mean	std	min	\
closed	10.0	5.000000e-01	5.270463e-01	0.000000e+00	
PAYLOAD_ID	10.0	5.500000e+00	3.027650e+00	1.000000e+00	
AMOUNT	10.0	2.098250e+02	1.419650e+02	5.025000e+01	
BUYER_ID	10.0	5.500000e+00	3.027650e+00	1.000000e+00	
ORDER_ID	10.0	1.055000e+02	3.027650e+00	1.010000e+02	
buyer_id	10.0	5.500000e+00	3.027650e+00	1.000000e+00	
phone	10.0	5.110407e+09	3.156104e+09	1.112346e+09	
buyer_data_id	10.0	5.500000e+00	3.027650e+00	1.000000e+00	
buyer_id.1	10.0	3.000000e+00	1.490712e+00	1.000000e+00	
user_id	10.0	4.196000e+02	2.387664e+02	1.010000e+02	
age	10.0	3.560000e+01	9.453982e+00	2.600000e+01	
days_since_1st_tx	10.0	1.065000e+02	8.586326e+01	1.500000e+01	
ltv	10.0	6.600000e+02	3.204164e+02	2.000000e+02	
order_count	10.0	1.300000e+01	6.497863e+00	4.000000e+00	
last_order_amt	10.0	6.750000e+01	3.208063e+01	2.000000e+01	
last_order_at	0.0	NaN	NaN	NaN	
order_amt_last3m	10.0	2.450000e+02	9.312477e+01	1.000000e+02	
order_count_last3m	10.0	5.100000e+00	1.911951e+00	2.000000e+00	
subscription_count	10.0	2.900000e+00	1.449138e+00	1.000000e+00	
number_of_points	10.0	1.975000e+02	1.166012e+02	5.000000e+01	
order_id	10.0	5.500000e+00	3.027650e+00	1.000000e+00	
shipping	10.0	9.850000e+00	2.887232e+00	6.000000e+00	
tax	10.0	4.925000e+00	1.443616e+00	3.000000e+00	
item_id	10.0	5.500000e+00	3.027650e+00	1.000000e+00	
order_id.1	10.0	3.000000e+00	1.490712e+00	1.000000e+00	
quantity	10.0	2.100000e+00	9.944289e-01	1.000000e+00	
unit_price	10.0	2.520000e+01	1.330664e+01	1.000000e+01	
shipping_addr_id	10.0	5.500000e+00	3.027650e+00	1.000000e+00	
buyer_id.2	10.0	3.000000e+00	1.490712e+00	1.000000e+00	
zip	10.0	5.756110e+04	3.589934e+04	2.201000e+03	

	25%	50%	75%	max
closed	0.000000e+00	5.000000e-01	1.000000e+00	1.000000e+00
PAYLOAD_ID	3.250000e+00	5.500000e+00	7.750000e+00	1.000000e+01
AMOUNT	1.050000e+02	1.755000e+02	2.882500e+02	5.002500e+02
BUYER_ID	3.250000e+00	5.500000e+00	7.750000e+00	1.000000e+01
ORDER_ID	1.032500e+02	1.055000e+02	1.077500e+02	1.100000e+02

```
buyer_id             3.250000e+00  5.500000e+00  7.750000e+00  1.000000e+01
phone                2.500679e+09  4.998457e+09  7.496790e+09  9.876543e+09
buyer_data_id        3.250000e+00  5.500000e+00  7.750000e+00  1.000000e+01
buyer_id.1           2.000000e+00  3.000000e+00  4.000000e+00  5.000000e+00
user_id              2.272500e+02  4.300000e+02  5.807500e+02  7.890000e+02
age                  2.900000e+01  3.200000e+01  4.025000e+01  5.600000e+01
days_since_1st_tx    4.875000e+01  8.250000e+01  1.425000e+02  3.000000e+02
ltv                  4.250000e+02  6.500000e+02  8.750000e+02  1.200000e+03
order_count          8.500000e+00  1.300000e+01  1.725000e+01  2.400000e+01
last_order_amt       4.250000e+01  7.250000e+01  8.750000e+01  1.200000e+02
last_order_at                 NaN           NaN           NaN           NaN
order_amt_last3m     1.850000e+02  2.350000e+02  3.000000e+02  4.000000e+02
order_count_last3m   4.000000e+00  5.000000e+00  6.750000e+00  8.000000e+00
subscription_count   2.000000e+00  3.000000e+00  3.750000e+00  5.000000e+00
number_of_points     1.275000e+02  1.900000e+02  2.375000e+02  4.500000e+02
order_id             3.250000e+00  5.500000e+00  7.750000e+00  1.000000e+01
shipping             7.625000e+00  9.500000e+00  1.175000e+01  1.500000e+01
tax                  3.812500e+00  4.750000e+00  5.875000e+00  7.500000e+00
item_id              3.250000e+00  5.500000e+00  7.750000e+00  1.000000e+01
order_id.1           2.000000e+00  3.000000e+00  4.000000e+00  5.000000e+00
quantity             1.250000e+00  2.000000e+00  2.750000e+00  4.000000e+00
unit_price           1.500000e+01  2.250000e+01  3.375000e+01  5.000000e+01
shipping_addr_id     3.250000e+00  5.500000e+00  7.750000e+00  1.000000e+01
buyer_id.2           2.000000e+00  3.000000e+00  4.000000e+00  5.000000e+00
zip                  3.100100e+04  6.880150e+04  8.755100e+04  9.810100e+04
```

[174]:
```
stats.columns
```

[174]:
```
Index(['api_key', 'logo_url', 'closed', 'metadata', 'PAYLOAD_ID', 'AMOUNT',
       'CURRENCY', 'STORE_NAME', 'BUYER_ID', 'ORDER_ID', 'DESCRIPTION',
       'METADATA', 'buyer_id', 'Email', 'name1', 'name2', 'phone', 'dob',
       'buyer_data_id', 'buyer_id.1', 'user_id', 'age', 'age_platform',
       'account_reg_date', 'days_since_1st_tx', 'ltv', 'order_count',
       'last_order_amt', 'last_order_at', 'last_order_date',
       'order_amt_last3m', 'order_count_last3m', 'additional_ship_ad',
       'billing_address', 'delivery_locn_type', 'gender', 'subscription_count',
       'prev_payment_meth', 'number_of_points', 'order_item_categ', 'order_id',
       'order_ref', 'shipping', 'tax', 'item_id', 'order_id.1', 'quantity',
       'title', 'unit_price', 'description', 'shipping_addr_id', 'buyer_id.2',
       'line1', 'line2', 'city', 'state', 'zip'],
      dtype='object')
```

[175]:
```
stats.columns=['api_key_PK', 'logo_url_data', 'closed_status', 'metadata_data',␣
↪'PAYLOAD_ID', 'AMOUNT',
       'CURRENCY', 'STORE_NAME', 'BUYER_ID', 'ORDER_ID', 'DESCRIPTION',
       'METADATA', 'buyer_id', 'Email', 'name1', 'name2', 'phone', 'dob',
       'buyer_data_id', 'buyer_id.1', 'user_id', 'age', 'age_platform',
```

```
       'account_reg_date', 'days_since_1st_tx', 'ltv', 'order_count',
       'last_order_amt', 'last_order_at', 'last_order_date',
       'order_amt_last3m', 'order_count_last3m', 'additional_ship_ad',
       'billing_address', 'delivery_locn_type', 'gender', 'subscription_count',
       'prev_payment_meth', 'number_of_points', 'order_item_categ', 'order_id',
       'order_ref', 'shipping', 'tax', 'item_id', 'order_id.1', 'quantity',
       'title', 'unit_price', 'description', 'shipping_addr_id', 'buyer_id.2',
       'line1', 'line2', 'city', 'state', 'zip']
```

[176]:
```
stats
```

[176]:

	api_key_PK	logo_url_data	closed_status	\
0	abc123	https://example.com/logo1	0	
1	xyz789	https://example.com/logo2	1	
2	mno456	https://example.com/logo3	0	
3	pqr789	https://example.com/logo4	1	
4	lmn123	https://example.com/logo5	0	
5	efg456	https://example.com/logo6	1	
6	hij789	https://example.com/logo7	0	
7	xyz123	https://example.com/logo8	1	
8	uvw456	https://example.com/logo9	0	
9	rst789	https://example.com/logo10	1	

	metadata_data	PAYLOAD_ID	AMOUNT	CURRENCY	STORE_NAME	\
0	{}	1	100.00	USD	Store A	
1	{\key\": \"value\"}"	2	200.50	EUR	Store B	
2	{\key\": \"another_value\"}"	3	50.25	GBP	Store C	
3	{\key\": \"different_value\"}"	4	300.75	USD	Store D	
4	{}	5	150.50	EUR	Store E	
5	{\key\": \"new_value\"}"	6	75.00	GBP	Store F	
6	{}	7	500.25	USD	Store G	
7	{\key\": \"unique_value\"}"	8	250.75	EUR	Store H	
8	{\key\": \"sample_value\"}"	9	120.00	GBP	Store I	
9	{}	10	350.25	USD	Store J	

	BUYER_ID	ORDER_ID	DESCRIPTION	METADATA	buyer_id	\
0	1	101	First payload	Meta 1	1	
1	2	102	Second payload	Meta 2	2	
2	3	103	Third payload	Meta 3	3	
3	4	104	Fourth payload	Meta 4	4	
4	5	105	Fifth payload	Meta 5	5	
5	6	106	Sixth payload	Meta 6	6	
6	7	107	Seventh payload	Meta 7	7	
7	8	108	Eighth payload	Meta 8	8	
8	9	109	Ninth payload	Meta 9	9	
9	10	110	Tenth payload	Meta 10	10	

	Email	name1	name2	phone	dob
0	buyer1@example.com	John	Doe	1234567890	5/15/1990
1	buyer2@example.com	Jane	Smith	9876543210	10/22/1985
2	buyer3@example.com	Michael	Johnson	5551234567	3/10/1978
3	buyer4@example.com	Emily	Williams	8889876543	12/1/1995
4	buyer5@example.com	David	Brown	4445678901	7/8/1982
5	buyer6@example.com	Sarah	Jones	3332345678	9/25/1998
6	buyer7@example.com	Robert	Miller	2223456789	11/12/1972
7	buyer8@example.com	Lisa	Davis	7774567890	6/18/1989
8	buyer9@example.com	William	Taylor	6663456789	4/30/1993
9	buyer10@example.com	Olivia	Anderson	1112345678	2/5/2000

	buyer_data_id	buyer_id.1	user_id	age	age_platform	account_reg_date
0	1	1	123	31	Android	8/15/2015
1	2	2	456	38	iOS	3/22/2018
2	3	3	789	45	Android	12/5/2012
3	4	4	101	29	iOS	7/20/2020
4	5	5	202	41	Android	4/18/2017
5	6	1	303	26	iOS	10/10/2019
6	7	2	404	29	Android	2/28/2016
7	8	3	505	56	iOS	7/15/2013
8	9	4	606	33	Android	4/3/2021
9	10	5	707	28	iOS	9/9/2018

	days_since_1st_tx	ltv	order_count	last_order_amt	last_order_at
0	120	500	10	50	NaN
1	60	800	15	75	NaN
2	180	1000	20	100	NaN
3	30	300	5	30	NaN
4	90	700	12	80	NaN
5	45	400	8	40	NaN
6	150	900	18	90	NaN
7	300	1200	24	120	NaN
8	15	200	4	20	NaN
9	75	600	14	70	NaN

	last_order_date	order_amt_last3m	order_count_last3m	additional_ship_ad
0	6/28/2023	300	5	Shipping Address 1
1	7/8/2023	200	4	Shipping Address 2
2	6/12/2023	350	7	Shipping Address 3
3	7/2/2023	150	3	Shipping Address 4
4	6/18/2023	250	6	Shipping Address 5
5	7/6/2023	180	4	Shipping Address 1
6	6/22/2023	300	7	Shipping Address 2
7	7/12/2023	400	8	Shipping Address 3
8	6/28/2023	100	2	Shipping Address 4
9	7/3/2023	220	5	Shipping Address 5

```
     billing_address delivery_locn_type  gender  subscription_count  \
0  Billing Address 1              Urban    Male                   3
1  Billing Address 2           Suburban  Female                   5
2  Billing Address 3              Rural    Male                   2
3  Billing Address 4              Urban  Female                   1
4  Billing Address 5           Suburban    Male                   4
5  Billing Address 1              Urban  Female                   2
6  Billing Address 2           Suburban    Male                   3
7  Billing Address 3              Rural  Female                   5
8  Billing Address 4              Urban    Male                   1
9  Billing Address 5           Suburban  Female                   3

  prev_payment_meth  number_of_points order_item_categ  order_id order_ref  \
0       Credit Card               200      Electronics         1     OR123
1            PayPal               150         Clothing         2     OR456
2        Debit Card               300      Electronics         3     OR789
3            PayPal                50         Clothing         4     OR101
4       Credit Card               180      Electronics         5     OR202
5            PayPal               120         Clothing         6     OR303
6        Debit Card               250      Electronics         7     OR404
7            PayPal               450         Clothing         8     OR505
8       Credit Card                75      Electronics         9     OR606
9        Debit Card               200         Clothing        10     OR707

   shipping   tax  item_id  order_id.1  quantity      title  unit_price  \
0      10.0  5.00        1           1         2  Product A          25
1       7.0  3.50        2           1         3  Product B          15
2      12.0  6.00        3           2         1  Product C          20
3       8.0  4.00        4           2         2  Product D          10
4      15.0  7.50        5           3         3  Product E          30
5       6.0  3.00        6           3         1  Product F          40
6       9.0  4.50        7           4         2  Product G          15
7      11.0  5.50        8           4         1  Product H          50
8       7.5  3.75        9           5         2  Product I          35
9      13.0  6.50       10           5         4  Product J          12

  description  shipping_addr_id  buyer_id.2         line1         line2  \
0      Item A                 1           1   123 Main St        Apt 4B
1      Item B                 2           2    456 Elm Rd      Unit 202
2      Item C                 3           3   789 Oak Ave       Suite 5
3      Item D                 4           4  101 Maple St           NaN
4      Item E                 5           5   202 Pine Rd  Apartment 10
5      Item F                 6           1  303 Cedar St           NaN
6      Item G                 7           2  404 Birch Ln       Unit 15
7      Item H                 8           3    505 Elm St           NaN
8      Item I                 9           4    606 Oak Rd           NaN
```

```
9      Item J                10           5  707 Maple Ave           NaN

            city state    zip
0       New York    NY  10001
1    Los Angeles    CA  90001
2        Chicago    IL  60601
3        Houston    TX  77002
4          Miami    FL  33101
5        Seattle    WA  98101
6         Boston    MA   2201
7         Denver    CO  80201
8        Atlanta    GA  30301
9  San Francisco    CA  94101
```

[177]:
```
stats[6:8]
```

[177]:
```
  api_key_PK              logo_url_data  closed_status  \
6     hij789  https://example.com/logo7              0
7     xyz123  https://example.com/logo8              1

                metadata_data  PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  \
6                          {}           7  500.25      USD    Store G
7  {\key\": \"unique_value\"}"           8  250.75      EUR    Store H

   BUYER_ID  ORDER_ID      DESCRIPTION METADATA  buyer_id              Email  \
6         7       107  Seventh payload   Meta 7         7  buyer7@example.com
7         8       108   Eighth payload   Meta 8         8  buyer8@example.com

    name1   name2       phone         dob  buyer_data_id  buyer_id.1  user_id  \
6  Robert  Miller  2223456789  11/12/1972              7           2      404
7    Lisa   Davis  7774567890   6/18/1989              8           3      505

   age age_platform account_reg_date  days_since_1st_tx   ltv  order_count  \
6   29      Android        2/28/2016                150   900           18
7   56          iOS        7/15/2013                300  1200           24

   last_order_amt  last_order_at last_order_date  order_amt_last3m  \
6              90            NaN       6/22/2023               300
7             120            NaN       7/12/2023               400

   order_count_last3m  additional_ship_ad    billing_address  \
6                   7  Shipping Address 2  Billing Address 2
7                   8  Shipping Address 3  Billing Address 3

  delivery_locn_type  gender  subscription_count prev_payment_meth  \
6           Suburban    Male                   3        Debit Card
7              Rural  Female                   5            PayPal
```

```
   number_of_points order_item_categ  order_id order_ref  shipping  tax  \
6               250      Electronics         7     OR404       9.0  4.5
7               450         Clothing         8     OR505      11.0  5.5

   item_id  order_id.1  quantity      title  unit_price description  \
6        7           4         2  Product G          15      Item G
7        8           4         1  Product H          50      Item H

   shipping_addr_id  buyer_id.2         line1    line2    city state    zip
6                 7           2  404 Birch Ln  Unit 15  Boston    MA   2201
7                 8           3    505 Elm St      NaN  Denver    CO  80201
```

[178]:
```
stats[1:5]
```

[178]:
```
  api_key_PK              logo_url_data  closed_status  \
1     xyz789  https://example.com/logo2              1
2     mno456  https://example.com/logo3              0
3     pqr789  https://example.com/logo4              1
4     lmn123  https://example.com/logo5              0

                   metadata_data  PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  \
1            {\key\": \"value\"}"           2  200.50      EUR    Store B
2    {\key\": \"another_value\"}"           3   50.25      GBP    Store C
3  {\key\": \"different_value\"}"           4  300.75      USD    Store D
4                              {}           5  150.50      EUR    Store E

   BUYER_ID  ORDER_ID     DESCRIPTION METADATA  buyer_id              Email  \
1         2       102  Second payload   Meta 2         2  buyer2@example.com
2         3       103   Third payload   Meta 3         3  buyer3@example.com
3         4       104  Fourth payload   Meta 4         4  buyer4@example.com
4         5       105   Fifth payload   Meta 5         5  buyer5@example.com

     name1     name2       phone         dob  buyer_data_id  buyer_id.1  \
1     Jane     Smith  9876543210  10/22/1985              2           2
2  Michael   Johnson  5551234567   3/10/1978              3           3
3    Emily  Williams  8889876543   12/1/1995              4           4
4    David     Brown  4445678901    7/8/1982              5           5

   user_id  age age_platform account_reg_date  days_since_1st_tx   ltv  \
1      456   38          iOS        3/22/2018                 60   800
2      789   45      Android        12/5/2012                180  1000
3      101   29          iOS        7/20/2020                 30   300
4      202   41      Android        4/18/2017                 90   700

   order_count  last_order_amt  last_order_at last_order_date  \
1           15              75            NaN        7/8/2023
```

```
2           20             100            NaN       6/12/2023
3            5              30            NaN        7/2/2023
4           12              80            NaN       6/18/2023

   order_amt_last3m  order_count_last3m  additional_ship_ad  \
1               200                   4  Shipping Address 2
2               350                   7  Shipping Address 3
3               150                   3  Shipping Address 4
4               250                   6  Shipping Address 5

     billing_address delivery_locn_type  gender  subscription_count  \
1  Billing Address 2           Suburban  Female                   5
2  Billing Address 3              Rural    Male                   2
3  Billing Address 4              Urban  Female                   1
4  Billing Address 5           Suburban    Male                   4

  prev_payment_meth  number_of_points order_item_categ  order_id order_ref  \
1            PayPal               150         Clothing         2     OR456
2       Debit Card               300      Electronics         3     OR789
3            PayPal                50         Clothing         4     OR101
4       Credit Card               180      Electronics         5     OR202

   shipping  tax  item_id  order_id.1  quantity      title  unit_price  \
1       7.0  3.5        2           1         3  Product B          15
2      12.0  6.0        3           2         1  Product C          20
3       8.0  4.0        4           2         2  Product D          10
4      15.0  7.5        5           3         3  Product E          30

  description  shipping_addr_id  buyer_id.2         line1         line2  \
1      Item B                 2           2    456 Elm Rd      Unit 202
2      Item C                 3           3   789 Oak Ave       Suite 5
3      Item D                 4           4  101 Maple St           NaN
4      Item E                 5           5   202 Pine Rd  Apartment 10

          city state    zip
1  Los Angeles    CA  90001
2      Chicago    IL  60601
3      Houston    TX  77002
4        Miami    FL  33101
```

[179]:
```
stats[3:]
```

[179]:
```
  api_key_PK              logo_url_data  closed_status  \
3     pqr789   https://example.com/logo4              1
4     lmn123   https://example.com/logo5              0
5     efg456   https://example.com/logo6              1
6     hij789   https://example.com/logo7              0
```

```
7     xyz123   https://example.com/logo8             1
8     uvw456   https://example.com/logo9             0
9     rst789  https://example.com/logo10             1

                    metadata_data  PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  \
3  {\key\": \"different_value\"}"           4  300.75      USD    Store D
4                              {}           5  150.50      EUR    Store E
5       {\key\": \"new_value\"}"           6   75.00      GBP    Store F
6                              {}           7  500.25      USD    Store G
7     {\key\": \"unique_value\"}"           8  250.75      EUR    Store H
8     {\key\": \"sample_value\"}"           9  120.00      GBP    Store I
9                              {}          10  350.25      USD    Store J

   BUYER_ID  ORDER_ID      DESCRIPTION METADATA  buyer_id  \
3         4       104   Fourth payload   Meta 4         4
4         5       105    Fifth payload   Meta 5         5
5         6       106    Sixth payload   Meta 6         6
6         7       107  Seventh payload   Meta 7         7
7         8       108   Eighth payload   Meta 8         8
8         9       109    Ninth payload   Meta 9         9
9        10       110    Tenth payload  Meta 10        10

                Email    name1     name2       phone         dob  \
3   buyer4@example.com    Emily  Williams  8889876543   12/1/1995
4   buyer5@example.com    David     Brown  4445678901    7/8/1982
5   buyer6@example.com    Sarah     Jones  3332345678   9/25/1998
6   buyer7@example.com   Robert    Miller  2223456789  11/12/1972
7   buyer8@example.com     Lisa     Davis  7774567890   6/18/1989
8   buyer9@example.com  William    Taylor  6663456789   4/30/1993
9  buyer10@example.com   Olivia  Anderson  1112345678    2/5/2000

   buyer_data_id  buyer_id.1  user_id  age age_platform account_reg_date  \
3              4           4      101   29          iOS        7/20/2020
4              5           5      202   41      Android        4/18/2017
5              6           1      303   26          iOS       10/10/2019
6              7           2      404   29      Android        2/28/2016
7              8           3      505   56          iOS        7/15/2013
8              9           4      606   33      Android         4/3/2021
9             10           5      707   28          iOS         9/9/2018

   days_since_1st_tx   ltv  order_count  last_order_amt  last_order_at  \
3                 30   300            5              30            NaN
4                 90   700           12              80            NaN
5                 45   400            8              40            NaN
6                150   900           18              90            NaN
7                300  1200           24             120            NaN
8                 15   200            4              20            NaN
```

```
9                75   600           14              70            NaN

  last_order_date  order_amt_last3m  order_count_last3m  additional_ship_ad  \
3       7/2/2023               150                   3  Shipping Address 4
4      6/18/2023               250                   6  Shipping Address 5
5       7/6/2023               180                   4  Shipping Address 1
6      6/22/2023               300                   7  Shipping Address 2
7      7/12/2023               400                   8  Shipping Address 3
8      6/28/2023               100                   2  Shipping Address 4
9       7/3/2023               220                   5  Shipping Address 5

     billing_address delivery_locn_type  gender  subscription_count  \
3  Billing Address 4              Urban  Female                   1
4  Billing Address 5           Suburban    Male                   4
5  Billing Address 1              Urban  Female                   2
6  Billing Address 2           Suburban    Male                   3
7  Billing Address 3              Rural  Female                   5
8  Billing Address 4              Urban    Male                   1
9  Billing Address 5           Suburban  Female                   3

  prev_payment_meth  number_of_points order_item_categ  order_id order_ref  \
3            PayPal                50         Clothing         4     OR101
4       Credit Card               180      Electronics         5     OR202
5            PayPal               120         Clothing         6     OR303
6        Debit Card               250      Electronics         7     OR404
7            PayPal               450         Clothing         8     OR505
8       Credit Card                75      Electronics         9     OR606
9        Debit Card               200         Clothing        10     OR707

   shipping   tax  item_id  order_id.1  quantity      title  unit_price  \
3       8.0  4.00        4           2         2  Product D          10
4      15.0  7.50        5           3         3  Product E          30
5       6.0  3.00        6           3         1  Product F          40
6       9.0  4.50        7           4         2  Product G          15
7      11.0  5.50        8           4         1  Product H          50
8       7.5  3.75        9           5         2  Product I          35
9      13.0  6.50       10           5         4  Product J          12

  description  shipping_addr_id  buyer_id.2          line1         line2  \
3      Item D                 4           4   101 Maple St           NaN
4      Item E                 5           5    202 Pine Rd  Apartment 10
5      Item F                 6           1   303 Cedar St           NaN
6      Item G                 7           2   404 Birch Ln       Unit 15
7      Item H                 8           3     505 Elm St           NaN
8      Item I                 9           4     606 Oak Rd           NaN
9      Item J                10           5  707 Maple Ave           NaN
```

```
            city state    zip
3        Houston    TX  77002
4          Miami    FL  33101
5        Seattle    WA  98101
6         Boston    MA   2201
7         Denver    CO  80201
8        Atlanta    GA  30301
9  San Francisco    CA  94101
```

[180]:
```
stats[::-1]
```

[180]:
```
  api_key_PK               logo_url_data  closed_status  \
9     rst789  https://example.com/logo10              1
8     uvw456   https://example.com/logo9              0
7     xyz123   https://example.com/logo8              1
6     hij789   https://example.com/logo7              0
5     efg456   https://example.com/logo6              1
4     lmn123   https://example.com/logo5              0
3     pqr789   https://example.com/logo4              1
2     mno456   https://example.com/logo3              0
1     xyz789   https://example.com/logo2              1
0     abc123   https://example.com/logo1              0

                    metadata_data  PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  \
9                              {}          10  350.25      USD    Store J
8     {\key\": \"sample_value\"}"           9  120.00      GBP    Store I
7     {\key\": \"unique_value\"}"           8  250.75      EUR    Store H
6                              {}           7  500.25      USD    Store G
5        {\key\": \"new_value\"}"           6   75.00      GBP    Store F
4                              {}           5  150.50      EUR    Store E
3  {\key\": \"different_value\"}"           4  300.75      USD    Store D
2    {\key\": \"another_value\"}"           3   50.25      GBP    Store C
1            {\key\": \"value\"}"           2  200.50      EUR    Store B
0                              {}           1  100.00      USD    Store A

   BUYER_ID  ORDER_ID      DESCRIPTION METADATA  buyer_id  \
9        10       110    Tenth payload  Meta 10        10
8         9       109    Ninth payload   Meta 9         9
7         8       108   Eighth payload   Meta 8         8
6         7       107  Seventh payload   Meta 7         7
5         6       106    Sixth payload   Meta 6         6
4         5       105    Fifth payload   Meta 5         5
3         4       104   Fourth payload   Meta 4         4
2         3       103    Third payload   Meta 3         3
1         2       102   Second payload   Meta 2         2
0         1       101    First payload   Meta 1         1
```

	Email	name1	name2	phone	dob
9	buyer10@example.com	Olivia	Anderson	1112345678	2/5/2000
8	buyer9@example.com	William	Taylor	6663456789	4/30/1993
7	buyer8@example.com	Lisa	Davis	7774567890	6/18/1989
6	buyer7@example.com	Robert	Miller	2223456789	11/12/1972
5	buyer6@example.com	Sarah	Jones	3332345678	9/25/1998
4	buyer5@example.com	David	Brown	4445678901	7/8/1982
3	buyer4@example.com	Emily	Williams	8889876543	12/1/1995
2	buyer3@example.com	Michael	Johnson	5551234567	3/10/1978
1	buyer2@example.com	Jane	Smith	9876543210	10/22/1985
0	buyer1@example.com	John	Doe	1234567890	5/15/1990

	buyer_data_id	buyer_id.1	user_id	age	age_platform	account_reg_date
9	10	5	707	28	iOS	9/9/2018
8	9	4	606	33	Android	4/3/2021
7	8	3	505	56	iOS	7/15/2013
6	7	2	404	29	Android	2/28/2016
5	6	1	303	26	iOS	10/10/2019
4	5	5	202	41	Android	4/18/2017
3	4	4	101	29	iOS	7/20/2020
2	3	3	789	45	Android	12/5/2012
1	2	2	456	38	iOS	3/22/2018
0	1	1	123	31	Android	8/15/2015

	days_since_1st_tx	ltv	order_count	last_order_amt	last_order_at
9	75	600	14	70	NaN
8	15	200	4	20	NaN
7	300	1200	24	120	NaN
6	150	900	18	90	NaN
5	45	400	8	40	NaN
4	90	700	12	80	NaN
3	30	300	5	30	NaN
2	180	1000	20	100	NaN
1	60	800	15	75	NaN
0	120	500	10	50	NaN

	last_order_date	order_amt_last3m	order_count_last3m	additional_ship_ad
9	7/3/2023	220	5	Shipping Address 5
8	6/28/2023	100	2	Shipping Address 4
7	7/12/2023	400	8	Shipping Address 3
6	6/22/2023	300	7	Shipping Address 2
5	7/6/2023	180	4	Shipping Address 1
4	6/18/2023	250	6	Shipping Address 5
3	7/2/2023	150	3	Shipping Address 4
2	6/12/2023	350	7	Shipping Address 3
1	7/8/2023	200	4	Shipping Address 2
0	6/28/2023	300	5	Shipping Address 1

```
     billing_address delivery_locn_type  gender  subscription_count  \
9  Billing Address 5           Suburban  Female                   3
8  Billing Address 4              Urban    Male                   1
7  Billing Address 3              Rural  Female                   5
6  Billing Address 2           Suburban    Male                   3
5  Billing Address 1              Urban  Female                   2
4  Billing Address 5           Suburban    Male                   4
3  Billing Address 4              Urban  Female                   1
2  Billing Address 3              Rural    Male                   2
1  Billing Address 2           Suburban  Female                   5
0  Billing Address 1              Urban    Male                   3

  prev_payment_meth  number_of_points order_item_categ  order_id order_ref  \
9       Debit Card               200         Clothing        10     OR707
8      Credit Card                75      Electronics         9     OR606
7           PayPal               450         Clothing         8     OR505
6       Debit Card               250      Electronics         7     OR404
5           PayPal               120         Clothing         6     OR303
4      Credit Card               180      Electronics         5     OR202
3           PayPal                50         Clothing         4     OR101
2       Debit Card               300      Electronics         3     OR789
1           PayPal               150         Clothing         2     OR456
0      Credit Card               200      Electronics         1     OR123

   shipping   tax  item_id  order_id.1  quantity      title  unit_price  \
9      13.0  6.50       10           5         4  Product J          12
8       7.5  3.75        9           5         2  Product I          35
7      11.0  5.50        8           4         1  Product H          50
6       9.0  4.50        7           4         2  Product G          15
5       6.0  3.00        6           3         1  Product F          40
4      15.0  7.50        5           3         3  Product E          30
3       8.0  4.00        4           2         2  Product D          10
2      12.0  6.00        3           2         1  Product C          20
1       7.0  3.50        2           1         3  Product B          15
0      10.0  5.00        1           1         2  Product A          25

  description  shipping_addr_id  buyer_id.2          line1         line2  \
9      Item J                10           5  707 Maple Ave           NaN
8      Item I                 9           4     606 Oak Rd           NaN
7      Item H                 8           3     505 Elm St           NaN
6      Item G                 7           2   404 Birch Ln       Unit 15
5      Item F                 6           1   303 Cedar St           NaN
4      Item E                 5           5    202 Pine Rd  Apartment 10
3      Item D                 4           4   101 Maple St           NaN
2      Item C                 3           3    789 Oak Ave       Suite 5
1      Item B                 2           2     456 Elm Rd      Unit 202
```

```
0      Item A                 1           1    123 Main St        Apt 4B

            city state    zip
9  San Francisco    CA  94101
8        Atlanta    GA  30301
7         Denver    CO  80201
6         Boston    MA   2201
5        Seattle    WA  98101
4          Miami    FL  33101
3        Houston    TX  77002
2        Chicago    IL  60601
1    Los Angeles    CA  90001
0       New York    NY  10001
```

[181]:
```
stats[::2]
```

[181]:
```
  api_key_PK              logo_url_data  closed_status  \
0     abc123  https://example.com/logo1              0
2     mno456  https://example.com/logo3              0
4     lmn123  https://example.com/logo5              0
6     hij789  https://example.com/logo7              0
8     uvw456  https://example.com/logo9              0

                  metadata_data  PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  \
0                            {}           1  100.00      USD    Store A
2  {\key\": \"another_value\"}"           3   50.25      GBP    Store C
4                            {}           5  150.50      EUR    Store E
6                            {}           7  500.25      USD    Store G
8   {\key\": \"sample_value\"}"           9  120.00      GBP    Store I

   BUYER_ID  ORDER_ID      DESCRIPTION METADATA  buyer_id              Email  \
0         1       101    First payload   Meta 1         1  buyer1@example.com
2         3       103    Third payload   Meta 3         3  buyer3@example.com
4         5       105    Fifth payload   Meta 5         5  buyer5@example.com
6         7       107  Seventh payload   Meta 7         7  buyer7@example.com
8         9       109    Ninth payload   Meta 9         9  buyer9@example.com

     name1    name2       phone         dob  buyer_data_id  buyer_id.1  \
0     John      Doe  1234567890   5/15/1990              1           1
2  Michael  Johnson  5551234567   3/10/1978              3           3
4    David    Brown  4445678901    7/8/1982              5           5
6   Robert   Miller  2223456789  11/12/1972              7           2
8  William   Taylor  6663456789   4/30/1993              9           4

   user_id  age age_platform account_reg_date  days_since_1st_tx   ltv  \
0      123   31      Android        8/15/2015                120   500
2      789   45      Android        12/5/2012                180  1000
```

```
4      202   41      Android        4/18/2017                 90   700
6      404   29      Android        2/28/2016                150   900
8      606   33      Android         4/3/2021                 15   200

   order_count  last_order_amt  last_order_at last_order_date  \
0           10              50            NaN       6/28/2023
2           20             100            NaN       6/12/2023
4           12              80            NaN       6/18/2023
6           18              90            NaN       6/22/2023
8            4              20            NaN       6/28/2023

   order_amt_last3m  order_count_last3m  additional_ship_ad  \
0               300                   5  Shipping Address 1
2               350                   7  Shipping Address 3
4               250                   6  Shipping Address 5
6               300                   7  Shipping Address 2
8               100                   2  Shipping Address 4

     billing_address delivery_locn_type gender  subscription_count  \
0  Billing Address 1              Urban   Male                   3
2  Billing Address 3              Rural   Male                   2
4  Billing Address 5           Suburban   Male                   4
6  Billing Address 2           Suburban   Male                   3
8  Billing Address 4              Urban   Male                   1

  prev_payment_meth  number_of_points order_item_categ  order_id order_ref  \
0       Credit Card               200      Electronics         1     OR123
2        Debit Card               300      Electronics         3     OR789
4       Credit Card               180      Electronics         5     OR202
6        Debit Card               250      Electronics         7     OR404
8       Credit Card                75      Electronics         9     OR606

   shipping   tax  item_id  order_id.1  quantity      title  unit_price  \
0      10.0  5.00        1           1         2  Product A          25
2      12.0  6.00        3           2         1  Product C          20
4      15.0  7.50        5           3         3  Product E          30
6       9.0  4.50        7           4         2  Product G          15
8       7.5  3.75        9           5         2  Product I          35

  description  shipping_addr_id  buyer_id.2         line1         line2  \
0      Item A                 1           1   123 Main St        Apt 4B
2      Item C                 3           3   789 Oak Ave       Suite 5
4      Item E                 5           5   202 Pine Rd  Apartment 10
6      Item G                 7           2  404 Birch Ln       Unit 15
8      Item I                 9           4    606 Oak Rd           NaN

       city state    zip
```

```
0  New York    NY  10001
2   Chicago    IL  60601
4     Miami    FL  33101
6    Boston    MA   2201
8   Atlanta    GA  30301
```

[182]:
```
stats
```

[182]:
```
  api_key_PK              logo_url_data  closed_status  \
0     abc123   https://example.com/logo1              0
1     xyz789   https://example.com/logo2              1
2     mno456   https://example.com/logo3              0
3     pqr789   https://example.com/logo4              1
4     lmn123   https://example.com/logo5              0
5     efg456   https://example.com/logo6              1
6     hij789   https://example.com/logo7              0
7     xyz123   https://example.com/logo8              1
8     uvw456   https://example.com/logo9              0
9     rst789  https://example.com/logo10              1

                    metadata_data  PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  \
0                              {}           1  100.00      USD    Store A
1            {\key\": \"value\"}"           2  200.50      EUR    Store B
2    {\key\": \"another_value\"}"           3   50.25      GBP    Store C
3  {\key\": \"different_value\"}"           4  300.75      USD    Store D
4                              {}           5  150.50      EUR    Store E
5        {\key\": \"new_value\"}"           6   75.00      GBP    Store F
6                              {}           7  500.25      USD    Store G
7     {\key\": \"unique_value\"}"           8  250.75      EUR    Store H
8     {\key\": \"sample_value\"}"           9  120.00      GBP    Store I
9                              {}          10  350.25      USD    Store J

   BUYER_ID  ORDER_ID      DESCRIPTION METADATA  buyer_id  \
0         1       101    First payload   Meta 1         1
1         2       102   Second payload   Meta 2         2
2         3       103    Third payload   Meta 3         3
3         4       104   Fourth payload   Meta 4         4
4         5       105    Fifth payload   Meta 5         5
5         6       106    Sixth payload   Meta 6         6
6         7       107  Seventh payload   Meta 7         7
7         8       108   Eighth payload   Meta 8         8
8         9       109    Ninth payload   Meta 9         9
9        10       110    Tenth payload  Meta 10        10

                 Email    name1     name2       phone         dob  \
0  buyer1@example.com     John       Doe  1234567890   5/15/1990
1  buyer2@example.com     Jane     Smith  9876543210  10/22/1985
```

```
2   buyer3@example.com  Michael   Johnson  5551234567   3/10/1978
3   buyer4@example.com    Emily  Williams  8889876543   12/1/1995
4   buyer5@example.com    David     Brown  4445678901    7/8/1982
5   buyer6@example.com    Sarah     Jones  3332345678   9/25/1998
6   buyer7@example.com   Robert    Miller  2223456789  11/12/1972
7   buyer8@example.com     Lisa     Davis  7774567890   6/18/1989
8   buyer9@example.com  William    Taylor  6663456789   4/30/1993
9  buyer10@example.com   Olivia  Anderson  1112345678    2/5/2000

   buyer_data_id  buyer_id.1  user_id  age age_platform account_reg_date  \
0              1           1      123   31      Android        8/15/2015
1              2           2      456   38          iOS        3/22/2018
2              3           3      789   45      Android        12/5/2012
3              4           4      101   29          iOS        7/20/2020
4              5           5      202   41      Android        4/18/2017
5              6           1      303   26          iOS       10/10/2019
6              7           2      404   29      Android        2/28/2016
7              8           3      505   56          iOS        7/15/2013
8              9           4      606   33      Android         4/3/2021
9             10           5      707   28          iOS         9/9/2018

   days_since_1st_tx   ltv  order_count  last_order_amt  last_order_at  \
0                120   500           10              50            NaN
1                 60   800           15              75            NaN
2                180  1000           20             100            NaN
3                 30   300            5              30            NaN
4                 90   700           12              80            NaN
5                 45   400            8              40            NaN
6                150   900           18              90            NaN
7                300  1200           24             120            NaN
8                 15   200            4              20            NaN
9                 75   600           14              70            NaN

  last_order_date  order_amt_last3m  order_count_last3m  additional_ship_ad  \
0       6/28/2023               300                   5  Shipping Address 1
1        7/8/2023               200                   4  Shipping Address 2
2       6/12/2023               350                   7  Shipping Address 3
3        7/2/2023               150                   3  Shipping Address 4
4       6/18/2023               250                   6  Shipping Address 5
5        7/6/2023               180                   4  Shipping Address 1
6       6/22/2023               300                   7  Shipping Address 2
7       7/12/2023               400                   8  Shipping Address 3
8       6/28/2023               100                   2  Shipping Address 4
9        7/3/2023               220                   5  Shipping Address 5

     billing_address delivery_locn_type  gender  subscription_count  \
0  Billing Address 1              Urban    Male                   3
```

```
1  Billing Address 2           Suburban  Female                   5
2  Billing Address 3              Rural    Male                   2
3  Billing Address 4              Urban  Female                   1
4  Billing Address 5           Suburban    Male                   4
5  Billing Address 1              Urban  Female                   2
6  Billing Address 2           Suburban    Male                   3
7  Billing Address 3              Rural  Female                   5
8  Billing Address 4              Urban    Male                   1
9  Billing Address 5           Suburban  Female                   3

  prev_payment_meth  number_of_points order_item_categ  order_id order_ref  \
0       Credit Card               200      Electronics         1     OR123
1            PayPal               150         Clothing         2     OR456
2        Debit Card               300      Electronics         3     OR789
3            PayPal                50         Clothing         4     OR101
4       Credit Card               180      Electronics         5     OR202
5            PayPal               120         Clothing         6     OR303
6        Debit Card               250      Electronics         7     OR404
7            PayPal               450         Clothing         8     OR505
8       Credit Card                75      Electronics         9     OR606
9        Debit Card               200         Clothing        10     OR707

   shipping   tax  item_id  order_id.1  quantity      title  unit_price  \
0      10.0  5.00        1           1         2  Product A          25
1       7.0  3.50        2           1         3  Product B          15
2      12.0  6.00        3           2         1  Product C          20
3       8.0  4.00        4           2         2  Product D          10
4      15.0  7.50        5           3         3  Product E          30
5       6.0  3.00        6           3         1  Product F          40
6       9.0  4.50        7           4         2  Product G          15
7      11.0  5.50        8           4         1  Product H          50
8       7.5  3.75        9           5         2  Product I          35
9      13.0  6.50       10           5         4  Product J          12

  description  shipping_addr_id  buyer_id.2          line1         line2  \
0      Item A                 1           1    123 Main St        Apt 4B
1      Item B                 2           2     456 Elm Rd      Unit 202
2      Item C                 3           3    789 Oak Ave       Suite 5
3      Item D                 4           4   101 Maple St           NaN
4      Item E                 5           5    202 Pine Rd  Apartment 10
5      Item F                 6           1   303 Cedar St           NaN
6      Item G                 7           2   404 Birch Ln       Unit 15
7      Item H                 8           3     505 Elm St           NaN
8      Item I                 9           4     606 Oak Rd           NaN
9      Item J                10           5  707 Maple Ave           NaN

            city state    zip
```

```
0       New York    NY  10001
1    Los Angeles    CA  90001
2        Chicago    IL  60601
3        Houston    TX  77002
4          Miami    FL  33101
5        Seattle    WA  98101
6         Boston    MA   2201
7         Denver    CO  80201
8        Atlanta    GA  30301
9  San Francisco    CA  94101
```

[183]:
```
stats[['name1' , 'name2']]
```

[183]:
```
     name1     name2
0     John       Doe
1     Jane     Smith
2  Michael   Johnson
3    Emily  Williams
4    David     Brown
5    Sarah     Jones
6   Robert    Miller
7     Lisa     Davis
8  William    Taylor
9   Olivia  Anderson
```

[184]:
```
stats[5:9][['name1' , 'STORE_NAME']]
```

[184]:
```
     name1 STORE_NAME
5    Sarah    Store F
6   Robert    Store G
7     Lisa    Store H
8  William    Store I
```

[185]:
```
Result=stats['AMOUNT*2']=stats.AMOUNT*2
```

[186]:
```
stats['AMOUNT']
```

[186]:
```
0    100.00
1    200.50
2     50.25
3    300.75
4    150.50
5     75.00
6    500.25
7    250.75
8    120.00
9    350.25
```

```
Name: AMOUNT, dtype: float64
```

[187]:
```
Result
```

[187]:
```
0     200.0
1     401.0
2     100.5
3     601.5
4     301.0
5     150.0
6    1000.5
7     501.5
8     240.0
9     700.5
Name: AMOUNT, dtype: float64
```

[188]:
```
stats
```

[188]:
```
  api_key_PK               logo_url_data  closed_status  \
0     abc123   https://example.com/logo1              0
1     xyz789   https://example.com/logo2              1
2     mno456   https://example.com/logo3              0
3     pqr789   https://example.com/logo4              1
4     lmn123   https://example.com/logo5              0
5     efg456   https://example.com/logo6              1
6     hij789   https://example.com/logo7              0
7     xyz123   https://example.com/logo8              1
8     uvw456   https://example.com/logo9              0
9     rst789  https://example.com/logo10              1

                    metadata_data  PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  \
0                              {}           1  100.00      USD    Store A
1            {\key\": \"value\"}"           2  200.50      EUR    Store B
2    {\key\": \"another_value\"}"           3   50.25      GBP    Store C
3  {\key\": \"different_value\"}"           4  300.75      USD    Store D
4                              {}           5  150.50      EUR    Store E
5        {\key\": \"new_value\"}"           6   75.00      GBP    Store F
6                              {}           7  500.25      USD    Store G
7     {\key\": \"unique_value\"}"           8  250.75      EUR    Store H
8     {\key\": \"sample_value\"}"           9  120.00      GBP    Store I
9                              {}          10  350.25      USD    Store J

   BUYER_ID  ORDER_ID      DESCRIPTION METADATA  buyer_id  \
0         1       101    First payload   Meta 1         1
1         2       102   Second payload   Meta 2         2
2         3       103    Third payload   Meta 3         3
3         4       104   Fourth payload   Meta 4         4
```

```
4         5       105    Fifth payload   Meta 5         5
5         6       106    Sixth payload   Meta 6         6
6         7       107  Seventh payload   Meta 7         7
7         8       108   Eighth payload   Meta 8         8
8         9       109    Ninth payload   Meta 9         9
9        10       110    Tenth payload  Meta 10        10

                 Email    name1     name2       phone         dob  \
0   buyer1@example.com     John       Doe  1234567890   5/15/1990
1   buyer2@example.com     Jane     Smith  9876543210  10/22/1985
2   buyer3@example.com  Michael   Johnson  5551234567   3/10/1978
3   buyer4@example.com    Emily  Williams  8889876543   12/1/1995
4   buyer5@example.com    David     Brown  4445678901    7/8/1982
5   buyer6@example.com    Sarah     Jones  3332345678   9/25/1998
6   buyer7@example.com   Robert    Miller  2223456789  11/12/1972
7   buyer8@example.com     Lisa     Davis  7774567890   6/18/1989
8   buyer9@example.com  William    Taylor  6663456789   4/30/1993
9  buyer10@example.com   Olivia  Anderson  1112345678    2/5/2000

   buyer_data_id  buyer_id.1  user_id  age age_platform account_reg_date  \
0              1           1      123   31      Android        8/15/2015
1              2           2      456   38          iOS        3/22/2018
2              3           3      789   45      Android        12/5/2012
3              4           4      101   29          iOS        7/20/2020
4              5           5      202   41      Android        4/18/2017
5              6           1      303   26          iOS       10/10/2019
6              7           2      404   29      Android        2/28/2016
7              8           3      505   56          iOS        7/15/2013
8              9           4      606   33      Android         4/3/2021
9             10           5      707   28          iOS         9/9/2018

   days_since_1st_tx   ltv  order_count  last_order_amt  last_order_at  \
0                120   500           10              50            NaN
1                 60   800           15              75            NaN
2                180  1000           20             100            NaN
3                 30   300            5              30            NaN
4                 90   700           12              80            NaN
5                 45   400            8              40            NaN
6                150   900           18              90            NaN
7                300  1200           24             120            NaN
8                 15   200            4              20            NaN
9                 75   600           14              70            NaN

  last_order_date  order_amt_last3m  order_count_last3m  additional_ship_ad  \
0       6/28/2023               300                   5  Shipping Address 1
1        7/8/2023               200                   4  Shipping Address 2
2       6/12/2023               350                   7  Shipping Address 3
```

```
3        7/2/2023                150                   3  Shipping Address 4
4       6/18/2023                250                   6  Shipping Address 5
5        7/6/2023                180                   4  Shipping Address 1
6       6/22/2023                300                   7  Shipping Address 2
7       7/12/2023                400                   8  Shipping Address 3
8       6/28/2023                100                   2  Shipping Address 4
9        7/3/2023                220                   5  Shipping Address 5

     billing_address delivery_locn_type  gender  subscription_count  \
0  Billing Address 1              Urban    Male                   3
1  Billing Address 2           Suburban  Female                   5
2  Billing Address 3              Rural    Male                   2
3  Billing Address 4              Urban  Female                   1
4  Billing Address 5           Suburban    Male                   4
5  Billing Address 1              Urban  Female                   2
6  Billing Address 2           Suburban    Male                   3
7  Billing Address 3              Rural  Female                   5
8  Billing Address 4              Urban    Male                   1
9  Billing Address 5           Suburban  Female                   3

  prev_payment_meth  number_of_points order_item_categ  order_id order_ref  \
0       Credit Card               200      Electronics         1     OR123
1            PayPal               150         Clothing         2     OR456
2        Debit Card               300      Electronics         3     OR789
3            PayPal                50         Clothing         4     OR101
4       Credit Card               180      Electronics         5     OR202
5            PayPal               120         Clothing         6     OR303
6        Debit Card               250      Electronics         7     OR404
7            PayPal               450         Clothing         8     OR505
8       Credit Card                75      Electronics         9     OR606
9        Debit Card               200         Clothing        10     OR707

   shipping   tax  item_id  order_id.1  quantity      title  unit_price  \
0      10.0  5.00        1           1         2  Product A          25
1       7.0  3.50        2           1         3  Product B          15
2      12.0  6.00        3           2         1  Product C          20
3       8.0  4.00        4           2         2  Product D          10
4      15.0  7.50        5           3         3  Product E          30
5       6.0  3.00        6           3         1  Product F          40
6       9.0  4.50        7           4         2  Product G          15
7      11.0  5.50        8           4         1  Product H          50
8       7.5  3.75        9           5         2  Product I          35
9      13.0  6.50       10           5         4  Product J          12

  description  shipping_addr_id  buyer_id.2         line1         line2  \
0      Item A                 1           1   123 Main St        Apt 4B
1      Item B                 2           2    456 Elm Rd      Unit 202
```

```
2      Item C                3           3    789 Oak Ave       Suite 5
3      Item D                4           4   101 Maple St           NaN
4      Item E                5           5    202 Pine Rd  Apartment 10
5      Item F                6           1   303 Cedar St           NaN
6      Item G                7           2   404 Birch Ln       Unit 15
7      Item H                8           3     505 Elm St           NaN
8      Item I                9           4     606 Oak Rd           NaN
9      Item J               10           5  707 Maple Ave           NaN
```

```
            city state    zip  AMOUNT*2
0       New York    NY  10001     200.0
1    Los Angeles    CA  90001     401.0
2        Chicago    IL  60601     100.5
3        Houston    TX  77002     601.5
4          Miami    FL  33101     301.0
5        Seattle    WA  98101     150.0
6         Boston    MA   2201    1000.5
7         Denver    CO  80201     501.5
8        Atlanta    GA  30301     240.0
9  San Francisco    CA  94101     700.5
```

[189]:
```
stats['AMOUNT*3']=stats.AMOUNT*3
```

[190]:
```
stats
```

[190]:
```
  api_key_PK               logo_url_data  closed_status  \
0     abc123   https://example.com/logo1              0
1     xyz789   https://example.com/logo2              1
2     mno456   https://example.com/logo3              0
3     pqr789   https://example.com/logo4              1
4     lmn123   https://example.com/logo5              0
5     efg456   https://example.com/logo6              1
6     hij789   https://example.com/logo7              0
7     xyz123   https://example.com/logo8              1
8     uvw456   https://example.com/logo9              0
9     rst789  https://example.com/logo10              1

                    metadata_data  PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  \
0                              {}           1  100.00      USD    Store A
1            {\key\": \"value\"}"           2  200.50      EUR    Store B
2    {\key\": \"another_value\"}"           3   50.25      GBP    Store C
3  {\key\": \"different_value\"}"           4  300.75      USD    Store D
4                              {}           5  150.50      EUR    Store E
5        {\key\": \"new_value\"}"           6   75.00      GBP    Store F
6                              {}           7  500.25      USD    Store G
7     {\key\": \"unique_value\"}"           8  250.75      EUR    Store H
8     {\key\": \"sample_value\"}"           9  120.00      GBP    Store I
```

```
9                           {}          10  350.25      USD    Store J

   BUYER_ID  ORDER_ID      DESCRIPTION METADATA  buyer_id  \
0         1       101    First payload   Meta 1         1
1         2       102   Second payload   Meta 2         2
2         3       103    Third payload   Meta 3         3
3         4       104   Fourth payload   Meta 4         4
4         5       105    Fifth payload   Meta 5         5
5         6       106    Sixth payload   Meta 6         6
6         7       107  Seventh payload   Meta 7         7
7         8       108   Eighth payload   Meta 8         8
8         9       109    Ninth payload   Meta 9         9
9        10       110    Tenth payload  Meta 10        10

                Email    name1     name2       phone         dob  \
0  buyer1@example.com     John       Doe  1234567890   5/15/1990
1  buyer2@example.com     Jane     Smith  9876543210  10/22/1985
2  buyer3@example.com  Michael   Johnson  5551234567   3/10/1978
3  buyer4@example.com    Emily  Williams  8889876543   12/1/1995
4  buyer5@example.com    David     Brown  4445678901    7/8/1982
5  buyer6@example.com    Sarah     Jones  3332345678   9/25/1998
6  buyer7@example.com   Robert    Miller  2223456789  11/12/1972
7  buyer8@example.com     Lisa     Davis  7774567890   6/18/1989
8  buyer9@example.com  William    Taylor  6663456789   4/30/1993
9 buyer10@example.com   Olivia  Anderson  1112345678    2/5/2000

   buyer_data_id  buyer_id.1  user_id  age age_platform account_reg_date  \
0              1           1      123   31      Android        8/15/2015
1              2           2      456   38          iOS        3/22/2018
2              3           3      789   45      Android        12/5/2012
3              4           4      101   29          iOS        7/20/2020
4              5           5      202   41      Android        4/18/2017
5              6           1      303   26          iOS       10/10/2019
6              7           2      404   29      Android        2/28/2016
7              8           3      505   56          iOS        7/15/2013
8              9           4      606   33      Android         4/3/2021
9             10           5      707   28          iOS         9/9/2018

   days_since_1st_tx   ltv  order_count  last_order_amt  last_order_at  \
0                120   500           10              50            NaN
1                 60   800           15              75            NaN
2                180  1000           20             100            NaN
3                 30   300            5              30            NaN
4                 90   700           12              80            NaN
5                 45   400            8              40            NaN
6                150   900           18              90            NaN
7                300  1200           24             120            NaN
```

```
8                15   200            4              20            NaN
9                75   600           14              70            NaN

  last_order_date  order_amt_last3m  order_count_last3m  additional_ship_ad  \
0       6/28/2023               300                   5  Shipping Address 1
1        7/8/2023               200                   4  Shipping Address 2
2       6/12/2023               350                   7  Shipping Address 3
3        7/2/2023               150                   3  Shipping Address 4
4       6/18/2023               250                   6  Shipping Address 5
5        7/6/2023               180                   4  Shipping Address 1
6       6/22/2023               300                   7  Shipping Address 2
7       7/12/2023               400                   8  Shipping Address 3
8       6/28/2023               100                   2  Shipping Address 4
9        7/3/2023               220                   5  Shipping Address 5

     billing_address delivery_locn_type  gender  subscription_count  \
0  Billing Address 1              Urban    Male                   3
1  Billing Address 2           Suburban  Female                   5
2  Billing Address 3              Rural    Male                   2
3  Billing Address 4              Urban  Female                   1
4  Billing Address 5           Suburban    Male                   4
5  Billing Address 1              Urban  Female                   2
6  Billing Address 2           Suburban    Male                   3
7  Billing Address 3              Rural  Female                   5
8  Billing Address 4              Urban    Male                   1
9  Billing Address 5           Suburban  Female                   3

  prev_payment_meth  number_of_points order_item_categ  order_id order_ref  \
0       Credit Card               200      Electronics         1     OR123
1            PayPal               150         Clothing         2     OR456
2        Debit Card               300      Electronics         3     OR789
3            PayPal                50         Clothing         4     OR101
4       Credit Card               180      Electronics         5     OR202
5            PayPal               120         Clothing         6     OR303
6        Debit Card               250      Electronics         7     OR404
7            PayPal               450         Clothing         8     OR505
8       Credit Card                75      Electronics         9     OR606
9        Debit Card               200         Clothing        10     OR707

   shipping   tax  item_id  order_id.1  quantity      title  unit_price  \
0      10.0  5.00        1           1         2  Product A          25
1       7.0  3.50        2           1         3  Product B          15
2      12.0  6.00        3           2         1  Product C          20
3       8.0  4.00        4           2         2  Product D          10
4      15.0  7.50        5           3         3  Product E          30
5       6.0  3.00        6           3         1  Product F          40
6       9.0  4.50        7           4         2  Product G          15
```

```
7      11.0  5.50        8           4         1  Product H          50
8       7.5  3.75        9           5         2  Product I          35
9      13.0  6.50       10           5         4  Product J          12

  description  shipping_addr_id  buyer_id.2          line1         line2  \
0      Item A                 1           1    123 Main St        Apt 4B
1      Item B                 2           2     456 Elm Rd      Unit 202
2      Item C                 3           3    789 Oak Ave       Suite 5
3      Item D                 4           4   101 Maple St           NaN
4      Item E                 5           5    202 Pine Rd  Apartment 10
5      Item F                 6           1   303 Cedar St           NaN
6      Item G                 7           2   404 Birch Ln       Unit 15
7      Item H                 8           3     505 Elm St           NaN
8      Item I                 9           4     606 Oak Rd           NaN
9      Item J                10           5  707 Maple Ave           NaN

            city state    zip  AMOUNT*2  AMOUNT*3
0       New York    NY  10001     200.0    300.00
1    Los Angeles    CA  90001     401.0    601.50
2        Chicago    IL  60601     100.5    150.75
3        Houston    TX  77002     601.5    902.25
4          Miami    FL  33101     301.0    451.50
5        Seattle    WA  98101     150.0    225.00
6         Boston    MA   2201    1000.5   1500.75
7         Denver    CO  80201     501.5    752.25
8        Atlanta    GA  30301     240.0    360.00
9  San Francisco    CA  94101     700.5   1050.75
```

[191]:
```
stats.drop('AMOUNT*3',1)
```

[191]:
```
  api_key_PK              logo_url_data  closed_status  \
0     abc123   https://example.com/logo1              0
1     xyz789   https://example.com/logo2              1
2     mno456   https://example.com/logo3              0
3     pqr789   https://example.com/logo4              1
4     lmn123   https://example.com/logo5              0
5     efg456   https://example.com/logo6              1
6     hij789   https://example.com/logo7              0
7     xyz123   https://example.com/logo8              1
8     uvw456   https://example.com/logo9              0
9     rst789  https://example.com/logo10              1

                    metadata_data  PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  \
0                              {}           1  100.00      USD    Store A
1            {\key\": \"value\"}"           2  200.50      EUR    Store B
2    {\key\": \"another_value\"}"           3   50.25      GBP    Store C
3  {\key\": \"different_value\"}"           4  300.75      USD    Store D
```

```
4                                {}           5  150.50      EUR    Store E
5       {\key\": \"new_value\"}"           6   75.00      GBP    Store F
6                                {}           7  500.25      USD    Store G
7    {\key\": \"unique_value\"}"           8  250.75      EUR    Store H
8    {\key\": \"sample_value\"}"           9  120.00      GBP    Store I
9                                {}          10  350.25      USD    Store J

   BUYER_ID  ORDER_ID      DESCRIPTION METADATA  buyer_id  \
0         1       101    First payload   Meta 1         1
1         2       102   Second payload   Meta 2         2
2         3       103    Third payload   Meta 3         3
3         4       104   Fourth payload   Meta 4         4
4         5       105    Fifth payload   Meta 5         5
5         6       106    Sixth payload   Meta 6         6
6         7       107  Seventh payload   Meta 7         7
7         8       108   Eighth payload   Meta 8         8
8         9       109    Ninth payload   Meta 9         9
9        10       110    Tenth payload  Meta 10        10

                Email    name1     name2       phone         dob  \
0   buyer1@example.com     John       Doe  1234567890   5/15/1990
1   buyer2@example.com     Jane     Smith  9876543210  10/22/1985
2   buyer3@example.com  Michael   Johnson  5551234567   3/10/1978
3   buyer4@example.com    Emily  Williams  8889876543   12/1/1995
4   buyer5@example.com    David     Brown  4445678901    7/8/1982
5   buyer6@example.com    Sarah     Jones  3332345678   9/25/1998
6   buyer7@example.com   Robert    Miller  2223456789  11/12/1972
7   buyer8@example.com     Lisa     Davis  7774567890   6/18/1989
8   buyer9@example.com  William    Taylor  6663456789   4/30/1993
9  buyer10@example.com   Olivia  Anderson  1112345678    2/5/2000

   buyer_data_id  buyer_id.1  user_id  age age_platform account_reg_date  \
0              1           1      123   31      Android        8/15/2015
1              2           2      456   38          iOS        3/22/2018
2              3           3      789   45      Android        12/5/2012
3              4           4      101   29          iOS        7/20/2020
4              5           5      202   41      Android        4/18/2017
5              6           1      303   26          iOS       10/10/2019
6              7           2      404   29      Android        2/28/2016
7              8           3      505   56          iOS        7/15/2013
8              9           4      606   33      Android         4/3/2021
9             10           5      707   28          iOS         9/9/2018

   days_since_1st_tx   ltv  order_count  last_order_amt  last_order_at  \
0                120   500           10              50            NaN
1                 60   800           15              75            NaN
2                180  1000           20             100            NaN
```

```
3                 30   300            5              30            NaN
4                 90   700           12              80            NaN
5                 45   400            8              40            NaN
6                150   900           18              90            NaN
7                300  1200           24             120            NaN
8                 15   200            4              20            NaN
9                 75   600           14              70            NaN

  last_order_date  order_amt_last3m  order_count_last3m  additional_ship_ad  \
0       6/28/2023               300                   5  Shipping Address 1
1        7/8/2023               200                   4  Shipping Address 2
2       6/12/2023               350                   7  Shipping Address 3
3        7/2/2023               150                   3  Shipping Address 4
4       6/18/2023               250                   6  Shipping Address 5
5        7/6/2023               180                   4  Shipping Address 1
6       6/22/2023               300                   7  Shipping Address 2
7       7/12/2023               400                   8  Shipping Address 3
8       6/28/2023               100                   2  Shipping Address 4
9        7/3/2023               220                   5  Shipping Address 5

     billing_address delivery_locn_type  gender  subscription_count  \
0  Billing Address 1              Urban    Male                   3
1  Billing Address 2           Suburban  Female                   5
2  Billing Address 3              Rural    Male                   2
3  Billing Address 4              Urban  Female                   1
4  Billing Address 5           Suburban    Male                   4
5  Billing Address 1              Urban  Female                   2
6  Billing Address 2           Suburban    Male                   3
7  Billing Address 3              Rural  Female                   5
8  Billing Address 4              Urban    Male                   1
9  Billing Address 5           Suburban  Female                   3

  prev_payment_meth  number_of_points order_item_categ  order_id order_ref  \
0       Credit Card               200      Electronics         1     OR123
1            PayPal               150         Clothing         2     OR456
2        Debit Card               300      Electronics         3     OR789
3            PayPal                50         Clothing         4     OR101
4       Credit Card               180      Electronics         5     OR202
5            PayPal               120         Clothing         6     OR303
6        Debit Card               250      Electronics         7     OR404
7            PayPal               450         Clothing         8     OR505
8       Credit Card                75      Electronics         9     OR606
9        Debit Card               200         Clothing        10     OR707

   shipping   tax  item_id  order_id.1  quantity      title  unit_price  \
0      10.0  5.00        1           1         2  Product A          25
1       7.0  3.50        2           1         3  Product B          15
```

```
2      12.0  6.00        3           2         1  Product C          20
3       8.0  4.00        4           2         2  Product D          10
4      15.0  7.50        5           3         3  Product E          30
5       6.0  3.00        6           3         1  Product F          40
6       9.0  4.50        7           4         2  Product G          15
7      11.0  5.50        8           4         1  Product H          50
8       7.5  3.75        9           5         2  Product I          35
9      13.0  6.50       10           5         4  Product J          12

  description  shipping_addr_id  buyer_id.2          line1         line2  \
0      Item A                 1           1    123 Main St        Apt 4B
1      Item B                 2           2     456 Elm Rd      Unit 202
2      Item C                 3           3    789 Oak Ave       Suite 5
3      Item D                 4           4   101 Maple St           NaN
4      Item E                 5           5    202 Pine Rd  Apartment 10
5      Item F                 6           1   303 Cedar St           NaN
6      Item G                 7           2   404 Birch Ln       Unit 15
7      Item H                 8           3     505 Elm St           NaN
8      Item I                 9           4     606 Oak Rd           NaN
9      Item J                10           5  707 Maple Ave           NaN

            city state    zip  AMOUNT*2
0       New York    NY  10001     200.0
1    Los Angeles    CA  90001     401.0
2        Chicago    IL  60601     100.5
3        Houston    TX  77002     601.5
4          Miami    FL  33101     301.0
5        Seattle    WA  98101     150.0
6         Boston    MA   2201    1000.5
7         Denver    CO  80201     501.5
8        Atlanta    GA  30301     240.0
9  San Francisco    CA  94101     700.5
```

[192]:
```
filter=stats.quantity>2
```

[193]:
```
filter
```

[193]:
```
0    False
1     True
2    False
3    False
4     True
5    False
6    False
7    False
8    False
9     True
```

```
Name: quantity, dtype: bool
```

[194]:
```
pd.set_option('display.max_columns', None)
```

[195]:
```
stats[filter]
```

[195]:
```
  api_key_PK              logo_url_data  closed_status         metadata_data  \
1     xyz789   https://example.com/logo2              1  {\key\": \"value\"}"
4     lmn123   https://example.com/logo5              0                    {}
9     rst789  https://example.com/logo10              1                    {}

   PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  BUYER_ID  ORDER_ID     DESCRIPTION  \
1           2  200.50      EUR    Store B         2       102  Second payload
4           5  150.50      EUR    Store E         5       105   Fifth payload
9          10  350.25      USD    Store J        10       110   Tenth payload

  METADATA  buyer_id                Email   name1     name2       phone  \
1   Meta 2         2   buyer2@example.com    Jane     Smith  9876543210
4   Meta 5         5   buyer5@example.com   David     Brown  4445678901
9  Meta 10        10  buyer10@example.com  Olivia  Anderson  1112345678

          dob  buyer_data_id  buyer_id.1  user_id  age age_platform  \
1  10/22/1985              2           2      456   38          iOS
4   7/8/1982              5           5      202   41      Android
9   2/5/2000             10           5      707   28          iOS

  account_reg_date  days_since_1st_tx  ltv  order_count  last_order_amt  \
1        3/22/2018                 60  800           15              75
4        4/18/2017                 90  700           12              80
9         9/9/2018                 75  600           14              70

   last_order_at last_order_date  order_amt_last3m  order_count_last3m  \
1            NaN        7/8/2023               200                   4
4            NaN       6/18/2023               250                   6
9            NaN        7/3/2023               220                   5

   additional_ship_ad    billing_address delivery_locn_type  gender  \
1  Shipping Address 2  Billing Address 2           Suburban  Female
4  Shipping Address 5  Billing Address 5           Suburban    Male
9  Shipping Address 5  Billing Address 5           Suburban  Female

   subscription_count prev_payment_meth  number_of_points order_item_categ  \
1                   5            PayPal               150         Clothing
4                   4       Credit Card               180      Electronics
9                   3        Debit Card               200         Clothing

   order_id order_ref  shipping  tax  item_id  order_id.1  quantity  \
```

```
1         2     OR456       7.0  3.5        2           1         3
4         5     OR202      15.0  7.5        5           3         3
9        10     OR707      13.0  6.5       10           5         4

       title  unit_price description  shipping_addr_id  buyer_id.2  \
1  Product B          15      Item B                 2           2
4  Product E          30      Item E                 5           5
9  Product J          12      Item J                10           5

           line1         line2           city state    zip  AMOUNT*2  AMOUNT*3
1     456 Elm Rd      Unit 202    Los Angeles    CA  90001     401.0    601.50
4    202 Pine Rd  Apartment 10          Miami    FL  33101     301.0    451.50
9  707 Maple Ave           NaN  San Francisco    CA  94101     700.5   1050.75
```

[196]:
```
stats[(stats.quantity>2)&(stats.AMOUNT>151)]
```

[196]:
```
  api_key_PK              logo_url_data  closed_status         metadata_data  \
1     xyz789   https://example.com/logo2              1  {\key\": \"value\"}"
9     rst789  https://example.com/logo10              1                    {}

   PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  BUYER_ID  ORDER_ID     DESCRIPTION  \
1           2  200.50      EUR    Store B         2       102  Second payload
9          10  350.25      USD    Store J        10       110   Tenth payload

  METADATA  buyer_id               Email   name1     name2       phone  \
1   Meta 2         2   buyer2@example.com    Jane     Smith  9876543210
9  Meta 10        10  buyer10@example.com  Olivia  Anderson  1112345678

          dob  buyer_data_id  buyer_id.1  user_id  age age_platform  \
1  10/22/1985              2           2      456   38          iOS
9   2/5/2000             10           5      707   28          iOS

  account_reg_date  days_since_1st_tx  ltv  order_count  last_order_amt  \
1        3/22/2018                 60  800           15              75
9         9/9/2018                 75  600           14              70

   last_order_at last_order_date  order_amt_last3m  order_count_last3m  \
1            NaN        7/8/2023               200                   4
9            NaN        7/3/2023               220                   5

   additional_ship_ad    billing_address delivery_locn_type  gender  \
1  Shipping Address 2  Billing Address 2           Suburban  Female
9  Shipping Address 5  Billing Address 5           Suburban  Female

   subscription_count prev_payment_meth  number_of_points order_item_categ  \
1                   5           PayPal               150         Clothing
9                   3       Debit Card               200         Clothing
```

```
   order_id order_ref  shipping  tax  item_id  order_id.1  quantity  \
1         2     OR456       7.0  3.5        2           1         3
9        10     OR707      13.0  6.5       10           5         4

       title  unit_price description  shipping_addr_id  buyer_id.2  \
1  Product B          15      Item B                 2           2
9  Product J          12      Item J                10           5

           line1     line2           city state    zip  AMOUNT*2  AMOUNT*3
1     456 Elm Rd  Unit 202    Los Angeles    CA  90001     401.0    601.50
9  707 Maple Ave       NaN  San Francisco    CA  94101     700.5   1050.75
```

[197]:
```
stats[stats.STORE_NAME=='Store A']
```

[197]:
```
  api_key_PK             logo_url_data  closed_status metadata_data  \
0     abc123  https://example.com/logo1              0            {}

   PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  BUYER_ID  ORDER_ID    DESCRIPTION  \
0           1   100.0      USD    Store A         1       101  First payload

  METADATA  buyer_id               Email name1 name2       phone        dob  \
0   Meta 1         1  buyer1@example.com  John   Doe  1234567890  5/15/1990

   buyer_data_id  buyer_id.1  user_id  age age_platform account_reg_date  \
0              1           1      123   31      Android        8/15/2015

   days_since_1st_tx  ltv  order_count  last_order_amt  last_order_at  \
0                120  500           10              50            NaN

  last_order_date  order_amt_last3m  order_count_last3m  additional_ship_ad  \
0       6/28/2023               300                   5  Shipping Address 1

     billing_address delivery_locn_type gender  subscription_count  \
0  Billing Address 1              Urban   Male                   3

  prev_payment_meth  number_of_points order_item_categ  order_id order_ref  \
0       Credit Card               200      Electronics         1     OR123

   shipping  tax  item_id  order_id.1  quantity      title  unit_price  \
0      10.0  5.0        1           1         2  Product A          25

  description  shipping_addr_id  buyer_id.2        line1   line2      city  \
0      Item A                 1           1  123 Main St  Apt 4B  New York

  state    zip  AMOUNT*2  AMOUNT*3
0    NY  10001     200.0     300.0
```

[198]:
```
stats.STORE_NAME.unique()
```

[198]:
```
array(['Store A', 'Store B', 'Store C', 'Store D', 'Store E', 'Store F',
       'Store G', 'Store H', 'Store I', 'Store J'], dtype=object)
```

[199]:
```
len(stats.STORE_NAME.unique())
```

[199]:
```
10
```

---

1 .at and .iat

[200]:
```
stats
```

[200]:

	api_key_PK	logo_url_data	closed_status	\
0	abc123	https://example.com/logo1	0	
1	xyz789	https://example.com/logo2	1	
2	mno456	https://example.com/logo3	0	
3	pqr789	https://example.com/logo4	1	
4	lmn123	https://example.com/logo5	0	
5	efg456	https://example.com/logo6	1	
6	hij789	https://example.com/logo7	0	
7	xyz123	https://example.com/logo8	1	
8	uvw456	https://example.com/logo9	0	
9	rst789	https://example.com/logo10	1	

	metadata_data	PAYLOAD_ID	AMOUNT	CURRENCY	STORE_NAME	\
0	{}	1	100.00	USD	Store A	
1	{\key\": \"value\"}"	2	200.50	EUR	Store B	
2	{\key\": \"another_value\"}"	3	50.25	GBP	Store C	
3	{\key\": \"different_value\"}"	4	300.75	USD	Store D	
4	{}	5	150.50	EUR	Store E	
5	{\key\": \"new_value\"}"	6	75.00	GBP	Store F	
6	{}	7	500.25	USD	Store G	
7	{\key\": \"unique_value\"}"	8	250.75	EUR	Store H	
8	{\key\": \"sample_value\"}"	9	120.00	GBP	Store I	
9	{}	10	350.25	USD	Store J	

	BUYER_ID	ORDER_ID	DESCRIPTION	METADATA	buyer_id	\
0	1	101	First payload	Meta 1	1	
1	2	102	Second payload	Meta 2	2	
2	3	103	Third payload	Meta 3	3	
3	4	104	Fourth payload	Meta 4	4	
4	5	105	Fifth payload	Meta 5	5	
5	6	106	Sixth payload	Meta 6	6	
6	7	107	Seventh payload	Meta 7	7	

```
7         8       108   Eighth payload   Meta 8         8
8         9       109    Ninth payload   Meta 9         9
9        10       110    Tenth payload  Meta 10        10

                Email    name1     name2       phone         dob  \
0   buyer1@example.com     John       Doe  1234567890   5/15/1990
1   buyer2@example.com     Jane     Smith  9876543210  10/22/1985
2   buyer3@example.com  Michael   Johnson  5551234567   3/10/1978
3   buyer4@example.com    Emily  Williams  8889876543   12/1/1995
4   buyer5@example.com    David     Brown  4445678901    7/8/1982
5   buyer6@example.com    Sarah     Jones  3332345678   9/25/1998
6   buyer7@example.com   Robert    Miller  2223456789  11/12/1972
7   buyer8@example.com     Lisa     Davis  7774567890   6/18/1989
8   buyer9@example.com  William    Taylor  6663456789   4/30/1993
9  buyer10@example.com   Olivia  Anderson  1112345678    2/5/2000

   buyer_data_id  buyer_id.1  user_id  age age_platform account_reg_date  \
0              1           1      123   31      Android        8/15/2015
1              2           2      456   38          iOS        3/22/2018
2              3           3      789   45      Android        12/5/2012
3              4           4      101   29          iOS        7/20/2020
4              5           5      202   41      Android        4/18/2017
5              6           1      303   26          iOS       10/10/2019
6              7           2      404   29      Android        2/28/2016
7              8           3      505   56          iOS        7/15/2013
8              9           4      606   33      Android         4/3/2021
9             10           5      707   28          iOS         9/9/2018

   days_since_1st_tx   ltv  order_count  last_order_amt  last_order_at  \
0                120   500           10              50            NaN
1                 60   800           15              75            NaN
2                180  1000           20             100            NaN
3                 30   300            5              30            NaN
4                 90   700           12              80            NaN
5                 45   400            8              40            NaN
6                150   900           18              90            NaN
7                300  1200           24             120            NaN
8                 15   200            4              20            NaN
9                 75   600           14              70            NaN

  last_order_date  order_amt_last3m  order_count_last3m  additional_ship_ad  \
0       6/28/2023               300                   5  Shipping Address 1
1        7/8/2023               200                   4  Shipping Address 2
2       6/12/2023               350                   7  Shipping Address 3
3        7/2/2023               150                   3  Shipping Address 4
4       6/18/2023               250                   6  Shipping Address 5
5        7/6/2023               180                   4  Shipping Address 1
```

```
6       6/22/2023               300                   7  Shipping Address 2
7       7/12/2023               400                   8  Shipping Address 3
8       6/28/2023               100                   2  Shipping Address 4
9        7/3/2023               220                   5  Shipping Address 5

     billing_address delivery_locn_type  gender  subscription_count  \
0  Billing Address 1              Urban    Male                   3
1  Billing Address 2           Suburban  Female                   5
2  Billing Address 3              Rural    Male                   2
3  Billing Address 4              Urban  Female                   1
4  Billing Address 5           Suburban    Male                   4
5  Billing Address 1              Urban  Female                   2
6  Billing Address 2           Suburban    Male                   3
7  Billing Address 3              Rural  Female                   5
8  Billing Address 4              Urban    Male                   1
9  Billing Address 5           Suburban  Female                   3

  prev_payment_meth  number_of_points order_item_categ  order_id order_ref  \
0       Credit Card               200      Electronics         1     OR123
1            PayPal               150         Clothing         2     OR456
2        Debit Card               300      Electronics         3     OR789
3            PayPal                50         Clothing         4     OR101
4       Credit Card               180      Electronics         5     OR202
5            PayPal               120         Clothing         6     OR303
6        Debit Card               250      Electronics         7     OR404
7            PayPal               450         Clothing         8     OR505
8       Credit Card                75      Electronics         9     OR606
9        Debit Card               200         Clothing        10     OR707

   shipping   tax  item_id  order_id.1  quantity      title  unit_price  \
0      10.0  5.00        1           1         2  Product A          25
1       7.0  3.50        2           1         3  Product B          15
2      12.0  6.00        3           2         1  Product C          20
3       8.0  4.00        4           2         2  Product D          10
4      15.0  7.50        5           3         3  Product E          30
5       6.0  3.00        6           3         1  Product F          40
6       9.0  4.50        7           4         2  Product G          15
7      11.0  5.50        8           4         1  Product H          50
8       7.5  3.75        9           5         2  Product I          35
9      13.0  6.50       10           5         4  Product J          12

  description  shipping_addr_id  buyer_id.2          line1         line2  \
0      Item A                 1           1    123 Main St        Apt 4B
1      Item B                 2           2     456 Elm Rd      Unit 202
2      Item C                 3           3    789 Oak Ave       Suite 5
3      Item D                 4           4   101 Maple St           NaN
4      Item E                 5           5    202 Pine Rd  Apartment 10
```

```
5      Item F                6           1   303 Cedar St           NaN
6      Item G                7           2   404 Birch Ln       Unit 15
7      Item H                8           3     505 Elm St           NaN
8      Item I                9           4     606 Oak Rd           NaN
9      Item J               10           5  707 Maple Ave           NaN
```

```
            city state    zip  AMOUNT*2  AMOUNT*3
0       New York    NY  10001     200.0    300.00
1    Los Angeles    CA  90001     401.0    601.50
2        Chicago    IL  60601     100.5    150.75
3        Houston    TX  77002     601.5    902.25
4          Miami    FL  33101     301.0    451.50
5        Seattle    WA  98101     150.0    225.00
6         Boston    MA   2201    1000.5   1500.75
7         Denver    CO  80201     501.5    752.25
8        Atlanta    GA  30301     240.0    360.00
9  San Francisco    CA  94101     700.5   1050.75
```

[201]:
```
stats.iat[2,1]
```

[201]: 'https://example.com/logo3'

[202]:
```
stats.at[2,'logo_url_data']
```

[202]: 'https://example.com/logo3'

[204]:
```
stats.iat[1,1] # iAt based indexing can only have integer indexers#
```

[204]: 'https://example.com/logo2'

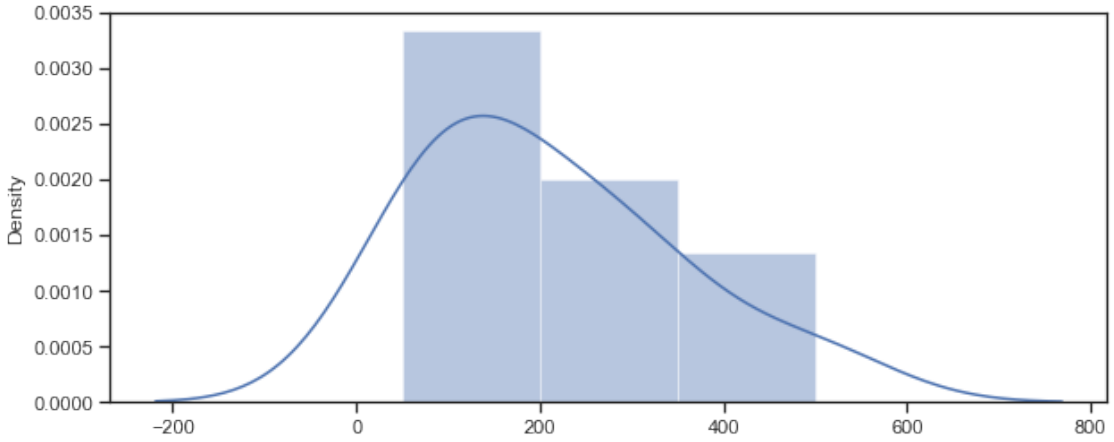
[205]:
```
stats.at[1,'logo_url_data']
```

[205]: 'https://example.com/logo2'

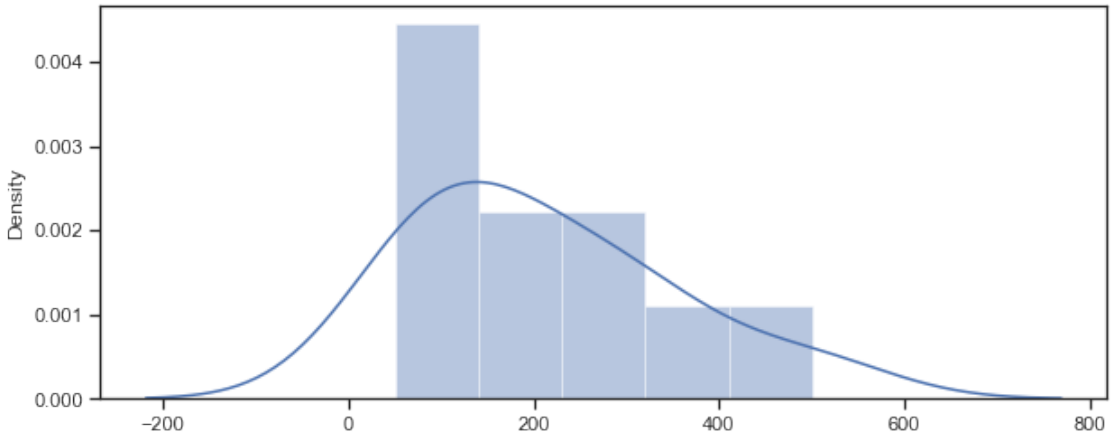
2 Visualization

[206]:
```
import matplotlib.pyplot as plt
import seaborn as sns

import warnings
warnings.filterwarnings("ignore")
%matplotlib inline
plt.rcParams['figure.figsize']=10,4
```

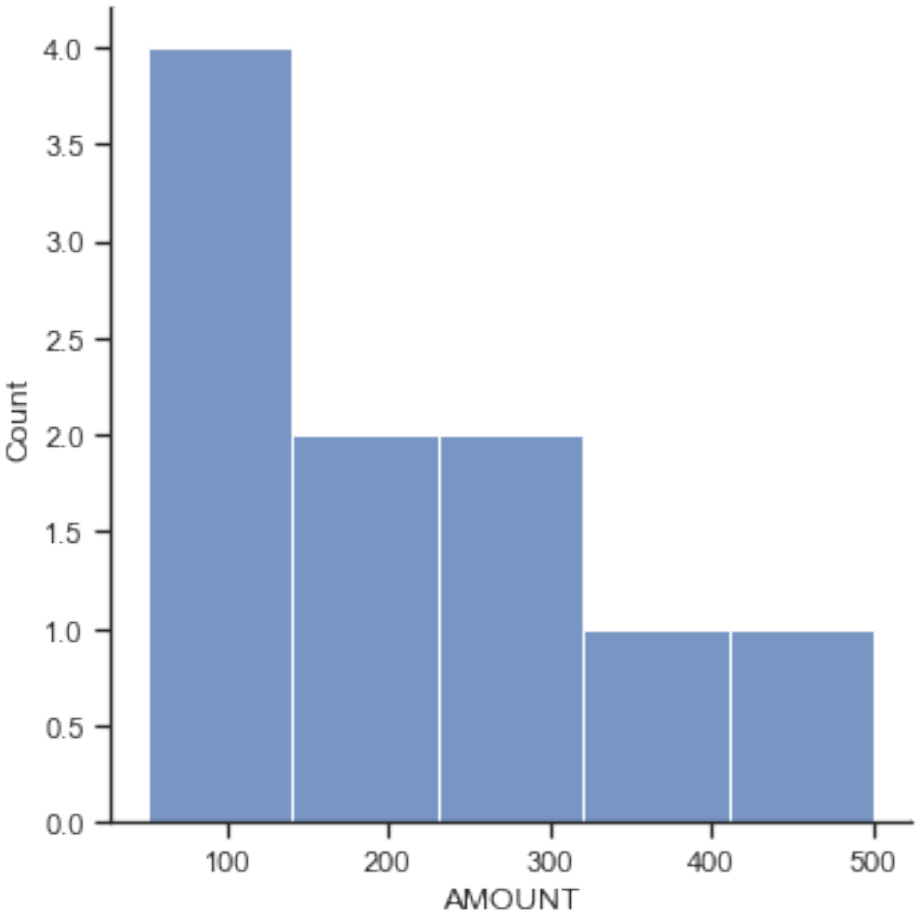
[207]:
```
sns.distplot([stats.AMOUNT])
plt.show()
```



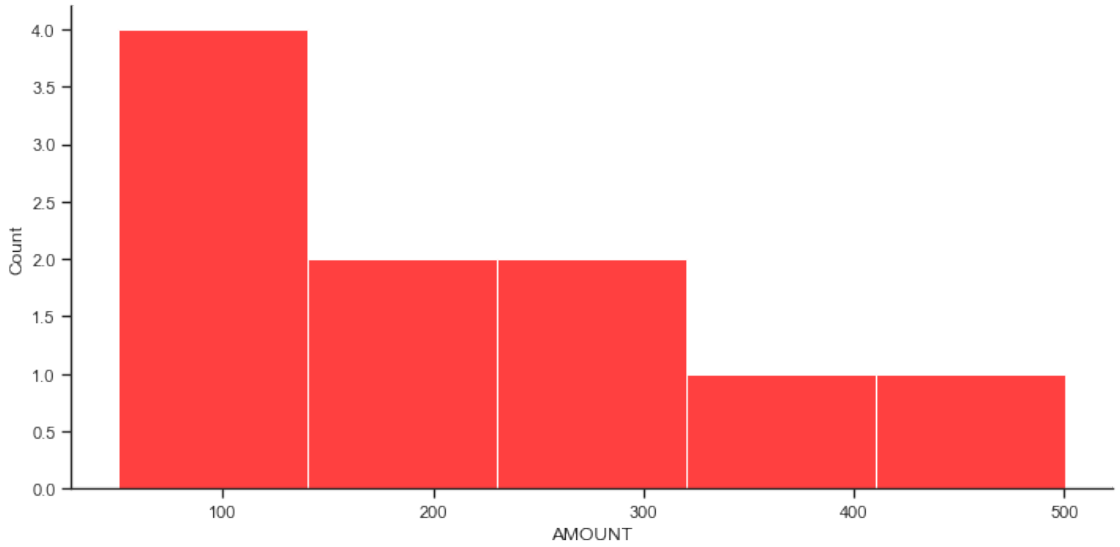
[208]:
```
sns.distplot([stats.AMOUNT],bins=5)
plt.show()
```



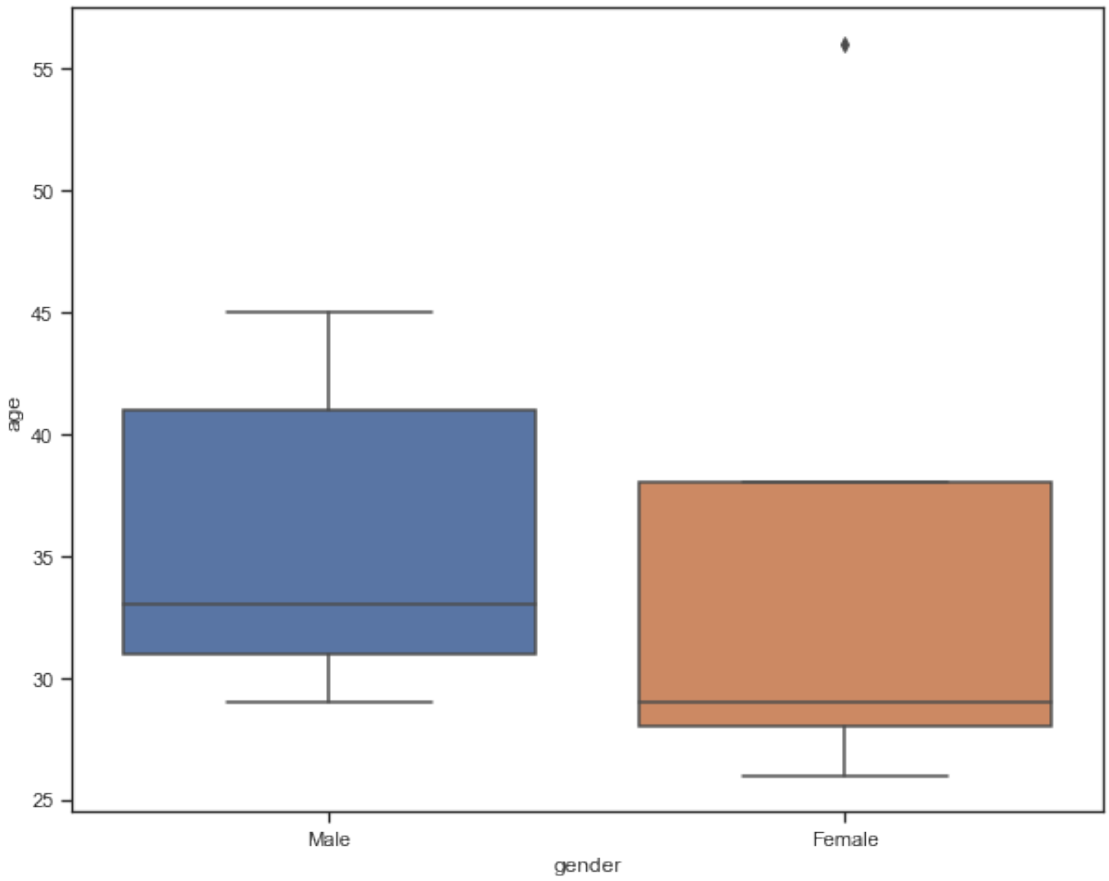
[209]:
```
vis1=sns.displot(stats["AMOUNT"],bins=5)
plt.rcParams['figure.figsize']=10,8
plt.show()
```



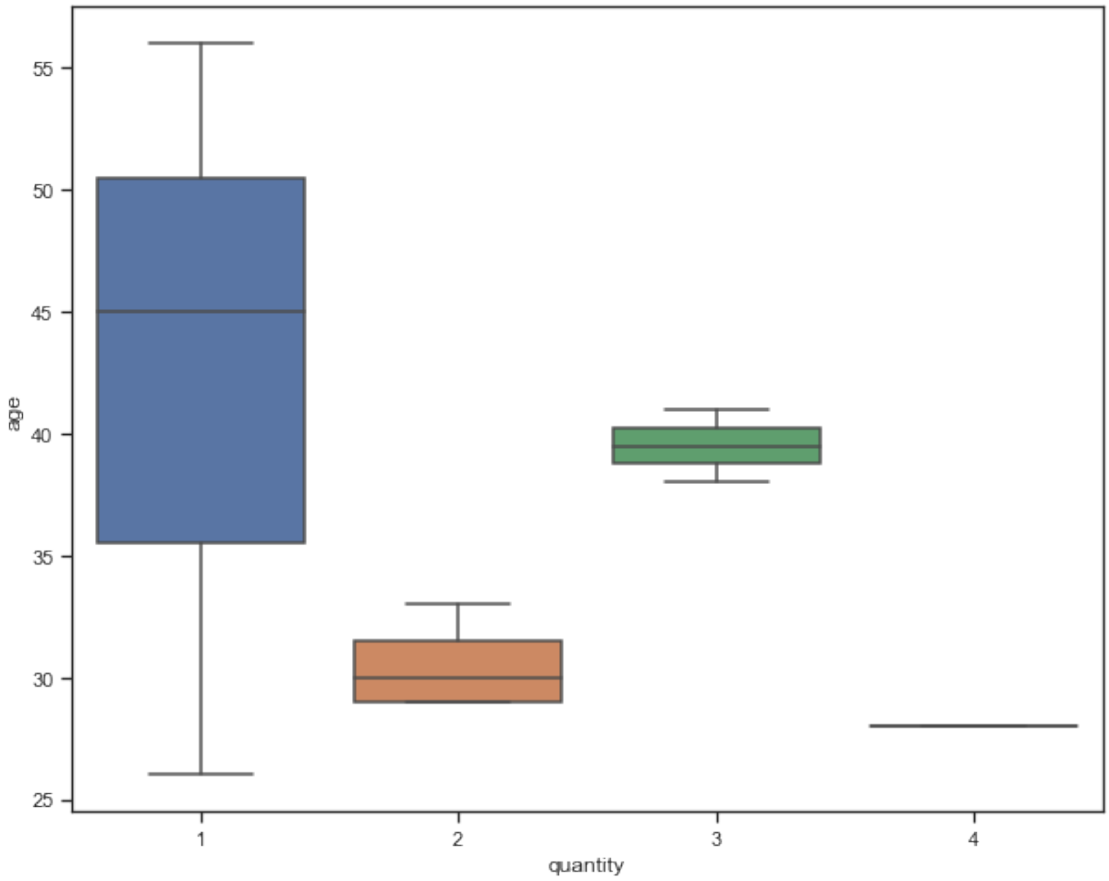
[210]:
```
sns.displot(stats["AMOUNT"],bins=5,height=5,aspect=2,color='Red')
plt.show()
```



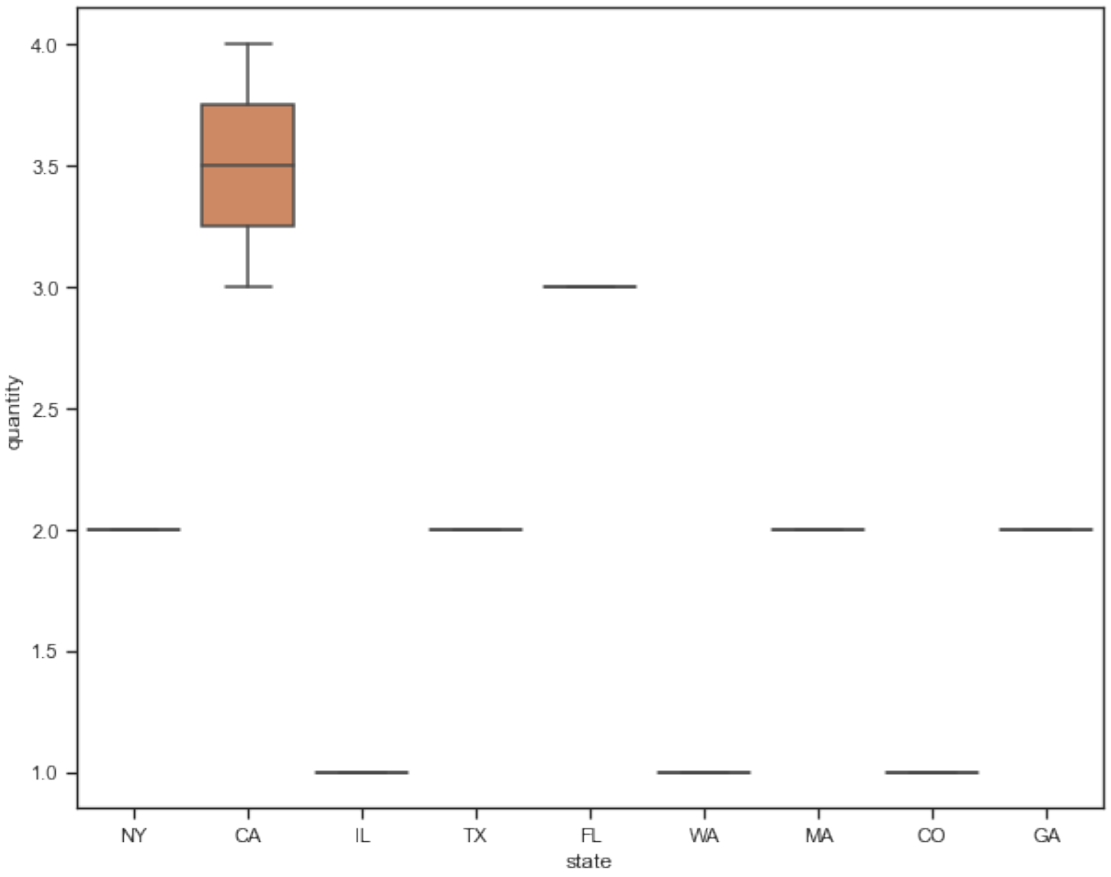
[211]:
```
sns.boxplot(data=stats,x="gender",y='age')
plt.show()
```



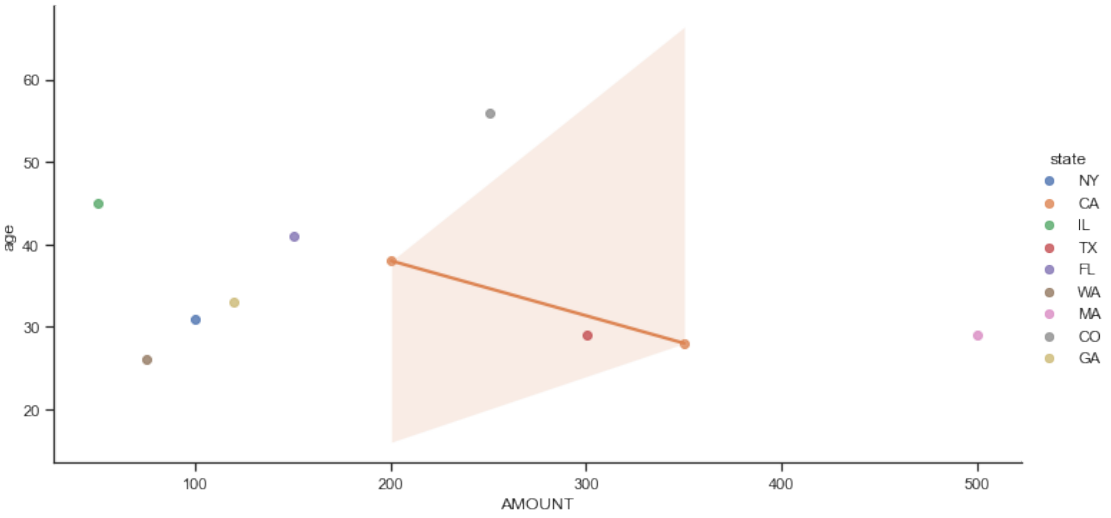
[212]:
```
sns.boxplot(data=stats,x="quantity",y='age')
plt.show()
```



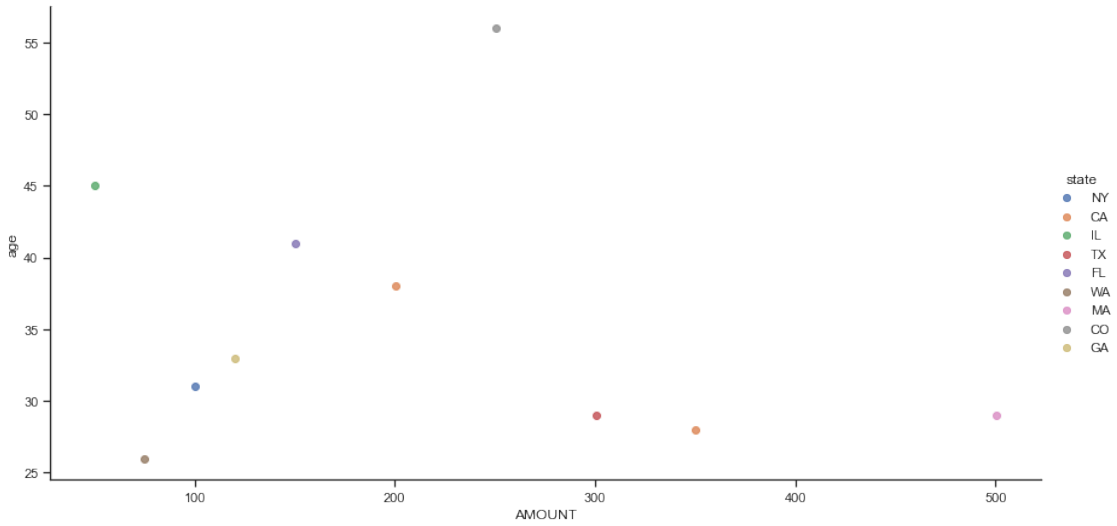
[213]:
```
sns.boxplot(data=stats,x="state",y='quantity')
plt.show()
```



[214]:
```
sns.lmplot(data=stats,x='AMOUNT',y="age",hue='state',aspect=2)
plt.show()
```

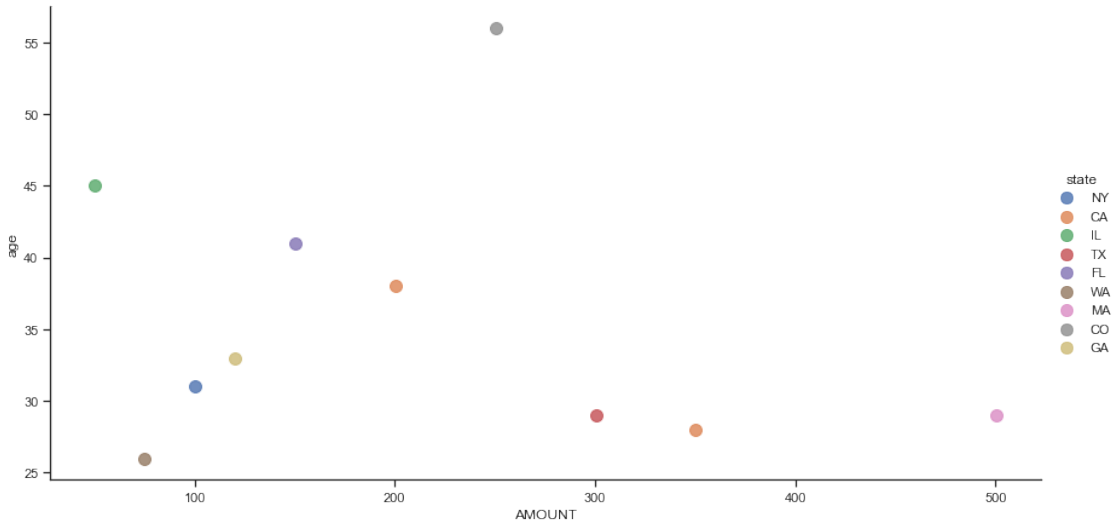


[215]:
```
sns.
↪lmplot(data=stats,x='AMOUNT',y='age',fit_reg=False,hue='state',aspect=2,size=6)
plt.show()
```



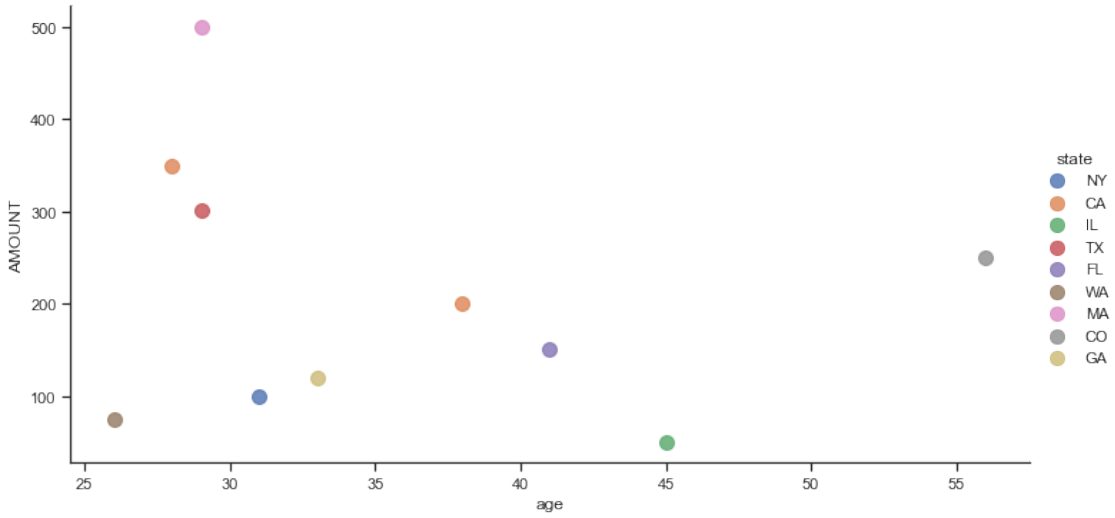
[216]:
```
sns.lmplot(data=stats,x='AMOUNT',y='age',fit_reg=False,hue='state',\
           size=6,scatter_kws={'s':100},aspect=2)
```

[216]: <seaborn.axisgrid.FacetGrid at 0x18dafe57d00>



[217]:
```
sns.lmplot(x="age",y="AMOUNT",data=stats,hue='state',scatter_kws={"s":
↪100},aspect=2,fit_reg=False)
```

```
plt.show()
```



[218]:
```
stats
```

[218]:
```
  api_key_PK              logo_url_data  closed_status  \
0     abc123   https://example.com/logo1              0
1     xyz789   https://example.com/logo2              1
2     mno456   https://example.com/logo3              0
3     pqr789   https://example.com/logo4              1
4     lmn123   https://example.com/logo5              0
5     efg456   https://example.com/logo6              1
6     hij789   https://example.com/logo7              0
7     xyz123   https://example.com/logo8              1
8     uvw456   https://example.com/logo9              0
9     rst789  https://example.com/logo10              1

                    metadata_data  PAYLOAD_ID  AMOUNT CURRENCY STORE_NAME  \
0                              {}           1  100.00      USD    Store A
1            {\key\": \"value\"}"           2  200.50      EUR    Store B
2    {\key\": \"another_value\"}"           3   50.25      GBP    Store C
3  {\key\": \"different_value\"}"           4  300.75      USD    Store D
4                              {}           5  150.50      EUR    Store E
5        {\key\": \"new_value\"}"           6   75.00      GBP    Store F
6                              {}           7  500.25      USD    Store G
7     {\key\": \"unique_value\"}"           8  250.75      EUR    Store H
8     {\key\": \"sample_value\"}"           9  120.00      GBP    Store I
9                              {}          10  350.25      USD    Store J

   BUYER_ID  ORDER_ID      DESCRIPTION METADATA  buyer_id  \
```

```
0         1       101    First payload   Meta 1         1
1         2       102   Second payload   Meta 2         2
2         3       103    Third payload   Meta 3         3
3         4       104   Fourth payload   Meta 4         4
4         5       105    Fifth payload   Meta 5         5
5         6       106    Sixth payload   Meta 6         6
6         7       107  Seventh payload   Meta 7         7
7         8       108   Eighth payload   Meta 8         8
8         9       109    Ninth payload   Meta 9         9
9        10       110    Tenth payload  Meta 10        10

                Email    name1     name2       phone         dob  \
0   buyer1@example.com     John       Doe  1234567890   5/15/1990
1   buyer2@example.com     Jane     Smith  9876543210  10/22/1985
2   buyer3@example.com  Michael   Johnson  5551234567   3/10/1978
3   buyer4@example.com    Emily  Williams  8889876543   12/1/1995
4   buyer5@example.com    David     Brown  4445678901    7/8/1982
5   buyer6@example.com    Sarah     Jones  3332345678   9/25/1998
6   buyer7@example.com   Robert    Miller  2223456789  11/12/1972
7   buyer8@example.com     Lisa     Davis  7774567890   6/18/1989
8   buyer9@example.com  William    Taylor  6663456789   4/30/1993
9  buyer10@example.com   Olivia  Anderson  1112345678    2/5/2000

   buyer_data_id  buyer_id.1  user_id  age age_platform account_reg_date  \
0              1           1      123   31      Android        8/15/2015
1              2           2      456   38          iOS        3/22/2018
2              3           3      789   45      Android        12/5/2012
3              4           4      101   29          iOS        7/20/2020
4              5           5      202   41      Android        4/18/2017
5              6           1      303   26          iOS       10/10/2019
6              7           2      404   29      Android        2/28/2016
7              8           3      505   56          iOS        7/15/2013
8              9           4      606   33      Android         4/3/2021
9             10           5      707   28          iOS         9/9/2018

   days_since_1st_tx   ltv  order_count  last_order_amt  last_order_at  \
0                120   500           10              50            NaN
1                 60   800           15              75            NaN
2                180  1000           20             100            NaN
3                 30   300            5              30            NaN
4                 90   700           12              80            NaN
5                 45   400            8              40            NaN
6                150   900           18              90            NaN
7                300  1200           24             120            NaN
8                 15   200            4              20            NaN
9                 75   600           14              70            NaN
```

	last_order_date	order_amt_last3m	order_count_last3m	additional_ship_ad
0	6/28/2023	300	5	Shipping Address 1
1	7/8/2023	200	4	Shipping Address 2
2	6/12/2023	350	7	Shipping Address 3
3	7/2/2023	150	3	Shipping Address 4
4	6/18/2023	250	6	Shipping Address 5
5	7/6/2023	180	4	Shipping Address 1
6	6/22/2023	300	7	Shipping Address 2
7	7/12/2023	400	8	Shipping Address 3
8	6/28/2023	100	2	Shipping Address 4
9	7/3/2023	220	5	Shipping Address 5

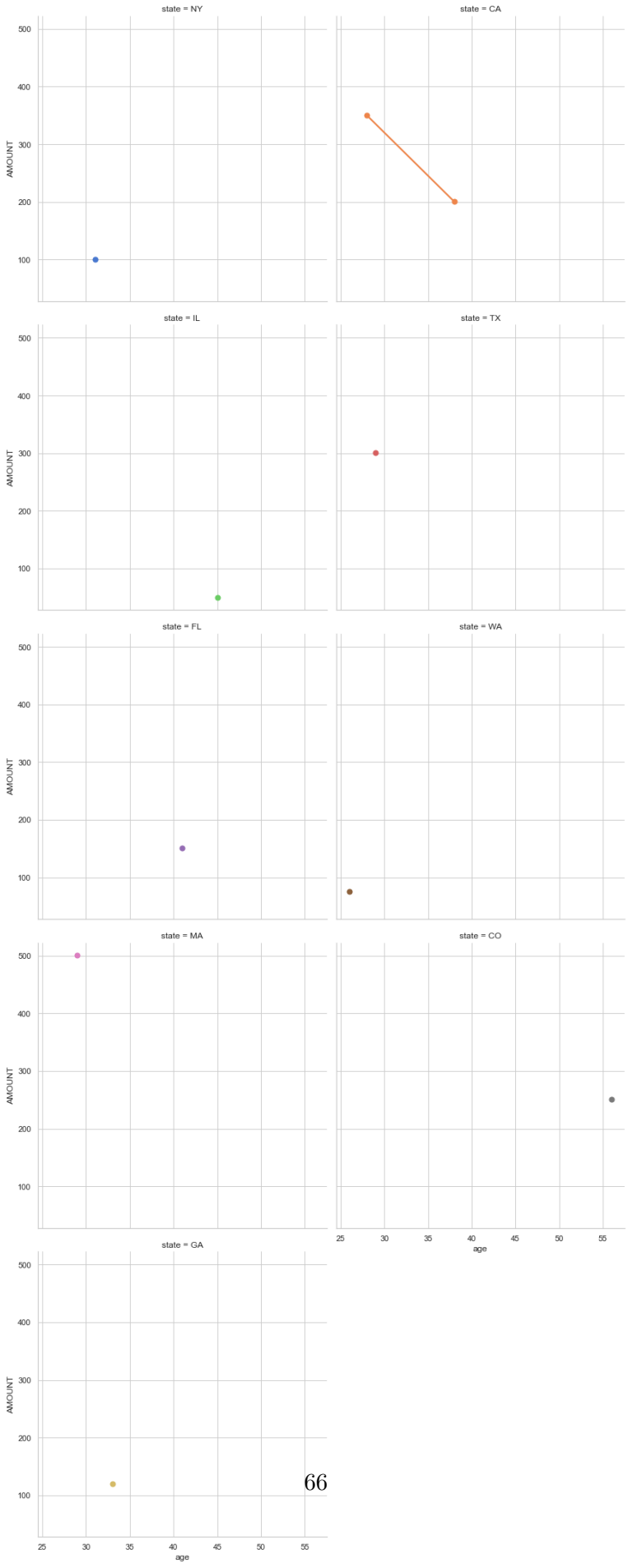
	billing_address	delivery_locn_type	gender	subscription_count
0	Billing Address 1	Urban	Male	3
1	Billing Address 2	Suburban	Female	5
2	Billing Address 3	Rural	Male	2
3	Billing Address 4	Urban	Female	1
4	Billing Address 5	Suburban	Male	4
5	Billing Address 1	Urban	Female	2
6	Billing Address 2	Suburban	Male	3
7	Billing Address 3	Rural	Female	5
8	Billing Address 4	Urban	Male	1
9	Billing Address 5	Suburban	Female	3

	prev_payment_meth	number_of_points	order_item_categ	order_id	order_ref
0	Credit Card	200	Electronics	1	OR123
1	PayPal	150	Clothing	2	OR456
2	Debit Card	300	Electronics	3	OR789
3	PayPal	50	Clothing	4	OR101
4	Credit Card	180	Electronics	5	OR202
5	PayPal	120	Clothing	6	OR303
6	Debit Card	250	Electronics	7	OR404
7	PayPal	450	Clothing	8	OR505
8	Credit Card	75	Electronics	9	OR606
9	Debit Card	200	Clothing	10	OR707

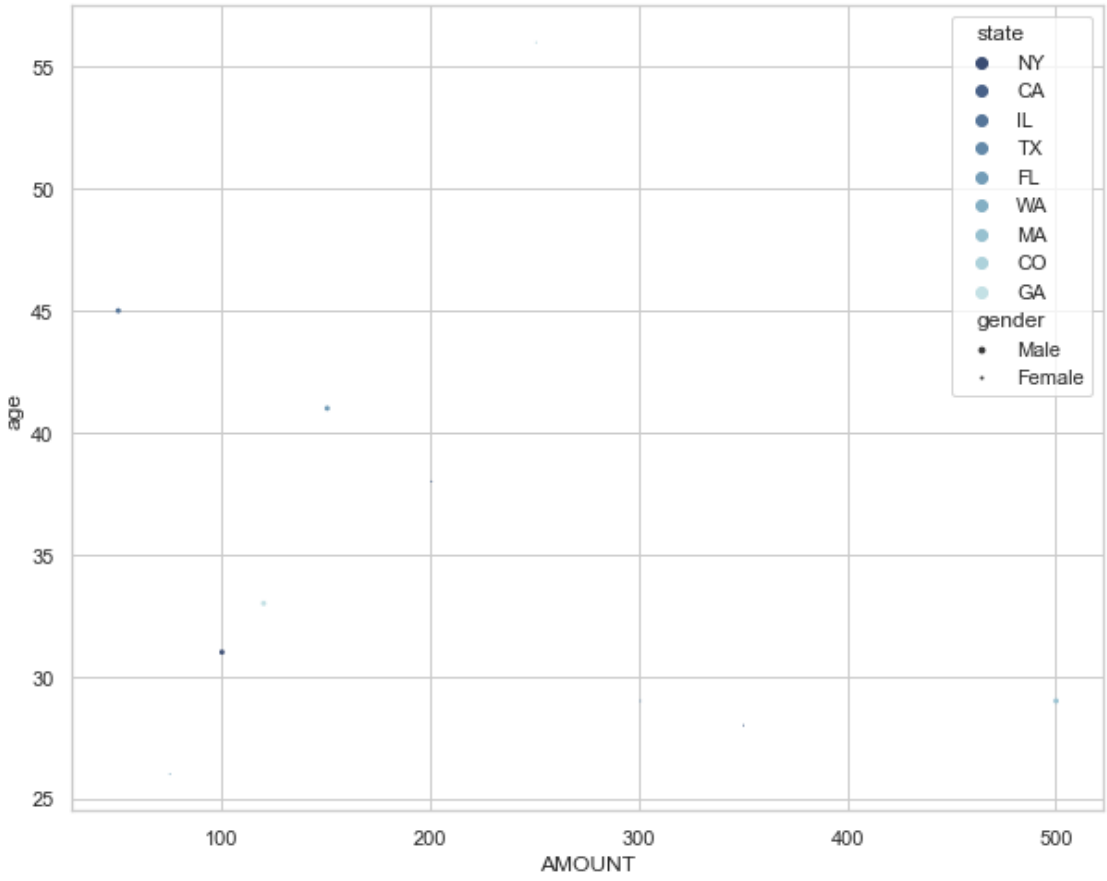
	shipping	tax	item_id	order_id.1	quantity	title	unit_price
0	10.0	5.00	1	1	2	Product A	25
1	7.0	3.50	2	1	3	Product B	15
2	12.0	6.00	3	2	1	Product C	20
3	8.0	4.00	4	2	2	Product D	10
4	15.0	7.50	5	3	3	Product E	30
5	6.0	3.00	6	3	1	Product F	40
6	9.0	4.50	7	4	2	Product G	15
7	11.0	5.50	8	4	1	Product H	50
8	7.5	3.75	9	5	2	Product I	35
9	13.0	6.50	10	5	4	Product J	12

```
  description  shipping_addr_id  buyer_id.2          line1         line2  \
0      Item A                 1           1    123 Main St        Apt 4B
1      Item B                 2           2     456 Elm Rd      Unit 202
2      Item C                 3           3    789 Oak Ave       Suite 5
3      Item D                 4           4   101 Maple St           NaN
4      Item E                 5           5    202 Pine Rd  Apartment 10
5      Item F                 6           1   303 Cedar St           NaN
6      Item G                 7           2   404 Birch Ln       Unit 15
7      Item H                 8           3     505 Elm St           NaN
8      Item I                 9           4     606 Oak Rd           NaN
9      Item J                10           5  707 Maple Ave           NaN

            city state    zip  AMOUNT*2  AMOUNT*3
0       New York    NY  10001     200.0    300.00
1    Los Angeles    CA  90001     401.0    601.50
2        Chicago    IL  60601     100.5    150.75
3        Houston    TX  77002     601.5    902.25
4          Miami    FL  33101     301.0    451.50
5        Seattle    WA  98101     150.0    225.00
6         Boston    MA   2201    1000.5   1500.75
7         Denver    CO  80201     501.5    752.25
8        Atlanta    GA  30301     240.0    360.00
9  San Francisco    CA  94101     700.5   1050.75
```

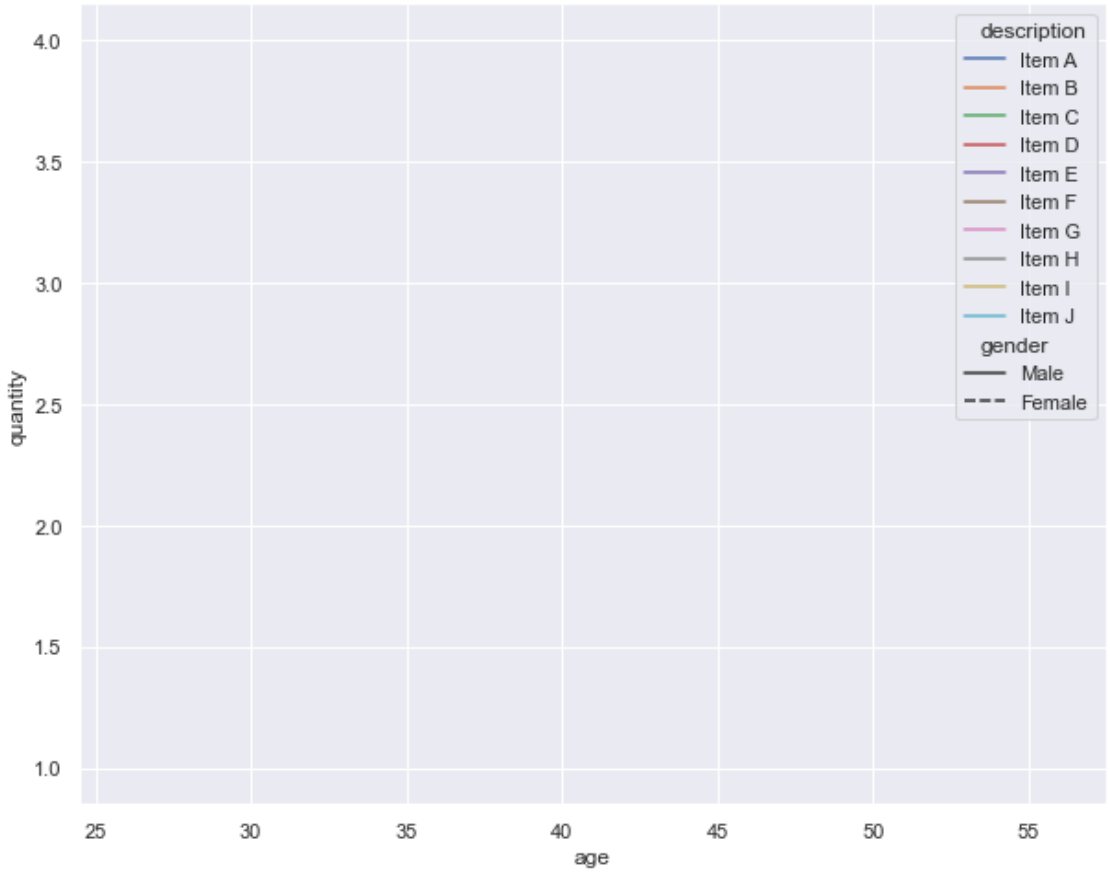
[219]:
```
sns.set_theme(style="whitegrid") #ticks

sns.
 ↪lmplot(data=stats,x="age",y="AMOUNT",col="state",hue="state",col_wrap=2,ci=None,palette="mu
          scatter_kws={"s":50,"alpha":1})
plt.show()
```


state = NY
state = CA
state = IL
state = TX
state = FL
state = WA
state = MA
state = CO
state = GA
AMOUNT
100
200
300
400
500
25
30
35
40
45
50
55
age

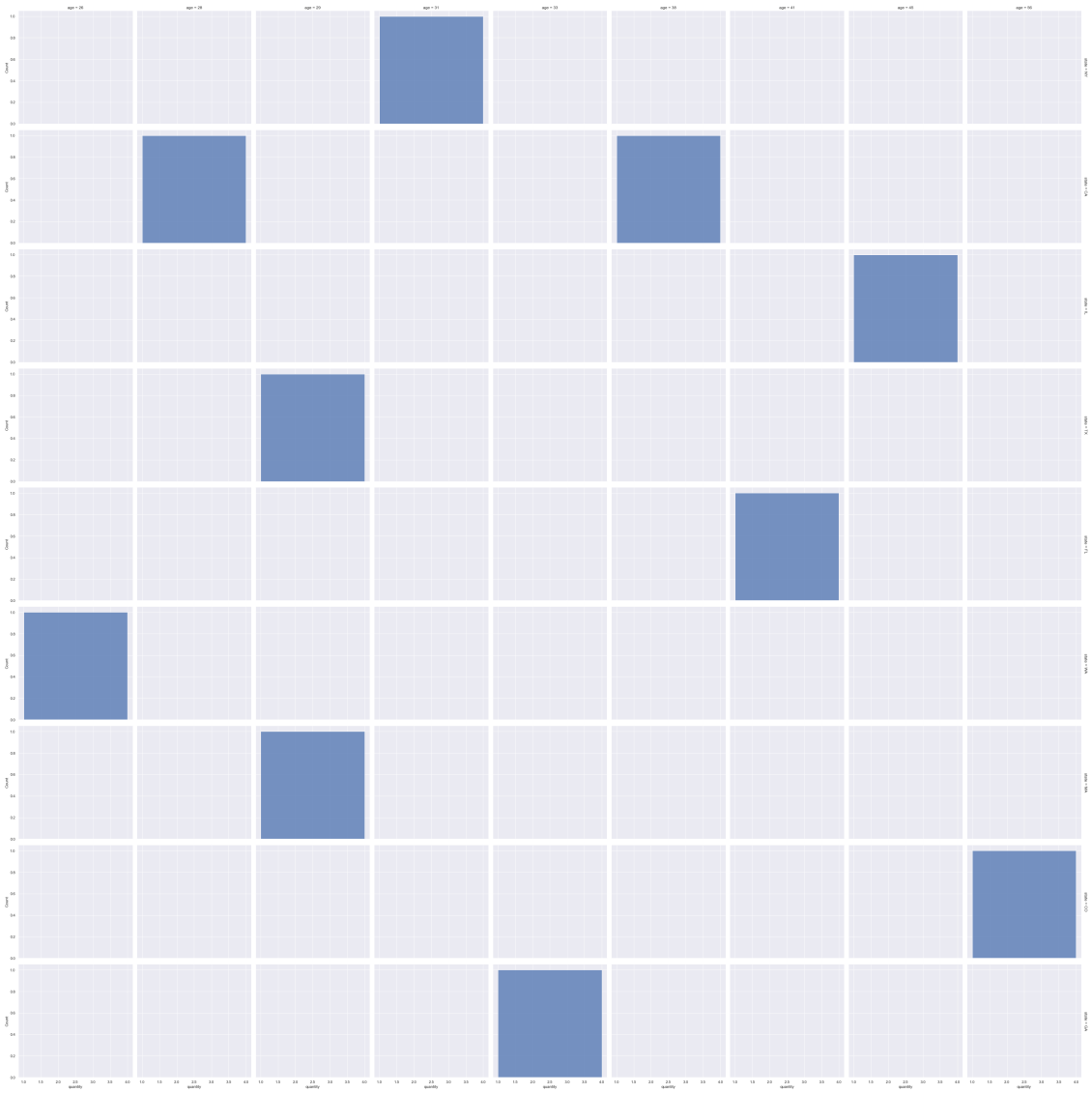
[220]:
```
sns.set_theme(style="whitegrid")
sns.scatterplot(data=stats,x="AMOUNT",y="age",hue="state",size="gender",\
                palette="ch:r=-.2,d=.3_r",sizes=(1,8),linewidth=0)
plt.show()
```



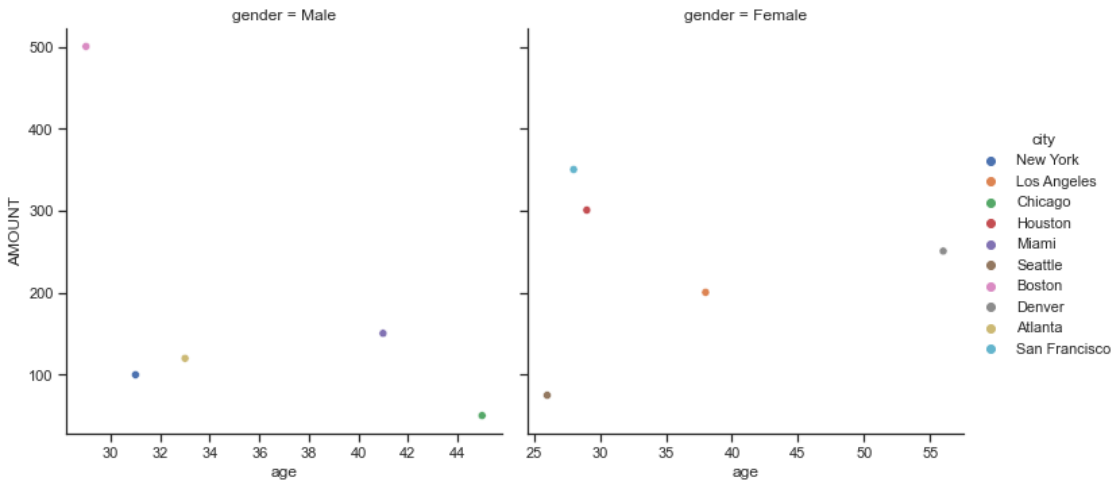
[221]:
```
sns.set_theme(style="darkgrid")
sns.lineplot(data=stats,x="age",y="quantity",hue="description",style="gender")
plt.show()
```



[222]:
```
sns.displot(data=stats,x="quantity",col="age",row="state",binwidth=3, height=5,\
            facet_kws=dict(margin_titles=True),)
plt.show()
```



[223]:
```
sns.set_theme(style="ticks")

legend="Gender"
sns.relplot(data=stats,x="age",y="AMOUNT",hue="city",col="gender",\
 ↪␣
 ↪size_order=["T1","T2"],height=5,aspect=1,facet_kws=dict(sharex=False))
plt.show()
```


gender = Male
gender = Female
AMOUNT
500
400
300
200
100
30
32
34
36
38
40
42
44
25
30
35
40
45
50
55
age
age
city
New York
Los Angeles
Chicago
Houston
Miami
Seattle
Boston
Denver
Atlanta
San Francisco

[ ]: