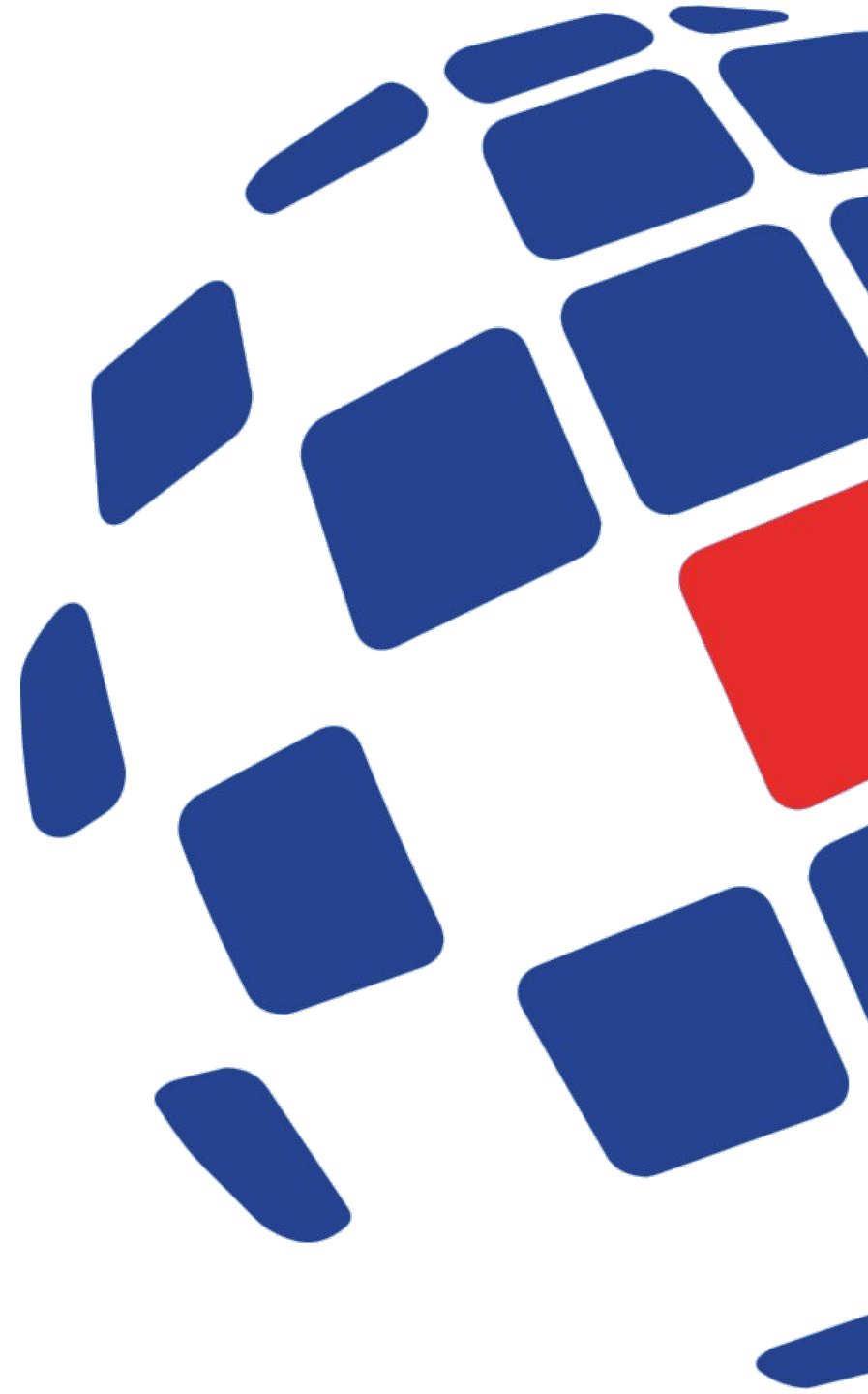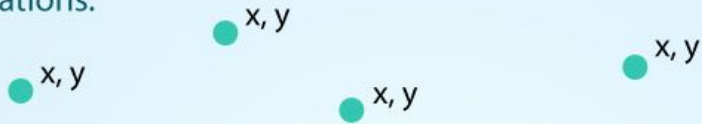**October 2023 - Dominica**

GIS Data: Vectors

Vector Data - Structure
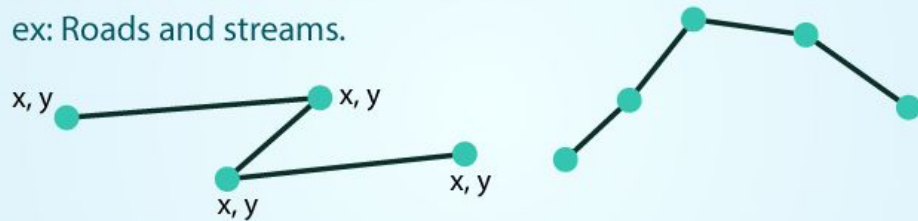

POINTS: Individual **x, y** locations.
ex: Center point of plot locations, tower locations, sampling locations.

x, y
x, y
x, y
x, y

LINES: Composed of many (at least 2) vertices, or points, that are connected.
ex: Roads and streams.

x, y
x, y
x, y

POLYGONS: 3 or more vertices that are connected and **closed**.
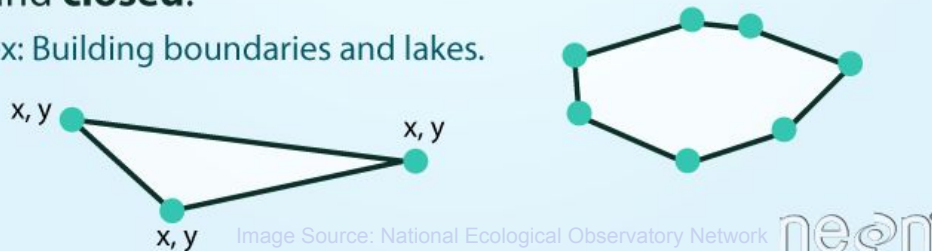ex: Building boundaries and lakes.

x, y
x, y
x, y

Image Source: National Ecological Observatory Network neon

Vector data (point, line or polygon) are all made up of series of points or vertices

Each individual point, line or polygon has separate line in the attribute table where information about the object is stored

The most popular data format for vector data is the Shapefile (Shp)

https://datacarpentry.org/organization-geospatial/02-intro-vector-data/

Vector Data

- Features represented by series of coordinates
- Features have attribute information in tables
- Generic term is vector data
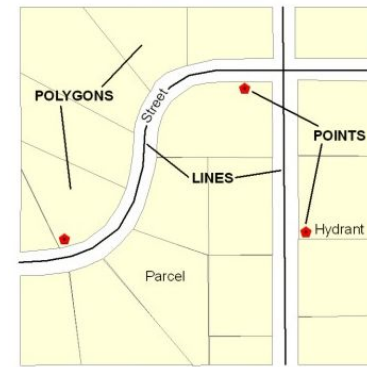
Example Attributes for Point Data

ID	Plot Size	Type	VegClass
1	40	Vegetation	Conifer
2	20	Vegetation	Deciduous
3	40	Vegetation	Conifer

Example Attributes for Line Data

ID	Type	Status	Maintenance
1	Road	Open	Year Round
2	Dirt Trail	Open	Summer
3	Road	Closed	Year Round

Example Attributes for Polygon Data

ID	Type	Class	Status
1	Herbaceous	Grassland	Protected
2	Herbaceous	Pasture	Open
3	Herbaceous / Woody	Grassland	Protected

Image Source: National Ecological Observatory Network (NEON)

Paths Browser

Surface	Access	Cycling
Earth	Public	Yes
Tarmac	Private	Yes

Woodland Browser

Name	Area_m2	Nesting_birds
Jesus Green	12,652	yes

Trees Browser

Common_name	Height_2003	Trunk_diam_200	Condition
Sycamore	5	0	Healthy
Beech	0	0	Diseased

GIS Mapping Data Formats

VECTOR DATA

- GPX – GPS standard format
- KML/KMZ – Google Earth/Map
- ShapeFile SHP – ESRI – widely used – multiple files
- QGIS Geopackage   ESRI Geodatabase
- Excel.xlsx, CSV, DBF

brb_admn_ad1_ln_s1_gadm_pp_parish.CPG
brb_admn_ad1_ln_s1_gadm_pp_parish.dbf
brb_admn_ad1_ln_s1_gadm_pp_parish.prj
brb_admn_ad1_ln_s1_gadm_pp_parish.sbn
brb_admn_ad1_ln_s1_gadm_pp_parish.sbx
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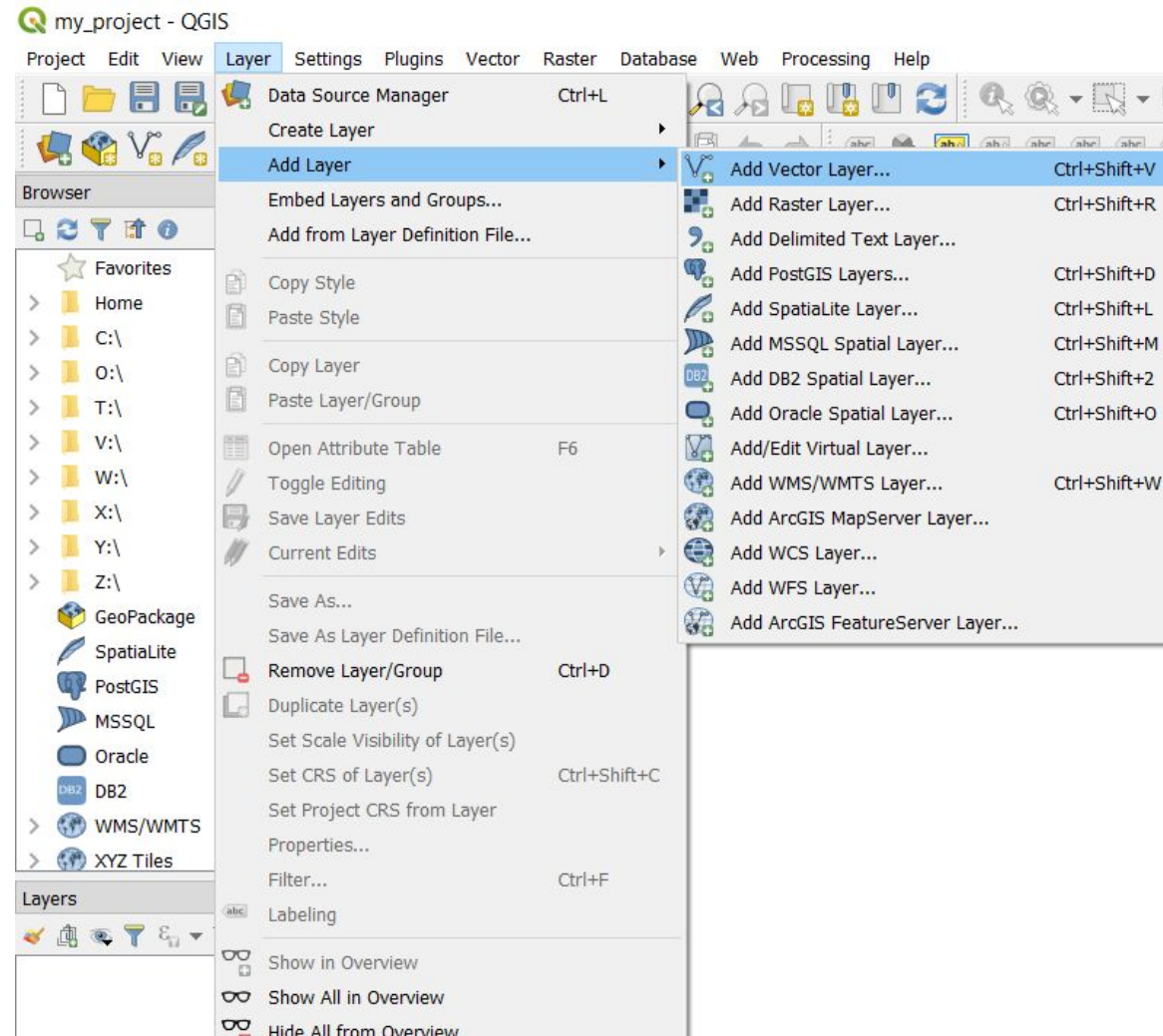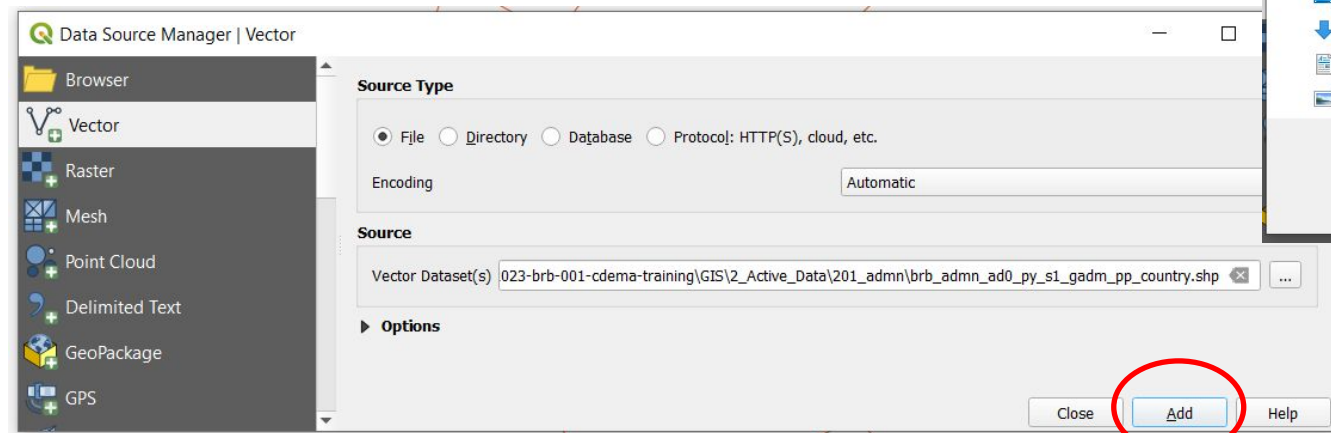brb_admn_ad1_ln_s1_gadm_pp_parish.shx
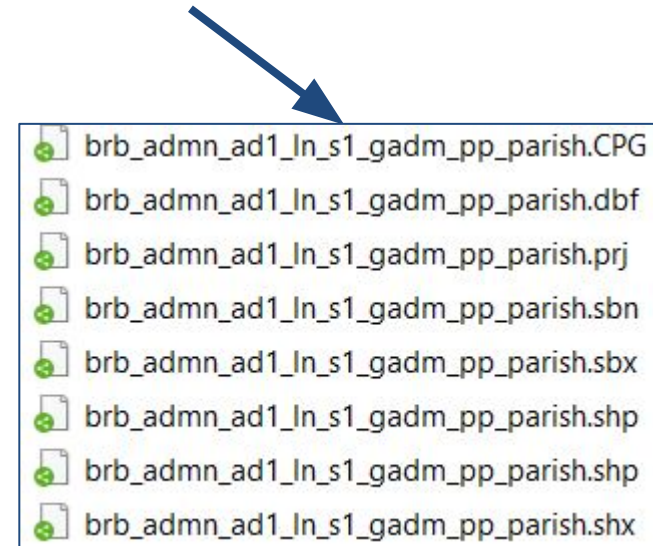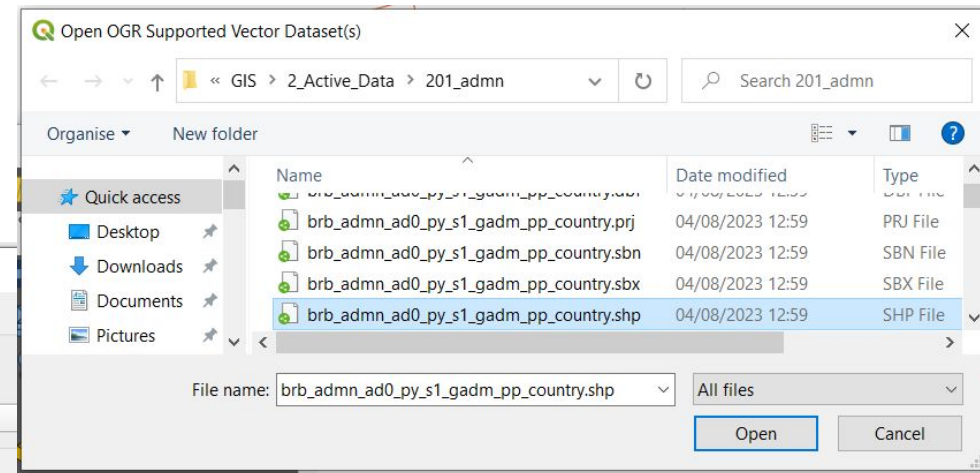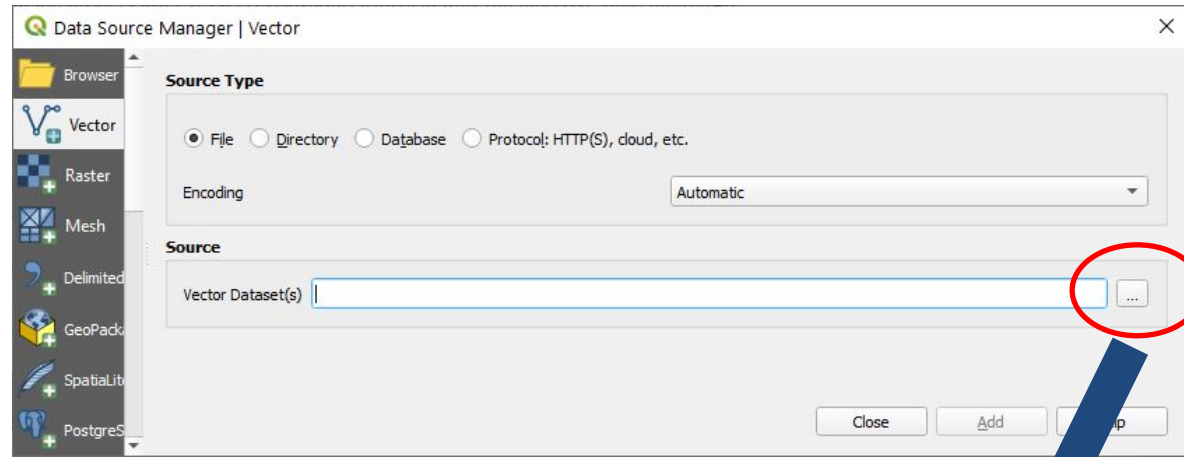
Adding Vector Data

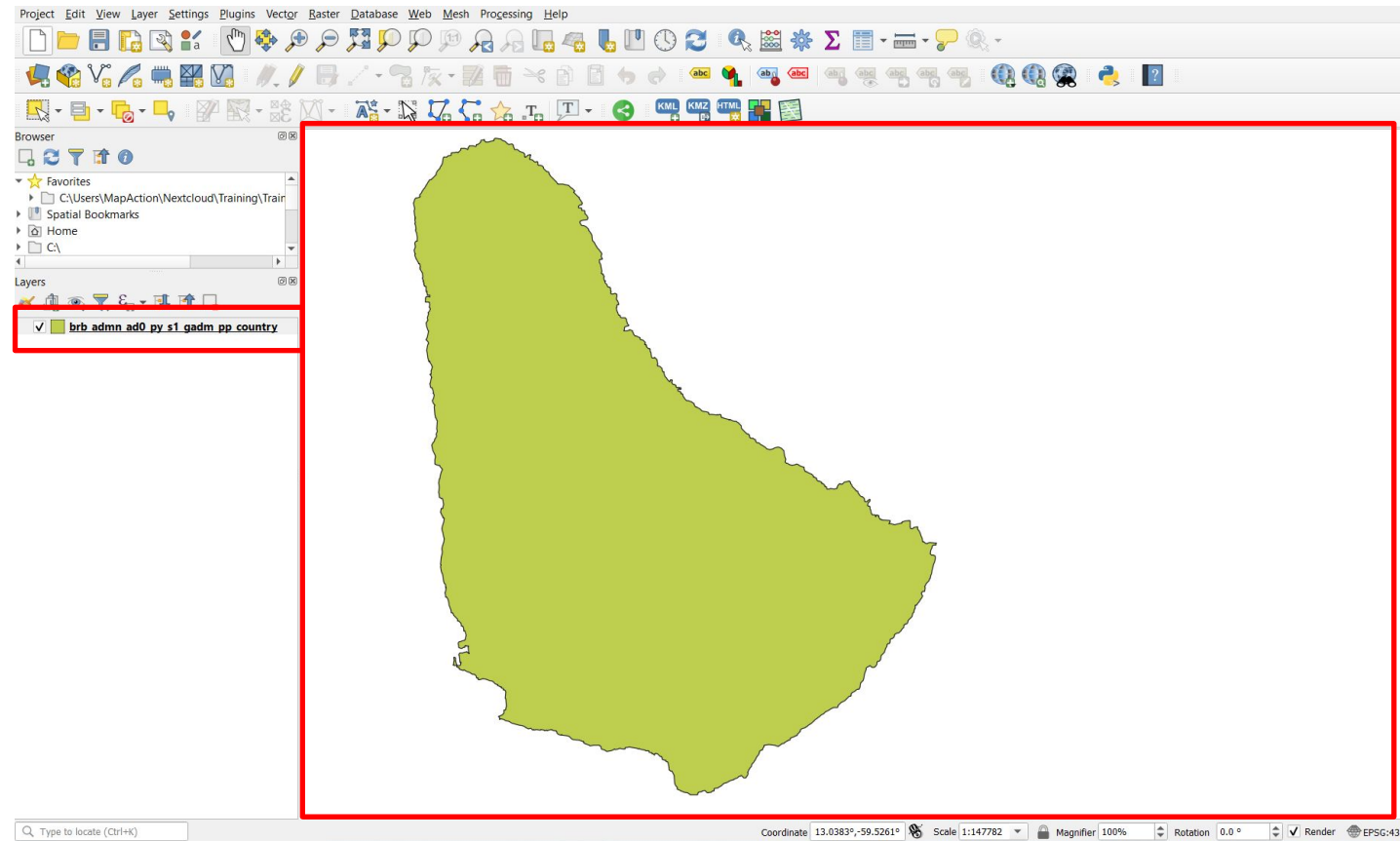## Adding SHAPE file
- Add Layer
- Add Vector Layer

Add Data

Add Vector Layer
- Source Type: File
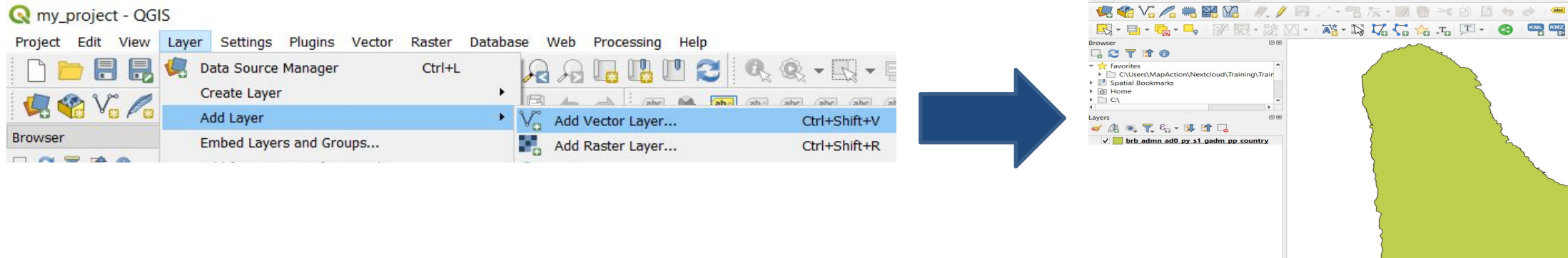- Navigate to file
- Open SHP file > Add data

Add Data

- The layer had been added to the map window
- The name is also shown in the layer list panel

Conclusion

We have now looked at the following features:
- Vector data
- How to add a vector shape file to the project

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