In [1]:
```
import pandas as pd
import numpy as np
df = pd.read_csv('Iris.csv', header=None)
df.columns=['A', 'B', 'C', 'D', 'E']
print(df.head())
```

```
   A  B  C  D  E
0  2 14 33 50  0
1 24 56 31 67  1
2 23 51 31 69  1
3  2 10 36 46  0
4 20 52 30 65  1
```

In [2]:
```
df.shape
```

Out[2]: (150, 5)

In [3]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149
Data columns (total 5 columns):
 #   Column  Non-Null Count  Dtype
---  ------  --------------  -----
 0   A       150 non-null    int64
 1   B       150 non-null    int64
 2   C       150 non-null    int64
 3   D       150 non-null    int64
 4   E       150 non-null    int64
dtypes: int64(5)
memory usage: 6.0 KB
```

In [4]:
```
len(df)
```

Out[4]: 150

In [5]:
```
len(df.columns)
```

Out[5]: 5

In [6]:
```
print(df)
```

```
       A  B  C  D  E
0      2 14 33 50  0
1     24 56 31 67  1
2     23 51 31 69  1
3      2 10 36 46  0
4     20 52 30 65  1
..    .. .. .. .. ..
145   20 50 25 57  1
146   13 40 23 55  2
147    2 17 34 54  0
148   24 51 28 58  1
149    2 15 37 53  0

[150 rows x 5 columns]
```

In [7]:
```
df['E']
```

Out[7]:
```
0      0
1      1
2      1
3      0
4      1
      ..
145    1
146    2
147    0
148    1
149    0
Name: E, Length: 150, dtype: int64
```

In [8]:
```
df.iloc[:,4:]
```

Out[8]:

	E
0	0
1	1
2	1
3	0
4	1
...	...
145	1
146	2
147	0
148	1
149	0

150 rows × 1 columns

In [9]:
```
print(df.loc[df['E'] < 0, ['E']])
```

```
       E
10   -10
23   -12
58   -10
89   -12
108  -11
136  -11
```

In [10]:
```
df.drop(df[df['E'] < 0].index, inplace = True)
```

In [11]:
```
print(df.shape)
```

```
(144, 5)
```

In [12]:
```
print(df)
```

```
       A  B  C  D  E
0      2 14 33 50  0
1     24 56 31 67  1
2     23 51 31 69  1
3      2 10 36 46  0
4     20 52 30 65  1
..    .. .. .. .. ..
145   20 50 25 57  1
146   13 40 23 55  2
147    2 17 34 54  0
148   24 51 28 58  1
149    2 15 37 53  0

[144 rows x 5 columns]
```

In [13]:
```
print(df.E)
```

```
0      0
1      1
2      1
3      0
4      1
      ..
145    1
146    2
147    0
148    1
149    0
Name: E, Length: 144, dtype: int64
```

In [14]:
```
df['F'] = df['D']
```

In [15]:
```
print(df)
```

```
       A  B  C  D  E  F
0      2 14 33 50  0 50
1     24 56 31 67  1 67
2     23 51 31 69  1 69
3      2 10 36 46  0 46
4     20 52 30 65  1 65
..    .. .. .. .. .. ..
145   20 50 25 57  1 57
146   13 40 23 55  2 55
147    2 17 34 54  0 54
148   24 51 28 58  1 58
149    2 15 37 53  0 53

[144 rows x 6 columns]
```

In [16]:
```
df['G'] = df['E']
```

In [17]:
```
print(df)
```

```
       A  B  C  D  E  F  G
0      2 14 33 50  0 50  0
1     24 56 31 67  1 67  1
2     23 51 31 69  1 69  1
3      2 10 36 46  0 46  0
4     20 52 30 65  1 65  1
..    .. .. .. .. .. .. ..
145   20 50 25 57  1 57  1
146   13 40 23 55  2 55  2
147    2 17 34 54  0 54  0
148   24 51 28 58  1 58  1
149    2 15 37 53  0 53  0

[144 rows x 7 columns]
```

In [18]:
```
df.apply(lambda s: pd.Series([s.min(), s.max()],
                             index=['min', 'max']))
)
```

Out[18]:

	A	B	C	D	E	F	G
min	1	10	20	43	0	43	0
max	25	69	44	79	2	79	2

In [19]:
```
print((df[df.C > 36]) )
```

```
     A  B  C  D  E  F  G
17   2 16 38 51  0 51  0
20   4 19 38 51  0 51  0
29   2 14 42 55  0 55  0
46   3 17 38 57  0 57  0
48   4 15 37 51  0 51  0
76   1 15 41 52  0 52  0
80   4 17 39 54  0 54  0
88   2 15 37 54  0 54  0
91   4 13 39 54  0 54  0
96   3 15 38 51  0 51  0
106 22 67 38 77  1 77  1
112 20 64 38 79  1 79  1
119  2 12 40 58  0 58  0
123  4 15 44 57  0 57  0
149  2 15 37 53  0 53  0
```

In [20]:
```
df.loc[df['C']>36]
```

Out[20]:

	A	B	C	D	E	F	G
17	2	16	38	51	0	51	0
20	4	19	38	51	0	51	0
29	2	14	42	55	0	55	0
46	3	17	38	57	0	57	0
48	4	15	37	51	0	51	0
76	1	15	41	52	0	52	0
80	4	17	39	54	0	54	0
88	2	15	37	54	0	54	0
91	4	13	39	54	0	54	0
96	3	15	38	51	0	51	0
106	22	67	38	77	1	77	1
112	20	64	38	79	1	79	1
119	2	12	40	58	0	58	0
123	4	15	44	57	0	57	0
149	2	15	37	53	0	53	0

In [21]:
```
np.sum(df['C'] >36)
```

Out[21]: 15

In [22]:
```
N = 4
```

In [23]:
```
first_n_columns  = df.iloc[: , :N]
```

In [24]:
```
print("First 4 Columns Of Dataframe : ")
print(first_n_columns)
print("Type:")
print(type(first_n_columns))
```

```
First 4 Columns Of Dataframe :
       A  B  C  D
0      2 14 33 50
1     24 56 31 67
2     23 51 31 69
3      2 10 36 46
4     20 52 30 65
..    .. .. .. ..
145   20 50 25 57
146   13 40 23 55
147    2 17 34 54
148   24 51 28 58
149    2 15 37 53

[144 rows x 4 columns]
Type:
<class 'pandas.core.frame.DataFrame'>
```

In [26]:
```
df['E']
```

Out[26]:
```
0      0
1      1
2      1
3      0
4      1
      ..
145    1
146    2
147    0
148    1
149    0
Name: E, Length: 144, dtype: int64
```

In [ ]: