**REPORT**

We ran the K-means algorithm on the given datasets by considering different K-values as shown below:

* K- value = 3:

cluster = 0 -> Points = 3 , 4 , 11 , 14 , 16 , 18 , 21 , 22 , 25 , 26 , 28 , 32 , 33 , 36 , 37 , 40 , 42 , 48 , 50 , 52 , 56 , 59 , 60 , 64 , 68 , 69 , 70 , 71 , 72 , 74 , 80 , 82 , 83 , 84 , 91 , 92 , 95 , 96 , 100 ,

cluster = 1 -> Points = 5 , 7 , 9 , 15 , 23 , 30 , 31 , 35 , 43 , 44 , 45 , 46 , 47 , 49 , 62 , 66 , 67 , 76 , 79 , 81 , 86 , 87 , 90 ,

cluster = 2 -> Points = 1 , 2 , 6 , 8 , 10 , 12 , 13 , 17 , 19 , 20 , 24 , 27 , 29 , 34 , 38 , 39 , 41 , 51 , 53 , 54 , 55 , 57 , 58 , 61 , 63 , 65 , 73 , 75 , 77 , 78 , 85 , 88 , 89 , 93 , 94 , 97 , 98 , 99 ,

**The SSE is = 1.91069170607**

* K-value = 5:

cluster = 0 -> Points = 14 , 18 , 21 , 22 , 28 , 33 , 36 , 37 , 40 , 48 , 50 , 68 , 69 , 71 , 72 , 74 , 82 , 83 , 84 , 91 , 92 , 95 , 96 ,

cluster = 1 -> Points = 1 , 2 , 8 , 10 , 17 , 19 , 24 , 27 , 29 , 34 , 39 , 51 , 53 , 57 , 58 , 61 , 63 , 65 , 73 , 78 , 85 , 88 , 89 , 94 , 98 , 99 ,

cluster = 2 -> Points = 6 , 12 , 13 , 20 , 38 , 41 , 54 , 55 , 75 , 77 , 93 , 97 ,

cluster = 3 -> Points = 5 , 7 , 9 , 15 , 23 , 30 , 31 , 35 , 43 , 44 , 45 , 46 , 47 , 49 , 62 , 66 , 67 , 76 , 79 , 81 , 86 , 87 , 90 ,

cluster = 4 -> Points = 3 , 4 , 11 , 16 , 25 , 26 , 32 , 42 , 52 , 56 , 59 , 60 , 64 , 70 , 80 , 100 ,

**The SSE is = 1.37875258577**

* K-value = 7:

cluster = 0 -> Points = 6 , 12 , 13 , 19 , 20 , 24 , 27 , 29 , 34 , 39 , 41 , 51 , 53 , 54 , 55 , 57 , 58 , 63 , 65 , 73 , 75 , 77 , 78 , 85 , 88 , 89 , 93 , 97 ,

cluster = 1 -> Points = 14 , 18 , 21 , 25 , 26 , 33 , 40 , 42 , 50 , 69 , 74 , 80 , 84 , 91 , 100 ,

cluster = 2 -> Points = 11 , 22 , 28 , 36 , 37 , 48 , 68 , 70 , 71 , 72 , 82 , 83 , 92 , 95 , 96 ,

cluster = 3 -> Points = 7 , 9 , 15 , 23 , 30 , 35 , 43 , 44 , 45 , 46 , 47 , 49 , 62 , 66 , 67 , 76 , 81 , 86 , 87 , 90 ,

cluster = 4 -> Points = 1 , 2 , 8 , 10 , 17 , 61 , 94 , 98 , 99 ,

cluster = 5 -> Points = 5 , 31 , 79 ,

cluster = 6 -> Points = 3 , 4 , 16 , 32 , 38 , 52 , 56 , 59 , 60 , 64 ,

**The SSE is = 1.03081818413**

* K-value = 10:

cluster = 0 -> Points = 6 , 13 , 38 , 56 , 97 ,

cluster = 1 -> Points = 1 , 31 , 79 , 99 ,

cluster = 2 -> Points = 3 , 14 , 16 , 18 , 21 , 25 , 26 , 33 , 40 , 42 , 50 , 69 , 74 , 80 , 84 , 91 , 100 ,

cluster = 3 -> Points = 9 , 23 , 30 , 35 , 44 , 45 , 46 , 47 , 49 , 66 , 76 , 81 , 86 , 90 ,

cluster = 4 -> Points =

cluster = 5 -> Points = 5 , 7 , 15 , 43 , 62 , 67 , 87 ,

cluster = 6 -> Points = 12 , 19 , 20 , 27 , 41 , 54 , 55 , 75 , 77 , 78 , 88 , 93 ,

cluster = 7 -> Points = 4 , 32 , 52 , 59 , 60 , 64 ,

cluster = 8 -> Points = 2 , 8 , 10 , 17 , 24 , 29 , 34 , 39 , 51 , 53 , 57 , 58 , 61 , 63 , 65 , 73 , 85 , 89 , 94 , 98 ,

cluster = 9 -> Points = 11 , 22 , 28 , 36 , 37 , 48 , 68 , 70 , 71 , 72 , 82 , 83 , 92 , 95 , 96 ,

**The SSE is = 0.846668882913**

* K-value = 15:

cluster = 0 -> Points = 33 , 36 , 37 , 48 , 82 , 83 , 91 , 95 , 96 ,

cluster = 1 -> Points =

cluster = 2 -> Points = 6 , 12 , 13 , 38 , 65 , 75 , 93 , 97 ,

cluster = 3 -> Points = 1 , 2 , 8 , 17 , 53 , 57 , 61 , 94 , 98 , 99 ,

cluster = 4 -> Points = 3 , 4 , 14 , 16 , 25 , 26 , 40 , 42 , 50 , 56 , 60 , 64 , 80 , 84 , 100 ,

cluster = 5 -> Points =

cluster = 6 -> Points = 5 , 7 , 15 , 43 , 62 , 67 , 87 ,

cluster = 7 -> Points = 31 , 79 ,

cluster = 8 -> Points = 18 , 21 , 69 , 74 ,

cluster = 9 -> Points =

cluster = 10 -> Points = 9 , 23 , 30 , 35 , 44 , 45 , 46 , 47 , 49 , 66 , 76 , 81 , 86 , 90 ,

cluster = 11 -> Points = 11 , 22 , 28 , 68 , 70 , 71 , 72 , 92 ,

cluster = 12 -> Points = 32 , 52 , 59 ,

cluster = 13 -> Points =

cluster = 14 -> Points = 10 , 19 , 20 , 24 , 27 , 29 , 34 , 39 , 41 , 51 , 54 , 55 , 58 , 63 , 73 , 77 , 78 , 85 , 88 , 89 ,

**The SSE is = 0.649585925397**