
Declaration of Originality

I confirm that this assignment is my own work and I have

- Read and understood the guidance on plagiarism in the Course Handbook, including the University of Glasgow Statement on Plagiarism.
- Clearly referenced, in both the text and the bibliography or references, all sources used in the work.
- Fully referenced (including page numbers) and used inverted commas for all text quoted from books, journals, web etc. (Please check with the Subject which referencing style is to be used).
- Provided the sources for all tables, figures, data etc. that are not my own work.
- Not made use of the work of any other student(s) past or present without acknowledgement. This included any of my own work, that has previously, or concurrently, submitted for assessment, either at this or any other institution, including school.
- Not sought or used the services of any professional agencies to produce this work.
- In addition, I understand that any false claim in respect of this work will result in disciplinary action in accordance with University regulations.

DECLARATION

I am aware of and understand the University's policy on plagiarism and I certify that this assignment is my own work, except where indicated by referencing, and that I have followed the good academic practices noted above.

Extract from the University of Glasgow Plagiarism Statement

- 31.1 The University's degrees and other academic awards are given in recognition of a student's personal achievement. All work submitted by students for assessment is accepted on the understanding that it is the student's own effort.
- 31.2 Plagiarism is defined as the submission or presentation of work, in any form, which is not one's own, without acknowledgement of the sources. Plagiarism includes inappropriate collaboration with others. Special cases of plagiarism can arise from a student using his or her own previous work (termed auto-plagiarism or self-plagiarism). Auto-plagiarism includes using work that has already been submitted for assessment at this University or for any other academic award.
- 31.3 The incorporation of material without formal and proper acknowledgement (even with no deliberate intent to cheat) can constitute plagiarism.
Work may be considered to be plagiarised if it consists of:
 - a direct quotation;
 - a close paraphrase;
 - an unacknowledged summary of a source;
 - direct copying or transcription.

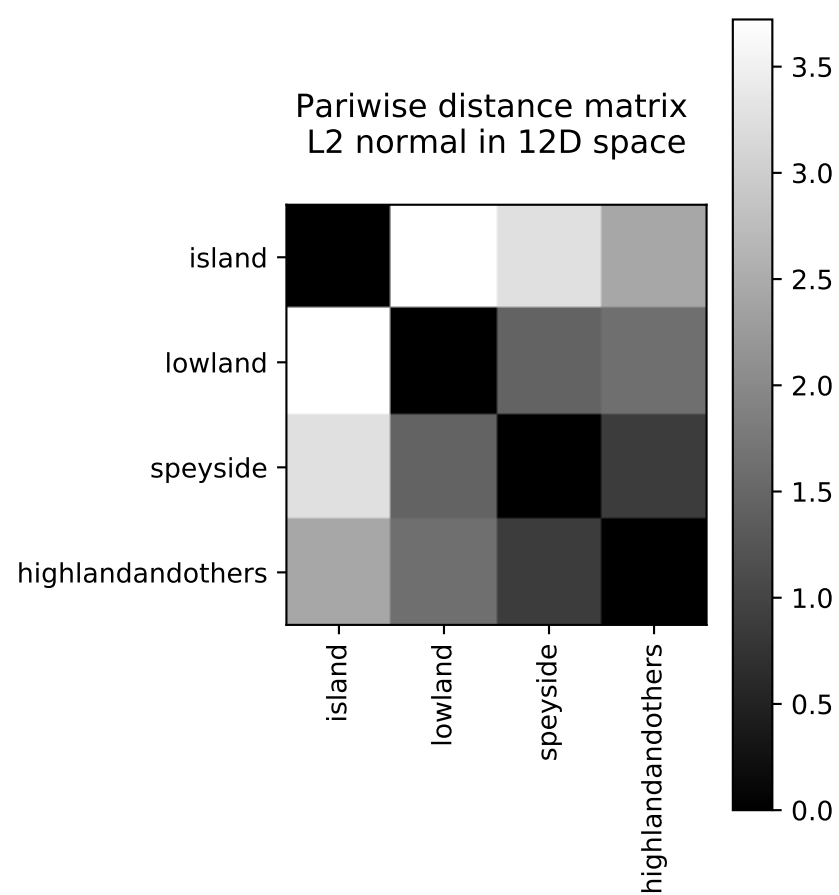
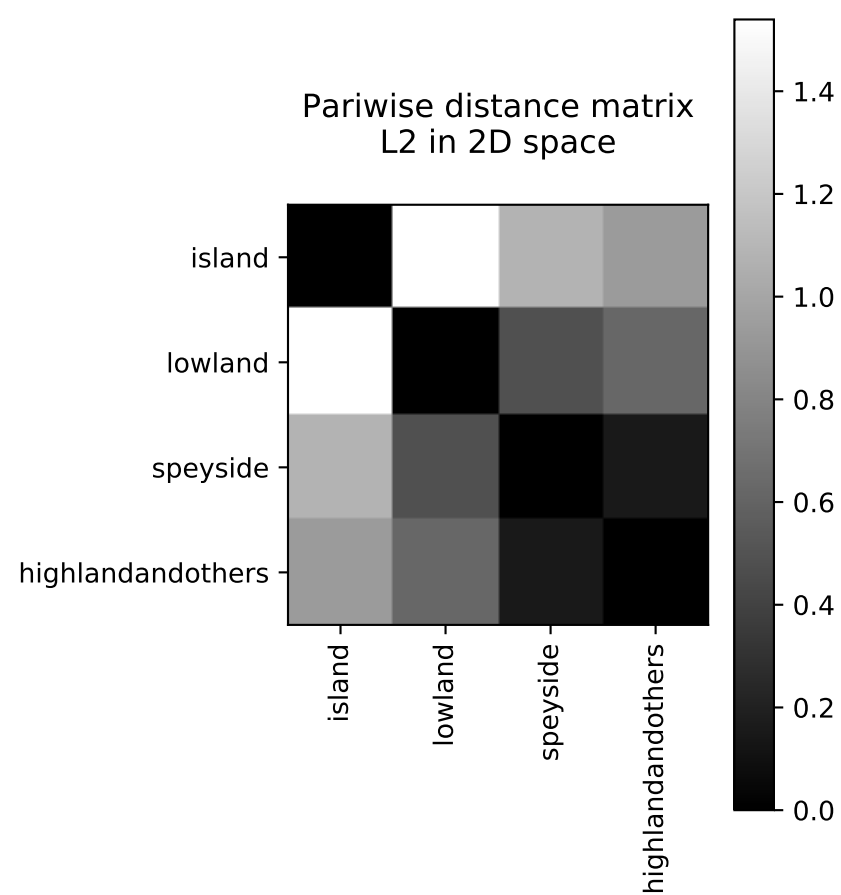
With regard to essays, reports and dissertations, the rule is: if information or ideas are obtained from any source, that source must be acknowledged according to the appropriate convention in that discipline; and any direct quotation must be placed in quotation marks and the source cited immediately. Any failure to acknowledge adequately or to cite properly other sources in submitted work is plagiarism. Under examination conditions, material learnt by rote or close paraphrase will be expected to follow the usual rules of reference citation otherwise it will be considered as plagiarism. Departments should provide guidance on other appropriate use of references in examination conditions.

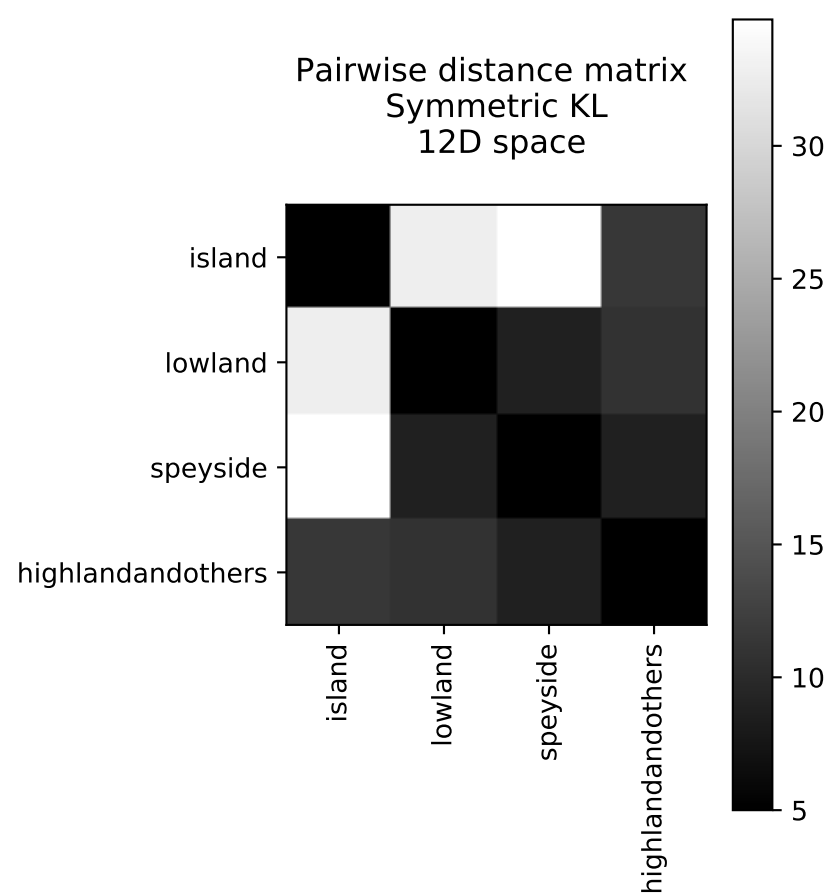
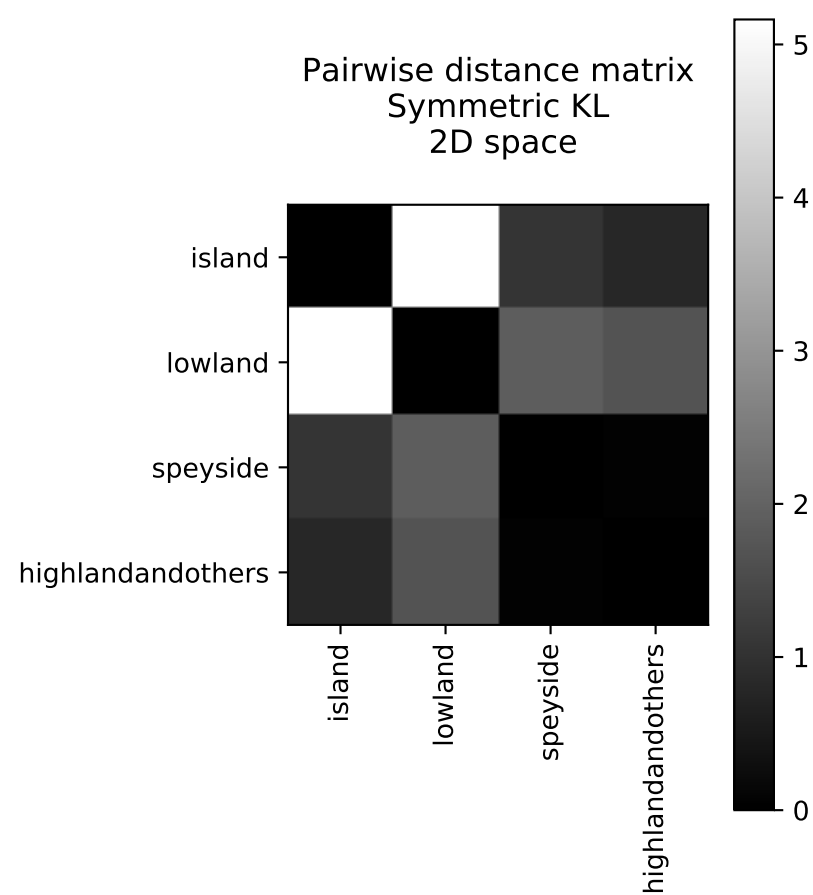
- 31.4 Plagiarism is considered to be an act of fraudulence and an offence against University discipline. Alleged plagiarism, at whatever stage of a student's studies, whether before or after graduation, will be investigated and dealt with appropriately by the University.
 - 31.5 The University reserves the right to use plagiarism detection systems, which may be externally based, in the interests of improving academic standards when assessing student work.
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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 the 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 separation, since the differences in the distances are quite significant.

The projection to 2D space seems to show no help to separate 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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