**Experiment no. 11**

import pandas as pd

df=pd.read\_csv('data.csv')

print(df.to\_string) #entire

print(df.head(10))

print(df.tail(10))

print(df.info())

print(df.shape)

print(df.size)

res=df.columns

print(res)

print(df.index)

df\_new=df[df['Duration']<=30]

print(df\_new)

df\_new=df[df['Pulse']>100]

print(df\_new)

df\_new=df[df['Maxpulse']<200]

print(df\_new)

df\_new=df[df['Calories']>=50]

print(df\_new)

uv=df['Duration'].unique()

print(uv)

uv=df['Pulse'].unique()

print(uv)

uv=df['Maxpulse'].unique()

print(uv)

uv=df['Calories'].unique()

print(uv)

uv=len(df['Duration'].unique())

print(uv)

sorted\_df= df.sort\_values(by=['Duration'],ascending=True)

print(sorted\_df)

df2=df.rename(columns={df.columns[0]:'Year'})

print(df2)

df2=df.rename(columns={df.columns[1]:'Marks'})

print(df2)

avg=df['Duration'].mean()

print(avg)

mode=df['Duration'].mode()

print(mode)

std=df['Pulse'].std()

print(std)

var=df['Maxpulse'].var()

print(var)

min=df['Calories'].min()

print(min)

max=df['Calories'].max()

print(max)

**OUTPUT**

PS S:\python> & C:/Users/aarti/AppData/Local/Programs/Python/Python313/python.exe s:/python/18.py

<bound method DataFrame.to\_string of Duration Pulse Maxpulse Calories

0 60 110 130 409.1

1 60 117 145 479.0

2 60 103 135 340.0

3 45 109 175 282.4

4 45 117 148 406.0

.. ... ... ... ...

164 60 105 140 290.8

165 60 110 145 300.0

166 60 115 145 310.2

167 75 120 150 320.4

168 75 125 150 330.4

[169 rows x 4 columns]>

Duration Pulse Maxpulse Calories

0 60 110 130 409.1

1 60 117 145 479.0

2 60 103 135 340.0

3 45 109 175 282.4

4 45 117 148 406.0

5 60 102 127 300.0

6 60 110 136 374.0

7 45 104 134 253.3

8 30 109 133 195.1

9 60 98 124 269.0

Duration Pulse Maxpulse Calories

159 30 80 120 240.9

160 30 85 120 250.4

161 45 90 130 260.4

162 45 95 130 270.0

163 45 100 140 280.9

164 60 105 140 290.8

165 60 110 145 300.0

166 60 115 145 310.2

167 75 120 150 320.4

168 75 125 150 330.4

<class 'pandas.core.frame.DataFrame'>

RangeIndex: 169 entries, 0 to 168

Data columns (total 4 columns):

# Column Non-Null Count Dtype

--- ------ -------------- -----

0 Duration 169 non-null int64

1 Pulse 169 non-null int64

2 Maxpulse 169 non-null int64

3 Calories 164 non-null float64

dtypes: float64(1), int64(3)

memory usage: 5.4 KB

None

(169, 4)

676

Index(['Duration', 'Pulse', 'Maxpulse', 'Calories'], dtype='object')

RangeIndex(start=0, stop=169, step=1)

Duration Pulse Maxpulse Calories

8 30 109 133 195.1

54 30 136 175 238.0

58 20 153 172 226.4

64 20 110 130 131.4

68 20 106 136 110.4

80 30 159 182 319.2

82 30 103 139 151.1

85 30 151 170 300.0

89 20 83 107 50.3

92 30 90 107 105.3

93 15 80 100 50.5

94 20 150 171 127.4

95 20 151 168 229.4

96 30 95 128 128.2

97 25 152 168 244.2

98 30 109 131 188.2

100 20 95 112 77.7

104 30 92 108 92.7

105 30 93 128 124.0

107 30 90 120 86.2

112 15 124 139 124.2

120 30 112 137 193.9

135 20 136 156 189.0

139 20 141 162 222.4

148 30 103 127 185.0

153 30 150 167 275.8

159 30 80 120 240.9

160 30 85 120 250.4

Duration Pulse Maxpulse Calories

0 60 110 130 409.1

1 60 117 145 479.0

2 60 103 135 340.0

3 45 109 175 282.4

4 45 117 148 406.0

.. ... ... ... ...

164 60 105 140 290.8

165 60 110 145 300.0

166 60 115 145 310.2

167 75 120 150 320.4

168 75 125 150 330.4

[110 rows x 4 columns]

Duration Pulse Maxpulse Calories

0 60 110 130 409.1

1 60 117 145 479.0

2 60 103 135 340.0

3 45 109 175 282.4

4 45 117 148 406.0

.. ... ... ... ...

164 60 105 140 290.8

165 60 110 145 300.0

166 60 115 145 310.2

167 75 120 150 320.4

168 75 125 150 330.4

[169 rows x 4 columns]

Duration Pulse Maxpulse Calories

0 60 110 130 409.1

1 60 117 145 479.0

2 60 103 135 340.0

3 45 109 175 282.4

4 45 117 148 406.0

.. ... ... ... ...

164 60 105 140 290.8

165 60 110 145 300.0

166 60 115 145 310.2

167 75 120 150 320.4

168 75 125 150 330.4

[164 rows x 4 columns]

[ 60 45 30 80 20 210 160 180 150 300 90 120 270 15 25 75]

[110 117 103 109 102 104 98 100 106 90 97 108 130 105 92 101 93 107

114 111 99 123 118 136 121 115 153 159 149 151 129 83 80 150 95 152

137 124 116 112 119 113 141 122 85 120 125]

[130 145 135 175 148 127 136 134 133 124 147 120 128 132 123 112 125 131

119 101 126 118 129 115 113 140 122 138 153 139 146 151 121 144 172 152

160 137 141 143 182 169 170 157 103 107 100 171 168 110 108 184 156 162

149 150 167]

[ 409.1 479. 340. 282.4 406. 300. 374. 253.3 195.1 269.

329.3 250.7 345.3 379.3 275. 215.2 nan 323. 243. 364.2

282. 246. 334.5 250. 241. 280. 380.3 180.1 299. 223.

361. 415. 266. 286. 329.4 400. 397. 273. 387.6 298.

397.6 380.2 643.1 263. 486. 238. 450.7 413. 305. 226.4

321. 1376. 1034.4 853. 341. 131.4 800.4 873.4 816. 110.4

1500.2 1115. 700. 953.2 304. 563.2 251. 500.4 1729. 319.2

344. 151.1 500. 225.3 234. 1000.1 242. 50.3 600.1 105.3

50.5 127.4 229.4 128.2 244.2 188.2 604.1 77.7 92.7 124.

800.3 86.2 500.3 1860.4 325.2 124.2 367.6 351.7 443. 277.4

332.7 193.9 100.7 336.7 344.9 368.5 271. 275.3 382. 466.4

384. 342.5 357.5 335. 327.5 339. 189. 317.7 318. 308.

222.4 390. 250.4 335.4 470.2 270.8 361.9 185. 409.4 343.

353.2 275.8 328. 270.4 382.8 240.9 260.4 270. 280.9 290.8

310.2 320.4 330.4]

16

Duration Pulse Maxpulse Calories

112 15 124 139 124.2

93 15 80 100 50.5

58 20 153 172 226.4

100 20 95 112 77.7

64 20 110 130 131.4

.. ... ... ... ...

65 180 90 130 800.4

60 210 108 160 1376.0

109 210 137 184 1860.4

79 270 100 131 1729.0

69 300 108 143 1500.2

[169 rows x 4 columns]

Year Pulse Maxpulse Calories

0 60 110 130 409.1

1 60 117 145 479.0

2 60 103 135 340.0

3 45 109 175 282.4

4 45 117 148 406.0

.. ... ... ... ...

164 60 105 140 290.8

165 60 110 145 300.0

166 60 115 145 310.2

167 75 120 150 320.4

168 75 125 150 330.4

[169 rows x 4 columns]

Duration Marks Maxpulse Calories

0 60 110 130 409.1

1 60 117 145 479.0

2 60 103 135 340.0

3 45 109 175 282.4

4 45 117 148 406.0

.. ... ... ... ...

164 60 105 140 290.8

165 60 110 145 300.0

166 60 115 145 310.2

167 75 120 150 320.4

168 75 125 150 330.4

[169 rows x 4 columns]

63.84615384615385

0 60

Name: Duration, dtype: int64

14.510259096501999

270.61679346294727

50.3

1860.4

PS S:\python>