dsbda-practical-2

February 9, 2024

```
[2]:
     import pandas as pd
     import numpy as num
[5]: df = pd.read_csv(r"E:\BE\6th sem\Data Science and Big Data analytics\Practical_
      →Outputs\customer_shopping_data.csv")
[6]: df
[6]:
           invoice_no customer_id
                                     gender
                                              age
                                                           category
                                                                      quantity
                                                                                   price
     0
               I138884
                            C241288
                                     Female
                                               28
                                                           Clothing
                                                                             5
                                                                                 1500.40
     1
               I317333
                            C111565
                                       Male
                                               21
                                                              Shoes
                                                                             3
                                                                                 1800.51
     2
               I127801
                            C266599
                                       Male
                                               20
                                                           Clothing
                                                                             1
                                                                                  300.08
     3
               I173702
                            C988172
                                     Female
                                                              Shoes
                                                                             5
                                                                                 3000.85
                                               66
     4
               I337046
                            C189076
                                     Female
                                               53
                                                              Books
                                                                                   60.60
     99452
               I219422
                            C441542
                                     Female
                                               45
                                                           Souvenir
                                                                             5
                                                                                   58.65
                                       Male
                                                                             2
     99453
               I325143
                            C569580
                                                   Food & Beverage
                                                                                   10.46
                                                   Food & Beverage
     99454
               I824010
                            C103292
                                       Male
                                               63
                                                                             2
                                                                                   10.46
     99455
               1702964
                            C800631
                                       Male
                                                         Technology
                                                                             4
                                                                                 4200.00
                                               56
     99456
               I232867
                            C273973 Female
                                                           Souvenir
                                                                             3
                                                                                   35.19
                                               36
           payment_method invoice_date
                                              shopping_mall
     0
               Credit Card
                                5/8/2022
                                                      Kanyon
                                             Forum Istanbul
     1
                Debit Card
                              12/12/2021
     2
                      Cash
                               9/11/2021
                                                  Metrocity
     3
               Credit Card
                              16/05/2021
                                               Metropol AVM
     4
                      Cash
                              24/10/2021
                                                      Kanyon
     99452
               Credit Card
                              21/09/2022
                                                      Kanyon
                                             Forum Istanbul
     99453
                      Cash
                              22/09/2021
                Debit Card
                              28/03/2021
                                                  Metrocity
     99454
                              16/03/2021
                                               Istinye Park
     99455
                      Cash
     99456
               Credit Card
                              15/10/2022
                                          Mall of Istanbul
```

[99457 rows x 10 columns]

[8]: df.isnull() [8]: invoice no customer_id gender quantity price \ category age 0 False False False False False False False 1 False False False False False False False 2 False False False False False False False 3 False False False False False False False 4 False False False False False False False 99452 False 99453 False False False False False False False False 99454 False False False False False False 99455 False False False False False False False False 99456 payment_method invoice_date shopping_mall 0 False False False False 1 False False 2 False False False 3 False False False 4 False False False 99452 False False False 99453 False False False 99454 False False False False 99455 False False 99456 False False False [99457 rows x 10 columns] [12]: series = pd.isnull(df["invoice_no"]) df[series] [12]: Empty DataFrame Columns: [invoice_no, customer_id, gender, age, category, quantity, price, payment_method, invoice_date, shopping_mall] Index: [] [13]: series1 = pd.notnull(df["customer_id"]) df[series1] Γ13]: invoice_no customer_id gender category quantity price \ age 0 I138884 C241288 Female 28 Clothing 5 1500.40 1 Male 21 Shoes 1800.51 I317333 C111565 3 2 I127801 C266599 Male 20 Clothing 1 300.08 3 C988172 Female Shoes 5 3000.85 I173702 66

53

Books

60.60

Female

C189076

4

I337046

•••	•••		•••		•••	•••	•••		
99452	I219422	C441542	Female	45		Souvenir		5	58.65
99453	I325143	C569580	Male	27	Food	& Beverage		2	10.46
99454	I824010	C103292	Male	63	Food	& Beverage		2	10.46
99455	1702964	C800631	Male	56		Technology		4	4200.00
99456	1232867	C273973	Female	36		Souvenir		3	35.19
	payment_method	invoice_	date	shop	ping_m	nall			
0	Credit Card	5/8/	2022	-	Kan	iyon			
1	Debit Card	12/12/	2021	Forum	Istan	ıbul			
2	Cash	9/11/	2021		Metroc	ity			
3	Credit Card	16/05/	2021	Met	ropol	AVM			
4	Cash	24/10/	2021		Kan	iyon			
•••	•••	•••							
99452	Credit Card	21/09/	2022		Kan	iyon			
99453	Cash	22/09/	2021	Forum	Istan	ıbul			
99454	Debit Card	28/03/	2021		Metroc	ity			
99455	Cash	16/03/	2021	Ist	inye F	ark			
99456	Credit Card	15/10/	2022 Ma	all of	Istan	ıbul			
[0045	7 10 3								
[9945]	7 rows x 10 col	umnsj							

[22]: df = pd.read_csv(r"E:\BE\6th sem\Data Science and Big Data analytics\Practical

→Outputs\StudentsPerformance.csv")

[15]: df

[15]:	Math Score	Reading Score	Writing Score	Placement Score	Club Join Year \	
0	95.0	81.0	93.0	85.0	23	
1	83.0	79.0	64.0	97.0	23	
2	100.0	96.0	70.0	86.0	23	
3	88.0	83.0	100.0	81.0	23	
4	73.0	72.0	96.0	62.0	23	
5	63.0	76.0	NaN	100.0	23	
6	72.0	87.0	99.0	94.0	23	
7	90.0	75.0	91.0	66.0	23	
8	97.0	79.0	74.0	77.0	23	
9	NaN	60.0	77.0	70.0	23	
10	77.0	65.0	61.0	90.0	23	
11	75.0	94.0	88.0	91.0	23	
12	85.0	79.0	63.0	93.0	23	
13	80.0	79.0	100.0	NaN	23	
14	81.0	81.0	88.0	61.0	23	
15	80.0	64.0	98.0	100.0	23	
16	66.0	85.0	94.0	84.0	23	
17	99.0	80.0	75.0	93.0	23	
18	85.0	NaN	81.0	99.0	23	

```
19
          76.0
                           99.0
                                           89.0
                                                             84.0
                                                                                 23
20
          34.0
                           23.0
                                           45.0
                                                             21.0
                                                                                 23
21
          43.0
                           23.0
                                           34.0
                                                             56.0
                                                                                 23
22
          45.0
                           65.0
                                           67.0
                                                             43.0
                                                                                 23
23
          12.0
                           24.0
                                            NaN
                                                             10.0
                                                                                 23
24
          23.0
                           21.0
                                           43.0
                                                             54.0
                                                                                 23
          11.0
                           12.0
                                           13.0
                                                             11.0
25
                                                                                 23
26
          13.0
                           14.0
                                           54.0
                                                             44.0
                                                                                 23
27
          43.0
                           54.0
                                                             76.0
                                                                                 23
                                           65.0
28
          43.0
                           44.0
                                           54.0
                                                             65.0
                                                                                 23
```

```
Placement Offer Count
                             gender
         98.0
                             female
0
         66.0
                         97 female
1
2
         84.0
                         69 female
3
         79.0
                         79 female
4
         64.0
                         64 female
5
         83.0
                         74 female
6
         72.0
                         68 female
7
         88.0
                            female
                         86
8
         90.0
                         91
                            female
9
         81.0
                               Male
                         69
10
         60.0
                         67
                               Male
         90.0
11
                         71
                               Male
12
         99.0
                         80
                               Male
         76.0
                               Male
13
                         95
14
         91.0
                               Male
                         84
15
         69.0
                         96
                               Male
16
         60.0
                         62
                               Male
17
         72.0
                         76
                               Male
18
         63.0
                         73
                               Male
19
         97.0
                         87
                               Male
20
         45.0
                         65
                            female
21
         56.0
                         56
                             female
22
         45.0
                             female
                         76
23
         56.0
                         87
                             female
24
         54.0
                         23 female
25
          {\tt NaN}
                         16
                               Male
26
         77.0
                         65
                               Male
27
         43.0
                         43
                               Male
28
         11.0
                         12
                               Male
```

```
[23]: from sklearn.preprocessing import LabelEncoder
le = LabelEncoder()
df['gender'] = le.fit_transform(df['gender'])
newdf=df
df
```

[23]:	Math Score	Reading Score	Writing Score	Placement Score	Club Join Year \
0	95.0	81.0	93.0	85.0	23
1	83.0	79.0	64.0	97.0	23
2	100.0	96.0	70.0	86.0	23
3	88.0	83.0	100.0	81.0	23
4	73.0	72.0	96.0	62.0	23
5	63.0	76.0	NaN	100.0	23
6	72.0	87.0	99.0	94.0	23
7	90.0	75.0	91.0	66.0	23
8	97.0	79.0	74.0	77.0	23
9	NaN	60.0	77.0	70.0	23
10	77.0	65.0	61.0	90.0	23
11	75.0	94.0	88.0	91.0	23
12	85.0	79.0	63.0	93.0	23
13	80.0	79.0	100.0	NaN	23
14	81.0	81.0	88.0	61.0	23
15	80.0	64.0	98.0	100.0	23
16	66.0	85.0	94.0	84.0	23
17	99.0	80.0	75.0	93.0	23
18	85.0	NaN	81.0	99.0	23
19	76.0	99.0	89.0	84.0	23
20	34.0	23.0	45.0	21.0	23
21	43.0	23.0	34.0	56.0	23
22	45.0	65.0	67.0	43.0	23
23	12.0	24.0	NaN	10.0	23
24	23.0	21.0	43.0	54.0	23
25	11.0	12.0	13.0	11.0	23
26	13.0	14.0	54.0	44.0	23
27	43.0	54.0	65.0	76.0	23
28	43.0	44.0	54.0	65.0	23
	Placement	Offer Count g	gender		
0	98.0	99	, 1		
1	66.0	97	1		
2	84.0	69	1		
3	79.0	79	1		
4	64.0	64	1		
5	83.0	74	1		
6	72.0	68	1		
7	88.0	86	1		
8	90.0	91	1		
9	81.0	69	0		
10	60.0	67	0		
11	90.0	71	0		
12	99.0	80	0		
13	76.0	95	0		

91.0

```
69.0
15
                           96
                                     0
16
          60.0
                           62
                                     0
          72.0
17
                           76
                                     0
18
          63.0
                           73
                                     0
19
          97.0
                           87
                                     0
20
          45.0
                           65
                                     1
21
          56.0
                           56
                                     1
22
          45.0
                           76
                                     1
23
          56.0
                           87
                                     1
24
          54.0
                           23
                                     1
25
           {\tt NaN}
                           16
                                     0
26
          77.0
                           65
                                     0
27
          43.0
                           43
                                     0
28
          11.0
                           12
                                     0
```

```
[24]: m_v=df['Math Score'].mean()
df['Math Score'].fillna(value=m_v, inplace=True)
df
```

C:\Users\Rohan\AppData\Local\Temp\ipykernel_2356\464449955.py:2: FutureWarning: A value is trying to be set on a copy of a DataFrame or Series through chained assignment using an inplace method.

The behavior will change in pandas 3.0. This implace method will never work because the intermediate object on which we are setting values always behaves as a copy.

For example, when doing 'df[col].method(value, inplace=True)', try using 'df.method({col: value}, inplace=True)' or df[col] = df[col].method(value) instead, to perform the operation inplace on the original object.

df['Math Score'].fillna(value=m_v, inplace=True)

[24]:	Math Score	Reading Score	Writing Score	Placement Score	Club Join Year \
0	95.000000	81.0	93.0	85.0	23
1	83.000000	79.0	64.0	97.0	23
2	100.000000	96.0	70.0	86.0	23
3	88.000000	83.0	100.0	81.0	23
4	73.000000	72.0	96.0	62.0	23
5	63.000000	76.0	NaN	100.0	23
6	72.000000	87.0	99.0	94.0	23
7	90.000000	75.0	91.0	66.0	23
8	97.000000	79.0	74.0	77.0	23
9	65.428571	60.0	77.0	70.0	23
10	77.000000	65.0	61.0	90.0	23
11	75.000000	94.0	88.0	91.0	23
12	85.000000	79.0	63.0	93.0	23

13	80.000000	79.0	100.0	NaN	23
14	81.000000	81.0	88.0	61.0	23
15	80.000000	64.0	98.0	100.0	23
16	66.000000	85.0	94.0	84.0	23
17	99.000000	80.0	75.0	93.0	23
18	85.000000	NaN	81.0	99.0	23
19	76.000000	99.0	89.0	84.0	23
20	34.000000	23.0	45.0	21.0	23
21	43.000000	23.0	34.0	56.0	23
22	45.000000	65.0	67.0	43.0	23
23	12.000000	24.0	NaN	10.0	23
24	23.000000	21.0	43.0	54.0	23
25	11.000000	12.0	13.0	11.0	23
26	13.000000	14.0	54.0	44.0	23
27	43.000000	54.0	65.0	76.0	23
28	43.000000	44.0	54.0	65.0	23

	Placement	Offer Count	gender
0	98.0	99	1
1	66.0	97	1
2	84.0	69	1
3	79.0	79	1
4	64.0	64	1
5	83.0	74	1
6	72.0	68	1
7	88.0	86	1
8	90.0	91	1
9	81.0	69	0
10	60.0	67	0
11	90.0	71	0
12	99.0	80	0
13	76.0	95	0
14	91.0	84	0
15	69.0	96	0
16	60.0	62	0
17	72.0	76	0
18	63.0	73	0
19	97.0	87	0
20	45.0	65	1
21	56.0	56	1
22	45.0	76	1
23	56.0	87	1
24	54.0	23	1
25	NaN	16	0
26	77.0	65	0
27	43.0	43	0
28	11.0	12	0

```
[29]: import numpy as np
      df.replace(to_replace=np.nan, value=-99, inplace=True)
[30]: df
[30]:
                       Reading Score
                                        Writing Score Placement Score
                                                                           Club Join Year
          Math Score
            95.000000
                                  81.0
                                                  93.0
                                                                     85.0
      1
            83.000000
                                  79.0
                                                  64.0
                                                                     97.0
                                                                                         23
      2
                                  96.0
                                                                     86.0
                                                                                         23
          100.000000
                                                  70.0
      3
            88.000000
                                  83.0
                                                 100.0
                                                                     81.0
                                                                                         23
      4
                                                                     62.0
                                                                                         23
            73.000000
                                  72.0
                                                  96.0
      5
                                                 -99.0
                                                                    100.0
                                                                                         23
            63.000000
                                  76.0
      6
                                  87.0
                                                  99.0
                                                                     94.0
                                                                                         23
            72.000000
      7
            90.000000
                                  75.0
                                                  91.0
                                                                     66.0
                                                                                         23
      8
            97.000000
                                  79.0
                                                  74.0
                                                                     77.0
                                                                                         23
      9
                                  60.0
                                                  77.0
                                                                     70.0
            65.428571
                                                                                         23
      10
            77.000000
                                  65.0
                                                  61.0
                                                                     90.0
                                                                                         23
                                  94.0
                                                  88.0
                                                                     91.0
                                                                                         23
      11
            75.000000
      12
            85.000000
                                  79.0
                                                  63.0
                                                                     93.0
                                                                                         23
      13
            80.000000
                                  79.0
                                                 100.0
                                                                    -99.0
                                                                                         23
      14
            81.000000
                                  81.0
                                                  88.0
                                                                     61.0
                                                                                         23
      15
            80.000000
                                  64.0
                                                  98.0
                                                                    100.0
                                                                                         23
      16
            66.000000
                                  85.0
                                                  94.0
                                                                     84.0
                                                                                         23
      17
                                                  75.0
            99.000000
                                  80.0
                                                                     93.0
                                                                                         23
      18
            85.000000
                                -99.0
                                                  81.0
                                                                     99.0
                                                                                         23
      19
                                                  89.0
                                                                     84.0
            76.000000
                                  99.0
                                                                                         23
      20
                                  23.0
                                                  45.0
                                                                     21.0
                                                                                         23
            34.000000
      21
            43.000000
                                  23.0
                                                  34.0
                                                                     56.0
                                                                                         23
                                                                     43.0
      22
            45.000000
                                  65.0
                                                  67.0
                                                                                         23
      23
            12.000000
                                  24.0
                                                 -99.0
                                                                     10.0
                                                                                         23
      24
                                  21.0
                                                  43.0
                                                                     54.0
            23.000000
                                                                                         23
      25
            11.000000
                                  12.0
                                                  13.0
                                                                     11.0
                                                                                         23
      26
            13.000000
                                  14.0
                                                  54.0
                                                                     44.0
                                                                                         23
      27
            43.000000
                                  54.0
                                                  65.0
                                                                     76.0
                                                                                         23
      28
                                  44.0
                                                  54.0
                                                                     65.0
                                                                                         23
            43.000000
          Placement
                      Offer Count
                                    gender
      0
                98.0
                                99
                                          1
                66.0
                                97
                                          1
      1
      2
                84.0
                                69
                                          1
      3
                                79
                                           1
                79.0
      4
                64.0
                                64
                                          1
      5
                83.0
                                74
                                           1
      6
                72.0
                                68
                                          1
      7
                88.0
                                86
                                          1
      8
                90.0
                                91
                                          1
```

0

9

81.0

69

10	60.0	67	0
11	90.0	71	0
12	99.0	80	0
13	76.0	95	0
14	91.0	84	0
15	69.0	96	0
16	60.0	62	0
17	72.0	76	0
18	63.0	73	0
19	97.0	87	0
20	45.0	65	1
21	56.0	56	1
22	45.0	76	1
23	56.0	87	1
24	54.0	23	1
25	-99.0	16	0
26	77.0	65	0
27	43.0	43	0
28	11.0	12	0

[31]: df.dropna()

[31]:	Math Score	Reading Score	Writing Score	Placement Score	Club Join Year	\
0	95.000000	81.0	93.0	85.0	23	
1	83.000000	79.0	64.0	97.0	23	
2	100.000000	96.0	70.0	86.0	23	
3	88.000000	83.0	100.0	81.0	23	
4	73.000000	72.0	96.0	62.0	23	
5	63.000000	76.0	-99.0	100.0	23	
6	72.000000	87.0	99.0	94.0	23	
7	90.000000	75.0	91.0	66.0	23	
8	97.000000	79.0	74.0	77.0	23	
9	65.428571	60.0	77.0	70.0	23	
10	77.000000	65.0	61.0	90.0	23	
11	75.000000	94.0	88.0	91.0	23	
12	85.000000	79.0	63.0	93.0	23	
13	80.000000	79.0	100.0	-99.0	23	
14	81.000000	81.0	88.0	61.0	23	
15	80.000000	64.0	98.0	100.0	23	
16	66.000000	85.0	94.0	84.0	23	
17	99.000000	80.0	75.0	93.0	23	
18	85.000000	-99.0	81.0	99.0	23	
19	76.000000	99.0	89.0	84.0	23	
20	34.000000	23.0	45.0	21.0	23	
21	43.000000	23.0	34.0	56.0	23	
22	45.000000	65.0	67.0	43.0	23	
23	12.000000	24.0	-99.0	10.0	23	

24	23.000000	21	. 0	43.0	54.0		23	
25	11.000000	12	. 0	13.0	11.0		23	
26	13.000000	14	. 0	54.0	44.0		23	
27	43.000000	54	.0	65.0	76.0		23	
28	43.000000	44		54.0	65.0		23	
	Placement	Offer Count	gender					
0	98.0	99	1					
1	66.0	97	1					
2	84.0	69	1					
3	79.0	79	1					
4	64.0	64	1					
5	83.0	74	1					
6	72.0	68	1					
7	88.0	86	1					
8	90.0							
		91	1					
9	81.0	69	0					
10	60.0	67	0					
11	90.0	71	0					
12	99.0	80	0					
13	76.0	95	0					
14	91.0	84	0					
15	69.0	96	0					
16	60.0	62	0					
17	72.0	76	0					
18	63.0	73	0					
19	97.0	87	0					
20	45.0	65	1					
21	56.0	56	1					
22	45.0	76	1					
23	56.0	87	1					
24	54.0	23	1					
25	-99.0	16	0					
26	77.0	65	0					
27	43.0	43	0					
28	11.0	12	0					
df.	dropna(how =	= 'all')						
	Moth Corre	Dooding Cr.	no Umiti-	m C	Dingoment Corre	Club Tada	V	\
	Math Score	Reading Sco		g Score	Placement Score	Club Join		\
0	95.000000	81		93.0	85.0		23	
1	83.000000	79		64.0	97.0		23	
2	100.000000	96		70.0	86.0		23	
3	88.000000	83		100.0	81.0		23	
4	73.000000	72		96.0	62.0		23	
5	63.000000 72.000000	76 87		-99.0 99.0	100.0 94.0		23 23	
6								

[33]:

[33]:

7	90.000000	75.0	91.0	66.0	23
8	97.000000	79.0	74.0	77.0	23
9	65.428571	60.0	77.0	70.0	23
10	77.000000	65.0	61.0	90.0	23
11	75.000000	94.0	88.0	91.0	23
12	85.000000	79.0	63.0	93.0	23
13	80.000000	79.0	100.0	-99.0	23
14	81.000000	81.0	88.0	61.0	23
15	80.000000	64.0	98.0	100.0	23
16	66.000000	85.0	94.0	84.0	23
17	99.000000	80.0	75.0	93.0	23
18	85.000000	-99.0	81.0	99.0	23
19	76.000000	99.0	89.0	84.0	23
20	34.000000	23.0	45.0	21.0	23
21	43.000000	23.0	34.0	56.0	23
22	45.000000	65.0	67.0	43.0	23
23	12.000000	24.0	-99.0	10.0	23
24	23.000000	21.0	43.0	54.0	23
25	11.000000	12.0	13.0	11.0	23
26	13.000000	14.0	54.0	44.0	23
27	43.000000	54.0	65.0	76.0	23
28	43.000000	44.0	54.0	65.0	23

	Placement	Offer	Count	gender
0	98.0		99	1
1	66.0		97	1
2	84.0		69	1
3	79.0		79	1
4	64.0		64	1
5	83.0		74	1
6	72.0		68	1
7	88.0		86	1
8	90.0		91	1
9	81.0		69	0
10	60.0		67	0
11	90.0		71	0
12	99.0		80	0
13	76.0		95	0
14	91.0		84	0
15	69.0		96	0
16	60.0		62	0
17	72.0		76	0
18	63.0		73	0
19	97.0		87	0
20	45.0		65	1
21	56.0		56	1
22	45.0		76	1

```
56.0
      23
                              87
                                       1
      24
               54.0
                              23
                                       1
      25
              -99.0
                              16
                                       0
               77.0
                              65
                                       0
      26
      27
               43.0
                              43
                                       0
      28
               11.0
                              12
                                       0
[34]: df.dropna(axis = 1)
```

0 95.000000 81.0 93.0 85.0 23 1 83.000000 79.0 64.0 97.0 23 2 100.00000 96.0 70.0 86.0 23 3 88.00000 83.0 100.0 81.0 23 4 73.000000 72.0 96.0 62.0 23 5 63.00000 76.0 -99.0 100.0 23 6 72.000000 87.0 99.0 94.0 23 7 90.000000 75.0 91.0 66.0 23 8 97.000000 75.0 91.0 66.0 23 8 97.000000 79.0 74.0 77.0 20 10 77.000000 65.0 61.0 90.0 23 11 75.000000 94.0 88.0 91.0 23 12 85.00000 79.0 63.0 93.0 23 13 80.000000 79.0	[34]:	Math Score	Reading Score	Writing Score	Placement Score	Club Join Year \
2 100.000000 96.0 70.0 86.0 23 3 88.000000 83.0 100.0 81.0 23 4 73.000000 72.0 96.0 62.0 23 5 63.000000 76.0 -99.0 100.0 23 6 72.000000 87.0 99.0 94.0 23 7 90.000000 75.0 91.0 66.0 23 8 97.000000 79.0 74.0 77.0 23 9 65.428571 60.0 77.0 70.0 23 10 77.000000 65.0 61.0 90.0 23 11 75.000000 79.0 63.0 93.0 23 12 85.000000 79.0 63.0 93.0 23 13 80.00000 79.0 100.0 -99.0 23 14 81.00000 81.0 88.0 61.0 23 15 80.00000 64.0 98.0 100.0 23 16 66.00000 85.0 <			•	•		
2 100.000000 96.0 70.0 86.0 23 3 88.000000 83.0 100.0 81.0 23 4 73.000000 72.0 96.0 62.0 23 5 63.000000 76.0 -99.0 100.0 23 6 72.000000 87.0 99.0 94.0 23 7 90.000000 75.0 91.0 66.0 23 8 97.000000 79.0 74.0 77.0 23 9 65.428571 60.0 77.0 70.0 23 10 77.000000 65.0 61.0 90.0 23 11 75.000000 79.0 63.0 93.0 23 12 85.000000 79.0 63.0 93.0 23 13 80.00000 79.0 100.0 -99.0 23 14 81.00000 81.0 88.0 61.0 23 15 80.00000 64.0 98.0 100.0 23 16 66.00000 85.0 <	1	83.000000	79.0	64.0	97.0	23
4 73.000000 72.0 96.0 62.0 23 5 63.000000 76.0 -99.0 100.0 23 6 72.000000 87.0 99.0 94.0 23 7 90.000000 75.0 91.0 66.0 23 8 97.000000 79.0 74.0 77.0 23 9 65.428571 60.0 77.0 70.0 23 10 77.00000 65.0 61.0 90.0 23 11 75.00000 94.0 88.0 91.0 23 12 85.00000 79.0 63.0 93.0 23 13 80.00000 79.0 100.0 -99.0 23 14 81.00000 81.0 88.0 61.0 23 15 80.00000 64.0 98.0 100.0 23 16 66.00000 85.0 94.0 84.0 23 17 99.00000 80.0 75.0 93.0 23 18 85.00000 -99.0 8	2	100.000000		70.0	86.0	
5 63.000000 76.0 -99.0 100.0 23 6 72.000000 87.0 99.0 94.0 23 7 90.000000 75.0 91.0 66.0 23 8 97.000000 79.0 74.0 77.0 23 9 65.428571 60.0 77.0 70.0 23 10 77.000000 65.0 61.0 90.0 23 11 75.000000 94.0 88.0 91.0 23 12 85.000000 79.0 63.0 93.0 23 13 80.000000 79.0 100.0 -99.0 23 14 81.000000 81.0 88.0 61.0 23 15 80.000000 64.0 98.0 100.0 23 16 66.000000 85.0 94.0 84.0 23 17 99.000000 80.0 75.0 93.0 23 18 85.000000 -99.0 81.0 99.0 23 19 76.000000 23.0	3	88.000000	83.0	100.0	81.0	23
6 72.000000 87.0 99.0 94.0 23 7 90.000000 75.0 91.0 66.0 23 8 97.000000 79.0 74.0 77.0 23 9 65.428571 60.0 77.0 70.0 23 10 77.000000 65.0 61.0 90.0 23 11 75.000000 94.0 88.0 91.0 23 12 85.000000 79.0 63.0 93.0 23 13 80.000000 79.0 100.0 -99.0 23 14 81.000000 81.0 88.0 61.0 23 15 80.000000 64.0 98.0 100.0 23 16 66.000000 85.0 94.0 84.0 23 17 99.000000 80.0 75.0 93.0 23 18 85.000000 -99.0 81.0 99.0 23 19 76.000000 99.0 89.0 84.0 23 20 34.000000 23.0	4	73.000000	72.0	96.0	62.0	23
7 90.000000 75.0 91.0 66.0 23 8 97.000000 79.0 74.0 77.0 23 9 65.428571 60.0 77.0 70.0 23 10 77.000000 65.0 61.0 90.0 23 11 75.000000 94.0 88.0 91.0 23 12 85.000000 79.0 63.0 93.0 23 13 80.00000 79.0 100.0 -99.0 23 14 81.000000 81.0 88.0 61.0 23 15 80.00000 64.0 98.0 100.0 23 16 66.000000 85.0 94.0 84.0 23 17 99.000000 80.0 75.0 93.0 23 18 85.000000 -99.0 81.0 99.0 23 19 76.00000 99.0 89.0 84.0 23 20 34.00000 23.0 45.0 21.0 23 21 43.00000 23.0	5	63.000000	76.0	-99.0	100.0	23
8 97.000000 79.0 74.0 77.0 23 9 65.428571 60.0 77.0 70.0 23 10 77.000000 65.0 61.0 90.0 23 11 75.00000 94.0 88.0 91.0 23 12 85.00000 79.0 63.0 93.0 23 13 80.00000 79.0 100.0 -99.0 23 14 81.00000 81.0 88.0 61.0 23 15 80.00000 64.0 98.0 100.0 23 16 66.00000 85.0 94.0 84.0 23 17 99.00000 80.0 75.0 93.0 23 18 85.000000 -99.0 81.0 99.0 23 19 76.000000 99.0 89.0 84.0 23 20 34.00000 23.0 45.0 21.0 23 21 43.00000 23.0 34.0 56.0 23 22 45.00000 65.0	6	72.000000	87.0	99.0	94.0	23
9 65.428571 60.0 77.0 70.0 23 10 77.000000 65.0 61.0 90.0 23 11 75.000000 94.0 88.0 91.0 23 12 85.000000 79.0 63.0 93.0 23 13 80.000000 79.0 100.0 -99.0 23 14 81.000000 81.0 88.0 61.0 23 15 80.000000 64.0 98.0 100.0 23 16 66.000000 85.0 94.0 84.0 23 17 99.000000 80.0 75.0 93.0 23 18 85.000000 -99.0 81.0 99.0 23 19 76.000000 99.0 89.0 84.0 23 20 34.00000 23.0 45.0 21.0 23 21 43.00000 23.0 34.0 56.0 23 22 45.00000 24.0 -99.0 10.0 23 24 23.00000 24.0	7	90.000000	75.0	91.0	66.0	23
10 77.000000 65.0 61.0 90.0 23 11 75.000000 94.0 88.0 91.0 23 12 85.000000 79.0 63.0 93.0 23 13 80.000000 79.0 100.0 -99.0 23 14 81.000000 81.0 88.0 61.0 23 15 80.000000 64.0 98.0 100.0 23 16 66.000000 85.0 94.0 84.0 23 17 99.00000 80.0 75.0 93.0 23 18 85.000000 -99.0 81.0 99.0 23 19 76.000000 99.0 89.0 84.0 23 20 34.00000 23.0 45.0 21.0 23 21 43.00000 23.0 34.0 56.0 23 22 45.00000 65.0 67.0 43.0 23 23 12.00000 24.0 -99.0 10.0 23 24 23.000000 24.0	8	97.000000	79.0	74.0	77.0	23
11 75.000000 94.0 88.0 91.0 23 12 85.000000 79.0 63.0 93.0 23 13 80.000000 79.0 100.0 -99.0 23 14 81.000000 81.0 88.0 61.0 23 15 80.00000 64.0 98.0 100.0 23 16 66.00000 85.0 94.0 84.0 23 17 99.00000 80.0 75.0 93.0 23 18 85.00000 -99.0 81.0 99.0 23 19 76.00000 99.0 89.0 84.0 23 20 34.00000 23.0 45.0 21.0 23 21 43.00000 23.0 34.0 56.0 23 22 45.00000 65.0 67.0 43.0 23 23 12.00000 24.0 -99.0 10.0 23 24 23.00000 21.0 43.0 54.0 23 25 11.00000 12.0 <t< td=""><td>9</td><td>65.428571</td><td>60.0</td><td>77.0</td><td>70.0</td><td>23</td></t<>	9	65.428571	60.0	77.0	70.0	23
12 85.000000 79.0 63.0 93.0 23 13 80.000000 79.0 100.0 -99.0 23 14 81.000000 81.0 88.0 61.0 23 15 80.00000 64.0 98.0 100.0 23 16 66.00000 85.0 94.0 84.0 23 17 99.00000 80.0 75.0 93.0 23 18 85.000000 -99.0 81.0 99.0 23 19 76.000000 99.0 89.0 84.0 23 20 34.00000 23.0 45.0 21.0 23 21 43.00000 23.0 34.0 56.0 23 22 45.00000 24.0 -99.0 10.0 23 23 12.000000 24.0 -99.0 10.0 23 24 23.000000 21.0 43.0 54.0 23 25 11.000000 12.0 13.0 11.0 23 26 13.000000 54.0	1	0 77.000000	65.0	61.0	90.0	23
13 80.000000 79.0 100.0 -99.0 23 14 81.000000 81.0 88.0 61.0 23 15 80.000000 64.0 98.0 100.0 23 16 66.000000 85.0 94.0 84.0 23 17 99.000000 80.0 75.0 93.0 23 18 85.000000 -99.0 81.0 99.0 23 19 76.000000 99.0 89.0 84.0 23 20 34.000000 23.0 45.0 21.0 23 21 43.000000 23.0 34.0 56.0 23 22 45.000000 65.0 67.0 43.0 23 23 12.000000 24.0 -99.0 10.0 23 24 23.000000 21.0 43.0 54.0 23 25 11.000000 12.0 13.0 11.0 23 26 13.000000 54.0 65.0 76.0 23	1	1 75.000000	94.0	88.0	91.0	23
14 81.000000 81.0 88.0 61.0 23 15 80.00000 64.0 98.0 100.0 23 16 66.00000 85.0 94.0 84.0 23 17 99.00000 80.0 75.0 93.0 23 18 85.00000 -99.0 81.0 99.0 23 19 76.00000 99.0 89.0 84.0 23 20 34.00000 23.0 45.0 21.0 23 21 43.00000 23.0 34.0 56.0 23 22 45.00000 65.0 67.0 43.0 23 23 12.00000 24.0 -99.0 10.0 23 24 23.00000 21.0 43.0 54.0 23 25 11.00000 12.0 13.0 11.0 23 26 13.00000 54.0 65.0 76.0 23	1	2 85.000000	79.0	63.0	93.0	23
15 80.000000 64.0 98.0 100.0 23 16 66.000000 85.0 94.0 84.0 23 17 99.000000 80.0 75.0 93.0 23 18 85.000000 -99.0 81.0 99.0 23 19 76.000000 99.0 89.0 84.0 23 20 34.000000 23.0 45.0 21.0 23 21 43.000000 23.0 34.0 56.0 23 22 45.000000 65.0 67.0 43.0 23 23 12.000000 24.0 -99.0 10.0 23 24 23.000000 21.0 43.0 54.0 23 25 11.000000 12.0 13.0 11.0 23 26 13.000000 14.0 54.0 44.0 23 27 43.000000 54.0 65.0 76.0 23	1	3 80.000000	79.0	100.0	-99.0	23
16 66.000000 85.0 94.0 84.0 23 17 99.000000 80.0 75.0 93.0 23 18 85.000000 -99.0 81.0 99.0 23 19 76.000000 99.0 89.0 84.0 23 20 34.000000 23.0 45.0 21.0 23 21 43.000000 23.0 34.0 56.0 23 22 45.000000 65.0 67.0 43.0 23 23 12.000000 24.0 -99.0 10.0 23 24 23.000000 21.0 43.0 54.0 23 25 11.000000 12.0 13.0 11.0 23 26 13.000000 14.0 54.0 44.0 23 27 43.000000 54.0 65.0 76.0 23	1	4 81.000000	81.0	88.0	61.0	23
17 99.000000 80.0 75.0 93.0 23 18 85.000000 -99.0 81.0 99.0 23 19 76.000000 99.0 89.0 84.0 23 20 34.000000 23.0 45.0 21.0 23 21 43.000000 23.0 34.0 56.0 23 22 45.000000 65.0 67.0 43.0 23 23 12.000000 24.0 -99.0 10.0 23 24 23.000000 21.0 43.0 54.0 23 25 11.000000 12.0 13.0 11.0 23 26 13.000000 14.0 54.0 44.0 23 27 43.000000 54.0 65.0 76.0 23	1	5 80.000000	64.0	98.0	100.0	23
18 85.000000 -99.0 81.0 99.0 23 19 76.00000 99.0 89.0 84.0 23 20 34.00000 23.0 45.0 21.0 23 21 43.00000 23.0 34.0 56.0 23 22 45.00000 65.0 67.0 43.0 23 23 12.000000 24.0 -99.0 10.0 23 24 23.00000 21.0 43.0 54.0 23 25 11.00000 12.0 13.0 11.0 23 26 13.00000 14.0 54.0 44.0 23 27 43.00000 54.0 65.0 76.0 23	1	6 66.000000	85.0	94.0	84.0	23
19 76.000000 99.0 89.0 84.0 23 20 34.000000 23.0 45.0 21.0 23 21 43.000000 23.0 34.0 56.0 23 22 45.000000 65.0 67.0 43.0 23 23 12.000000 24.0 -99.0 10.0 23 24 23.000000 21.0 43.0 54.0 23 25 11.000000 12.0 13.0 11.0 23 26 13.000000 14.0 54.0 44.0 23 27 43.000000 54.0 65.0 76.0 23	1	7 99.000000	80.0	75.0	93.0	23
20 34.000000 23.0 45.0 21.0 23 21 43.000000 23.0 34.0 56.0 23 22 45.000000 65.0 67.0 43.0 23 23 12.000000 24.0 -99.0 10.0 23 24 23.000000 21.0 43.0 54.0 23 25 11.000000 12.0 13.0 11.0 23 26 13.000000 14.0 54.0 44.0 23 27 43.000000 54.0 65.0 76.0 23	1	8 85.000000	-99.0	81.0	99.0	23
21 43.000000 23.0 34.0 56.0 23 22 45.000000 65.0 67.0 43.0 23 23 12.000000 24.0 -99.0 10.0 23 24 23.000000 21.0 43.0 54.0 23 25 11.000000 12.0 13.0 11.0 23 26 13.000000 14.0 54.0 44.0 23 27 43.000000 54.0 65.0 76.0 23	1	9 76.000000	99.0	89.0	84.0	23
22 45.000000 65.0 67.0 43.0 23 23 12.000000 24.0 -99.0 10.0 23 24 23.000000 21.0 43.0 54.0 23 25 11.000000 12.0 13.0 11.0 23 26 13.000000 14.0 54.0 44.0 23 27 43.000000 54.0 65.0 76.0 23	2	0 34.000000	23.0	45.0	21.0	23
23 12.000000 24.0 -99.0 10.0 23 24 23.000000 21.0 43.0 54.0 23 25 11.000000 12.0 13.0 11.0 23 26 13.000000 14.0 54.0 44.0 23 27 43.000000 54.0 65.0 76.0 23	2	1 43.000000	23.0		56.0	23
24 23.000000 21.0 43.0 54.0 23 25 11.000000 12.0 13.0 11.0 23 26 13.000000 14.0 54.0 44.0 23 27 43.000000 54.0 65.0 76.0 23	2	2 45.000000	65.0	67.0	43.0	23
25 11.000000 12.0 13.0 11.0 23 26 13.000000 14.0 54.0 44.0 23 27 43.000000 54.0 65.0 76.0 23	2	3 12.000000	24.0	-99.0	10.0	23
26 13.000000 14.0 54.0 44.0 23 27 43.000000 54.0 65.0 76.0 23						
27 43.000000 54.0 65.0 76.0 23						
28 43.000000 44.0 54.0 65.0 23			54.0	65.0		
	2	8 43.000000	44.0	54.0	65.0	23

	Placement	Offer Count	gender
0	98.0	99	1
1	66.0	97	1
2	84.0	69	1
3	79.0	79	1
4	64.0	64	1
5	83.0	74	1

```
72.0
                          68
6
                                    1
         88.0
7
                          86
                                    1
         90.0
8
                                    1
                          91
9
         81.0
                          69
                                    0
         60.0
                                    0
10
                          67
11
          90.0
                          71
                                    0
12
          99.0
                          80
                                    0
13
          76.0
                          95
                                    0
         91.0
                                    0
14
                          84
15
          69.0
                          96
                                    0
         60.0
16
                          62
                                    0
          72.0
                                    0
17
                          76
18
          63.0
                          73
                                    0
19
          97.0
                          87
                                    0
20
          45.0
                          65
                                    1
21
          56.0
                          56
                                    1
22
          45.0
                          76
                                    1
         56.0
23
                          87
                                    1
24
         54.0
                          23
                                    1
25
         -99.0
                          16
                                    0
26
          77.0
                          65
                                    0
27
          43.0
                          43
                                    0
28
          11.0
                          12
                                    0
```

```
[35]: new_data = df.dropna(axis = 0, how ='any')
new_data
```

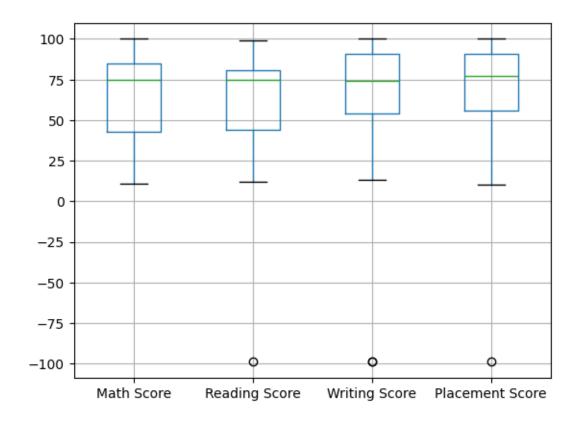
[35]:		Math Score	Reading Score	Writing Score	Placement Score	Club Join Year \	
	0	95.000000	81.0	93.0	85.0	23	
	1	83.000000	79.0	64.0	97.0	23	
	2	100.000000	96.0	70.0	86.0	23	
	3	88.000000	83.0	100.0	81.0	23	
	4	73.000000	72.0	96.0	62.0	23	
	5	63.000000	76.0	-99.0	100.0	23	
	6	72.000000	87.0	99.0	94.0	23	
	7	90.000000	75.0	91.0	66.0	23	
	8	97.000000	79.0	74.0	77.0	23	
	9	65.428571	60.0	77.0	70.0	23	
	10	77.000000	65.0	61.0	90.0	23	
	11	75.000000	94.0	88.0	91.0	23	
	12	85.000000	79.0	63.0	93.0	23	
	13	80.000000	79.0	100.0	-99.0	23	
	14	81.000000	81.0	88.0	61.0	23	
	15	80.000000	64.0	98.0	100.0	23	
	16	66.000000	85.0	94.0	84.0	23	
	17	99.000000	80.0	75.0	93.0	23	
	18	85.000000	-99.0	81.0	99.0	23	

```
76.000000
                         99.0
                                         89.0
                                                          84.0
                                                                             23
19
                         23.0
                                         45.0
                                                          21.0
                                                                             23
20
     34.000000
     43.000000
                         23.0
                                         34.0
                                                          56.0
                                                                             23
21
22
     45.000000
                         65.0
                                         67.0
                                                          43.0
                                                                             23
                         24.0
                                                          10.0
23
     12.000000
                                        -99.0
                                                                             23
                         21.0
                                                          54.0
24
     23.000000
                                         43.0
                                                                             23
25
     11.000000
                         12.0
                                         13.0
                                                          11.0
                                                                             23
26
     13.000000
                         14.0
                                         54.0
                                                          44.0
                                                                             23
                         54.0
                                         65.0
                                                          76.0
                                                                             23
27
     43.000000
28
     43.000000
                         44.0
                                         54.0
                                                          65.0
                                                                             23
```

		0.4.4	~ .	
•	Placement	Uffer	Count	gender
0	98.0		99	1
1	66.0		97	1
2	84.0		69	1
3	79.0		79	1
4	64.0		64	1
5	83.0		74	1
6	72.0		68	1
7	88.0		86	1
8	90.0		91	1
9	81.0		69	0
10	60.0		67	0
11	90.0		71	0
12	99.0		80	0
13	76.0		95	0
14	91.0		84	0
15	69.0		96	0
16	60.0		62	0
17	72.0		76	0
18	63.0		73	0
19	97.0		87	0
20	45.0		65	1
21	56.0		56	1
22	45.0		76	1
23	56.0		87	1
24	54.0		23	1
25	-99.0		16	0
26	77.0		65	0
27	43.0		43	0
28	11.0		12	0

```
[36]: col = ['Math Score', 'Reading Score', 'Writing Score', 'Placement Score']
df.boxplot(col)
```

[36]: <Axes: >



```
[37]: print(np.where(df['Math Score']>90))
      print(np.where(df['Reading Score']<25))</pre>
      print(np.where(df['Writing Score']<30))</pre>
     (array([ 0, 2, 8, 17], dtype=int64),)
      (array([18, 20, 21, 23, 24, 25, 26], dtype=int64),)
     (array([ 5, 23, 25], dtype=int64),)
[42]: df=pd.read_csv(r"E:\BE\6th sem\Data Science and Big Data analytics\Practical__
       ⇔Outputs\StudentsPerformance.csv")
      df
          Math Score Reading Score Writing Score Placement Score Club Join Year \
[42]:
                95.0
                                81.0
                                                93.0
                                                                  85.0
                                                                                     23
      0
                83.0
                                79.0
                                                64.0
                                                                  97.0
                                                                                     23
      1
      2
               100.0
                                96.0
                                                70.0
                                                                  86.0
                                                                                     23
      3
                88.0
                                83.0
                                               100.0
                                                                  81.0
                                                                                     23
      4
                73.0
                                72.0
                                                96.0
                                                                  62.0
                                                                                     23
      5
                63.0
                                76.0
                                                 {\tt NaN}
                                                                 100.0
                                                                                     23
      6
                72.0
                                87.0
                                                99.0
                                                                  94.0
                                                                                     23
      7
                                75.0
                                                91.0
                                                                  66.0
                90.0
                                                                                     23
                97.0
                                79.0
                                                74.0
                                                                  77.0
                                                                                     23
      8
```

9	NaN	60.0	77.0	70.0	23
10	77.0	65.0	61.0	90.0	23
11	75.0	94.0	88.0	91.0	23
12	85.0	79.0	63.0	93.0	23
13	80.0	79.0	100.0	NaN	23
14	81.0	81.0	88.0	61.0	23
15	80.0	64.0	98.0	100.0	23
16	66.0	85.0	94.0	84.0	23
17	99.0	80.0	75.0	93.0	23
18	85.0	NaN	81.0	99.0	23
19	76.0	99.0	89.0	84.0	23
20	34.0	23.0	45.0	21.0	23
21	43.0	23.0	34.0	56.0	23
22	45.0	65.0	67.0	43.0	23
23	12.0	24.0	NaN	10.0	23
24	23.0	21.0	43.0	54.0	23
25	11.0	12.0	13.0	11.0	23
26	13.0	14.0	54.0	44.0	23
27	43.0	54.0	65.0	76.0	23
28	43.0	44.0	54.0	65.0	23

	Placement	Offer	Count	gender
0	98.0		99	female
1	66.0		97	female
2	84.0		69	female
3	79.0		79	female
4	64.0		64	female
5	83.0		74	female
6	72.0		68	female
7	88.0		86	female
8	90.0		91	female
9	81.0		69	Male
10	60.0		67	Male
11	90.0		71	Male
12	99.0		80	Male
13	76.0		95	Male
14	91.0		84	Male
15	69.0		96	Male
16	60.0		62	Male
17	72.0		76	Male
18	63.0		73	Male
19	97.0		87	Male
20	45.0		65	female
21	56.0		56	female
22	45.0		76	female
23	56.0		87	female
24	54.0		23	female

```
25
                 NaN
                                 16
                                       Male
      26
                77.0
                                 65
                                       Male
      27
                43.0
                                 43
                                       Male
      28
                11.0
                                       Male
                                 12
[45]: import matplotlib.pyplot as plt
      import pandas as pd
      import numpy as num
      import sklearn as k
[46]: df=pd.read csv(r"E:\BE\6th sem\Data Science and Big Data analytics\Practical___

→Outputs\StudentsPerformance.csv")
[47]: df
[47]:
           Math Score
                        Reading Score
                                        Writing Score Placement Score Club Join Year
                 95.0
                                  81.0
                                                  93.0
                                                                     85.0
                                                                                         23
      0
      1
                 83.0
                                  79.0
                                                  64.0
                                                                     97.0
                                                                                         23
      2
                                  96.0
                                                  70.0
                                                                     86.0
                100.0
                                                                                         23
      3
                 88.0
                                  83.0
                                                 100.0
                                                                     81.0
                                                                                         23
      4
                 73.0
                                  72.0
                                                  96.0
                                                                     62.0
                                                                                         23
      5
                 63.0
                                  76.0
                                                   NaN
                                                                    100.0
                                                                                         23
      6
                 72.0
                                  87.0
                                                  99.0
                                                                     94.0
                                                                                         23
      7
                                  75.0
                 90.0
                                                  91.0
                                                                     66.0
                                                                                         23
      8
                 97.0
                                  79.0
                                                  74.0
                                                                     77.0
                                                                                         23
      9
                  {\tt NaN}
                                  60.0
                                                  77.0
                                                                     70.0
                                                                                         23
                 77.0
                                  65.0
      10
                                                  61.0
                                                                     90.0
                                                                                         23
      11
                 75.0
                                  94.0
                                                  88.0
                                                                     91.0
                                                                                         23
                                                  63.0
                                                                     93.0
      12
                 85.0
                                  79.0
                                                                                         23
      13
                 0.08
                                  79.0
                                                 100.0
                                                                      {\tt NaN}
                                                                                         23
      14
                 81.0
                                  81.0
                                                  88.0
                                                                     61.0
                                                                                         23
                                                                    100.0
      15
                 0.08
                                  64.0
                                                  98.0
                                                                                         23
      16
                 66.0
                                  85.0
                                                  94.0
                                                                     84.0
                                                                                         23
      17
                 99.0
                                  80.0
                                                  75.0
                                                                     93.0
                                                                                         23
      18
                 85.0
                                   NaN
                                                  81.0
                                                                     99.0
                                                                                         23
      19
                 76.0
                                  99.0
                                                  89.0
                                                                     84.0
                                                                                         23
                                  23.0
                                                                     21.0
      20
                 34.0
                                                  45.0
                                                                                         23
      21
                 43.0
                                  23.0
                                                  34.0
                                                                     56.0
                                                                                         23
      22
                 45.0
                                  65.0
                                                  67.0
                                                                     43.0
                                                                                         23
      23
                 12.0
                                  24.0
                                                   {\tt NaN}
                                                                     10.0
                                                                                         23
      24
                 23.0
                                  21.0
                                                  43.0
                                                                     54.0
                                                                                         23
      25
                 11.0
                                  12.0
                                                  13.0
                                                                     11.0
                                                                                         23
      26
                 13.0
                                  14.0
                                                  54.0
                                                                     44.0
                                                                                         23
```

Placement Offer Count gender

54.0

44.0

43.0

43.0

27

28

65.0

54.0

76.0

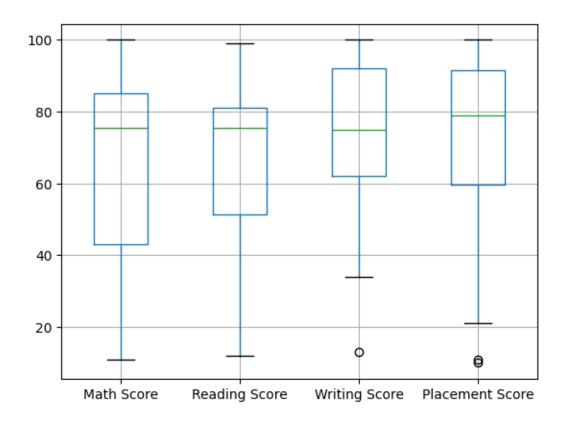
65.0

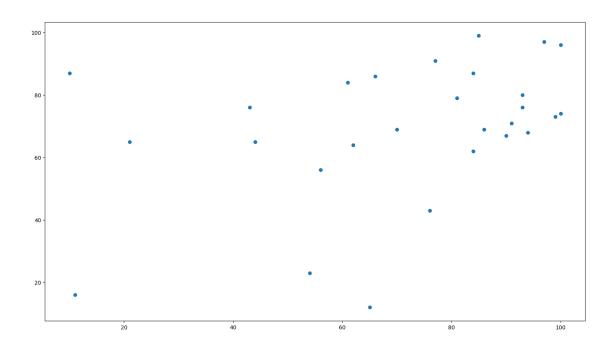
23

23

```
0
         98.0
                         99
                             female
1
         66.0
                         97
                             female
         84.0
2
                             female
                         69
3
         79.0
                             female
                         79
4
         64.0
                         64 female
5
         83.0
                         74 female
6
         72.0
                            female
                         68
7
         88.0
                         86
                             female
8
         90.0
                         91
                             female
9
         81.0
                         69
                               Male
10
         60.0
                         67
                               Male
         90.0
11
                         71
                               Male
12
         99.0
                               Male
                         80
13
         76.0
                         95
                               Male
14
         91.0
                         84
                               Male
15
         69.0
                         96
                               Male
16
         60.0
                         62
                               Male
17
         72.0
                         76
                               Male
         63.0
                               Male
18
                         73
19
         97.0
                         87
                               Male
20
         45.0
                         65
                            female
21
         56.0
                         56
                             female
22
         45.0
                         76
                            female
23
         56.0
                             female
                         87
24
         54.0
                             female
                         23
25
          NaN
                               Male
                         16
         77.0
26
                         65
                               Male
27
         43.0
                         43
                               Male
28
         11.0
                         12
                               Male
```

```
[48]: col = ['Math Score', 'Reading Score', 'Writing Score', 'Placement Score']
    df.boxplot(col)
    plt.show()
```





```
[53]: name = "Rohan Dhadke"
    roll = 13136

[55]: print(name)
    print(roll)

    Rohan Dhadke
    13136

[ ]:
```