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Module 5: K-means Clustering

Output with points1.txt:

```
Initial COVID-19 Patients: [[30, 45], [55, 82], [1, 61], [96, 14]]

Iterations to achieve stability: 7

Final Centroids:
[28.423076923076923, 20.076923076923077]
[62.458333333333336, 84.45833333333333]
[23.192307692307693, 68.38461538461539]
[85.4, 27.75]

Number of patients in Cluster 0: 26
[[0, 27], [33, 30], [34, 7], [21, 23], [40, 41], [46, 46], [34, 38], [56, 17], [38, 45],
 [36, 9], [52, 12], [19, 12], [39, 2], [16, 33], [12, 5], [15, 10], [6, 18], [18, 2], [31,
  8], [48, 24], [20, 10], [56, 15], [2, 34], [1, 27], [42, 27], [24, 0]]

Number of patients in Cluster 1: 24
[[37, 95], [40, 96], [93, 73], [64, 91], [97, 99], [51, 80], [42, 86], [53, 82], [41, 95],
  [47, 97], [65, 85], [78, 81], [54, 78], [58, 83], [81, 83], [79, 76], [78, 67], [44,
 92], [52, 100], [64, 99], [88, 71], [70, 75], [52, 67], [71, 76]]

Number of patients in Cluster 2: 26
[[5, 58], [40, 64], [37, 61], [22, 58], [2, 56], [5, 53], [40, 74], [11, 95], [22, 81],
  [44, 62], [10, 87], [37, 57], [7, 44], [16, 47], [13, 85], [43, 67], [26, 97], [17, 71],
  [18, 75], [19, 61], [30, 97], [41, 49], [23, 71], [31, 67], [1, 91], [43, 50]]

Number of patients in Cluster 3: 20
[[83, 13], [80, 18], [77, 16], [81, 40], [78, 16], [89, 26], [91, 45], [88, 32], [92, 34],
   [99, 15], [86, 57], [86, 36], [58, 32], [71, 21], [89, 16], [97, 35], [91, 7], [98, 24],
   [93, 40], [81, 32]]
```

Output with points2.txt:

```
"C:\Users\natis\Documents\Education\John Hopkins\EN.605.206.81 Python\venv\Scripts\python
 .exe" "C:/Users/natis/Documents/Education/John Hopkins/EN.605.206.81 Python/Module
 5/kmeans.py"
Initial COVID-19 Patients: [[42, 32], [10, 9], [10, 60]]

Iterations to achieve stability: 3

Final Centroids:
[71.5, 46.22727272727273]
[13.2, 18.0]
[31.35, 74.55]

Number of patients in Cluster 0: 22
[[71, 84], [72, 48], [75, 36], [52, 28], [76, 44], [56, 35], [88, 32], [61, 34], [94, 12],
 [71, 59], [76, 75], [62, 1], [71, 4], [78, 91], [100, 98], [49, 34], [49, 40], [57, 48],
 [66, 67], [97, 3], [66, 76], [86, 68]]

Number of patients in Cluster 1: 5
[[7, 16], [15, 21], [25, 16], [16, 32], [3, 5]]

Number of patients in Cluster 2: 20
[[36, 52], [11, 69], [32, 74], [10, 74], [51, 85], [10, 75], [55, 96], [34, 64], [54, 100],
 [60, 85], [14, 77], [40, 78], [2, 60], [37, 49], [42, 77], [39, 60], [38, 77], [40, 53],
 [14, 99], [8, 87]]


Process finished with exit code 0
```