

CSPB 4622 - Truong - Machine Learning

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Started on Saturday, 12 October 2024, 3:14 PM

State Finished

Completed on Saturday, 12 October 2024, 3:30 PM

Time taken 15 mins 35 secs

Marks 5.00/6.00

Grade 8.33 out of 10.00 (83%)

Question 1

Correct

Mark 1.00 out of 1.00

True or False A dendrogram using single linkage is always shorter than a dendrogram using other types of linkage

- ☒ a. True
- ☐ b. False



Question 2

Correct

Mark 1.00 out of 1.00

True or False k-means clustering leads to a unique solution.

- ☐ a. True
- ☒ b. False



Question **3**

Correct

Mark 1.00 out of 1.00

True or False Hierarchical clustering does not require any (hyper)parameters when finding the number of clusters.

- ☐ a. True
- ☒ b. False

Question **4**

Correct

Mark 1.00 out of 1.00

True or False K-means clustering may also be used with cosine similarity metric.

- ☒ a. True
- ☐ b. False



Question 5

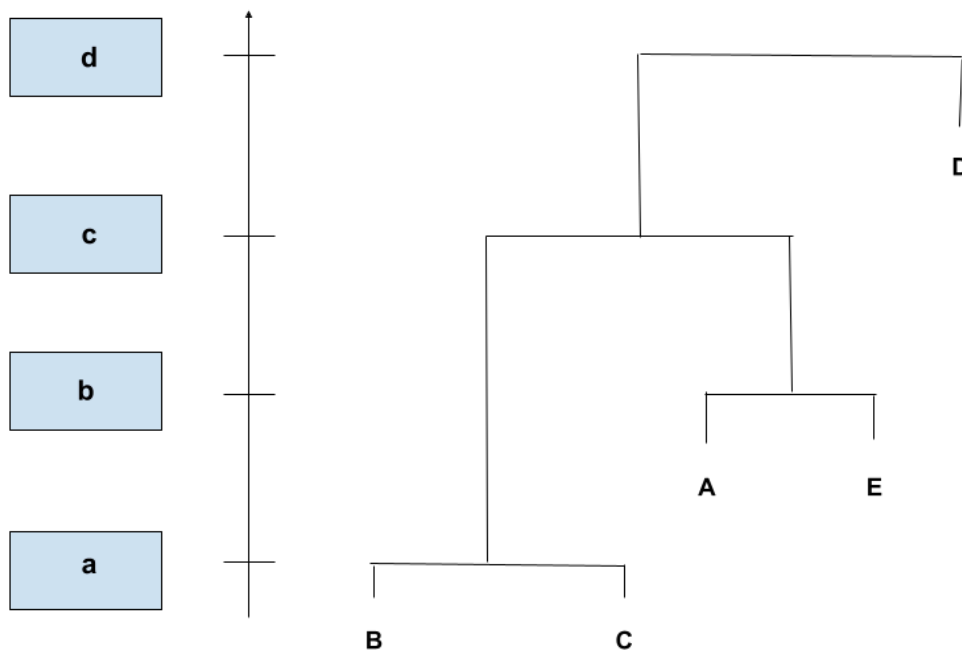
Correct

Mark 1.00 out of 1.00

In this question, we will examine how different linkage choices lead to hierarchical clustering dendrogram results. Consider a dissimilarity matrix as shown below.

	A	B	C	D	E
A	0.	0.74415444	0.43394511	0.88827404	0.5072831
B	0.74415444	0.	0.33333333	0.60570207	0.75
C	0.43394511	0.33333333	0.	0.906949	0.72918682
D	0.88827404	0.60570207	0.906949	0.	0.89784658
E	0.5072831	0.75	0.72918682	0.89784658	0.

Look at the dendrogram for complete linkage and fill out height values at fusion.



What is the height value at the first linkage, represented by **a** above? Please answer to two decimal places.

Answer:

0.33



Question 6

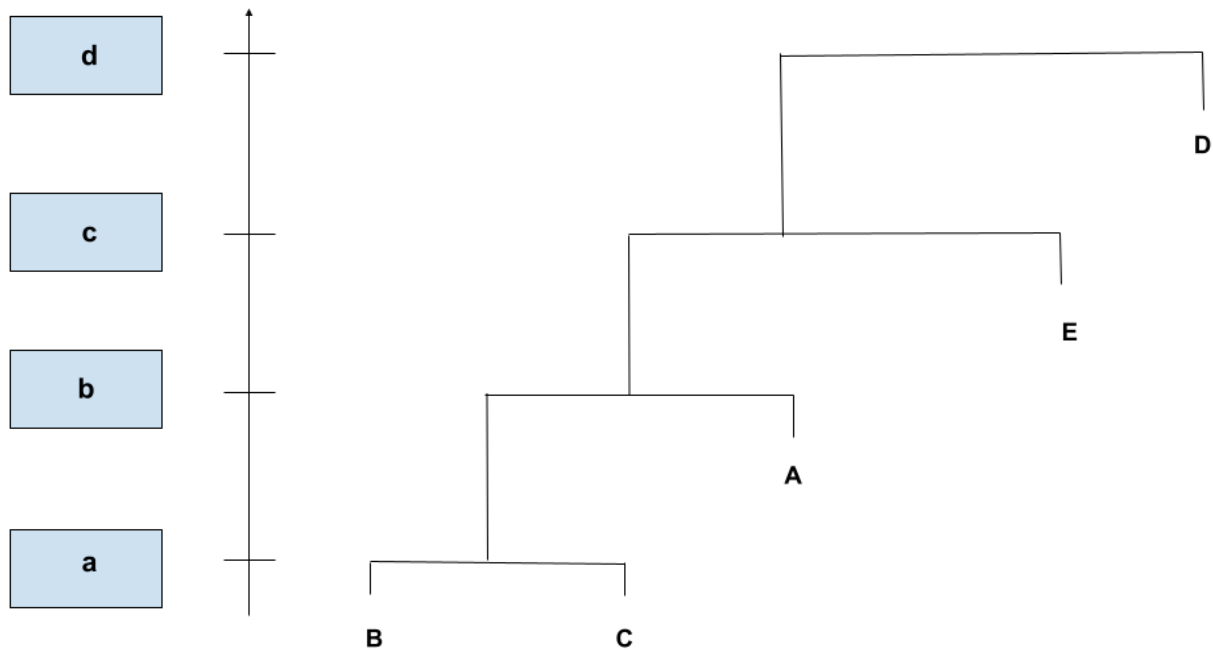
Incorrect

Mark 0.00 out of 1.00

In this question, we will examine how different linkage choices lead to hierarchical clustering dendrogram results. Consider a dissimilarity matrix as shown below.

	A	B	C	D	E
A	0.	0.74415444	0.43394511	0.88827404	0.5072831
B	0.74415444	0.	0.33333333	0.60570207	0.75
C	0.43394511	0.33333333	0.	0.906949	0.72918682
D	0.88827404	0.60570207	0.906949	0.	0.89784658
E	0.5072831	0.75	0.72918682	0.89784658	0.

Look at the dendrogram for single linkage and fill out height values at fusion.



What is the height value at the first linkage, represented by c above? Please answer to three decimal places.

Answer:

0.90

