ARC-GIS

EXCERCISE: 1

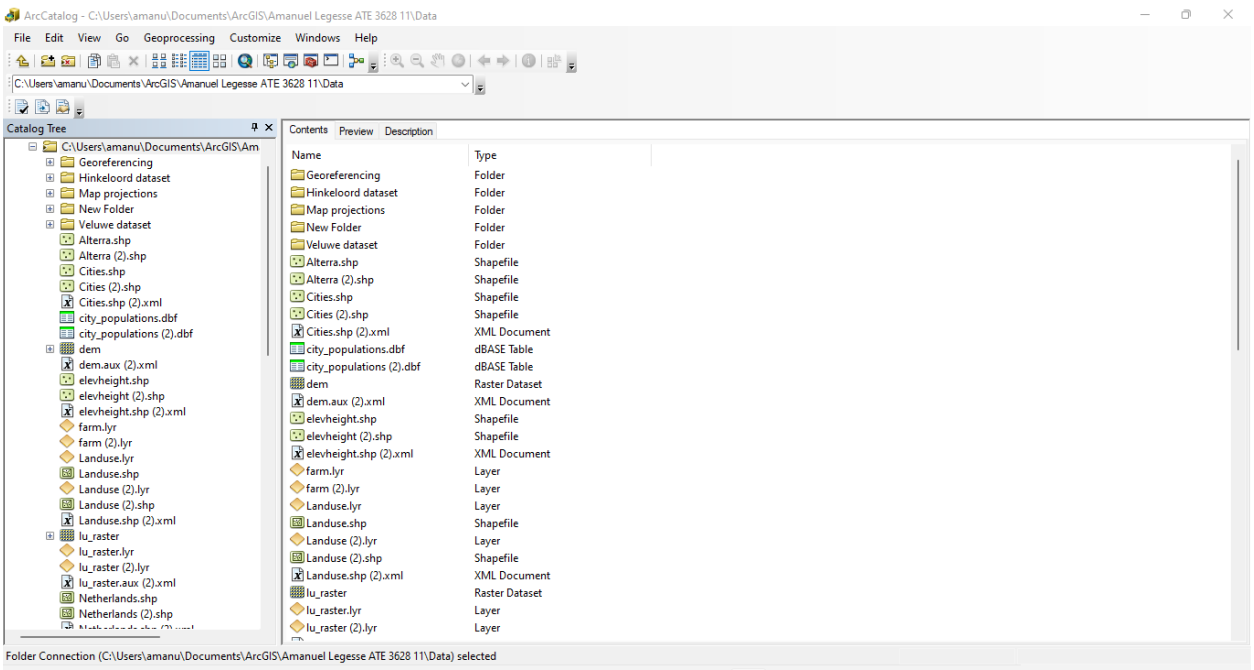
BY – AMANUEL LEGESSE SOFTWARE ENG. EXT

ID – ATE/3628/11

EXCERSISE - 1

- **Start the program ArcCatalog and access spatial data**

1.A :



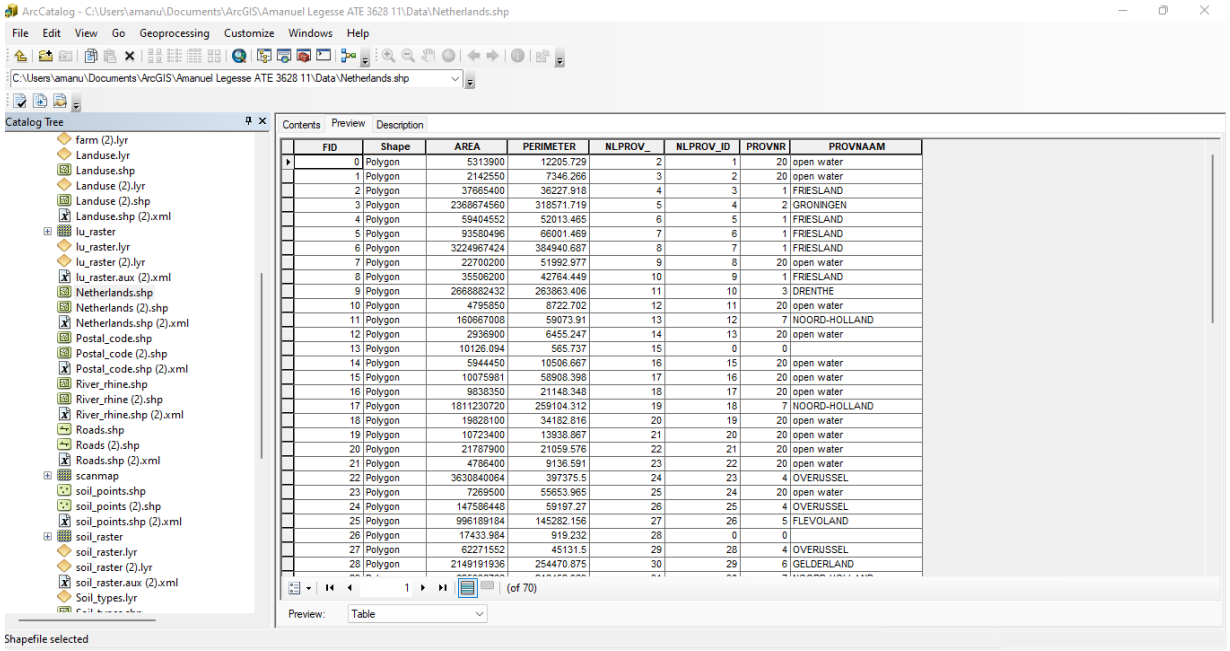
- The different file types of this folder are .shp, .xml, .dbf and .lyr

1.B :

- layer, database table and xml document

➢ Examining spatial data

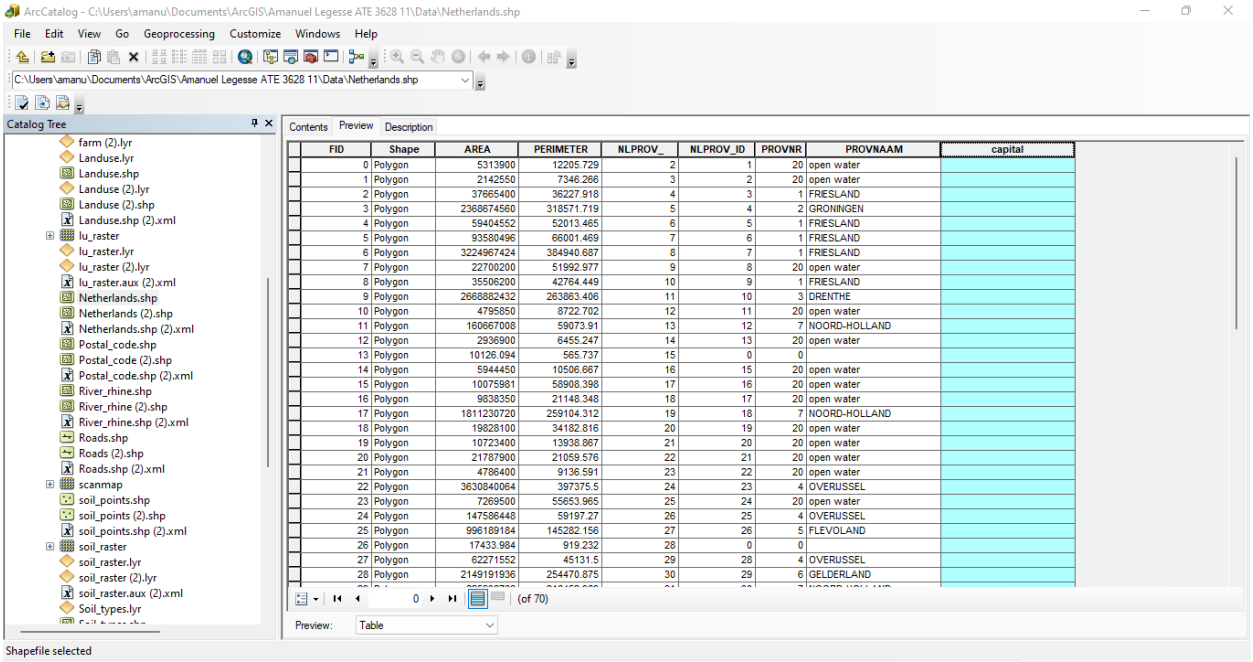
2.A



FID	Shape	AREA	PERIMETER	NLPROV_	NLPROV_ID	PROVNR	PROVNAAM
0	Polygon	5313900	12205.729	2	1	20	open water
1	Polygon	2142550	7346.266	3	2	20	open water
2	Polygon	37665400	36227.918	4	3	1	FRIESLAND
3	Polygon	2368674560	318571.719	5	4	2	GRONINGEN
4	Polygon	59404552	52013.465	6	5	1	FRIESLAND
5	Polygon	93580496	66001.469	7	6	1	FRIESLAND
6	Polygon	3224967424	384940.687	8	7	1	FRIESLAND
7	Polygon	22700200	51992.977	9	8	20	open water
8	Polygon	35506200	42764.449	10	9	1	FRIESLAND
9	Polygon	2668882432	263863.406	11	10	3	DRENTHE
10	Polygon	4795850	8722.702	12	11	20	open water
11	Polygon	160667008	59073.91	13	12	7	NOORD-HOLLAND
12	Polygon	2936900	6455.247	14	13	20	open water
13	Polygon	10126.094	565.737	15	0	0	
14	Polygon	5944450	10506.667	16	15	20	open water
15	Polygon	10075981	58908.398	17	16	20	open water
16	Polygon	9838350	21148.348	18	17	20	open water
17	Polygon	1811230720	259104.312	19	18	7	NOORD-HOLLAND
18	Polygon	19828100	34182.816	20	19	20	open water
19	Polygon	10723400	13938.867	21	20	20	open water
20	Polygon	21787900	21059.576	22	21	20	open water
21	Polygon	4786400	9136.591	23	22	20	open water
22	Polygon	3630840064	397375.5	24	23	4	OVERIJSSEL
23	Polygon	7269500	55653.965	25	24	20	open water
24	Polygon	147586448	59197.27	26	25	4	OVERIJSSEL
25	Polygon	996189184	145282.156	27	26	5	FLEVOLAND
26	Polygon	17433.984	919.232	28	0	0	
27	Polygon	62271552	45131.5	29	28	4	OVERIJSSEL
28	Polygon	2149191936	254470.875	30	29	6	GELDERLAND

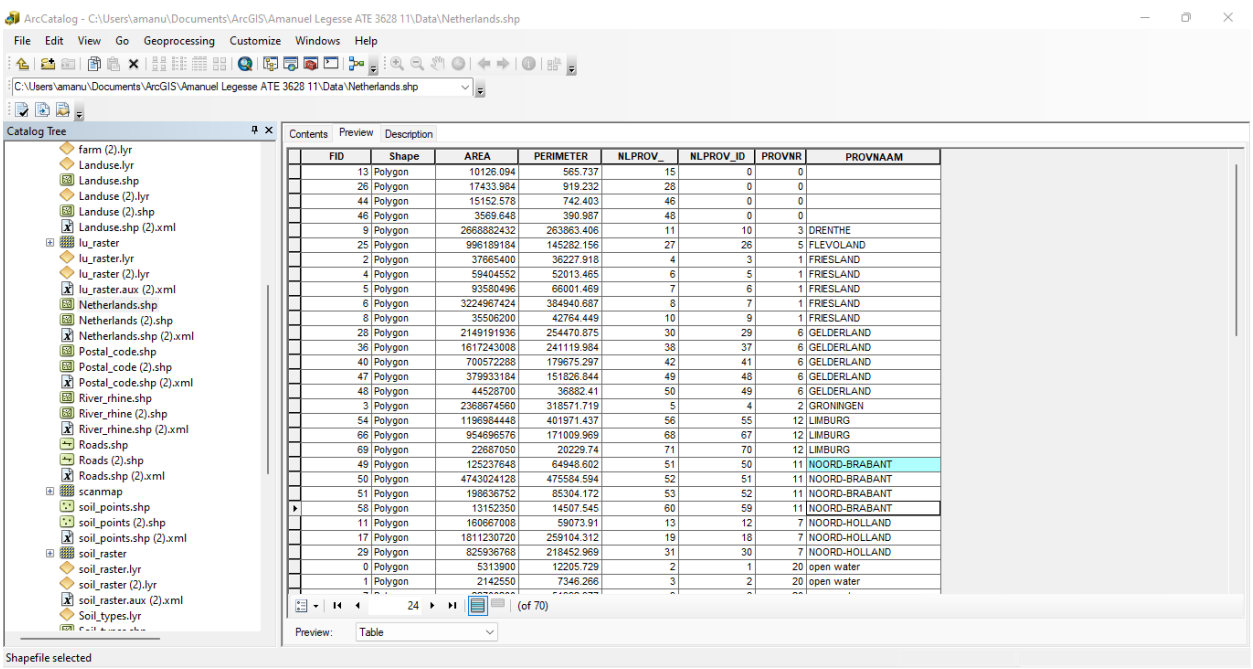
- The table contains 70 records and 8 fields.

2.B



FID	Shape	AREA	PERIMETER	NLPROV_	NLPROV_ID	PROVNR	PROVNAAM	capital
0	Polygon	5313900	12205.729	2	1	20	open water	
1	Polygon	2142550	7346.266	3	2	20	open water	
2	Polygon	37665400	36227.918	4	3	1	FRIESLAND	
3	Polygon	2368674560	318571.719	5	4	2	GRONINGEN	
4	Polygon	59404552	52013.465	6	5	1	FRIESLAND	
5	Polygon	93580496	66001.469	7	6	1	FRIESLAND	
6	Polygon	3224967424	384940.687	8	7	1	FRIESLAND	
7	Polygon	22700200	51992.977	9	8	20	open water	
8	Polygon	35506200	42764.449	10	9	1	FRIESLAND	
9	Polygon	2668882432	263863.406	11	10	3	DRENTHE	
10	Polygon	4795850	8722.702	12	11	20	open water	
11	Polygon	160667008	59073.91	13	12	7	NOORD-HOLLAND	
12	Polygon	2936900	6455.247	14	13	20	open water	
13	Polygon	10126.094	565.737	15	0	0		
14	Polygon	5944450	10506.667	16	15	20	open water	
15	Polygon	10075981	58908.398	17	16	20	open water	
16	Polygon	9838350	21148.348	18	17	20	open water	
17	Polygon	1811230720	259104.312	19	18	7	NOORD-HOLLAND	
18	Polygon	19828100	34182.816	20	19	20	open water	
19	Polygon	10723400	13938.867	21	20	20	open water	
20	Polygon	21787900	21059.576	22	21	20	open water	
21	Polygon	4786400	9136.591	23	22	20	open water	
22	Polygon	3630840064	397375.5	24	23	4	OVERIJSSEL	
23	Polygon	7269500	55653.965	25	24	20	open water	
24	Polygon	147586448	59197.27	26	25	4	OVERIJSSEL	
25	Polygon	996189184	145282.156	27	26	5	FLEVOLAND	
26	Polygon	17433.984	919.232	28	0	0		
27	Polygon	62271552	45131.5	29	28	4	OVERIJSSEL	
28	Polygon	2149191936	254470.875	30	29	6	GELDERLAND	

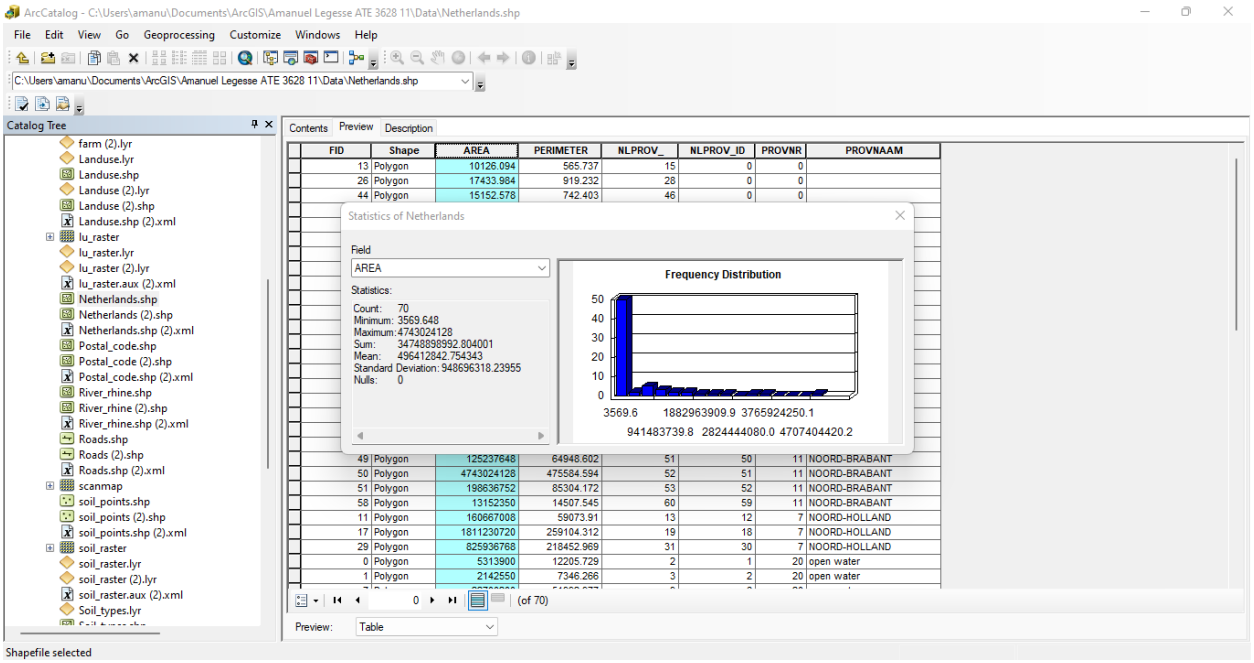
2.D



FID	Shape	AREA	PERIMETER	NLPROV_	NLPROV_ID	PROVNR	PROVNAAM
13	Polygon	10126.094	565.737	15	0	0	
26	Polygon	17433.984	919.232	28	0	0	
44	Polygon	15152.578	742.403	46	0	0	
46	Polygon	3569.648	390.987	48	0	0	
9	Polygon	2668882432	263863.406	11	10	3	DRENTHE
25	Polygon	996189184	145282.156	27	26	5	FLEVOLAND
2	Polygon	37665400	36227.918	4	3	1	FRIESLAND
4	Polygon	59404552	52013.465	6	5	1	FRIESLAND
5	Polygon	93580496	66001.469	7	6	1	FRIESLAND
6	Polygon	3224967424	384940.687	8	7	1	FRIESLAND
8	Polygon	35506200	42764.449	10	9	1	FRIESLAND
28	Polygon	2149191936	254470.875	30	29	6	GELDERLAND
36	Polygon	1617243008	241119.984	38	37	6	GELDERLAND
40	Polygon	700572288	179675.297	42	41	6	GELDERLAND
47	Polygon	379933184	151826.844	49	48	6	GELDERLAND
48	Polygon	44528700	36882.41	50	49	6	GELDERLAND
3	Polygon	2368674560	318571.719	5	4	2	GRONINGEN
54	Polygon	1196984448	401971.437	56	55	12	LIMBURG
66	Polygon	954696576	171009.969	68	67	12	LIMBURG
69	Polygon	22687050	20229.74	71	70	12	LIMBURG
49	Polygon	125237648	64948.602	51	50	11	NOORD-BRABANT
50	Polygon	4743024128	475584.594	52	51	11	NOORD-BRABANT
51	Polygon	198636752	85304.172	53	52	11	NOORD-BRABANT
58	Polygon	13152350	14507.545	60	59	11	NOORD-BRABANT
11	Polygon	160667008	59073.91	13	12	7	NOORD-HOLLAND
17	Polygon	1811230720	259104.312	19	18	7	NOORD-HOLLAND
29	Polygon	825936768	218452.969	31	30	7	NOORD-HOLLAND
0	Polygon	5313900	12205.729	2	1	20	open water
1	Polygon	2142550	7346.266	3	2	20	open water

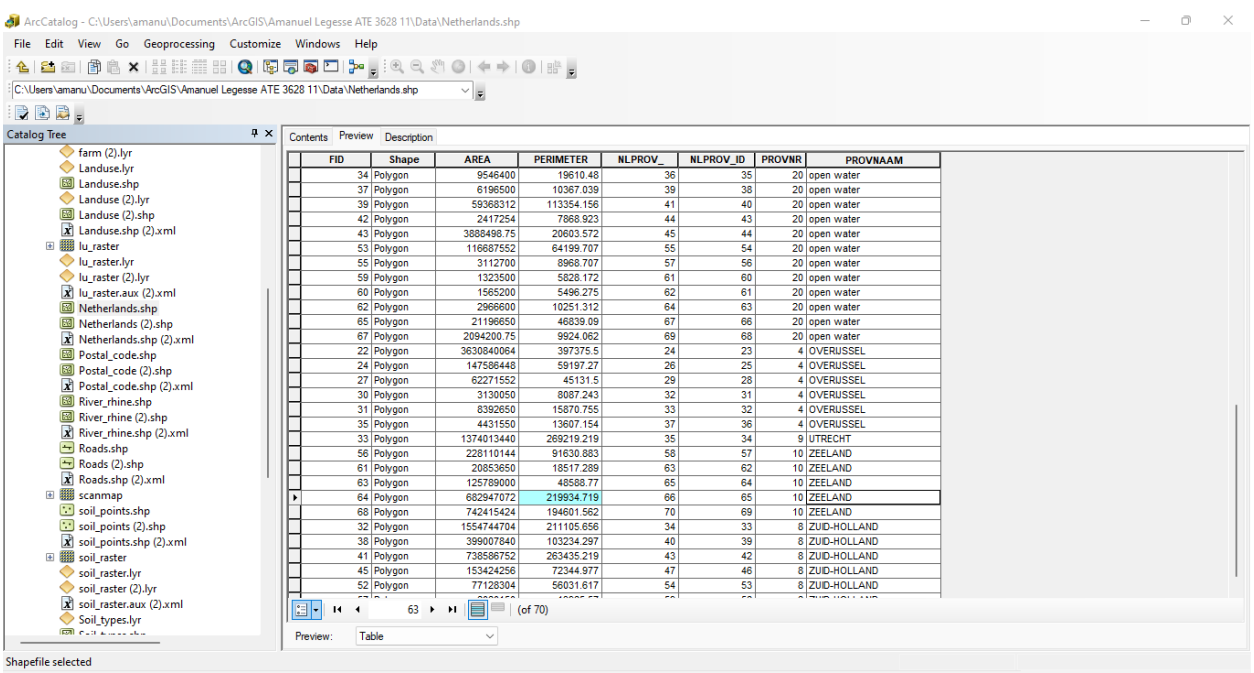
- 4 records belong to the province of Noord Brabant

2.E



- The total area of Netherlands is 34748898992.804001

2.F



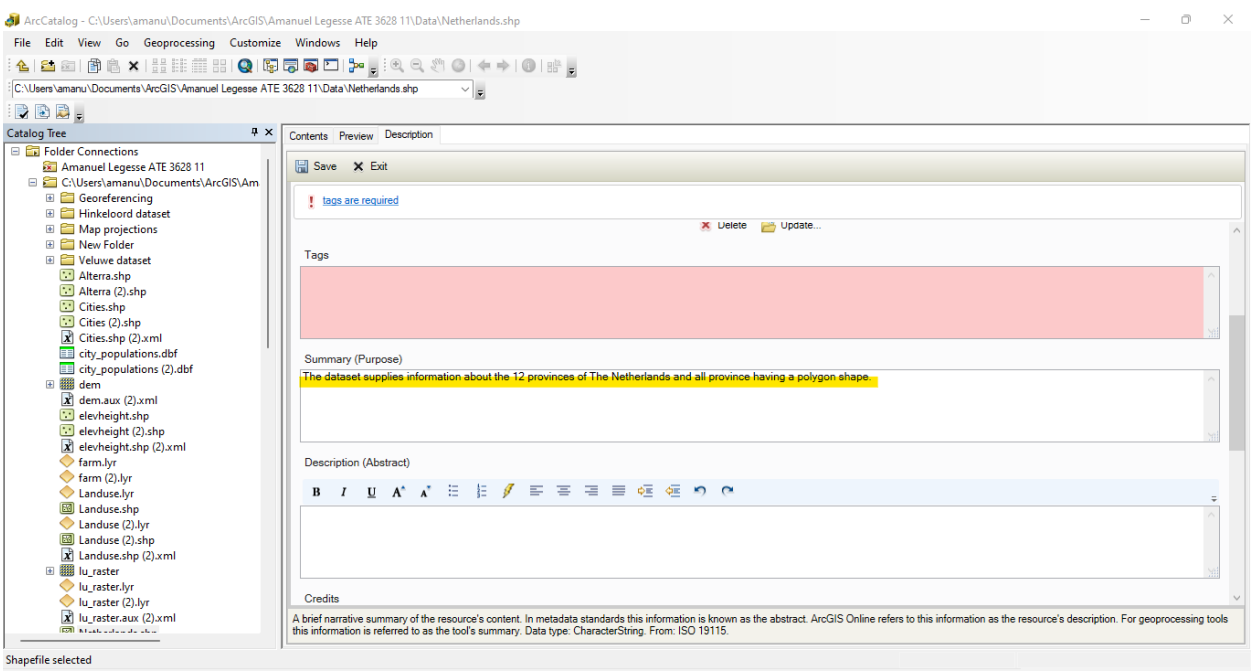
- ZEELAND province contains a feature that has a perimeter of 219934.719 meters.
- The value of the attribute ‘FID’ is 64.

2.G

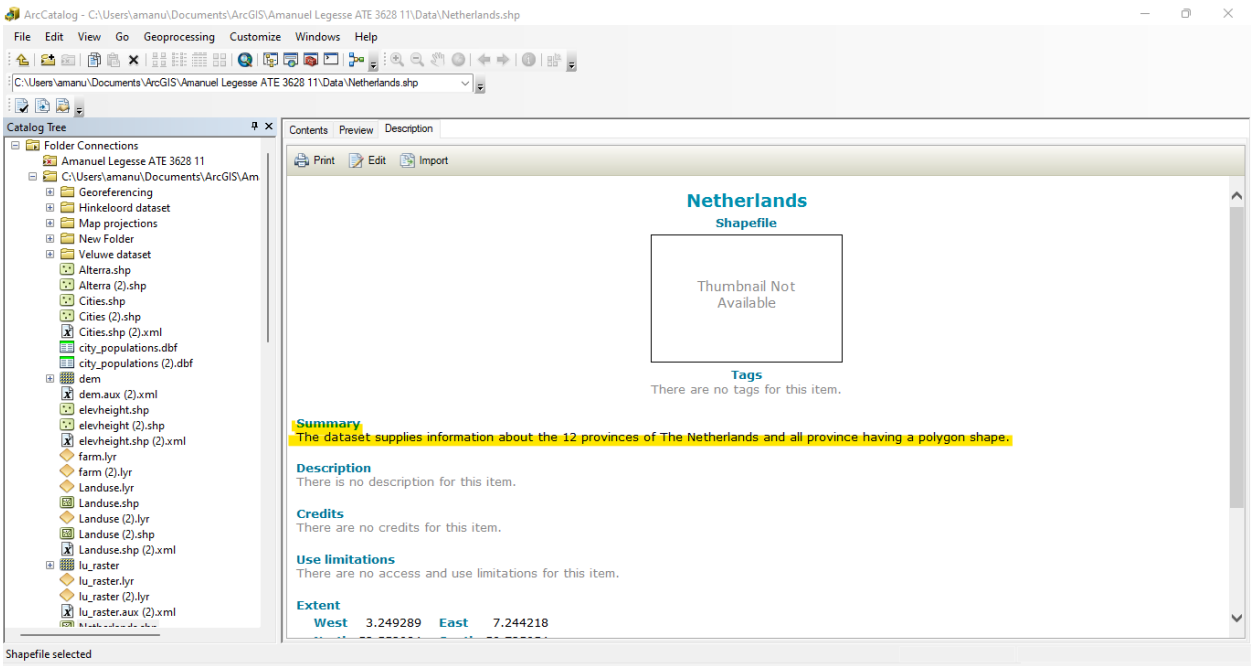
- ‘FID’ represents a value that uniquely identifies a record or feature.

➢ Exploring the metadata of a spatial dataset

3.A



3.B


ArcCatalog - C:\Users\amanu\Documents\ArcGIS\Amanuel Legesse ATE 3628 11\Data\Netherlands.shp
File Edit View Go Geoprocessing Customize Windows Help
C:\Users\amanu\Documents\ArcGIS\Amanuel Legesse ATE 3628 11\Data\Netherlands.shp
Catalog Tree
Folder Connections
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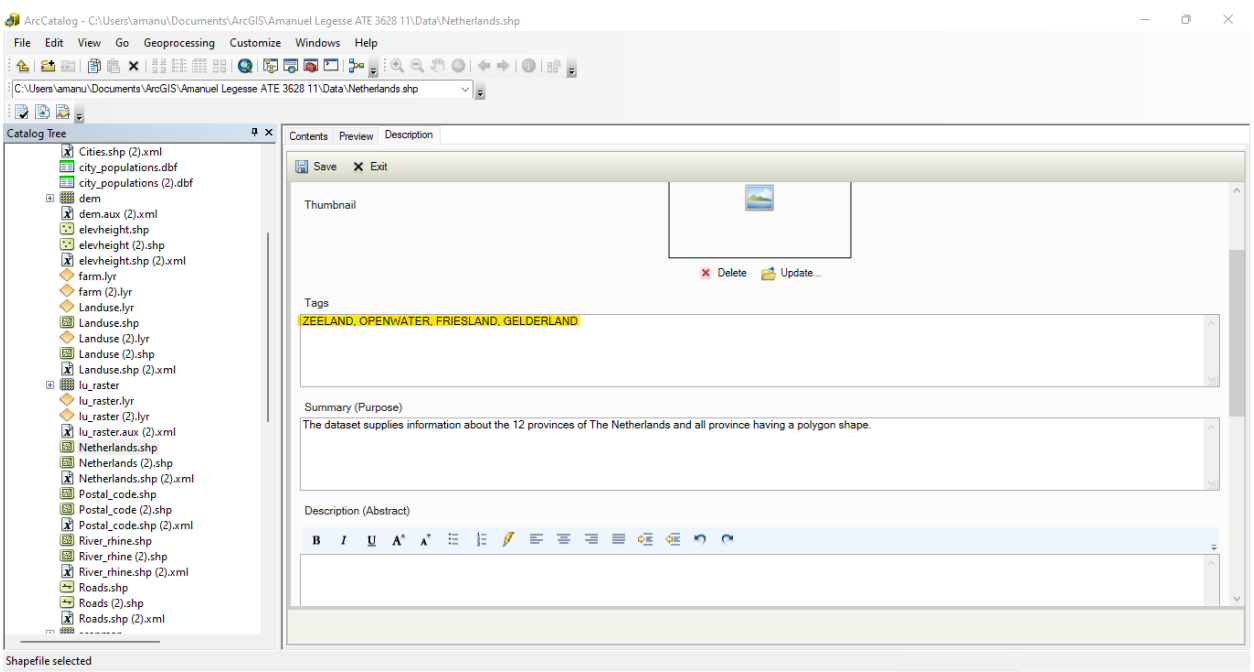
Georeferencing
Hinkeloord dataset
Map projections
New Folder
Veluwe dataset
Alterra.shp
Alterra (2).shp
Cities.shp
Cities (2).shp
Cities.shp (2).xml
city_populations.dbf
city_populations (2).dbf
dem
dem.aux (2).xml
elevheight.shp
elevheight (2).shp
elevheight.shp (2).xml
farm.lyr
farm (2).lyr
Landuse.lyr
Landuse.shp
Landuse (2).lyr
Landuse (2).shp
Landuse.shp (2).xml
lu_raster
lu_raster.lyr
lu_raster (2).lyr
lu_raster.aux (2).xml
Contents Preview Description
Print Edit Import
Netherlands
Shapefile
Thumbnail Not Available
Tags
There are no tags for this item.
Summary
The dataset supplies information about the 12 provinces of The Netherlands and all province having a polygon shape.
Description
There is no description for this item.
Credits
There are no credits for this item.
Use limitations
There are no access and use limitations for this item.
Extent
West 3.249289 East 7.244218
Shapefile selected

3.C


ArcCatalog - C:\Users\amanu\Documents\ArcGIS\Amanuel Legesse ATE 3628 11\Data\Netherlands.shp
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Netherlands (2).shp
Netherlands.shp (2).xml
Postal_code.shp
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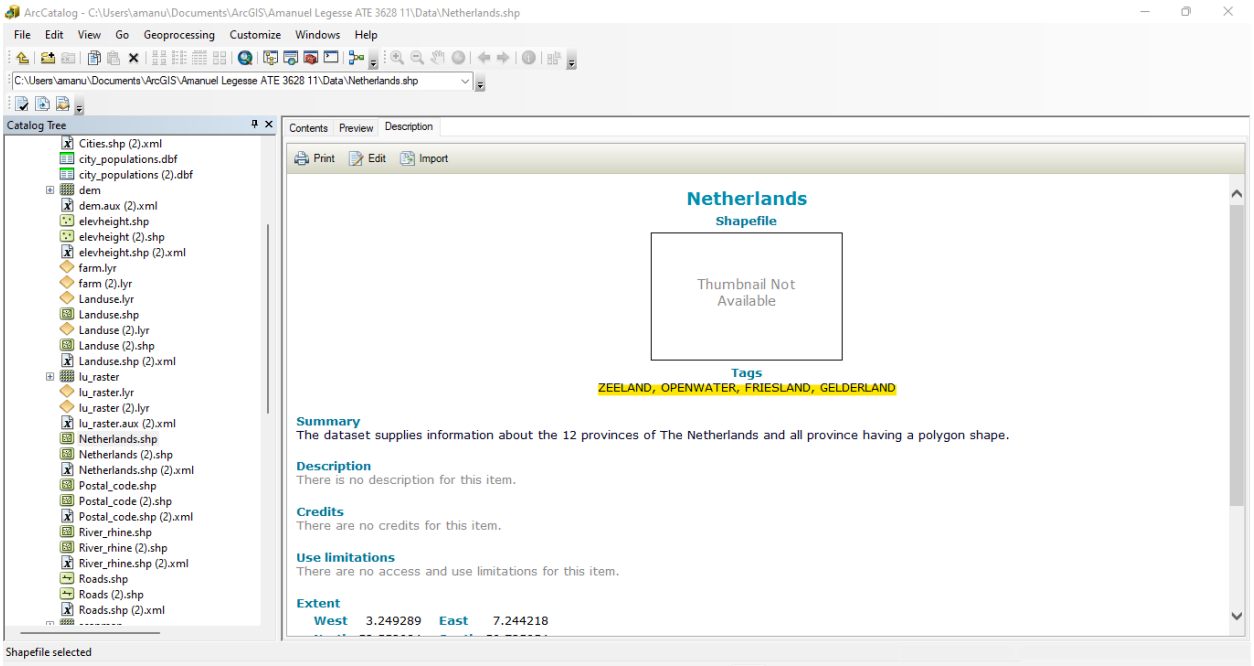
Postal_code.shp (2).xml
River_rhine.shp
River_rhine (2).shp
River_rhine.shp (2).xml
Roads.shp
Roads (2).shp
Roads.shp (2).xml
Contents Preview Description
Save Exit
Thumbnail
Delete Update...
Tags
ZEELAND, OPENWATER, FRIESLAND, GELDERLAND
Summary (Purpose)
The dataset supplies information about the 12 provinces of The Netherlands and all province having a polygon shape.
Description (Abstract)
Shapefile selected

3.D


ArcCatalog - C:\Users\amanu\Documents\ArcGIS\Amanuel Legesse ATE 3628 11\Data\Netherlands.shp
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city_populations (2).dbf
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dem.aux (2).xml
elevheight.shp
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elevheight.shp (2).xml
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farm (2).lyr
Landuse.lyr
Landuse.shp
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lu_raster.aux (2).xml
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Netherlands (2).shp
Netherlands.shp (2).xml
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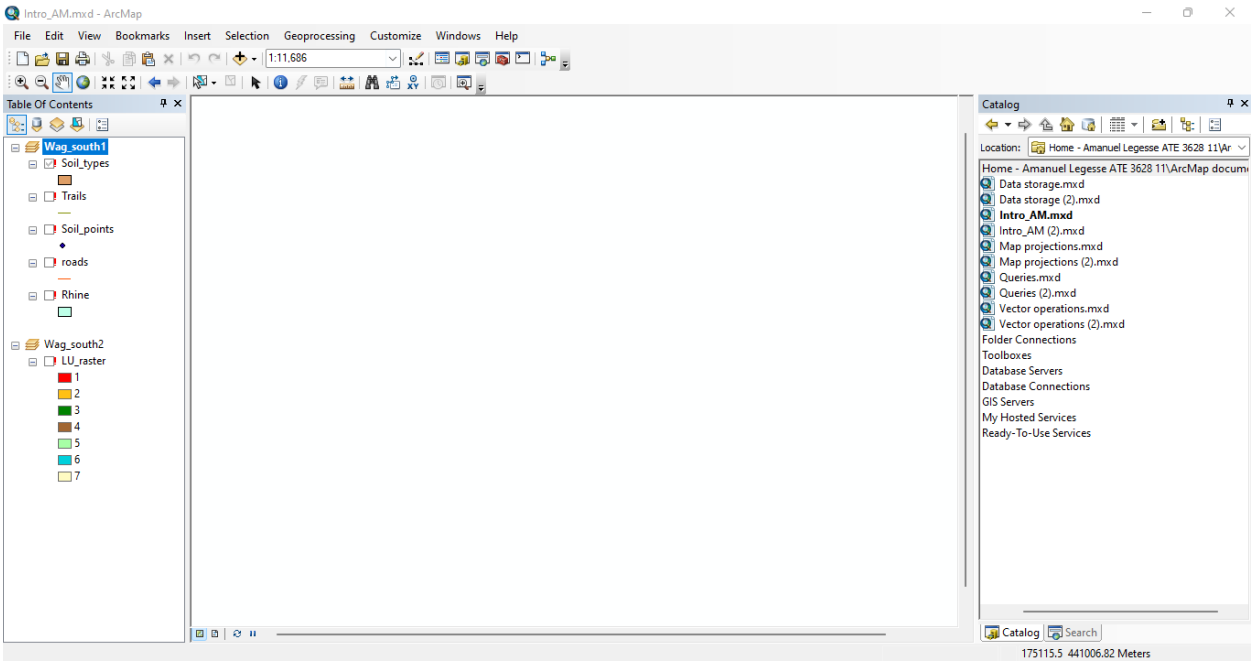
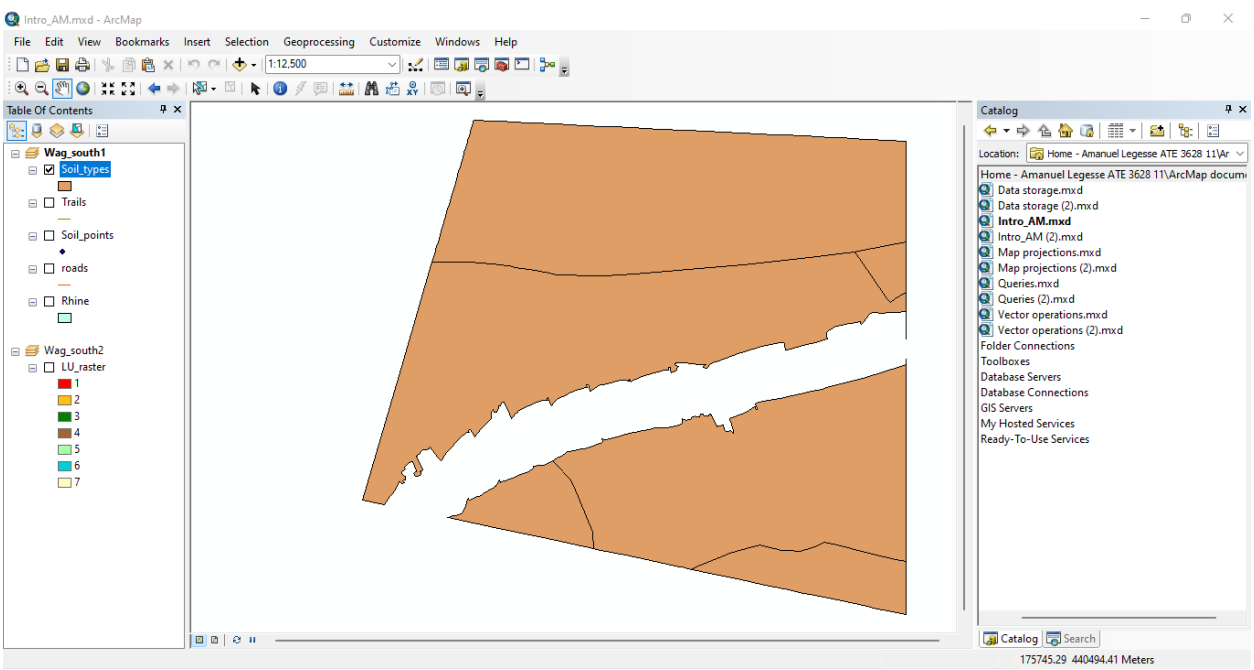
Postal_code (2).shp
Postal_code.shp (2).xml
River_rhine.shp
River_rhine (2).shp
River_rhine.shp (2).xml
Roads.shp
Roads (2).shp
Roads.shp (2).xml
Contents Preview Description
Print Edit Import
Netherlands
Shapefile
Thumbnail Not Available
Tags
ZEELAND, OPENWATER, FRIESLAND, GELDERLAND
Summary
The dataset supplies information about the 12 provinces of The Netherlands and all province having a polygon shape.
Description
There is no description for this item.
Credits
There are no credits for this item.
Use limitations
There are no access and use limitations for this item.
Extent
West 3.249289 East 7.244218
Shapefile selected

➢ Working with ArcMap

4.A :



5.A:



➢ Activate a Data Frame and turn the visibility of a dataset on and off

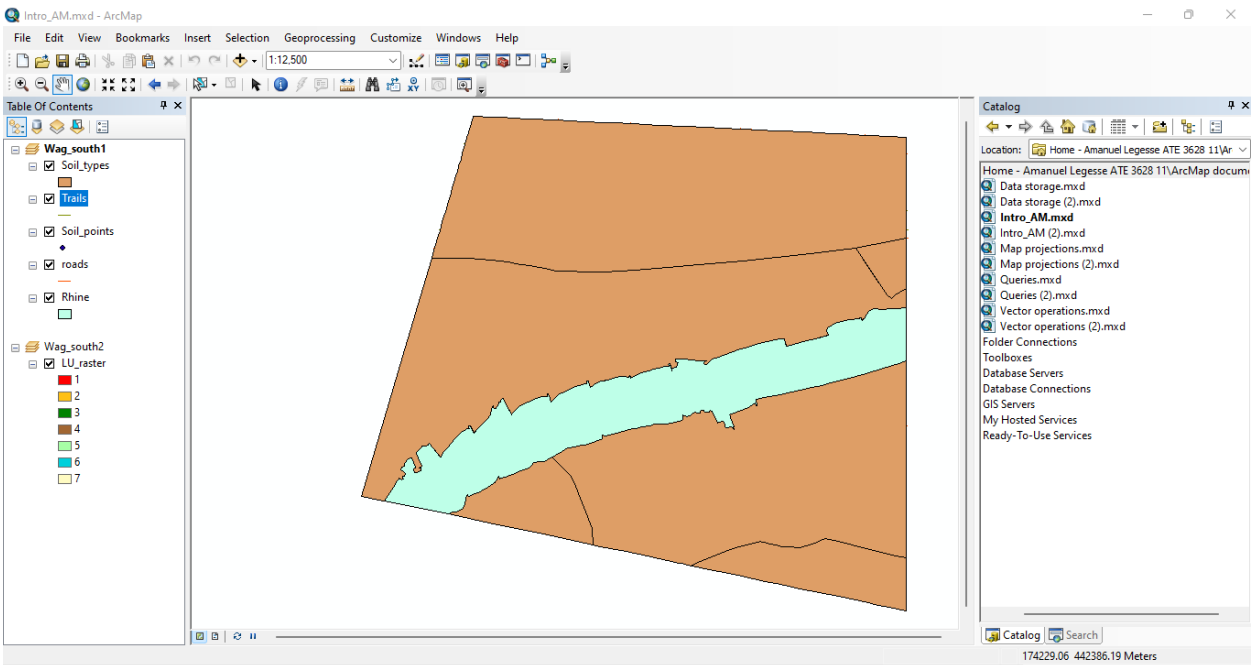
6.A :

- Intro_AM.mxd document contains 2 (Wag_south1 and Wag_south2) DataFrames.

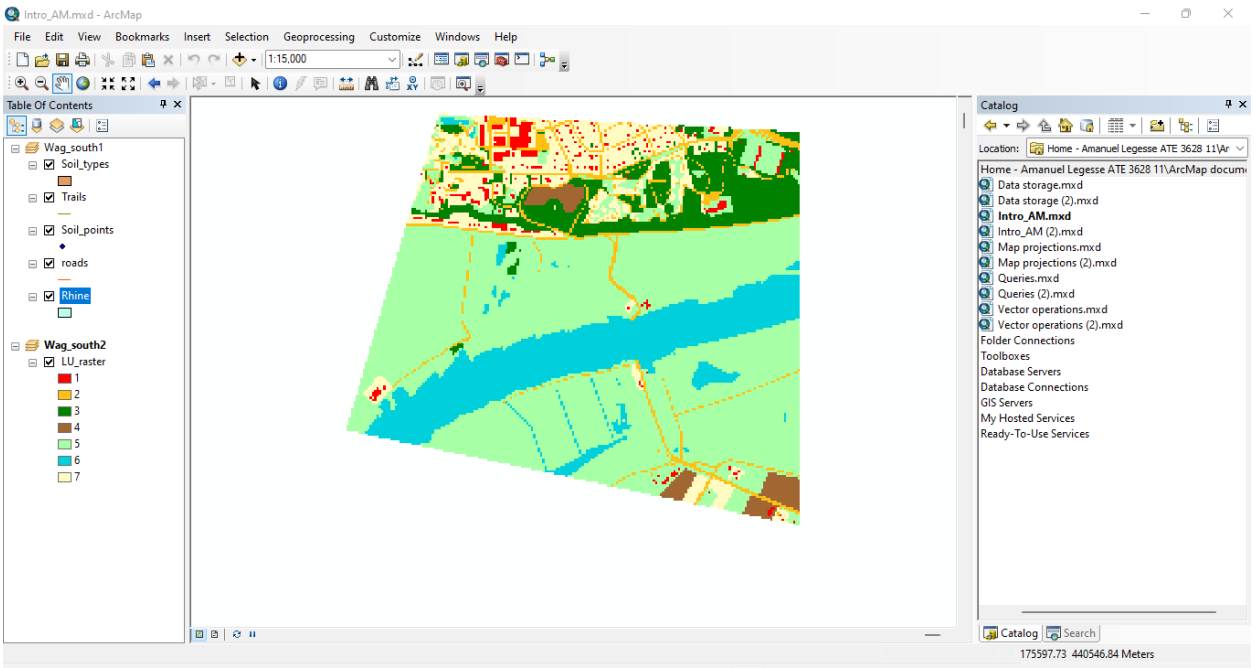
6.B :

- Wag_south1 contains 5 datasets.

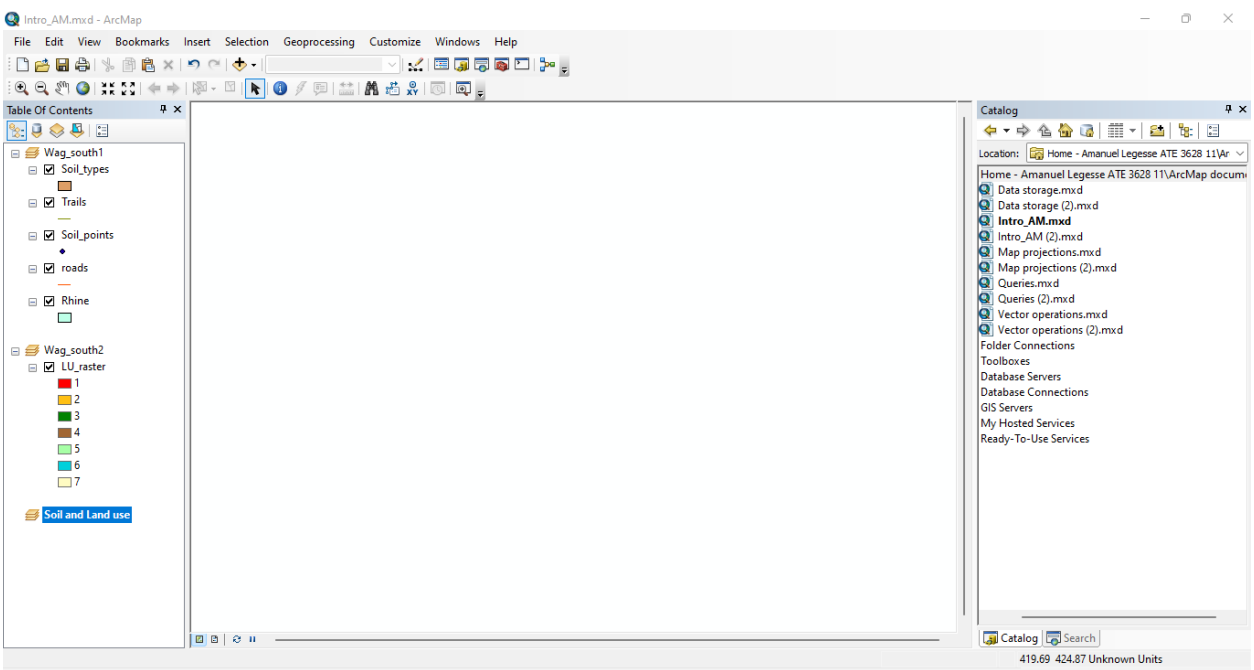
6.C:



6.D :

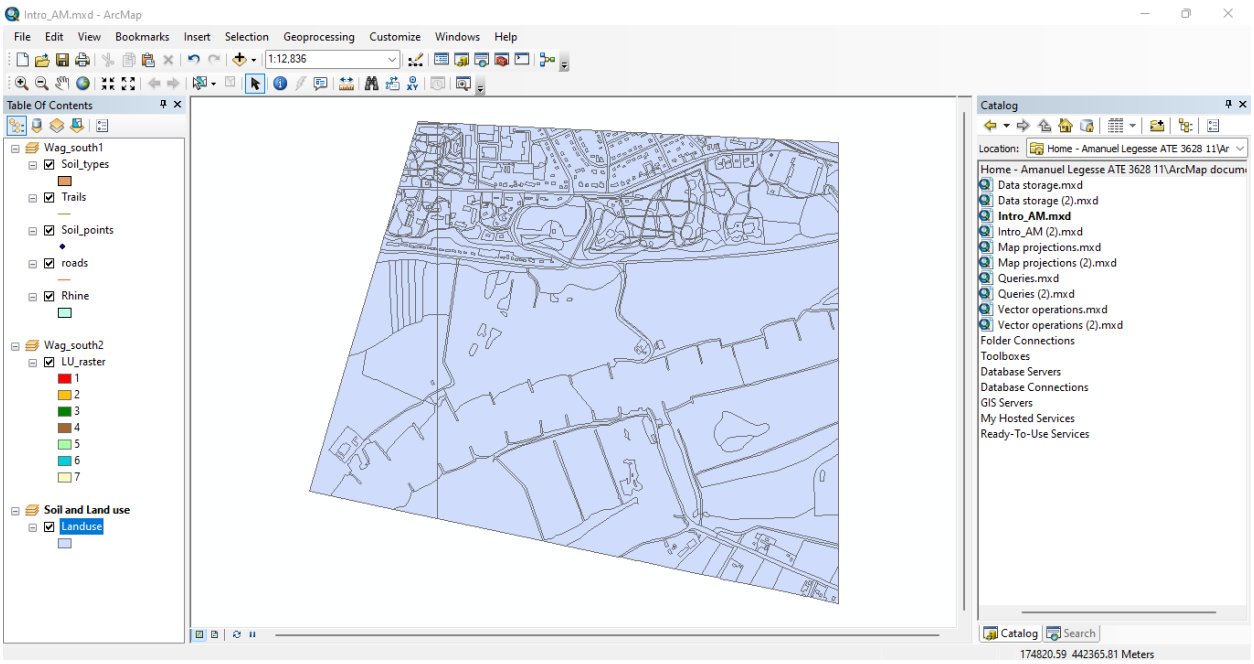

Intro_AM.mxd - ArcMap
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
1:15,000
Table Of Contents
Wag_south1
Soil_types
Trails
Soil_points
roads
Rhine
Wag_south2
LU_raster
1
2
3
4
5
6
7
Catalog
Location: Home - Amanuel Legesse ATE 3628 11\Ar
Home - Amanuel Legesse ATE 3628 11\ArcMap docum
Data storage.mxd
Data storage (2).mxd
Intro_AM.mxd
Intro_AM (2).mxd
Map projections.mxd
Map projections (2).mxd
Queries.mxd
Queries (2).mxd
Vector operations.mxd
Vector operations (2).mxd
Folder Connections
Toolboxes
Database Servers
Database Connections
GIS Servers
My Hosted Services
Ready-To-Use Services
Catalog
Search
175597.73 440546.84 Meters

6.E :


Intro_AM.mxd - ArcMap
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
Table Of Contents
Wag_south1
Soil_types
Trails
Soil_points
roads
Rhine
Wag_south2
LU_raster
1
2
3
4
5
6
7
Soil and Land use
Catalog
Location: Home - Amanuel Legesse ATE 3628 11\Ar
Home - Amanuel Legesse ATE 3628 11\ArcMap docum
Data storage.mxd
Data storage (2).mxd
Intro_AM.mxd
Intro_AM (2).mxd
Map projections.mxd
Map projections (2).mxd
Queries.mxd
Queries (2).mxd
Vector operations.mxd
Vector operations (2).mxd
Folder Connections
Toolboxes
Database Servers
Database Connections
GIS Servers
My Hosted Services
Ready-To-Use Services
Catalog
Search
419.69 424.87 Unknown Units

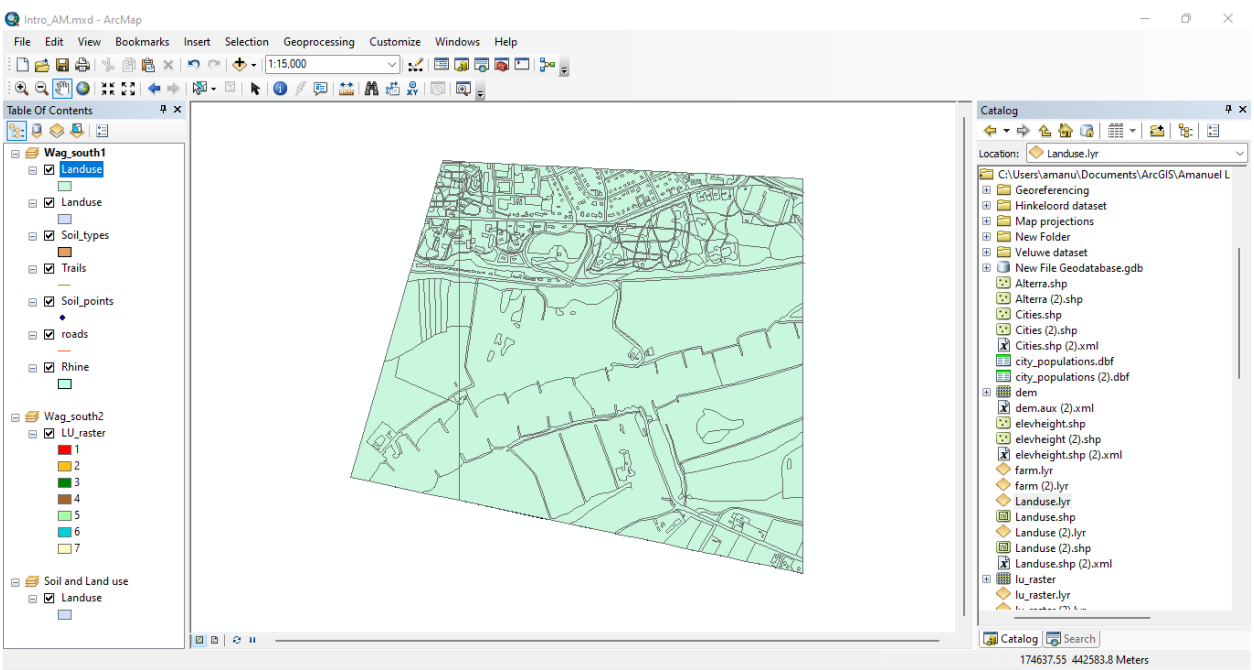
➢ Adding datasets

7.A :

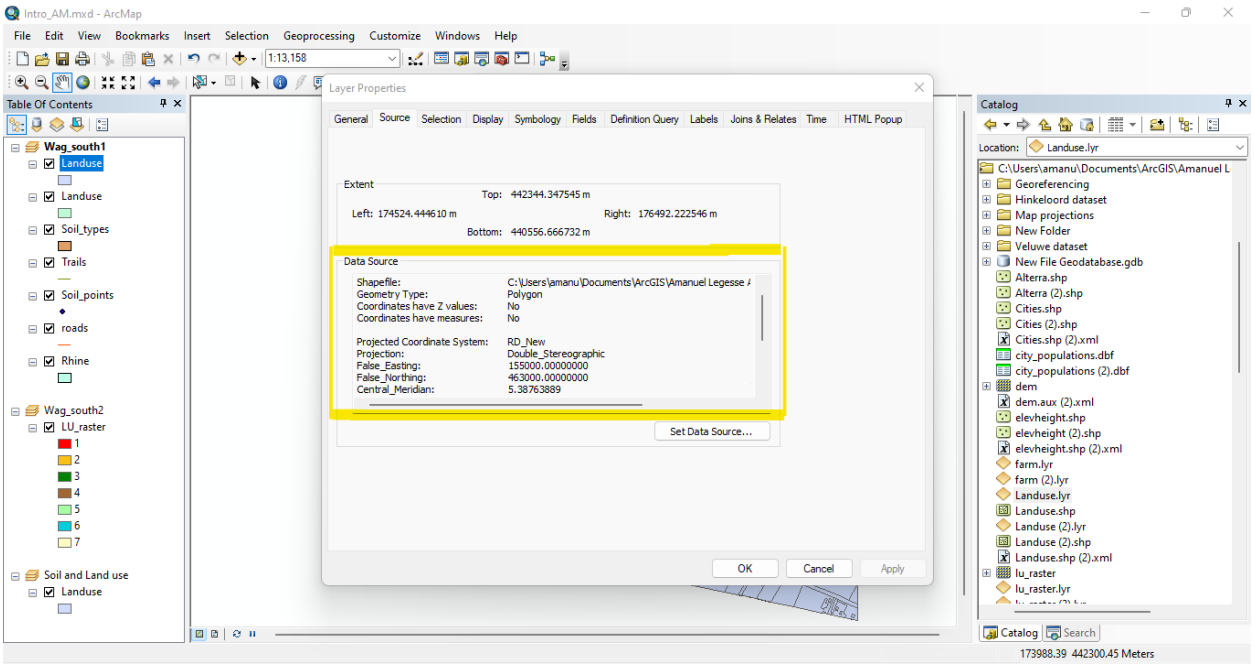


➢ Working with layer files

8.A :

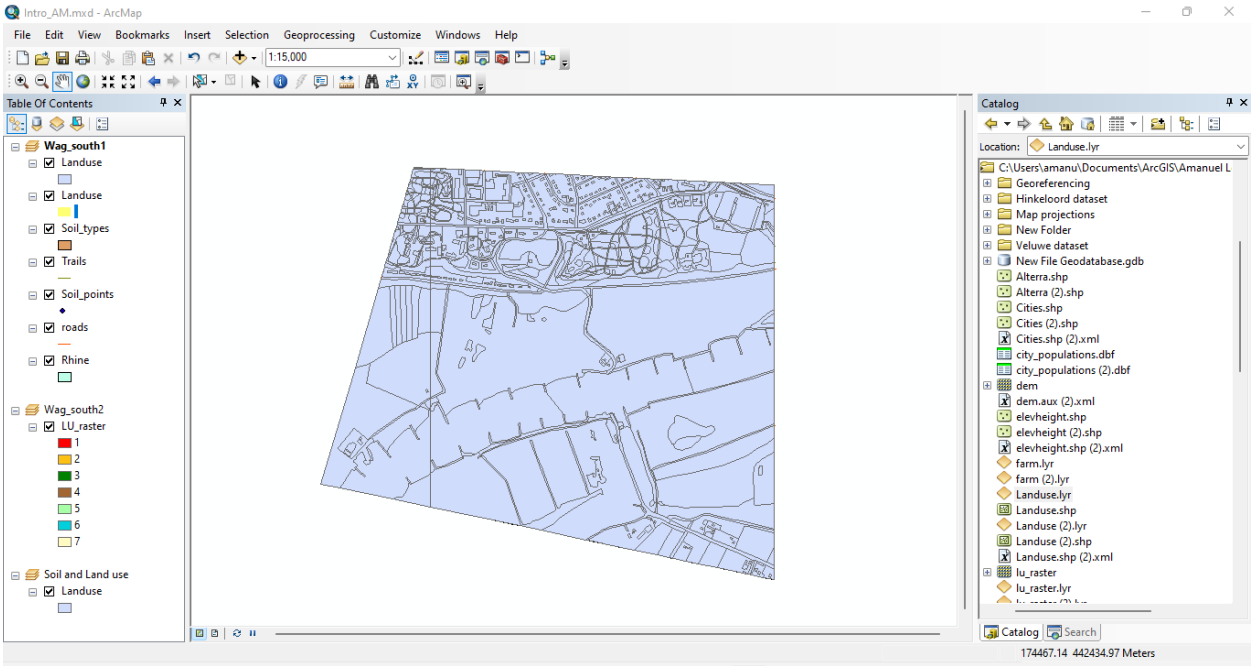


8.B :

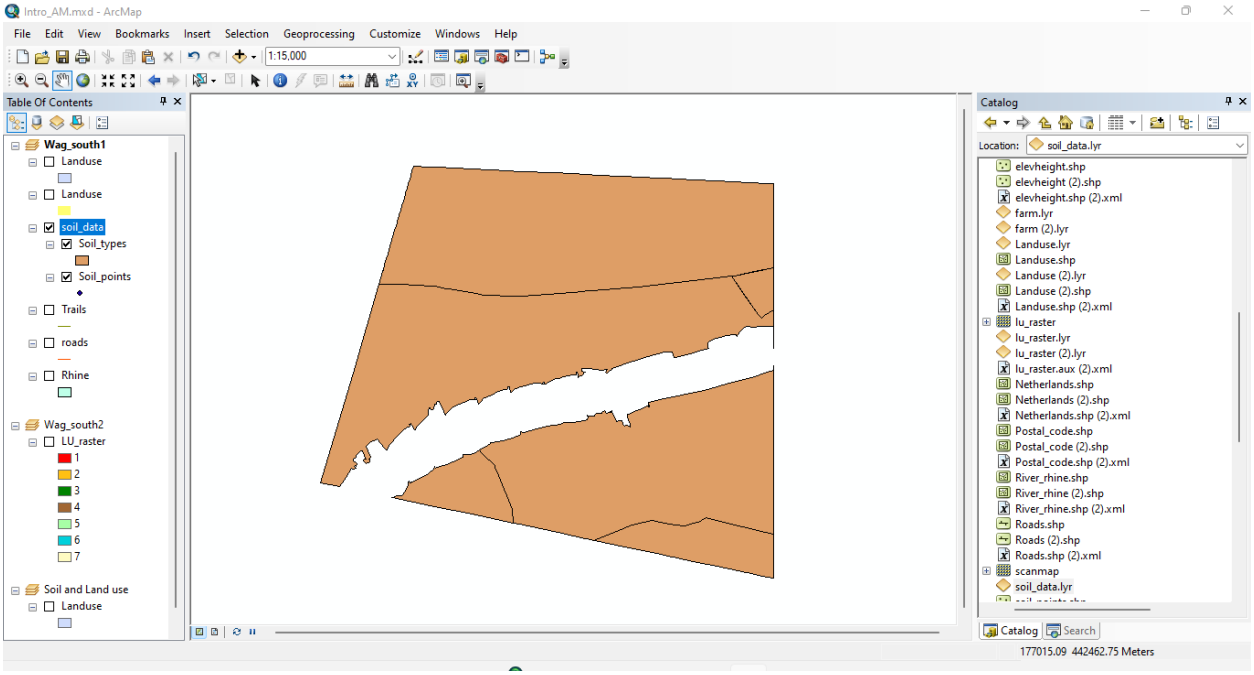


8.C :

- I tried changing the color in the dataset 'Landuse.shp' nothing happens to the layer 'Landuse.lyr'



9.A :


Intro_AM.mxd - ArcMap
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
1:15,000
Table Of Contents
Wag_south1
Landuse
Landuse
soil_data
Soil_types
Soil_points
Trails
roads
Rhine
Wag_south2
LU_raster
1
2
3
4
5
6
7
Soil and Land use
Landuse
Catalog
Location: soil_data.lyr
elevheight.shp
elevheight (2).shp
elevheight.shp (2).xml
farm.lyr
farm (2).lyr
Landuse.lyr
Landuse.shp
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lu_raster.lyr
lu_raster (2).lyr
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Roads.shp
Roads (2).shp
Roads.shp (2).xml
scanmap
soil_data.lyr
Catalog
Search
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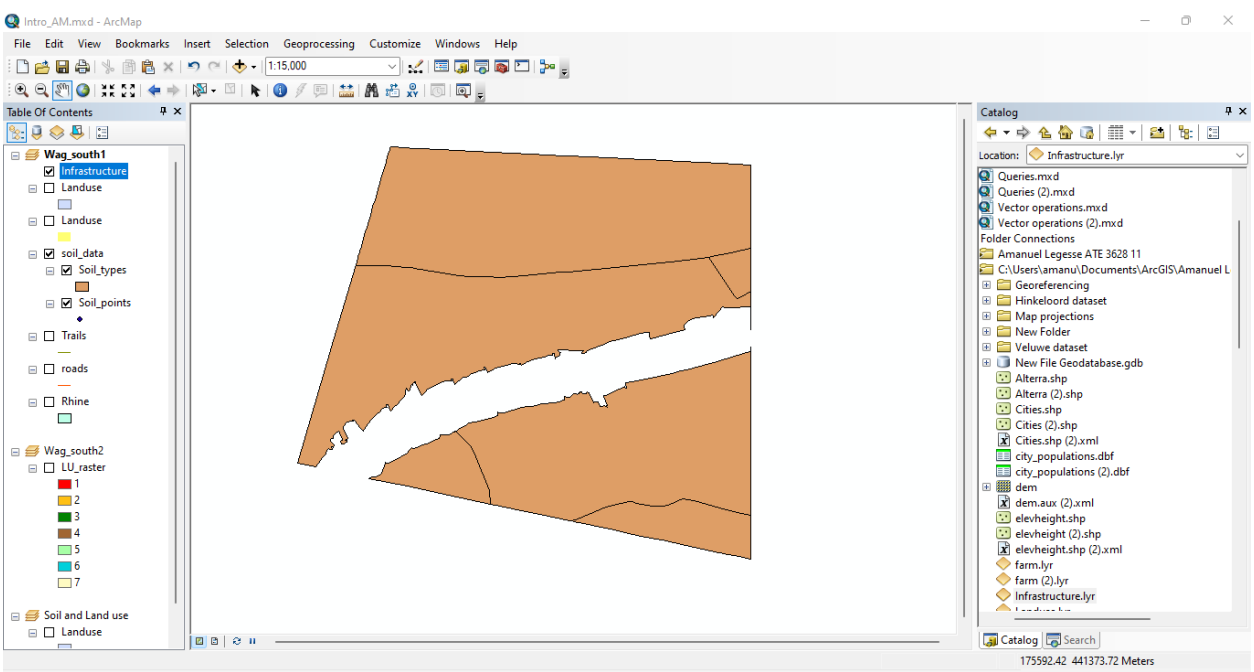
9.B: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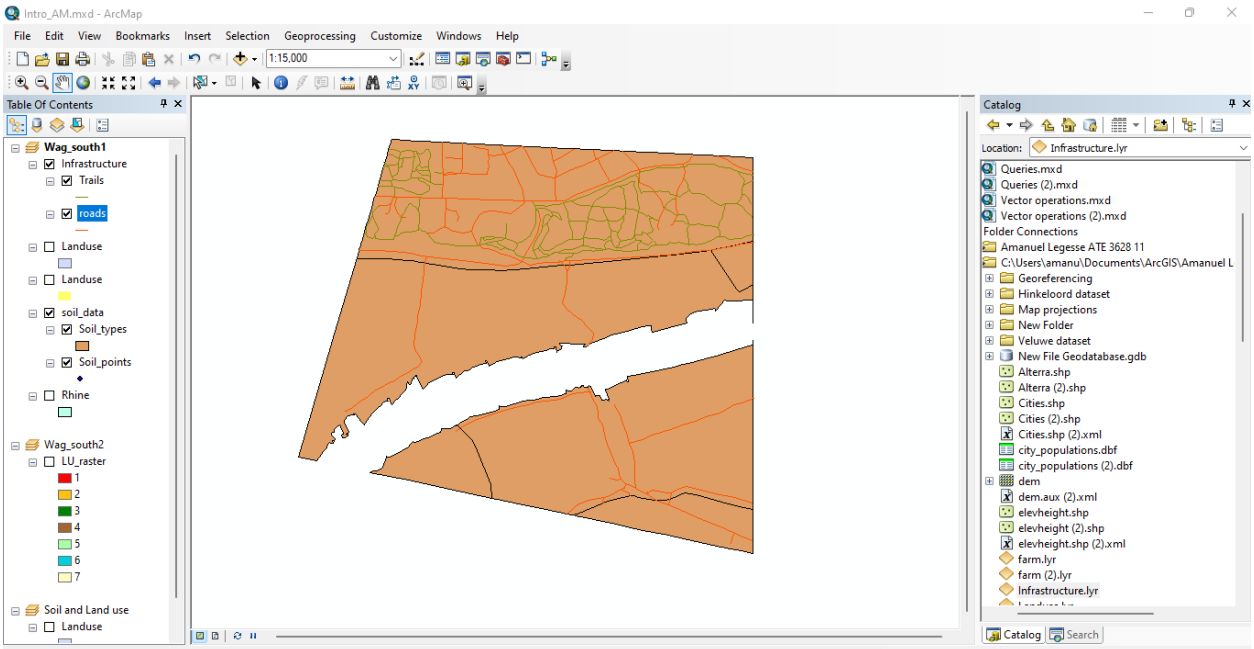
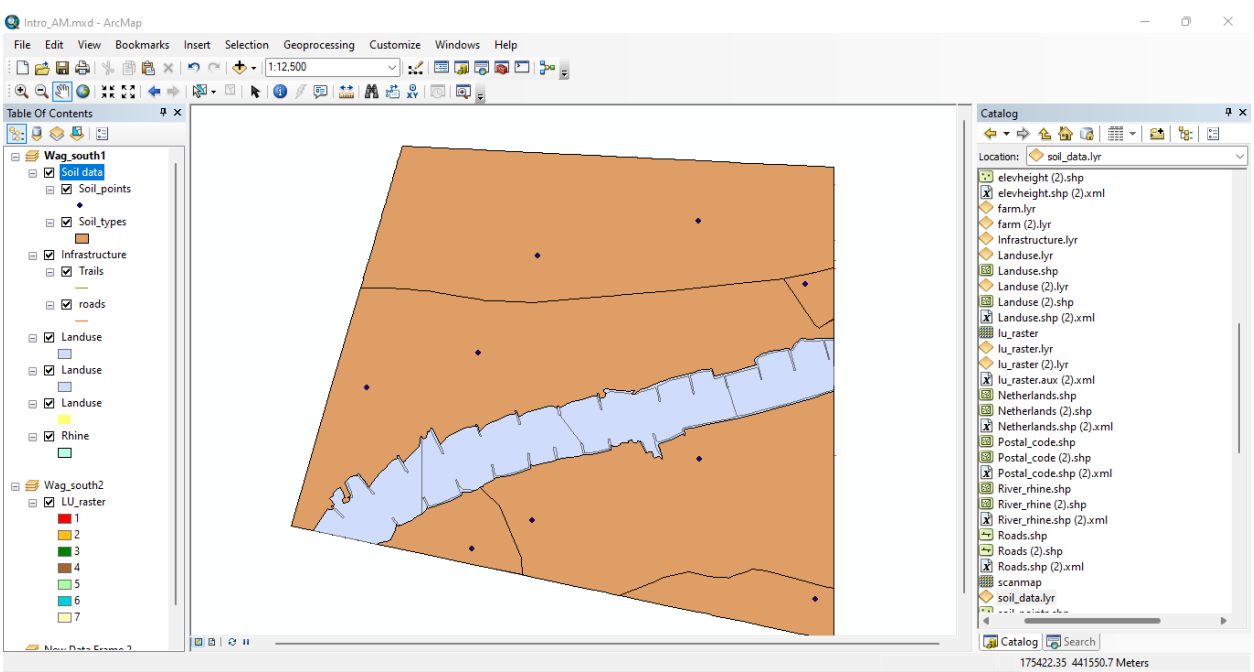
9.C :



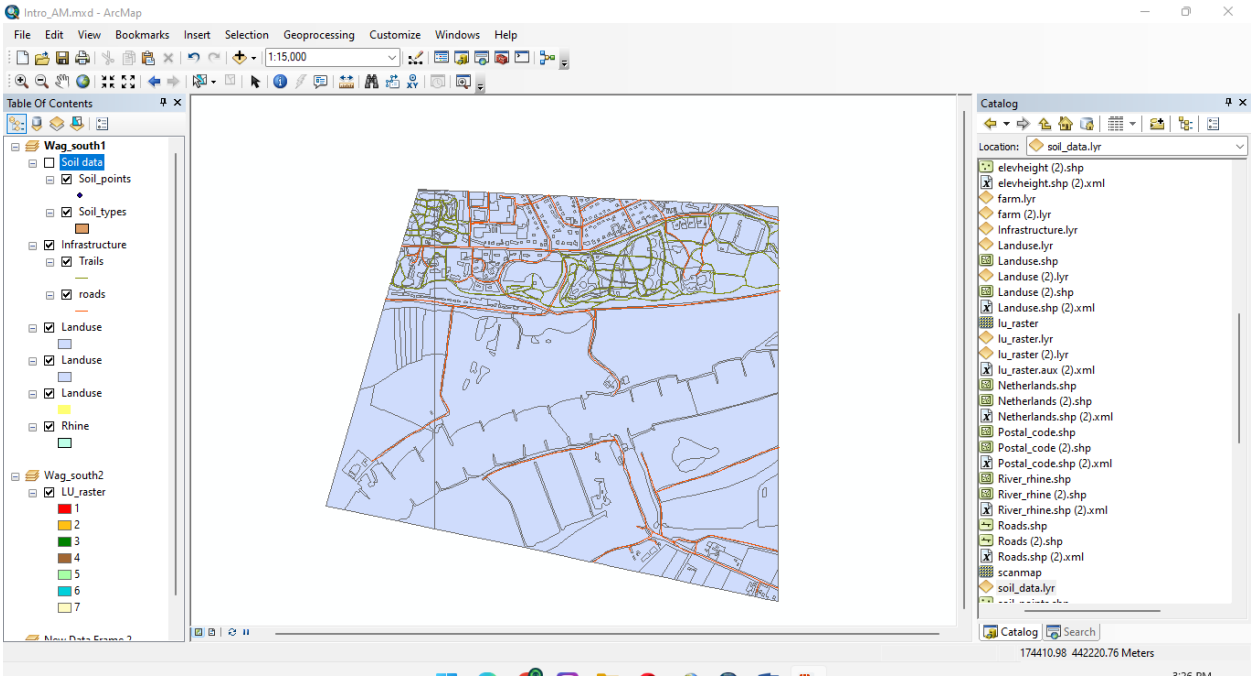
9.D :

- The other layers in the data set will disappear as if they have been deactivated but they are not, solid data will take over the infrastructure making the visibility on top hiding the other data sets

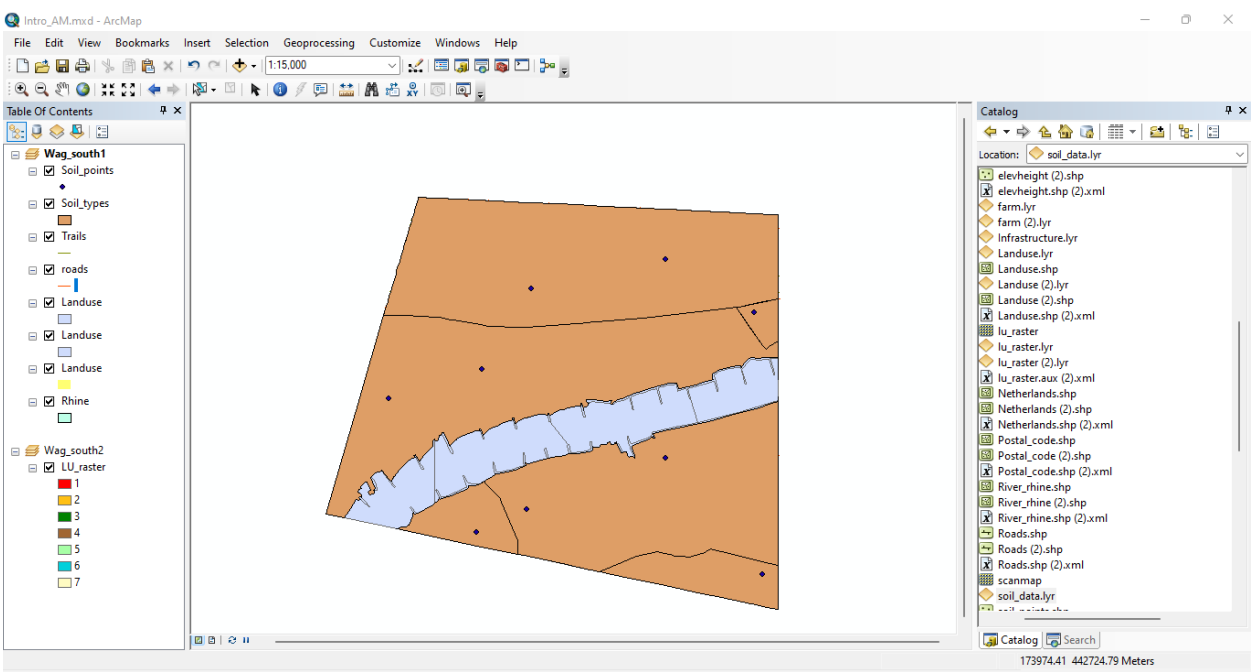


9.E :

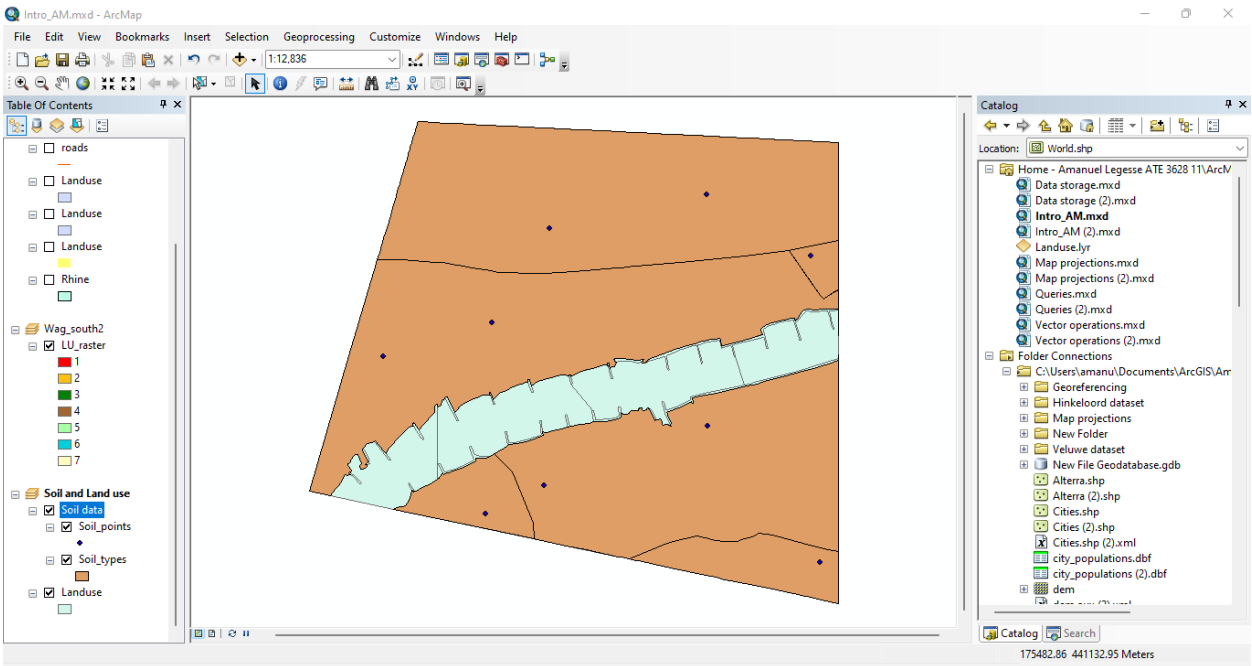
- Roads and trails become visible because Solid data is deactivated since it was the primary data.



9.F :



9.G :

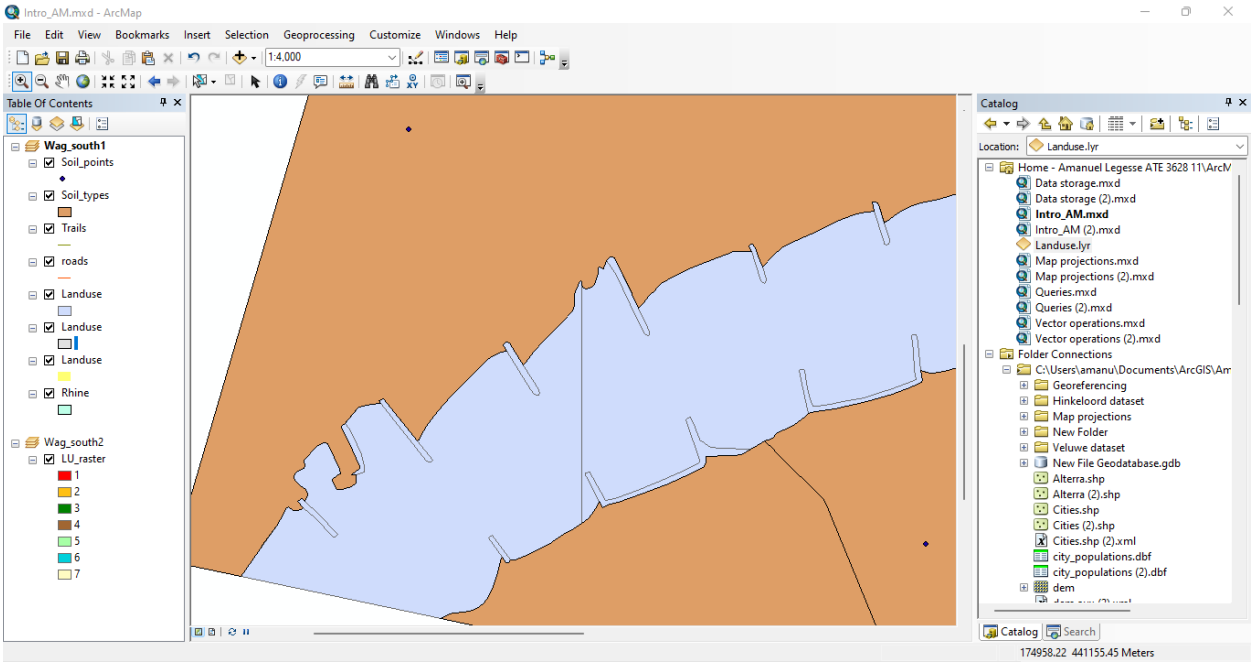


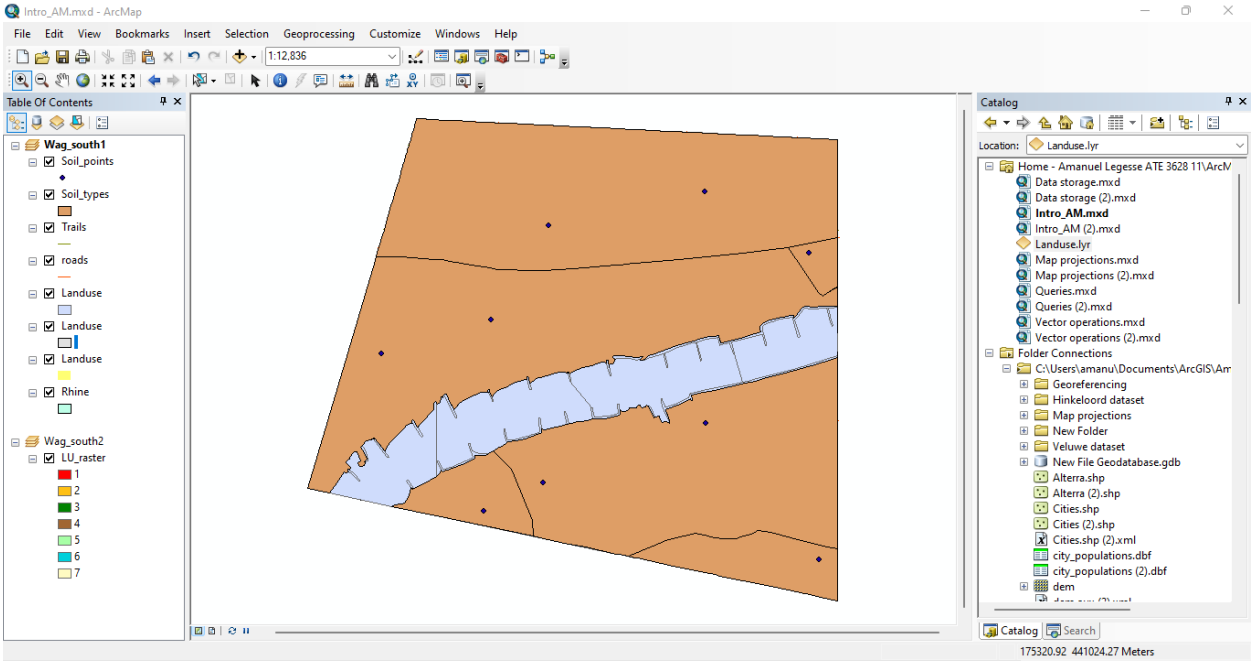
9.G :

- Removed the Data Frame ‘Soils and Land use’ from the ArcMap document.

- **Zooming in and out**

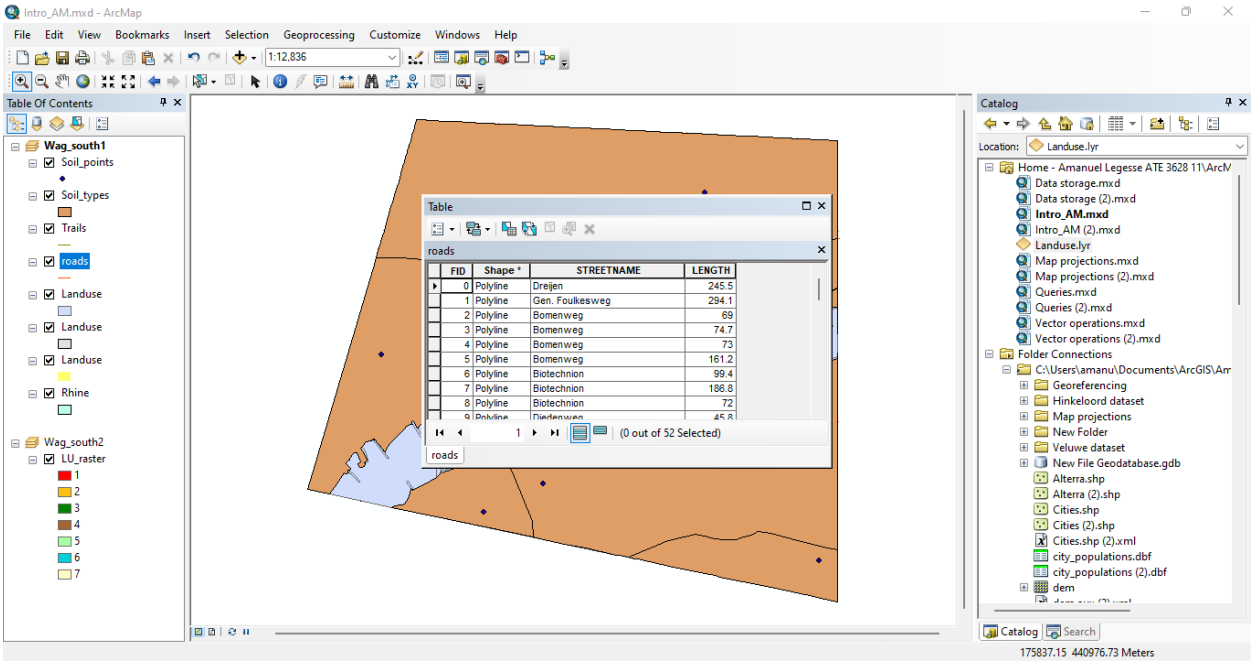
10.A :





➢ Viewing a dataset's attribute table

11.A :



A.1

- The table contains a polyline feature type.

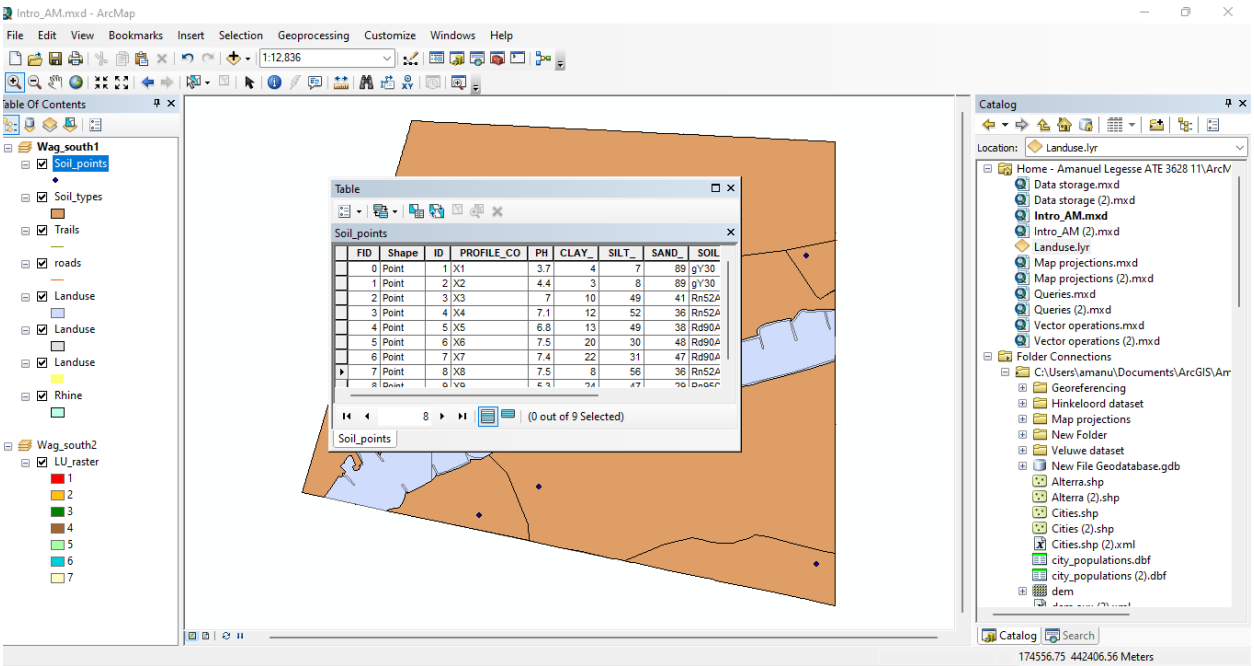
A.2

- There are 4 attributes. FID, shape, street name and length.

A.3

- The table contains 52 records.

11.A.1 :



B.1

- The table contains a points feature type.

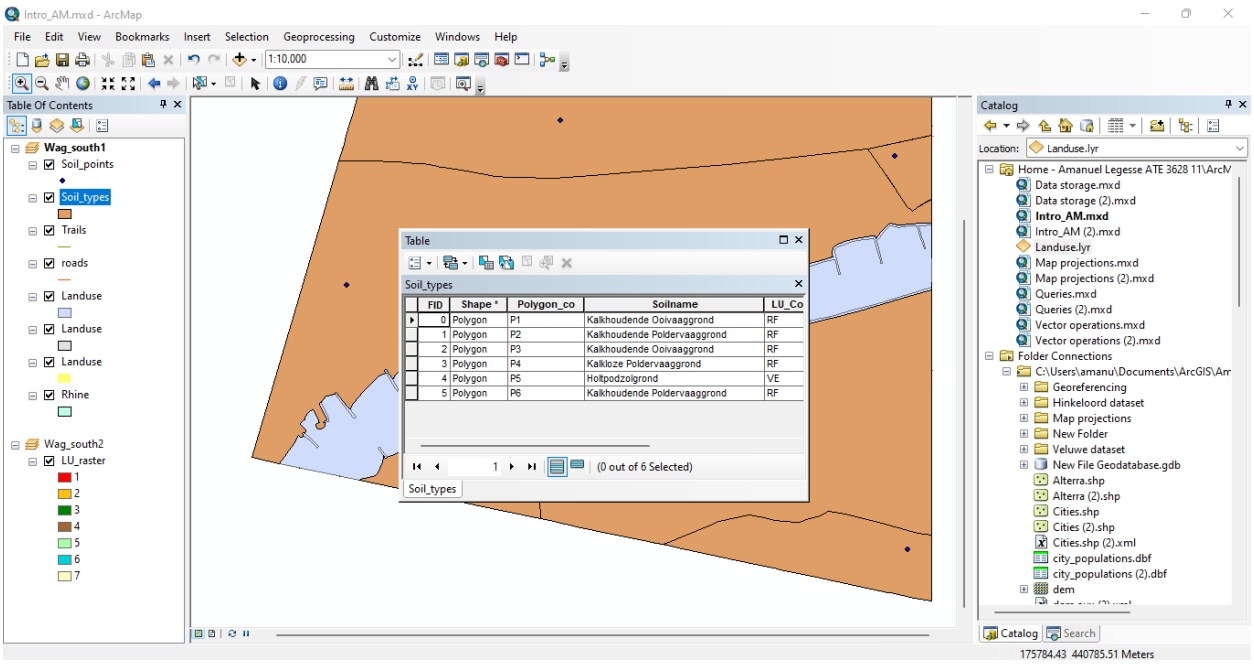
B.2

- There are 10 attributes. FID, ID, shape, profile_co, PPH, clay, silt, sand, soilcode and sc_ratio.

B.3

- The table contains 9 records.

11.B.1 :



B.1.1

- The table contains a polygon feature type.

B.2.1

- There are 8 attributes. FID, ID, shape, polygon_co, soliname, solicode, lu_code, A.

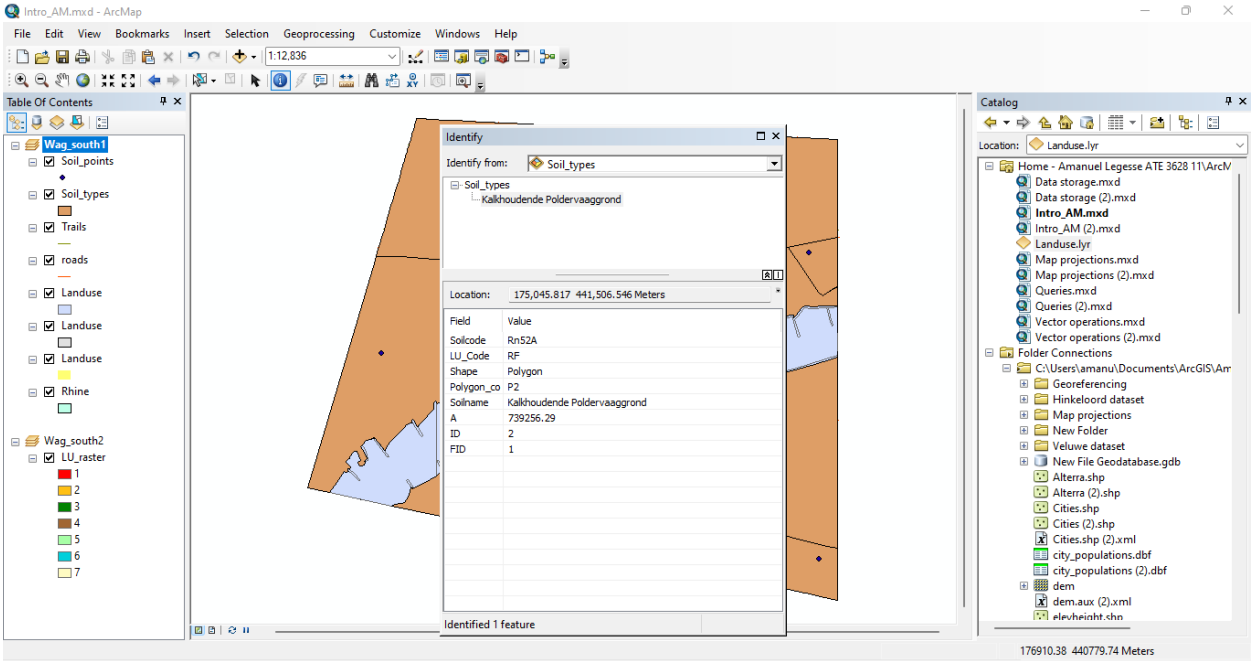
B.3.1

- The table contains 6 records.

11.C

- Each column represents a field of the record. Rows and columns intersect to form cells, which contain a specific value for one field in a record.

11.D :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Identify
Identify from: Soil_types
Soil_types
Kalkhoudende Poldervaaggrond
Location: 175,045.817 441,506.546 Meters
Field Value
Soilcode Rn52A
LU_Code RF
Shape Polygon
Polygon_co P2
Soilname Kalkhoudende Poldervaaggrond
A 739256.29
ID 2
FID 1
Identified 1 feature
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city_populations (2).dbf
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12.A :

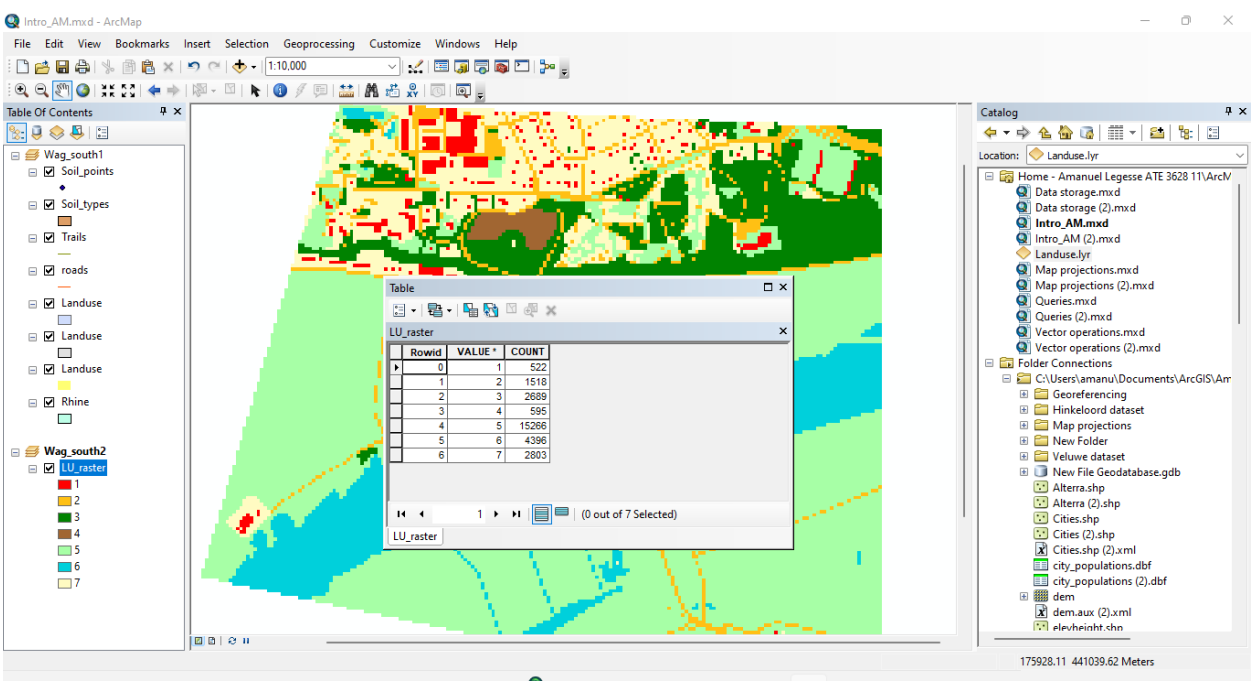
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Table
LU_raster
Rowid VALUE * COUNT
0 1 522
1 2 1518
2 3 2689
3 4 595
4 5 15266
5 6 4396
6 7 2803
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dem.aux (2).xml
175928.11 441039.62 Meters

- There are 3 attributes. Rowid, Value and count.

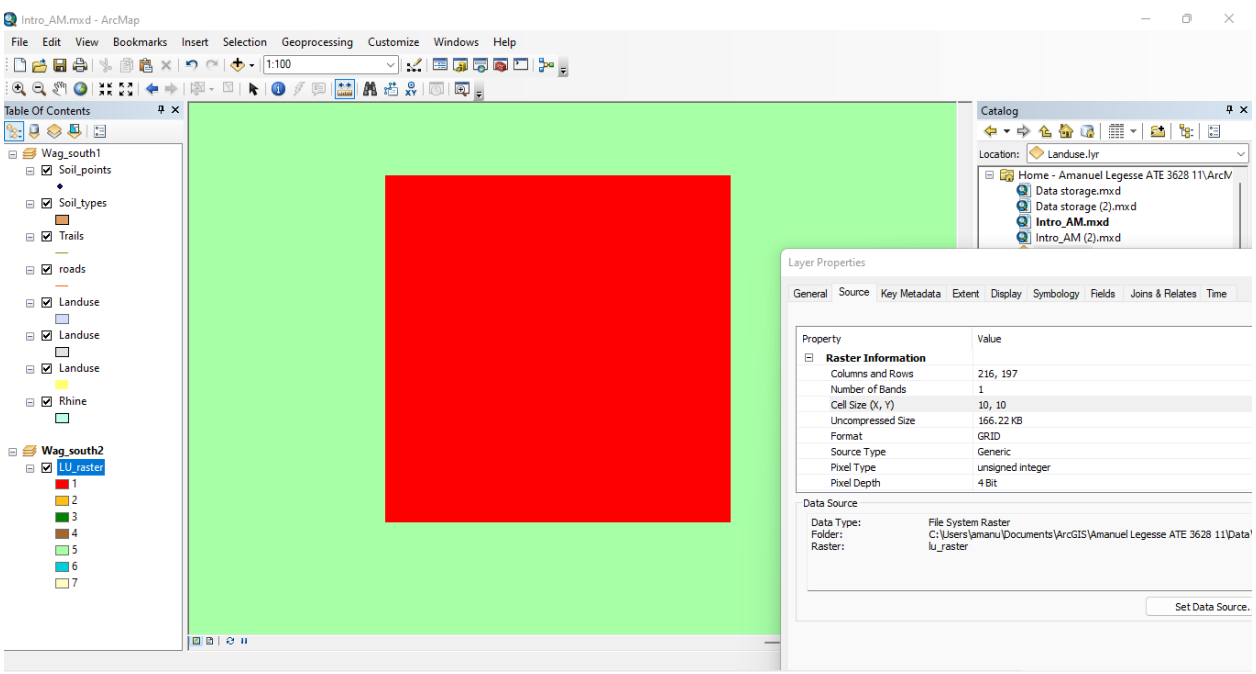
12.B

- The table contains 7 records.

12.C

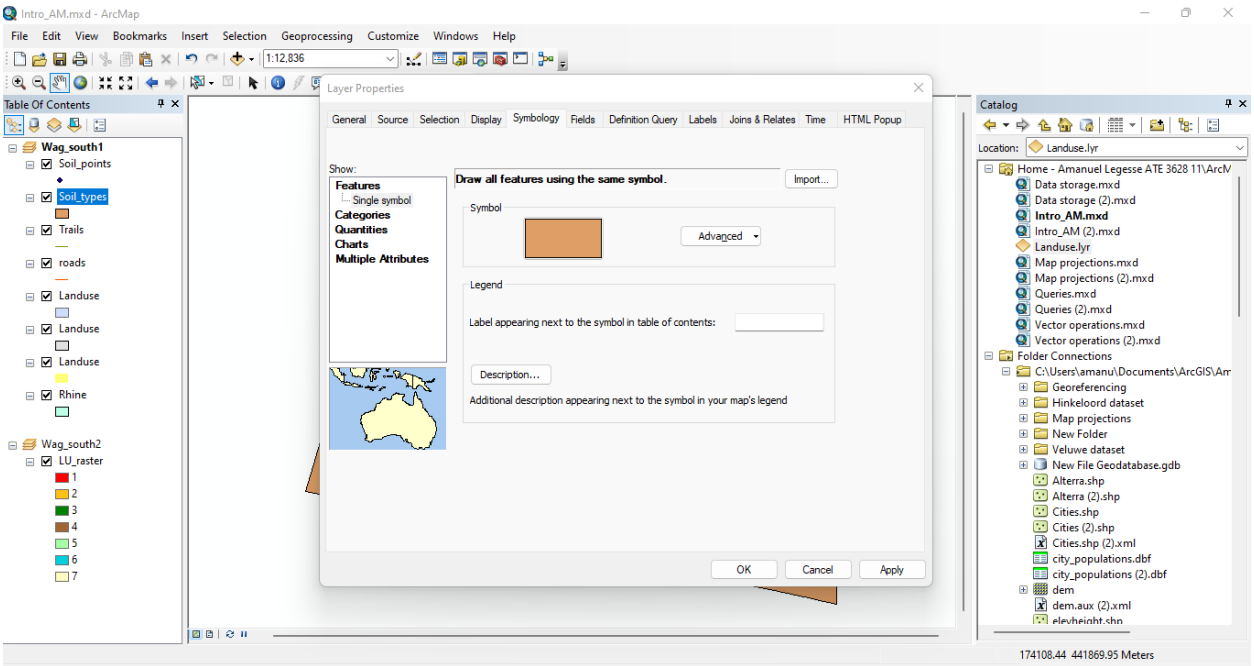
- **Count** command allows you to view the number of features in the map based on feature classes and subtypes.
- **Value** is a measurable quantity that may be passed to a function. Values are either assigned or determined by calculation.

12.D :



➢ Symbolizing spatial vector data

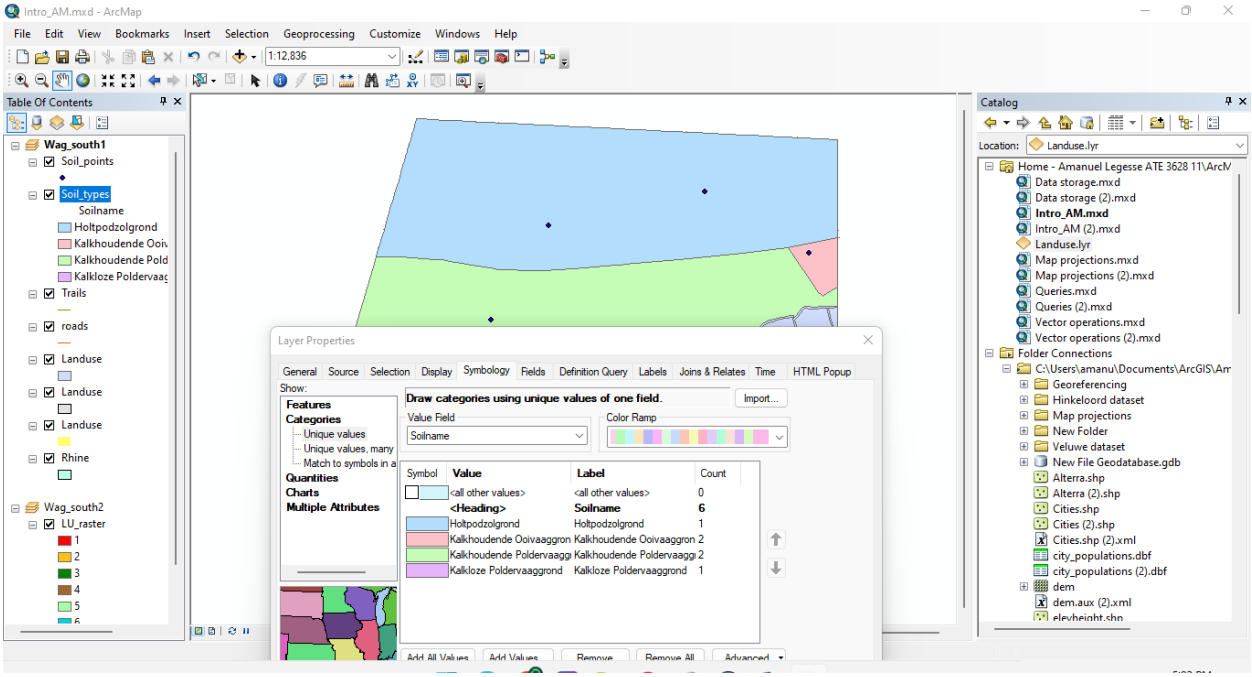
13.A :



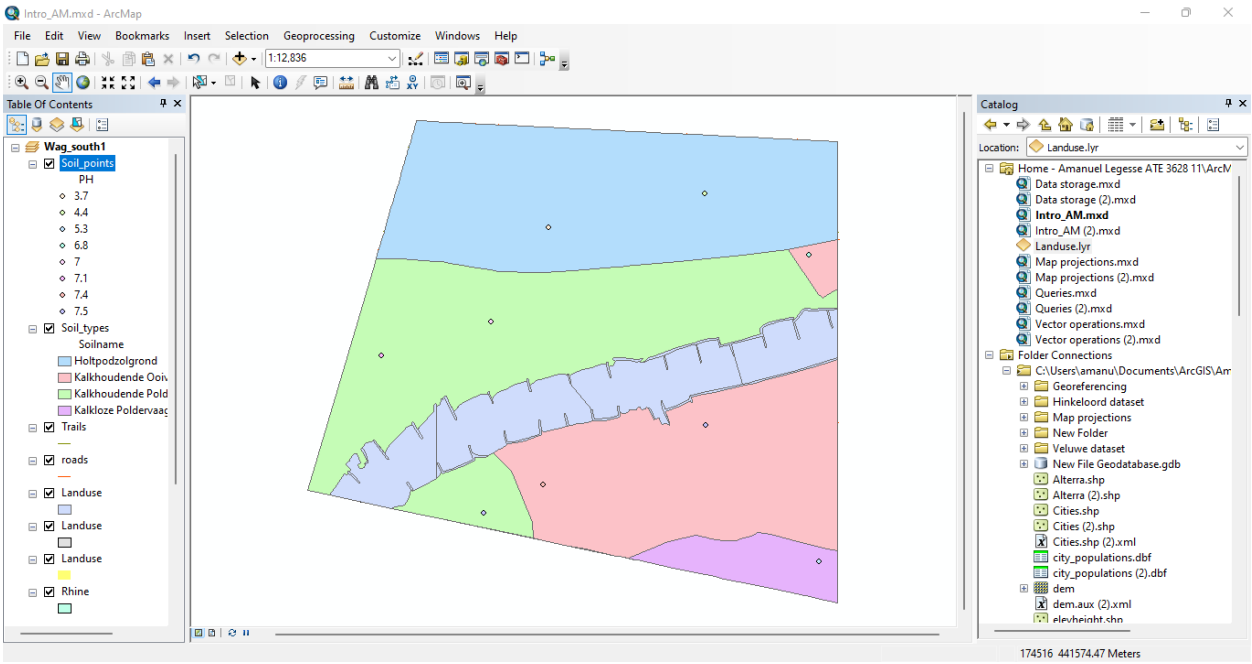
- **The map type used is features.**

13.B :

- **I used the catagories – unique values map in order to choose the attribute to display on my map.**



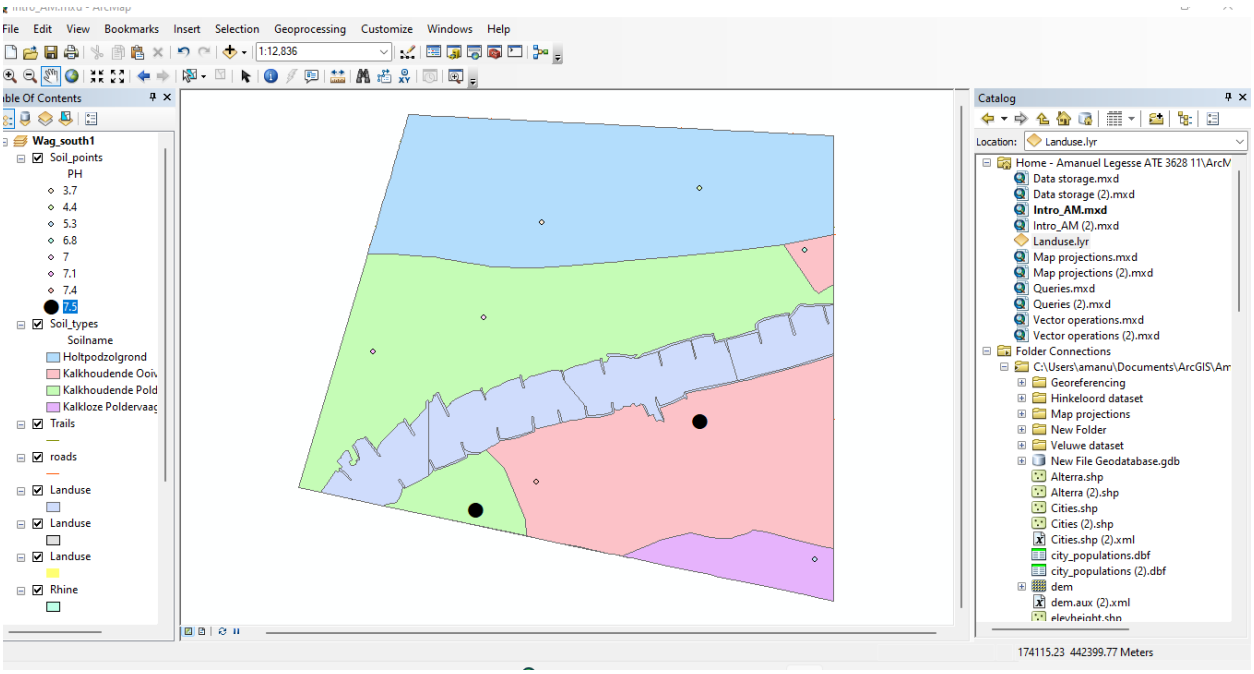
13.C :



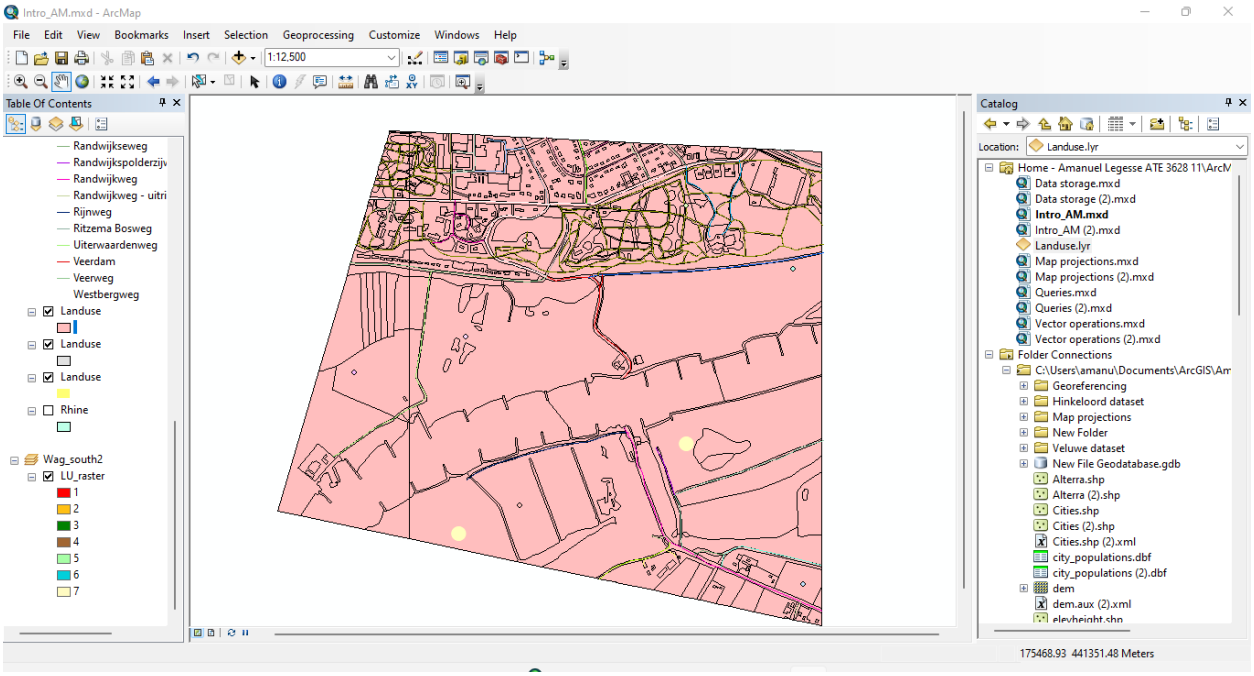
13.D :

- **I used the catagories – unique values map in order to choose the attribute to display on my map.**

13.E :



14.A :



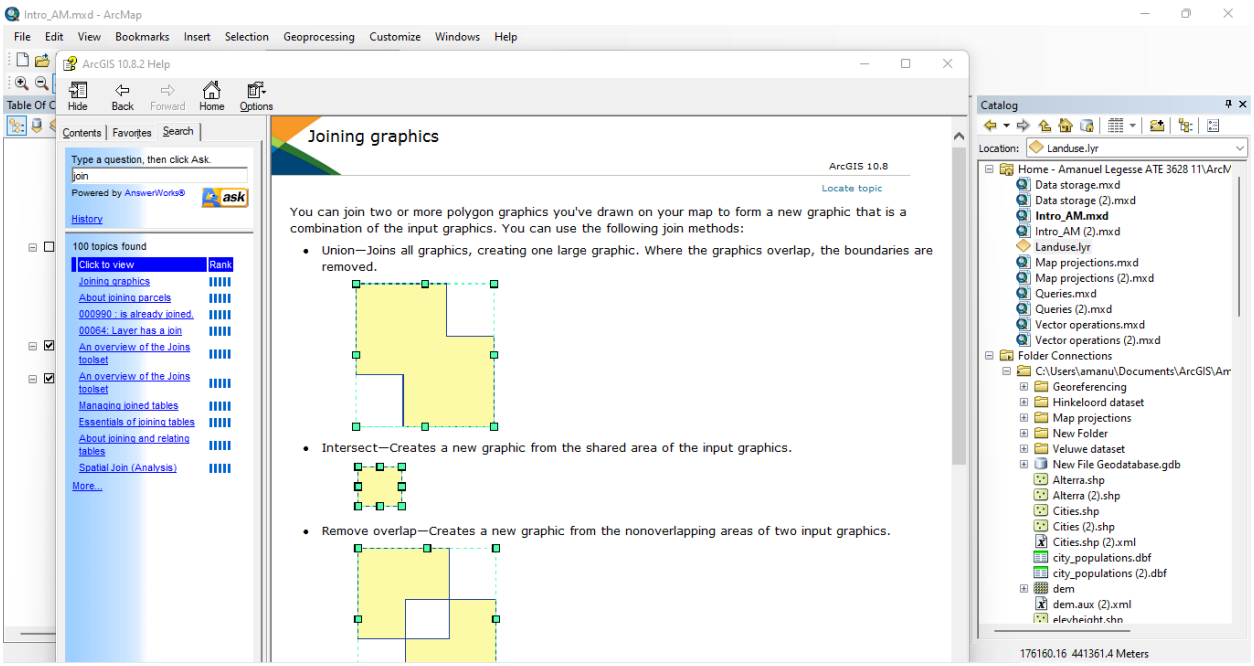
14.B

- The dataset contains 30 street names.

14.C:

- All the road features are polyline because features don't depend on street names.

15.A :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ask
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Click to view
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00064: Layer has a join
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An overview of the Joins toolset
Managing joined tables
Essentials of joining tables
About joining and relating tables
Spatial Join (Analysis)
More...
Joining graphics
ArcGIS 10.8
Locate topic
You can join two or more polygon graphics you've drawn on your map to form a new graphic that is a combination of the input graphics. You can use the following join methods:
Union—Joins all graphics, creating one large graphic. Where the graphics overlap, the boundaries are removed.
Intersect—Creates a new graphic from the shared area of the input graphics.
Remove overlap—Creates a new graphic from the nonoverlapping areas of two input graphics.
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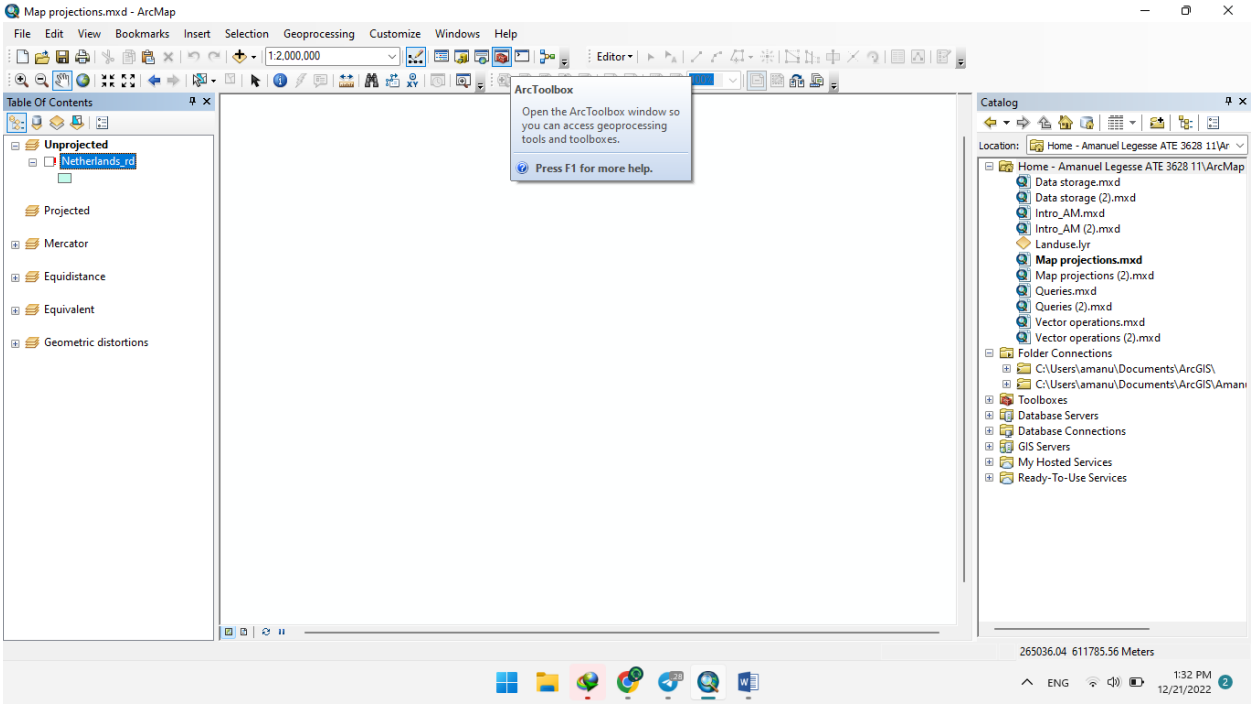
15.B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