In [22]:
```
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd
import random as rd
from sklearn import datasets
from sklearn.cluster import KMeans
import matplotlib.pyplot as plt
import seaborn as sns
import warnings
warnings.filterwarnings('ignore')
```

In [23]:
```
df= pd.read_csv(r'C:\Users\M_Ampah\Downloads\covid_data.csv')
```

In [24]:
```
df.head()
```

Out[24]:

	Sample	Age	Sex	Severity	A1BG	A1CF	A2M	A2ML1	A3GALT2	A4GALT	...	ZWILCH
0	C1	39	male	NonICU	0.49	0.00	0.21	0.04	0.07	0.0	...	2.84
1	C2	63	male	NonICU	0.29	0.00	0.14	0.00	0.00	0.0	...	3.55
2	C3	33	male	NonICU	0.26	0.00	0.03	0.02	0.00	0.0	...	1.34
3	C4	49	male	NonICU	0.45	0.01	0.09	0.07	0.00	0.0	...	3.71
4	C5	49	male	NonICU	0.17	0.00	0.00	0.05	0.07	0.0	...	1.44

5 rows × 19476 columns

In [25]:
```
df.tail()
```

Out[25]:

	Sample	Age	Sex	Severity	A1BG	A1CF	A2M	A2ML1	A3GALT2	A4GALT	...	ZWI
121	NC22	63	male	NonICU	0.30	0.0	0.02	0.02	0.00	0.0	...	
122	NC23	42	female	NonICU	0.70	0.0	0.02	0.01	0.00	0.0	...	
123	NC24	32	female	NonICU	0.75	0.0	0.27	0.00	0.06	0.0	...	
124	NC25	62	male	NonICU	2.80	0.0	0.04	0.00	0.00	0.0	...	
125	NC26	36	male	ICU	0.22	0.0	0.28	0.00	0.00	0.0	...	

5 rows × 19476 columns

In [26]:
```
df.shape
```

Out[26]: (126, 19476)

In [27]:
```
df.describe(include = 'object')
```

Out[27]:

	Sample	Sex	Severity
count	126	126	126
unique	126	3	2
top	C74	male	ICU
freq	1	74	66

In [28]:
```
Severity_map = {'NonICU': 0, 'ICU': 1}
Sex_map = {"male": 0, "female": 1, "unknown": 2}


# Replace column values using map method instead of multiple replace()
df['Severity'] = df['Severity'].map(Severity_map)
df['Sex'] = df['Sex'].map(Sex_map)
```

In [29]:
```
df.head()
```

Out[29]:

	Sample	Age	Sex	Severity	A1BG	A1CF	A2M	A2ML1	A3GALT2	A4GALT	...	ZWILCH
0	C1	39	0	0	0.49	0.00	0.21	0.04	0.07	0.0	...	2.84
1	C2	63	0	0	0.29	0.00	0.14	0.00	0.00	0.0	...	3.55
2	C3	33	0	0	0.26	0.00	0.03	0.02	0.00	0.0	...	1.34
3	C4	49	0	0	0.45	0.01	0.09	0.07	0.00	0.0	...	3.71
4	C5	49	0	0	0.17	0.00	0.00	0.05	0.07	0.0	...	1.44

5 rows × 19476 columns

In [ ]:
```

```