In [ ]:

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In [1]:
```
import pandas as pd
import numpy as np
```

In [4]:
```
df=pd.read_csv("CardioGoodFitness-1.csv")
```

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

Out[6]:

	Product	Age	Gender	Education	MaritalStatus	Usage	Fitness	Income	Miles
0	TM195	18	Male	14	Single	3	4	29562	112
1	TM195	19	Male	15	Single	2	3	31836	75
2	TM195	19	Female	14	Partnered	4	3	30699	66
3	TM195	19	Male	12	Single	3	3	32973	85
4	TM195	20	Male	13	Partnered	4	2	35247	47

In [7]:
```
df.tail()
```

Out[7]:

	Product	Age	Gender	Education	MaritalStatus	Usage	Fitness	Income	Miles
175	TM798	40	Male	21	Single	6	5	83416	200
176	TM798	42	Male	18	Single	5	4	89641	200
177	TM798	45	Male	16	Single	5	5	90886	160
178	TM798	47	Male	18	Partnered	4	5	104581	120
179	TM798	48	Male	18	Partnered	4	5	95508	180

In [9]:
```
df.sample()#random one sample
```

Out[9]:

	Product	Age	Gender	Education	MaritalStatus	Usage	Fitness	Income	Miles
70	TM195	38	Male	14	Single	2	3	52302	56

In [10]:
```
df.sample(5)#random 5 sample
```

Out[10]:

	Product	Age	Gender	Education	MaritalStatus	Usage	Fitness	Income	Miles
26	TM195	24	Female	16	Single	4	3	46617	75
105	TM498	25	Male	16	Partnered	2	3	50028	53
56	TM195	31	Female	14	Single	2	2	45480	47
100	TM498	25	Female	14	Partnered	5	3	47754	106
33	TM195	25	Male	16	Single	3	3	43206	85

In [11]:
```
df.dtypes
```

Out[11]:
```
Product          object
Age               int64
Gender           object
Education         int64
MaritalStatus    object
Usage             int64
Fitness           int64
Income            int64
Miles             int64
dtype: object
```

In [14]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 180 entries, 0 to 179
Data columns (total 9 columns):
 #   Column         Non-Null Count  Dtype 
---  ------         --------------  ----- 
 0   Product        180 non-null    object
 1   Age            180 non-null    int64 
 2   Gender         180 non-null    object
 3   Education      180 non-null    int64 
 4   MaritalStatus  180 non-null    object
 5   Usage          180 non-null    int64 
 6   Fitness        180 non-null    int64 
 7   Income         180 non-null    int64 
 8   Miles          180 non-null    int64 
dtypes: int64(6), object(3)
memory usage: 12.8+ KB
```

In [15]:
```
df.describe()#entire statistics
```

Out[15]:

	Age	Education	Usage	Fitness	Income	Miles
count	180.000000	180.000000	180.000000	180.000000	180.000000	180.000000
mean	28.788889	15.572222	3.455556	3.311111	53719.577778	103.194444
std	6.943498	1.617055	1.084797	0.958869	16506.684226	51.863605
min	18.000000	12.000000	2.000000	1.000000	29562.000000	21.000000
25%	24.000000	14.000000	3.000000	3.000000	44058.750000	66.000000
50%	26.000000	16.000000	3.000000	3.000000	50596.500000	94.000000
75%	33.000000	16.000000	4.000000	4.000000	58668.000000	114.750000
max	50.000000	21.000000	7.000000	5.000000	104581.000000	360.000000

In [16]:
```
df.describe(include="all")
```

Out[16]:

	Product	Age	Gender	Education	MaritalStatus	Usage	Fitness	Incom
count	180	180.000000	180	180.000000	180	180.000000	180.000000	180.00000
unique	3	NaN	2	NaN	2	NaN	NaN	Na
top	TM195	NaN	Male	NaN	Partnered	NaN	NaN	Na
freq	80	NaN	104	NaN	107	NaN	NaN	Na
mean	NaN	28.788889	NaN	15.572222	NaN	3.455556	3.311111	53719.57777
std	NaN	6.943498	NaN	1.617055	NaN	1.084797	0.958869	16506.68422
min	NaN	18.000000	NaN	12.000000	NaN	2.000000	1.000000	29562.00000
25%	NaN	24.000000	NaN	14.000000	NaN	3.000000	3.000000	44058.75000
50%	NaN	26.000000	NaN	16.000000	NaN	3.000000	3.000000	50596.50000
75%	NaN	33.000000	NaN	16.000000	NaN	4.000000	4.000000	58668.00000
max	NaN	50.000000	NaN	21.000000	NaN	7.000000	5.000000	104581.00000

In [17]:
```
df.isnull().sum()
```

Out[17]:
```
Product          0
Age              0
Gender           0
Education        0
MaritalStatus    0
Usage            0
Fitness          0
Income           0
Miles            0
dtype: int64
```

In [ ]: