



LECTURE #5

Mapping Freiburg – Spatial Analysis between Rivers/Lakes and buildings in Freiburg

OBJECTIVE

CREATE A THEMATIC MAP OF RIVERS/LAKES AND BUILDINGS IN FREIBURG BASED ON “SPATIAL QUESTIONS”.

- ANSWER SPATIAL QUESTIONS THROUGH GEOPROCESSING OPERATIONS.
 - APPLY THE CLIP, BUFFER, AND INTERSECT TOOLS IN QGIS.

STEPS

1. OPEN THE ‘PROJECT WASSER’ FROM LECTURE#4;
2. ADD BUILDINGS AND STYLE THE LAYER.
3. CLIP DATA TO FREIBURG (BUILDINGS).
4. APPLY BUFFER AND INTERSECT.
5. EXPORT MAP.

1 – OPEN PROJECT WASSER

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IMPORTANT

- OPEN THE QGIS PROJECT “WASSER” CREATED IN LECTURE#4.
- CHECK IF THE RIVERS AND LAKES LAYERS ARE CORRECTLY DISPLAYED AND STYLED.
- WHERE ARE THE MAIN RIVERS AND LAKES LOCATED IN FREIBURG?

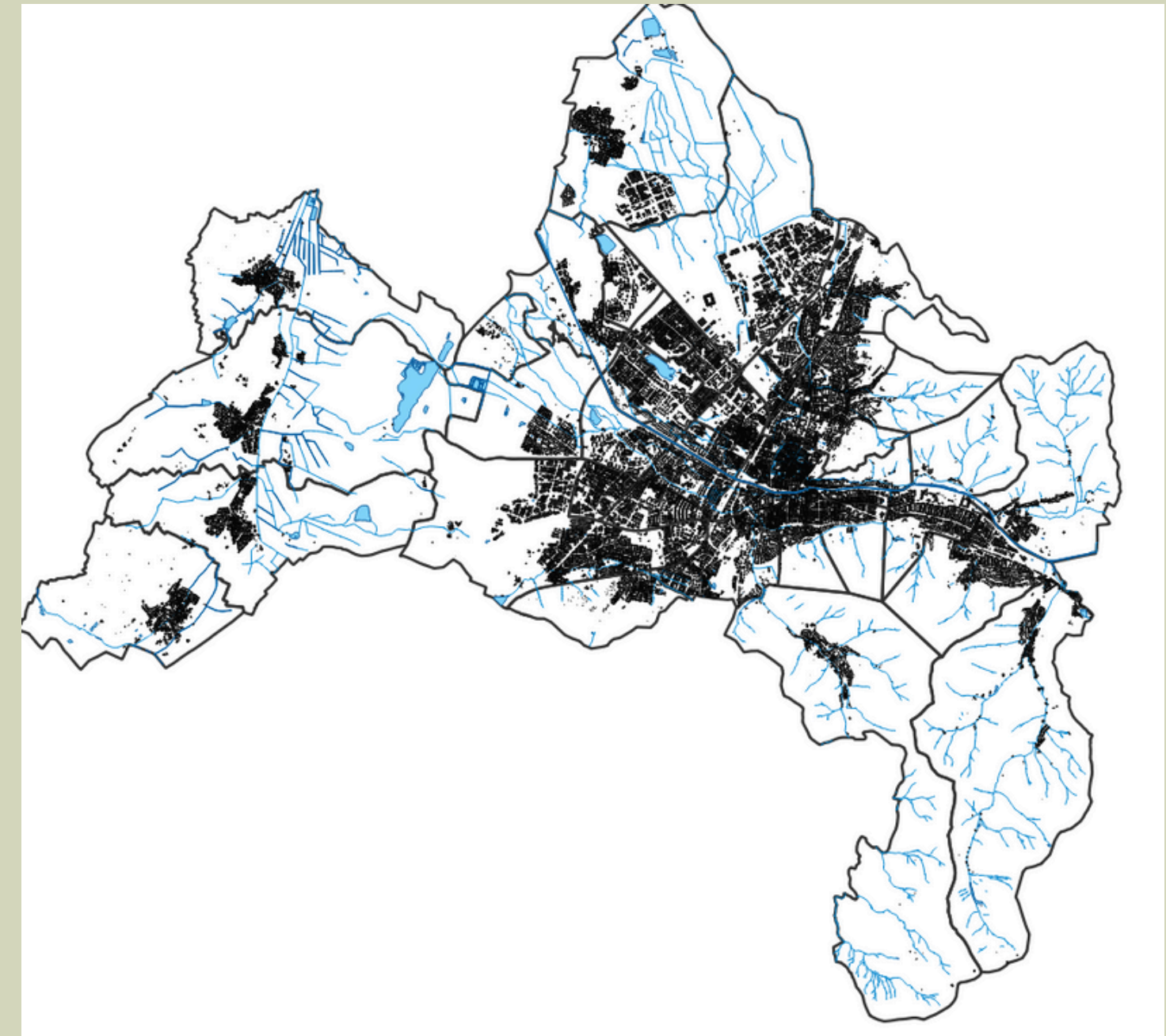
3 – ADD BUILDINGS AND STYLE THE LAYER

ADD LAYER: 'GIS_OSM_BUILDINGS_A_FREE_1'

(FROM FOLDER: FREIBURG-REGBEZ-251026-FREE)

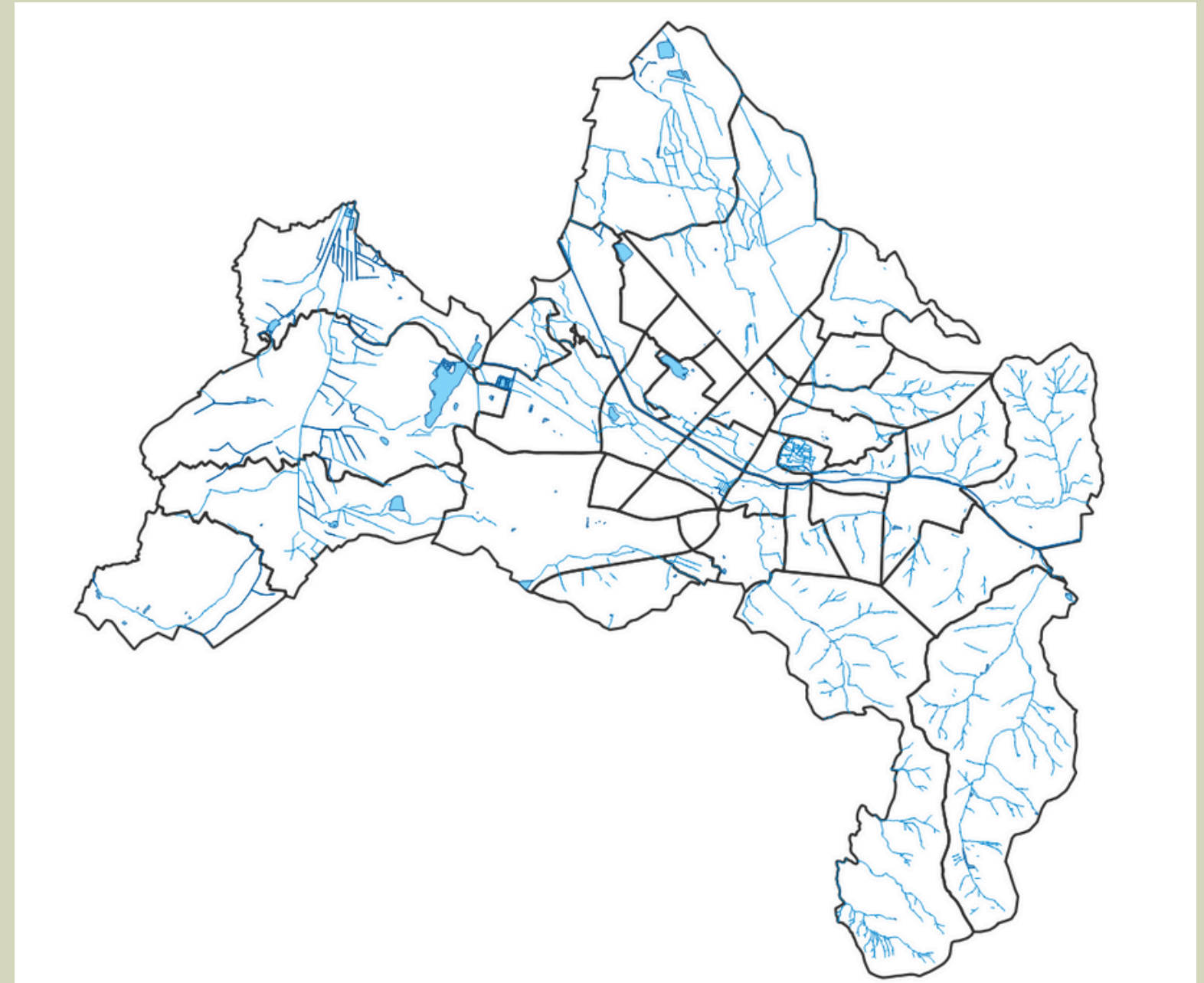
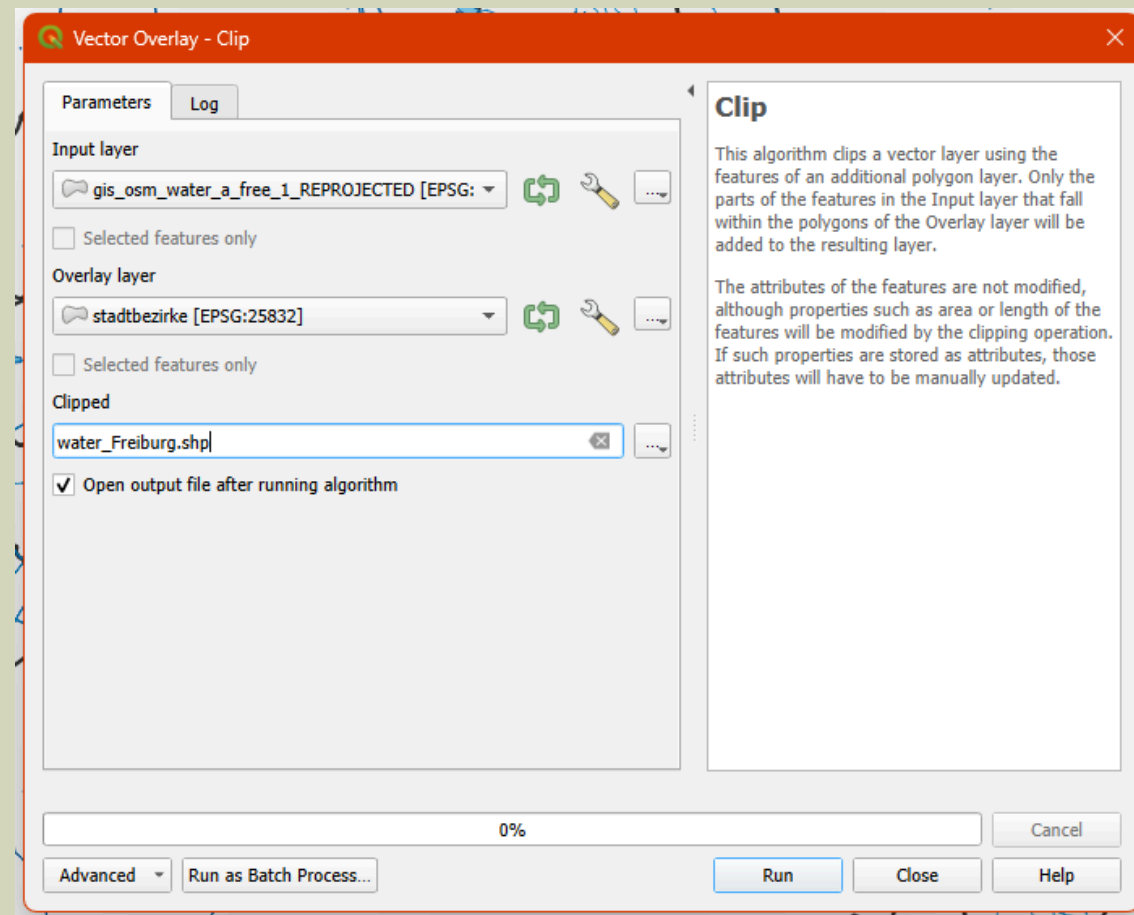
- A) REPROJECT TO THE PROJECT'S CRS;
- B) CLIP THE NEW LAYER (BUILDINGS) TO FREIBURG'S EXTENSION.
- C) STYLE OF BUILDINGS (POLYGONS)
 - FILL COLOR: #595959
 - BORDER: BLACK #000000, WIDTH 0.5

SPATIAL QUESTION:
HOW ARE BUILDINGS DISTRIBUTED ACROSS FREIBURG?



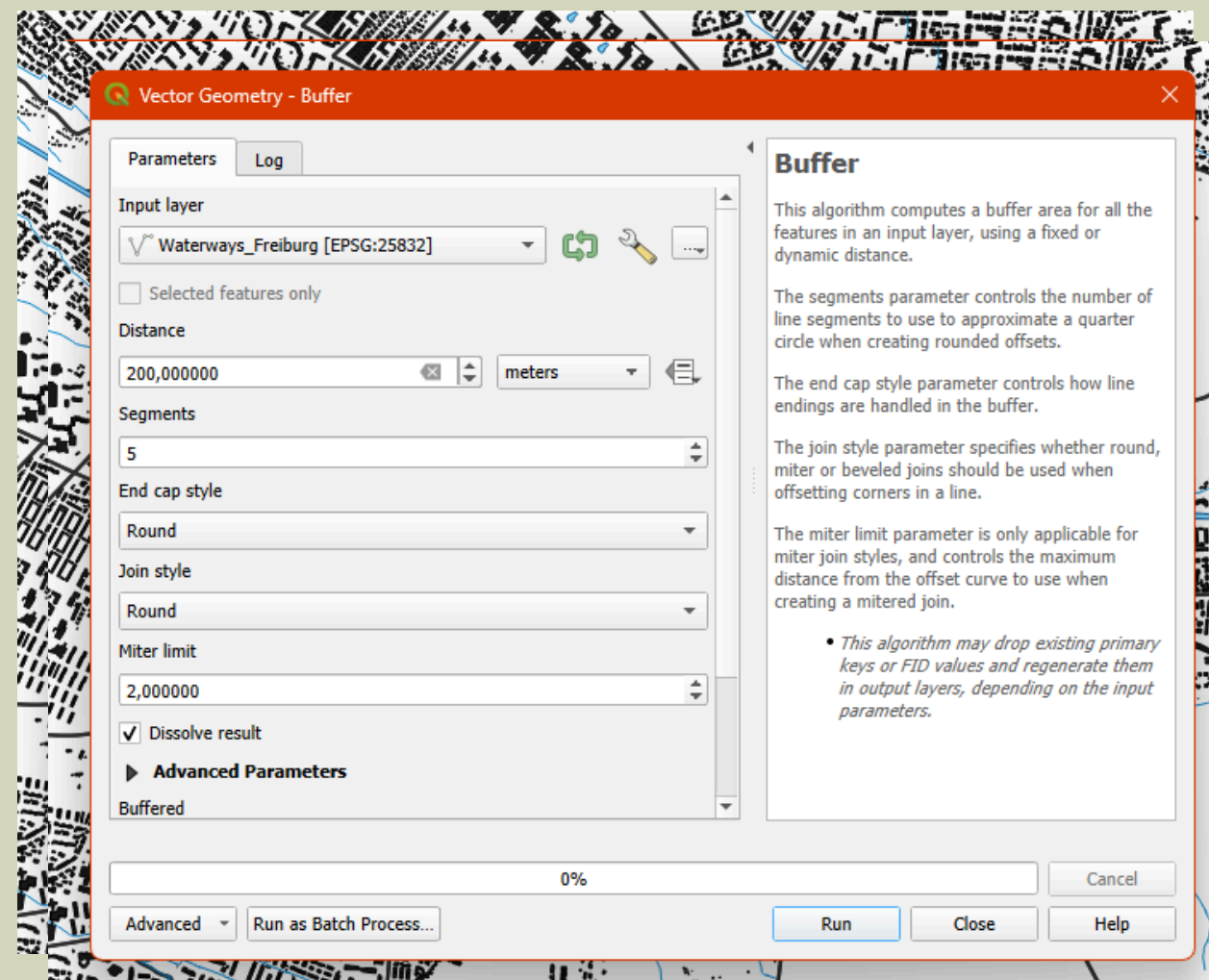
3 – CLIP DATA TO FREIBURG

- GO TO VECTOR → GEOPROCESSING TOOLS → CLIP
- INPUT LAYER: WATERWAYS OR WATER
- OVERLAY LAYER: STADTBEZIRKE_FREIBURG
- OUTPUT FILE NAME: RIVERS_FREIBURG.SHP AND LAKES_FREIBURG.SHP

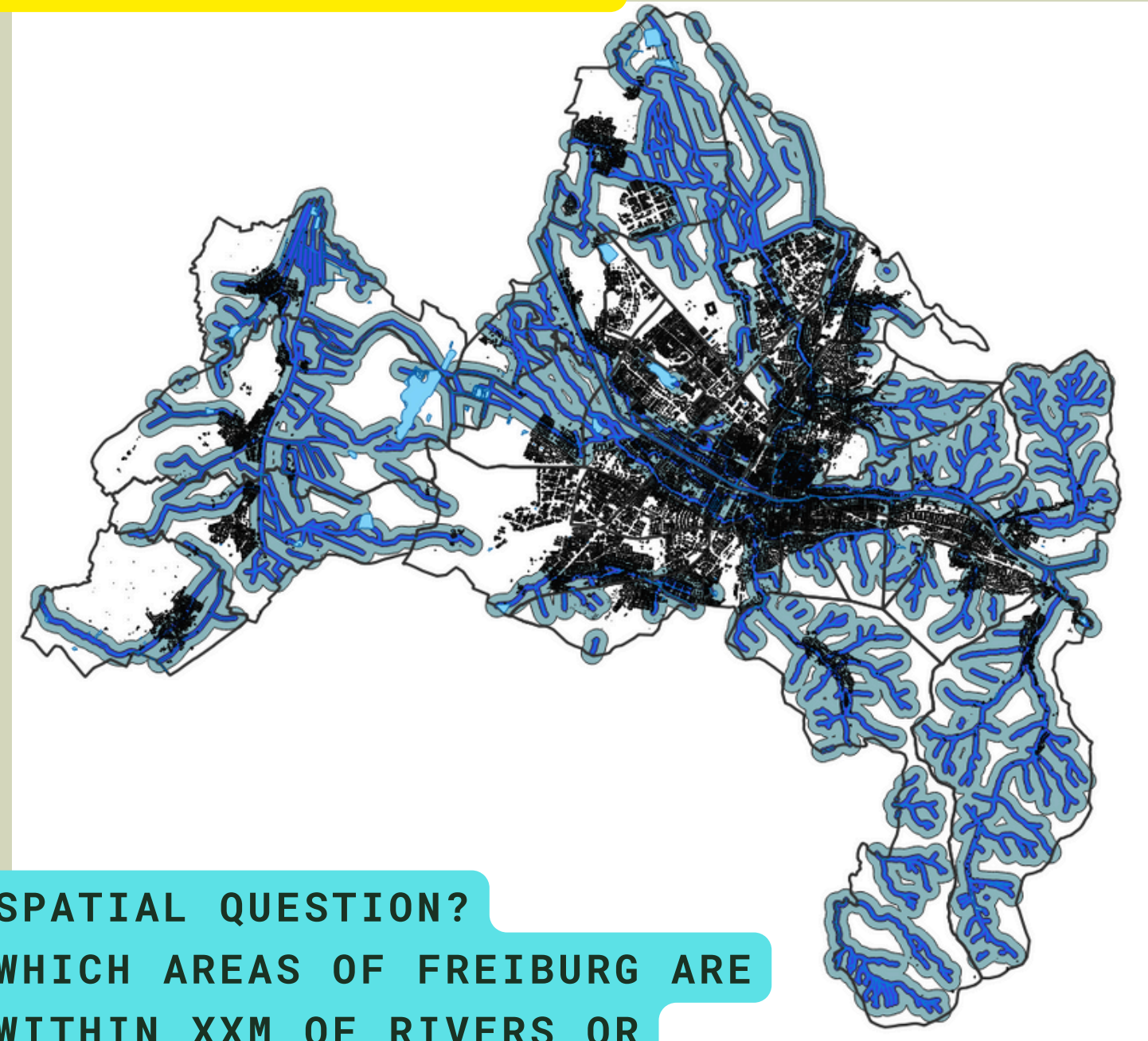


4. APPLY BUFFER AND INTERSECT

- BUFFER:
- GO TO VECTOR → GEOPROCESSING TOOLS → BUFFER.
- INPUT LAYER: RIVERS_LAKES_FREIBURG.SHP
- SET DISTANCE (E.G., 100 M).
- SAVE AS BUFFER_RIVERS_100M.SHP.



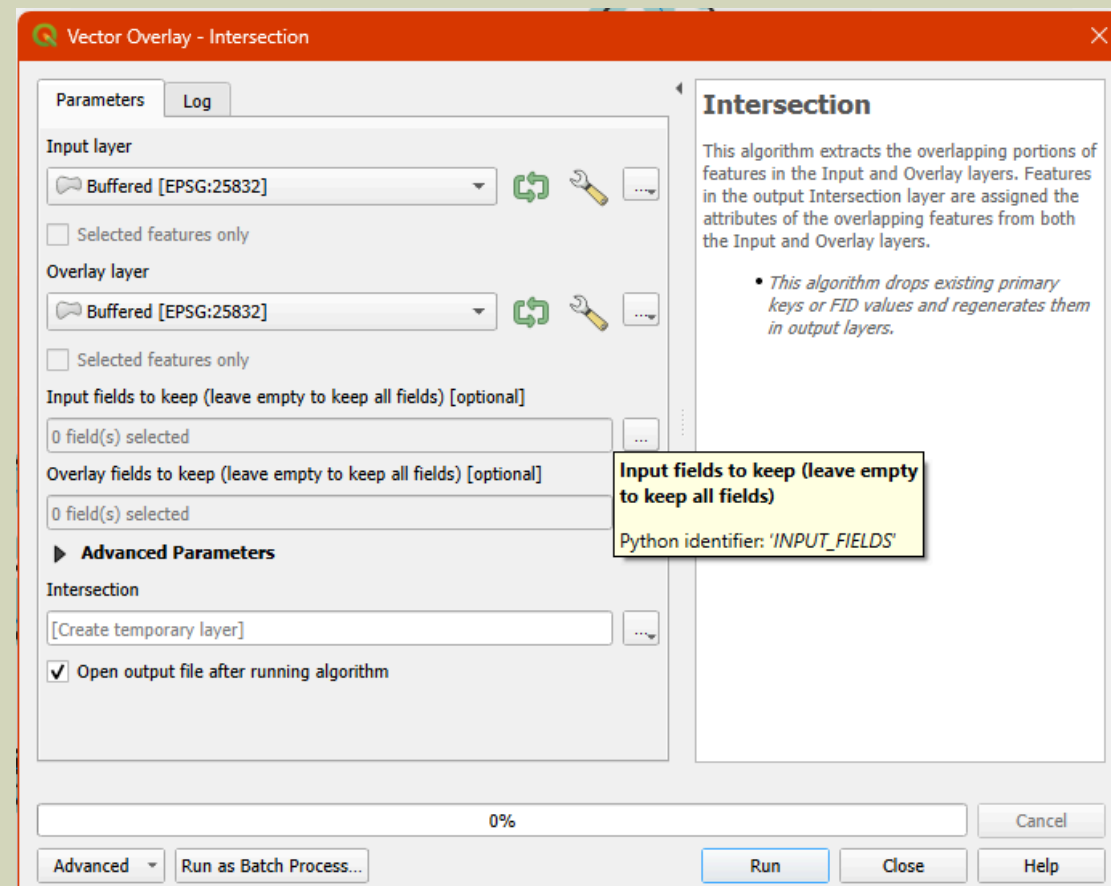
TEST MORE DISTANCES TOO



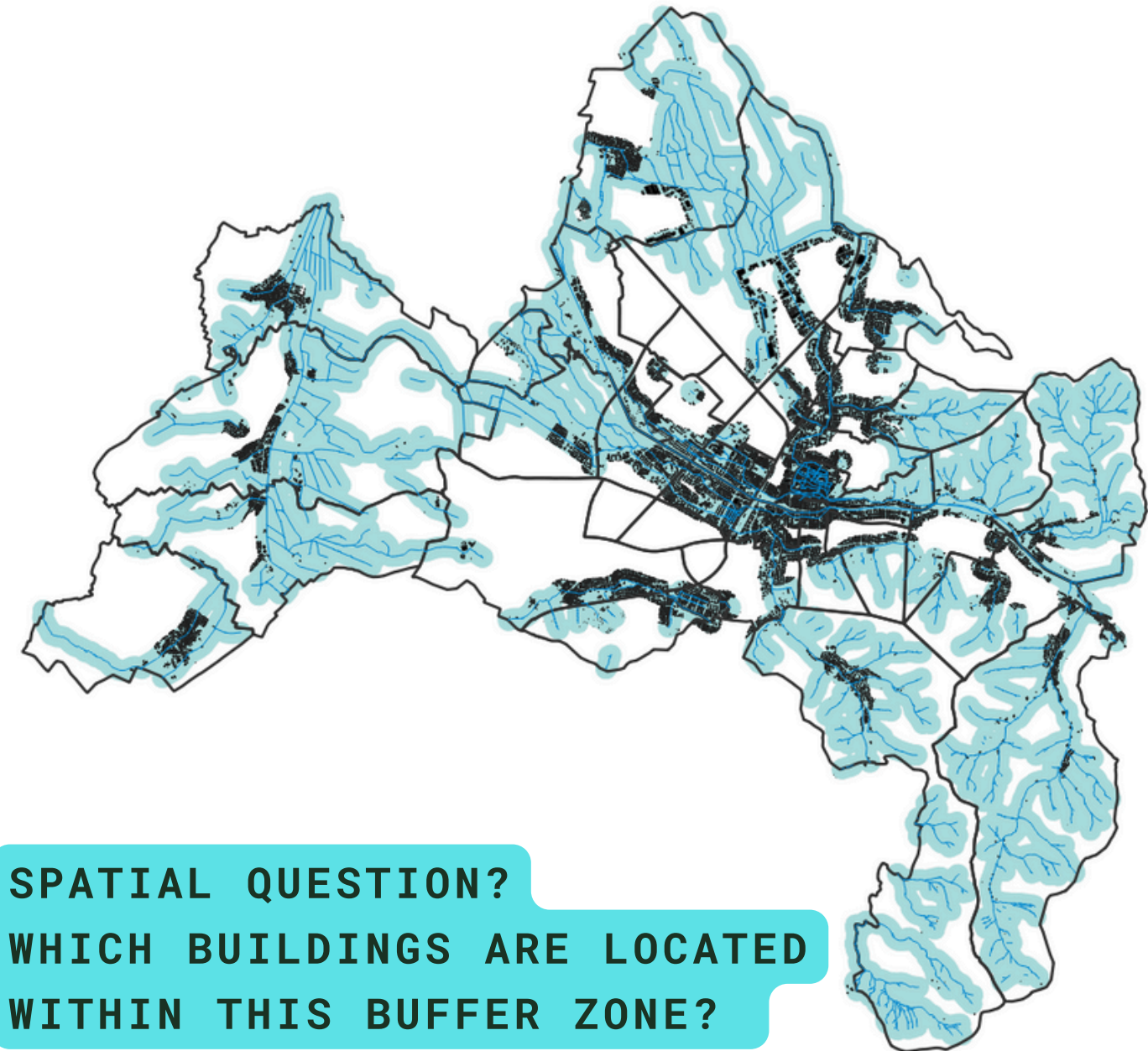
SPATIAL QUESTION?
WHICH AREAS OF FREIBURG ARE
WITHIN XXM OF RIVERS OR
LAKES?

4. APPLY BUFFER AND INTERSECT

- INTERSECT :
- GO TO VECTOR → GEOPROCESSING TOOLS → INTERSECT.
- INPUT LAYER: BUFFER_RIVERS_300M.SHP
- OVERLAY LAYER: BUILDINGS_FREIBURG_CLIPPED.SHP
- SAVE AS BUILDINGS_WITHIN_300M_BUFFER.SHP.



TEST MORE DISTANCES TOO



SPATIAL QUESTION?
WHICH BUILDINGS ARE LOCATED
WITHIN THIS BUFFER ZONE?

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EXERCISE:

- CHOOSE ONE DISTRICT (STADTTEIL) OF FREIBURG.
- REPEAT THE CLIP → BUFFER → INTERSECT PROCEDURE FOR THAT DISTRICT ONLY.
- EXPORT YOUR DISTRICT-LEVEL MAP AND WRITE A SHORT PARAGRAPH (5–7 LINES) EXPLAINING:
 - “WHICH AREAS OF MY DISTRICT ARE WITHIN 300 M OF RIVERS OR LAKES?”
 - “WHICH BUILDINGS ARE LOCATED WITHIN THIS BUFFER ZONE?”

UPLOAD YOUR MAP IN THIS LINK:

[HTTPS://CLASSROOM.GITHUB.COM/A/TOZG4LAI](https://classroom.github.com/A/TOZG4LAI)

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REFER TO THE SLIDES AND TUTORIALS FROM THE PREVIOUS SESSION TO IMPROVE YOUR MAP... BE CREATIVE.

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[HTTPS://CLASSROOM.GITHUB.COM/A/CFEACSR2](https://classroom.github.com/a/cfeacsr2)

GIS-UCF-W2526-classroom-12dc23

Accept the assignment — Lecture05 - Rivers-Lakes-and-Buildings

Once you accept this assignment, you will be granted access to the `lecture05-rivers-lakes-and-buildings-AyobamiBM` repository in the `GIS-UCF-W2526` organization on GitHub.

Accept this assignment



You're ready to go!

You accepted the assignment, `Lecture05 - Rivers-Lakes-and-Buildings`.

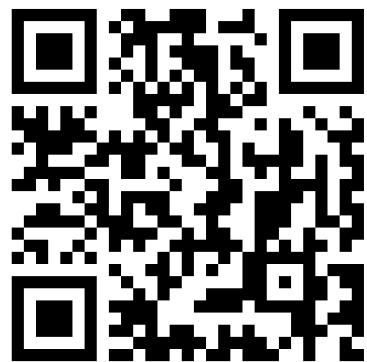
Your assignment repository has been created:

<https://github.com/GIS-UCF-W2526/lecture05-rivers-lakes-and-buildings-AyobamiBM>

CLICK HERE

We've configured the repository associated with this assignment.

Your assignment is due by **Oct 31, 2025, 22:59 UTC**

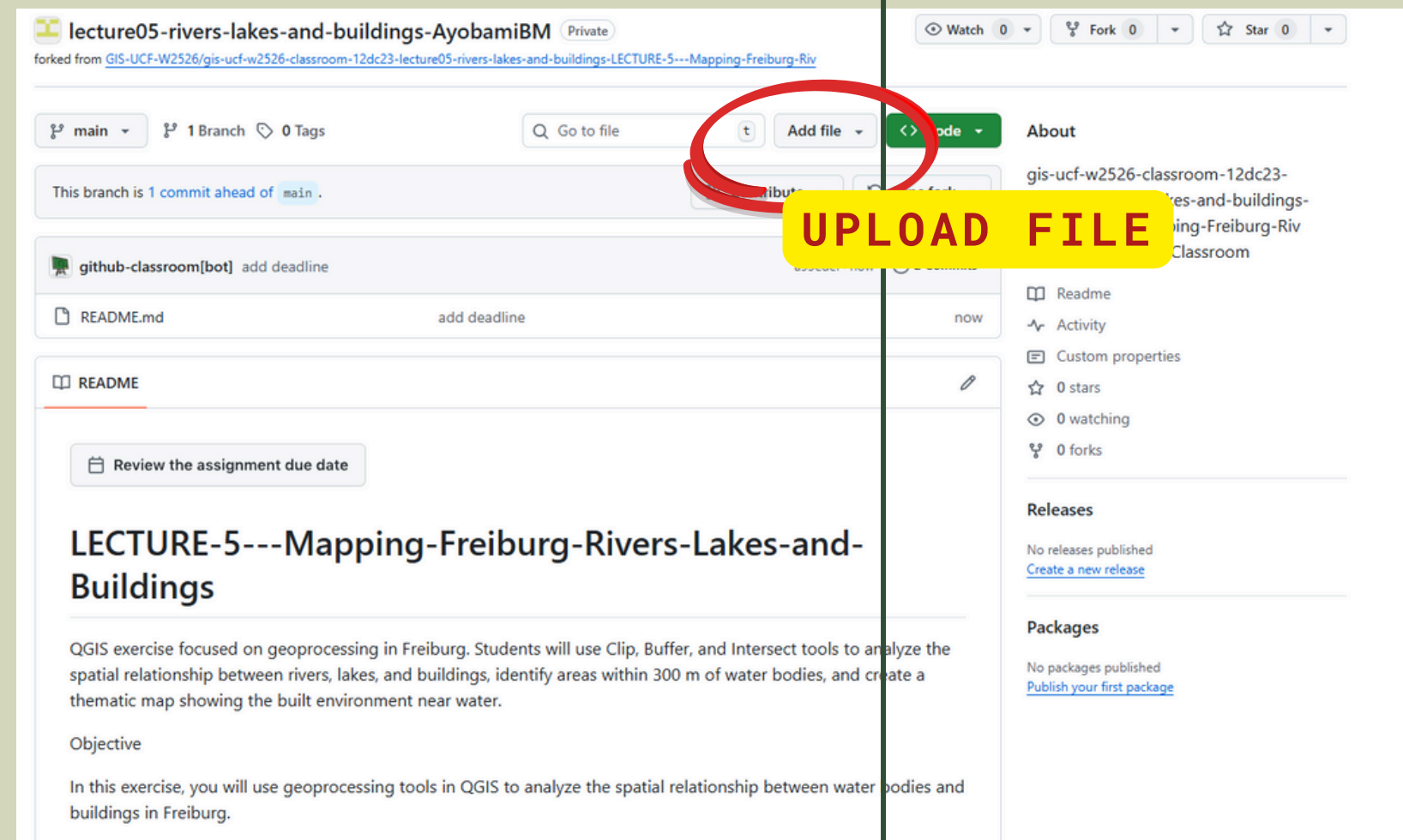


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UPLOAD YOUR MAP IN THIS LINK:

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UPLOAD FILE



Drag additional files here to add them to your repository

Or [choose your files](#)

133893515658721714.jpg



Commit changes

Add files via upload

Add an optional extended description...

☒ Commit directly to the `main` branch.

☐ Create a new branch for this commit and start a pull request. [Learn more about pull requests.](#)

Commit changes

Cancel