

Answer D.7:

[ From the figure generated above, the regions are barely separable in the projected 2D space.

Since all the regions are mixed together, which shows no further information, the 2D visualization does not answer ther question.

For 2D space, the conclusions drawn from L2 and KL are little difference. In KL figure, it shows that whiskies from island are closed to those from speyside, which we cannot find any similar clue in L2 distance.

For 12D space, the conclusions are mostly consistent. The differences are the distance from island to speyside and island to lowland. From L2 distance, we know that the distance from island to speyside is closer to that to lowland. However, the conclusion is contrary to it in KL distance.

For L2 distance, there is no significant difference between 2D and 12D space. Both of these two dimensions show that whisky from island is far away from those in specyside, lowland and highland.

However for KL distance, the 2D figure shows that whiskies from island are closed to those from speyside. While in 12D figure, the conclusion is contrary to it, it's far away from speyside.

I think KL in 2D suggests the best separtion, since the differences in the distances are quite significant.

The projection to 2D space seems to shows no help to seperate those features in different regions.

The Whiskies from lowland are stable in their features, which we can tell from the 2D scatter figure, and the distance to other regions.

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