

What is a Shapefile

- A geospatial *vector* data format.
- Developed and regulated by *Esri* as a mostly open specification.
- First introduced in the early 1990s.
- It consists of a series of files with the same name stored in the same directory.
 - Unlike a Word document, which is a single file per document.

Shapefile Structure

- It has three mandatory files:
 - **.shp**: Shape format, contains the feature geometry.
 - **.shx**: Shape index format, a positional index of the feature geometry allowing quick seeking.
 - **.dbf**: Attribute format, contains columnar attributes for each shape, in dBase IV format.

Shapefile Structure

- Other optional files:
 - **.prj**: Projection description
 - Although optional, a shapefile without a projection file cannot be displayed correctly in GIS software.
 - You will work with a shapefile without a projection file in assignment 3.
 - **.sbn**, **.sbx**, ...

Modern Alternatives

GeoPackage:

- Uses the `.gpkg` extension.
- An open, non-proprietary, platform-independent, and standards-based data format for GIS.
- Based on SQLite.
- Can hold multiple vector and raster data layers in a single file.
- Initially released in 2014.