

Nearest Neighbour Analysis

Spoken Tutorial Project

<https://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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Learning Objectives



Learning Objectives

- ▶ **Nearest Neighbour Analysis by Distance Matrix method**



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- ▶ **Nearest Neighbour Analysis by Distance Matrix method**
- ▶ **Statistics using Nearest Neighbour Analysis tool**



System Requirements



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- ▶ **Ubuntu Linux OS v 16.04**



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- ▶ **QGIS v 2.18**



Pre-requisites



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- ▶ **QGIS interface**



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- ▶ **QGIS interface**
- ▶ <https://spoken-tutorial.org>



Example File for Demonstration



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- ▶ **The files required to practise this tutorial are available in the Code files link**



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- ▶ **Please download and extract the contents of the folder**



Nearest Neighbour Analysis



Nearest Neighbour Analysis

- ▶ **Finding distance between two Point features**



Nearest Neighbour Analysis

- ▶ **Finding distance between two Point features**
- ▶ **Finding features which are closest to a given feature**



Nearest Neighbour Analysis



Nearest Neighbour Analysis

- ▶ **Run a Nearest Neighbour Analysis to analyze the distribution of features**



Nearest Neighbour Analysis

- ▶ Run a **Nearest Neighbour Analysis** to analyze the distribution of features
- ▶ The results will establish the distribution as clustered, dispersed or random



Nearest Neighbour Index



Nearest Neighbour Index

- ▶ **The Nearest Neighbour Index is expressed as the ratio of the Observed Mean Distance to the Expected Mean Distance**



Nearest Neighbour Index



Nearest Neighbour Index

- ▶ If the index value is < 1 , the pattern exhibits clustering



Nearest Neighbour Index

- ▶ If the index value is < 1 , the pattern exhibits clustering
- ▶ If the index value is > 1 , the trend is towards dispersion



Summary



Summary

- ▶ Nearest Neighbour Analysis by **Distance Matrix** method
- ▶ Statistics using **Nearest Neighbour Analysis** tool



Assignment

- ▶ **Create Distance Matrix for nearest 5 volcanoes to urban areas**
- ▶ **Hint: Use Urban Areas as Input and K as 5**



About the Spoken Tutorial Project

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Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- ▶ Conducts workshops using spoken tutorials
- ▶ Gives certificates to those who pass an online test
- ▶ For more details, please write to contact@spoken-tutorial.org



Forum for specific questions

- ▶ Questions in THIS Spoken Tutorial?
- ▶ Visit <https://forums.spoken-tutorial.org>
- ▶ Choose the minute and second where you have the question
- ▶ Explain your question briefly
- ▶ The Spoken Tutorial project will ensure an answer

You will have to register to ask questions



Acknowledgement

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