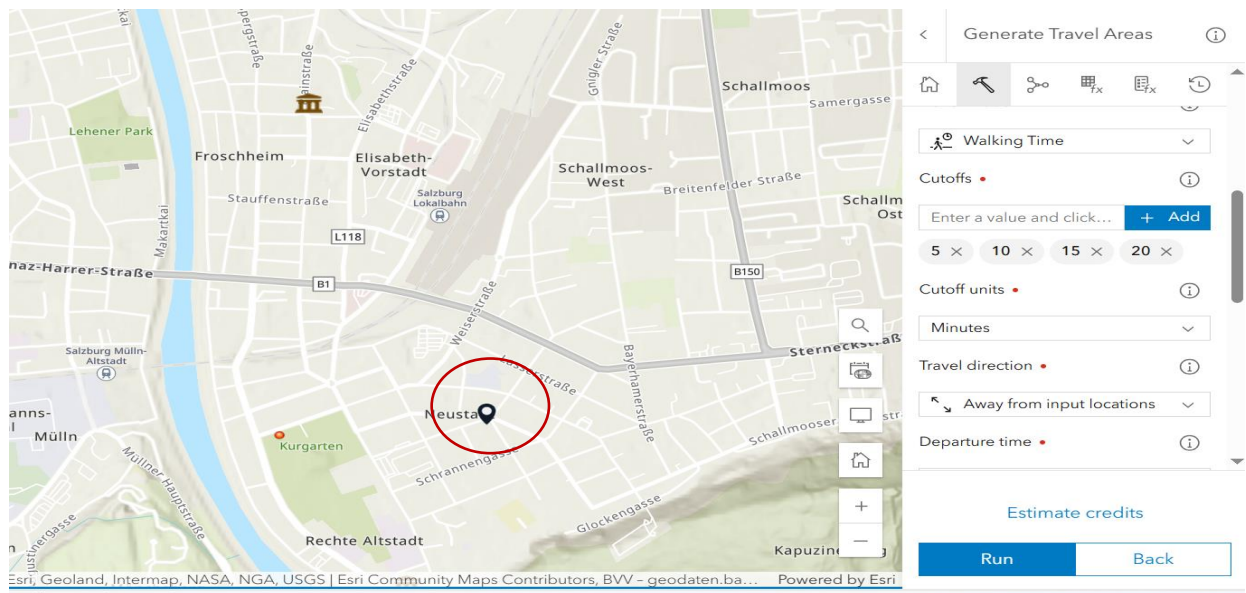


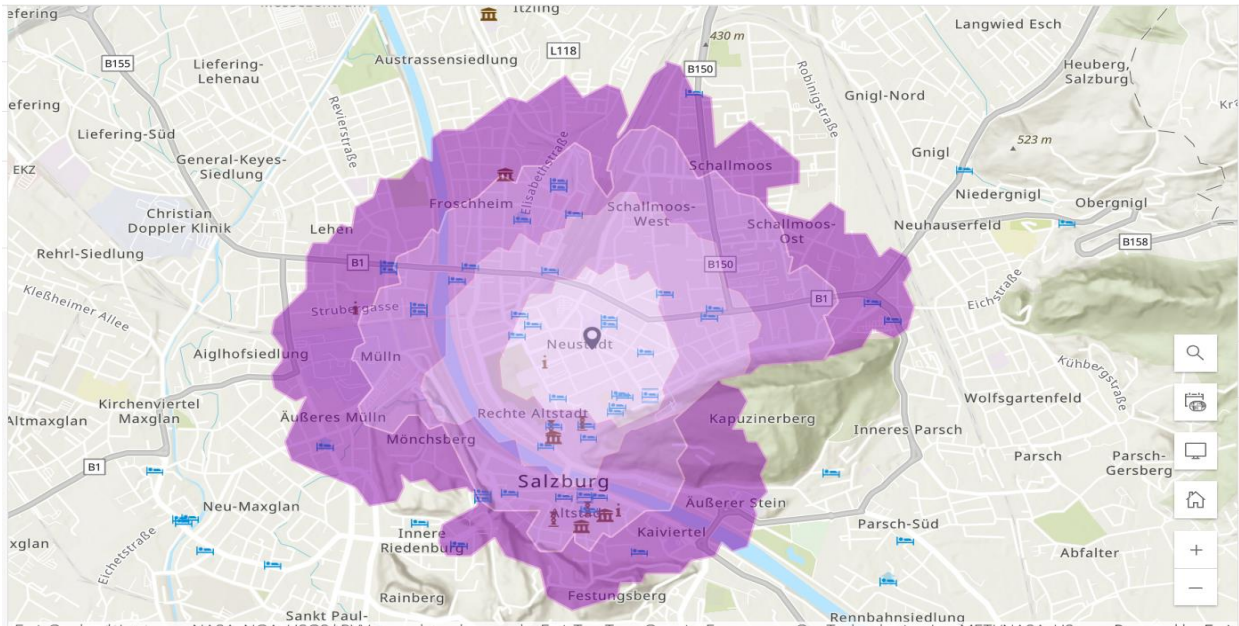
Methods in Spatial Analysis Assignment #1

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Task_1

For the first task, I need to determine how many tourist attractions are located within 5, 10, 15, and 20 minutes walking distance from my Salzburg address. To do this, I selected a location using the sketch point tool. Then, I analyzed the walking distance from the address for 5, 10, 15, and 20 minutes. The marked areas, as shown in the picture, represent my chosen place.





The map provided above is the final result of Task 1

It shows the tourist attractions within 5, 10, 15, and 20 minutes walking distance from my location. To obtain this, I first added the "OSM Tourist Attractions for Europe" layer to identify the tourist attractions in Salzburg around my selected area. I then used the analysis tool, searched for the "generate travel areas" function, and set the walking time and minutes. This process led to the final result displayed on the map.

Open tabs: 1

Generate Travel Areas x

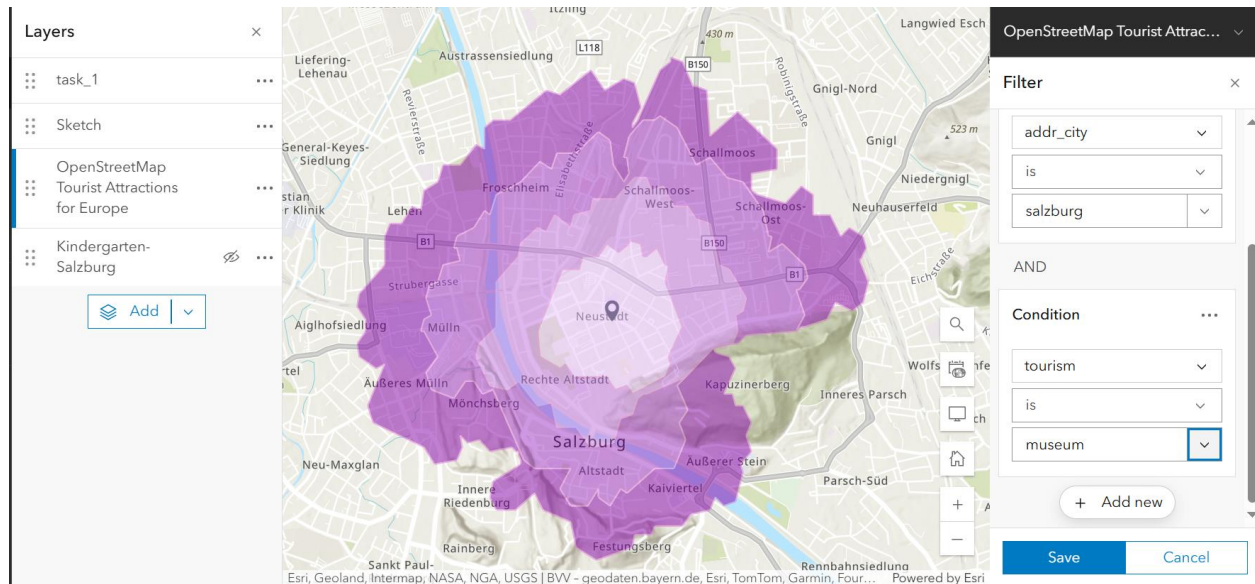
Parameters

| | |
|----------------|---------|
| Cutoffs | 5 |
| | 10 |
| | 15 |
| | 20 |
| Cutoff units | Minutes |
| Overlap policy | Split |
| Output name | step 1 |

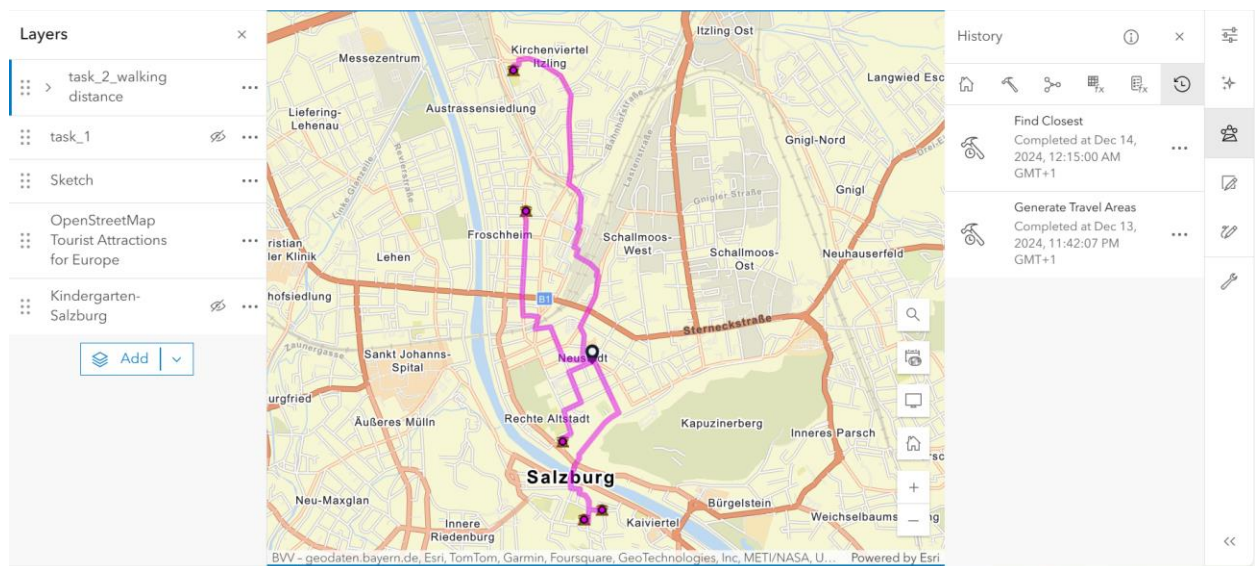
This is the parameter view of the Task_1.

Task_2

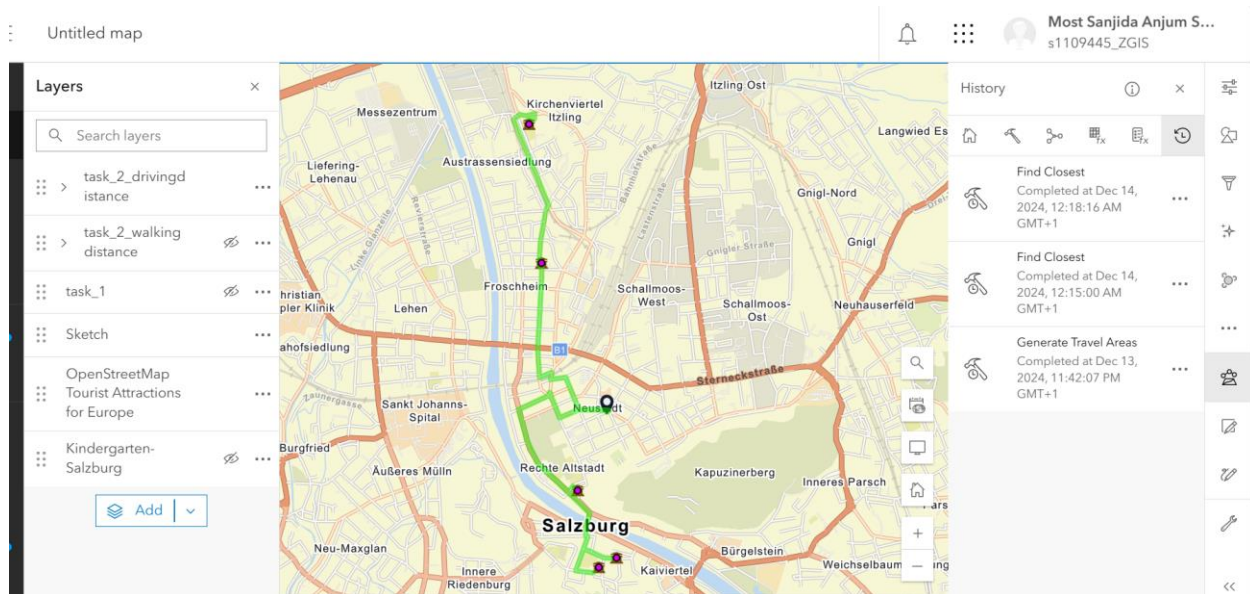
For the second task, I need to identify the 5 closest museums for both walking and driving from the location I selected in Task 1. To perform this analysis, I filtered the tourist attraction map using two parameters: "city_is_salzburg" and "Tourism_is_museum." The picture below illustrates this step.



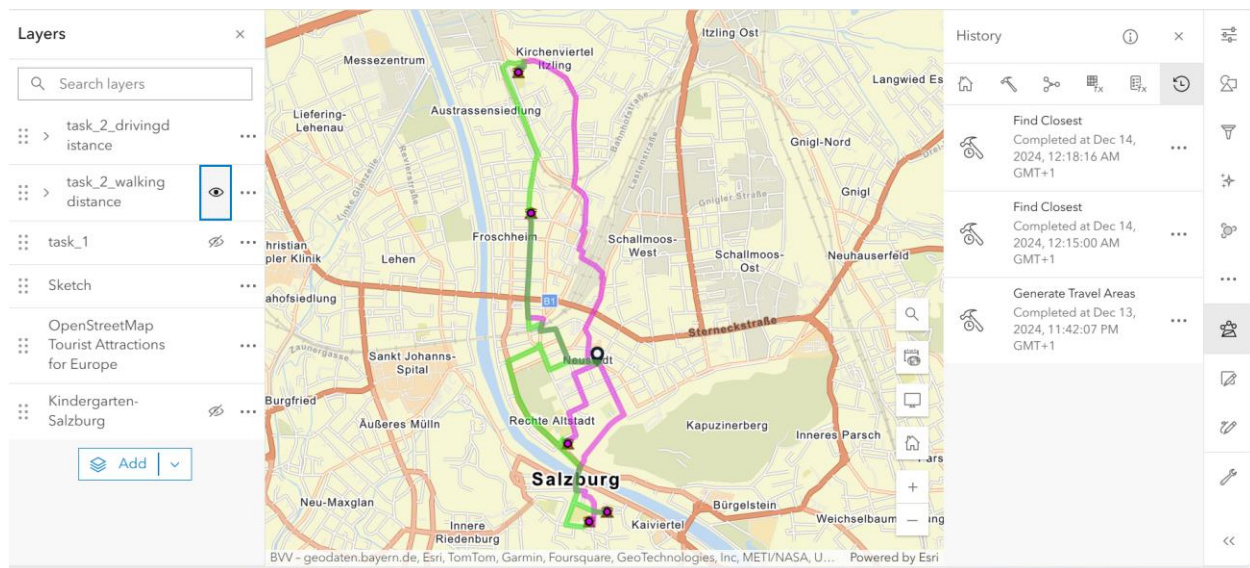
After that, I used the "find closest" tool. In the input layer, I selected the sketch point, and for the near layer, I chose the "OSM Tourist Attractions for Europe" layer. I then set the "Max number of closest locations to find per input" to 5 in order to identify the 5 nearest museums from my location, considering both walking and driving distances.



This map shows the walking distance of 5 museum from the pointed area.



This map shows the driving distance of 5 museum from the pointed area.

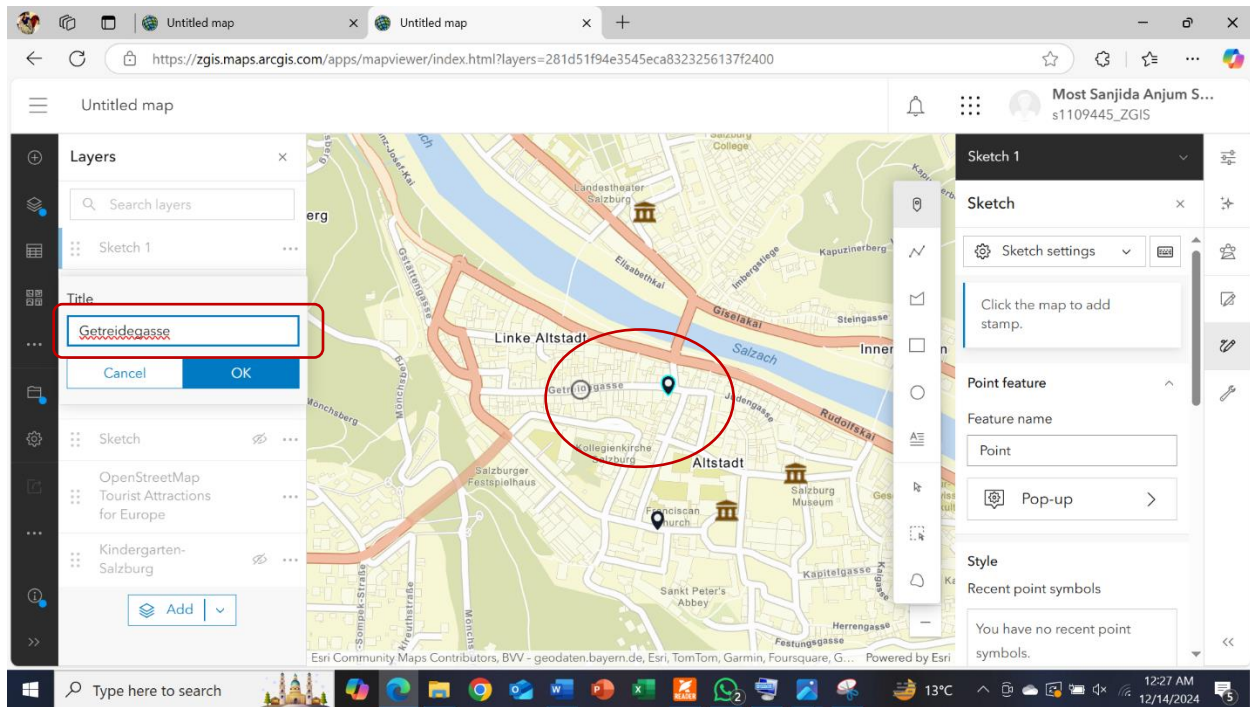


This is the final result of the two parameters for task_2.

The map highlights the significant differences in route options and travel times between walking and driving. From the two different routes, we can observe that the driving route is significantly shorter than the walking route. This is expected, as cars can take advantage of roads and highways, while pedestrians are limited to sidewalks and crosswalks. That driving route seems to be a more straightforward route that doesn't require as many turns and detours. The walking path, however, is more circuitous and perhaps even has to go through neighborhood streets or on footpaths.

Task_3

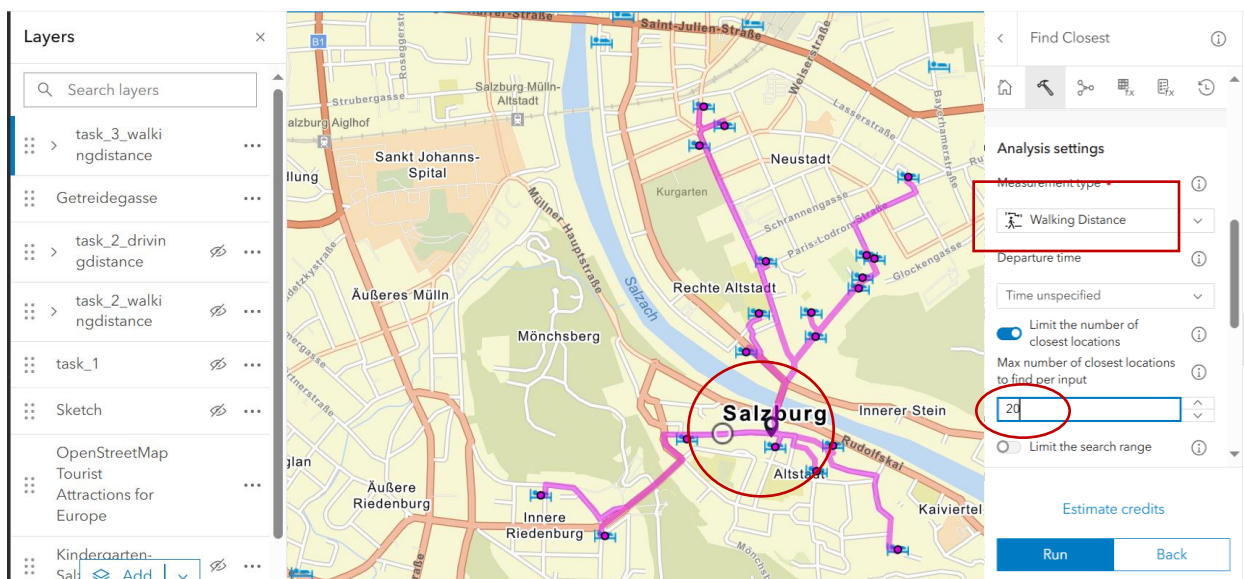
For Task 3, the goal is to find the 20 closest hotels (walking distance) around Getreidegasse. To begin, I used the search function to look for "Getreidegasse" and then sketched a new point near this location. Afterward, I renamed the layer to match the designated area.



After this step, I filtered the OSM tourism map using the parameter "tourism_is_hotel" to display only hotels for our network analysis. The related picture below provides a clearer understanding of this process.



Next, I analyzed the walking distance from the pointed location. I selected the "find closest" tool in the analysis tools, where I set the input layer as the sketch point marked as "Getreidegasse" and the "OSM Tourist Attractions for Europe" layer as the near layer. Then, I set the "Max number of closest locations to find per input" to 20 in order to identify the 20 nearest hotels from this location within walking distance.

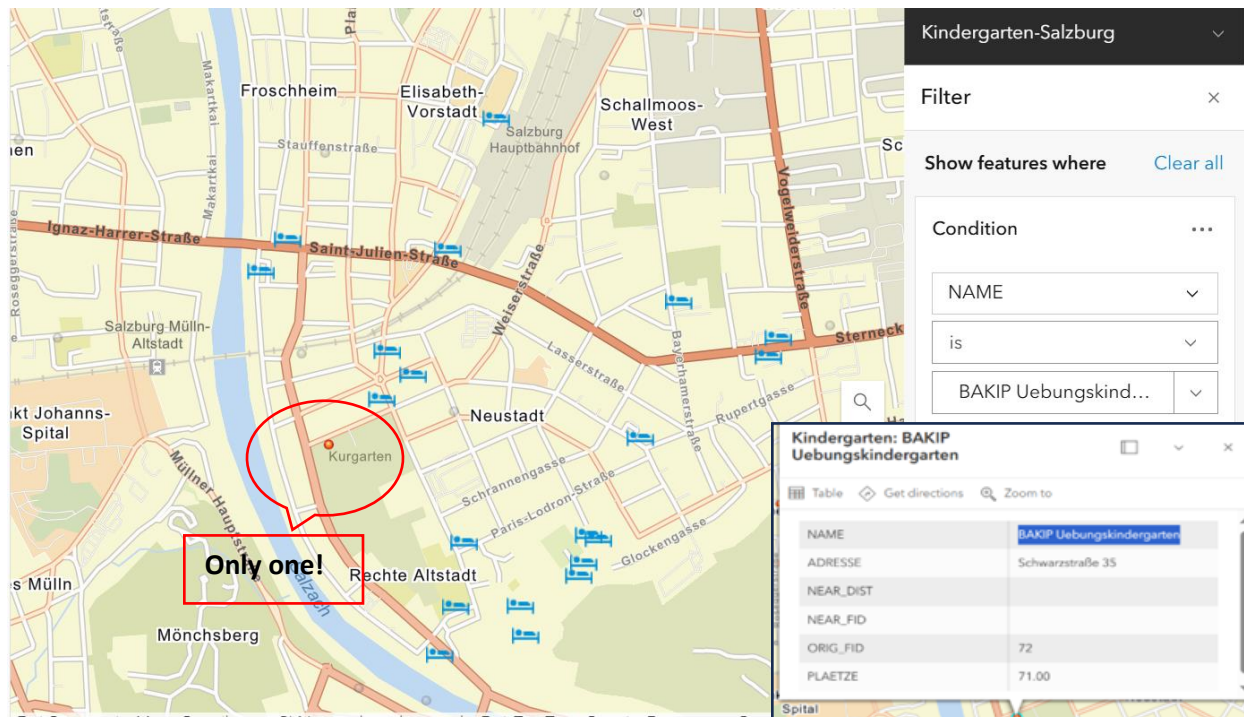


Now we can see the final result of task_3 in the above picture.

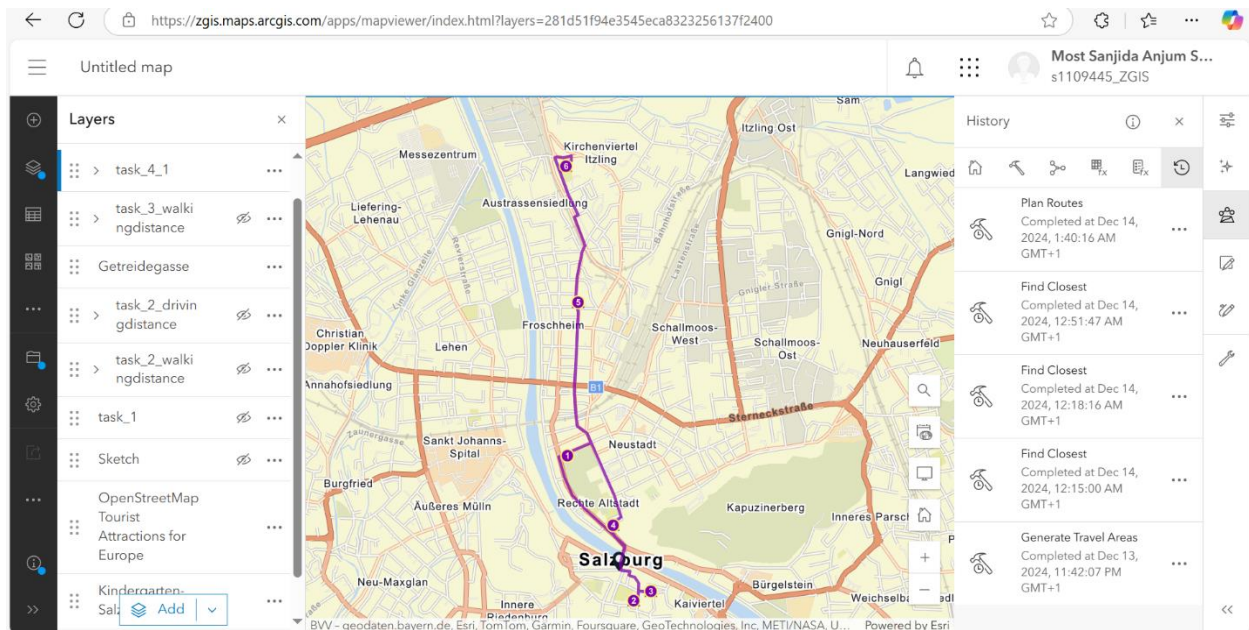
Task_4

In a previous task, I added the "Kindergarten_salzburg" layers. Now, the goal is to identify museums located within a 10-minute walking distance of kindergarten locations in Salzburg. For this task, I selected one specific kindergarten and filtered the "Kindergarten_salzburg" layer by the

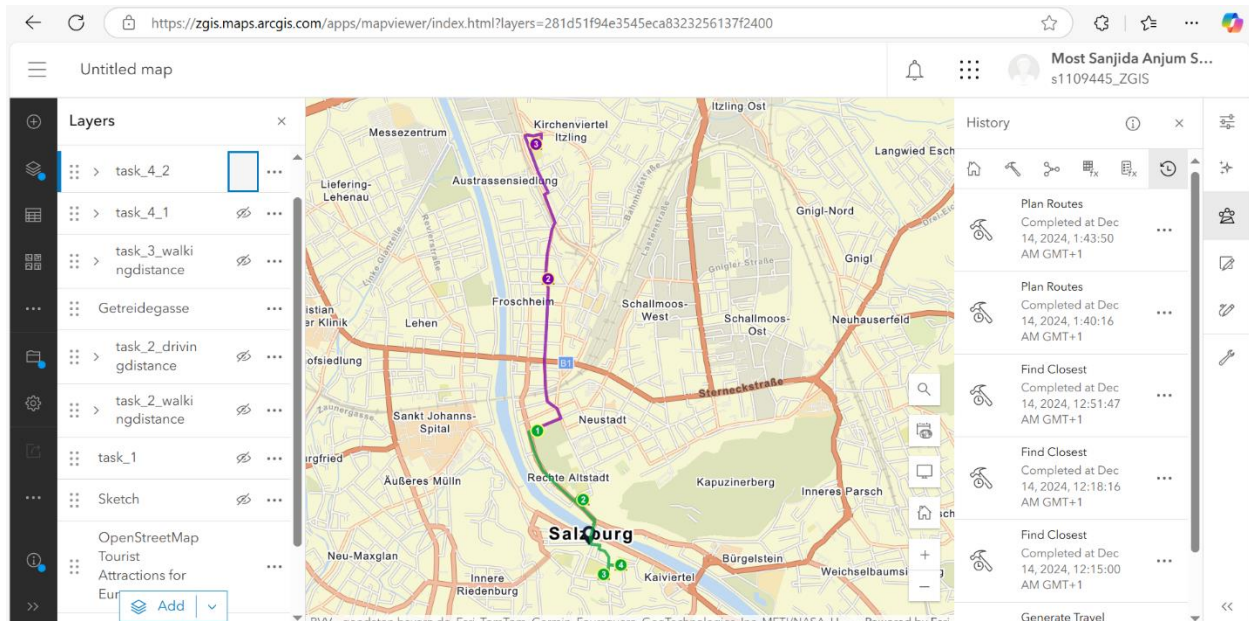
name "BAKIP Uebungskindergarten." After applying the filter, the map displays only the selected kindergarten, as shown below.



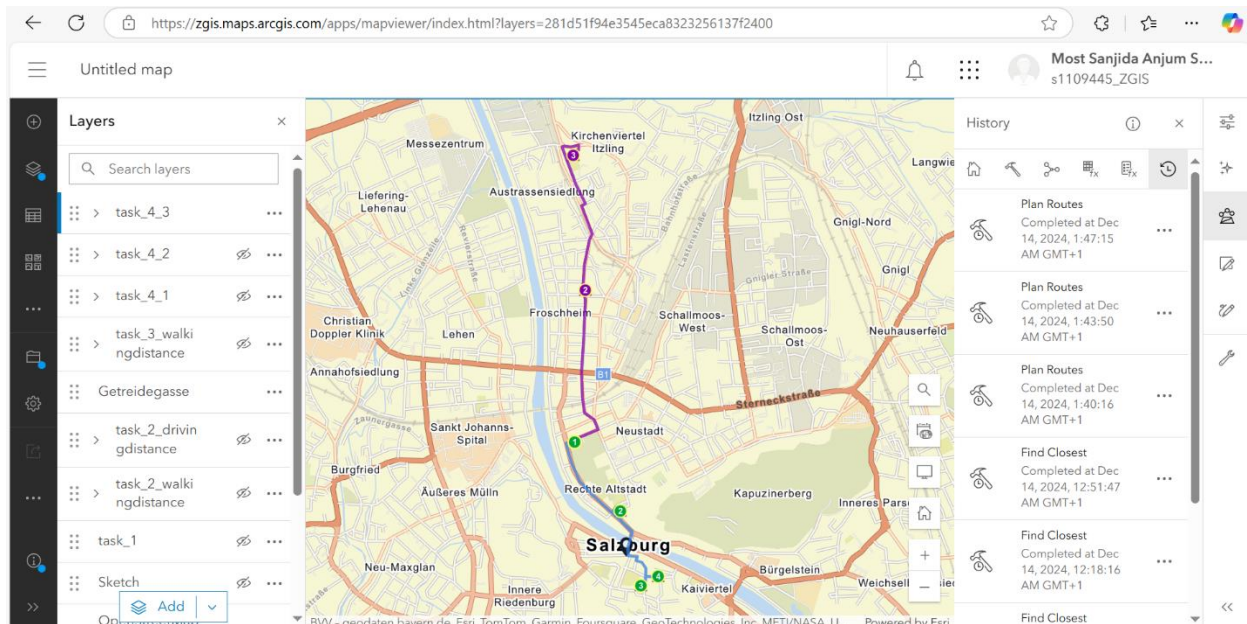
For the next step, I modified the filter on the OSM tourist attraction layer to "tourism_is_museum" so that only museums would be displayed. This allowed me to focus on finding the route plan with 1, 2, and 3 vehicles, respectively. I then accessed the analysis tool and searched for the route plan tool. In this tool, I set the start layer as "kindergarten_Salzburg" and the immediate start layer as "OSM_tourist_attraction_map." I also adjusted the travel mode to "walking time." First, I tested the route with a maximum of 1 vehicle, and then I tried 2 and 3 vehicles for the subsequent routes.



For 1 vehicle when maximum stoppage will be 5

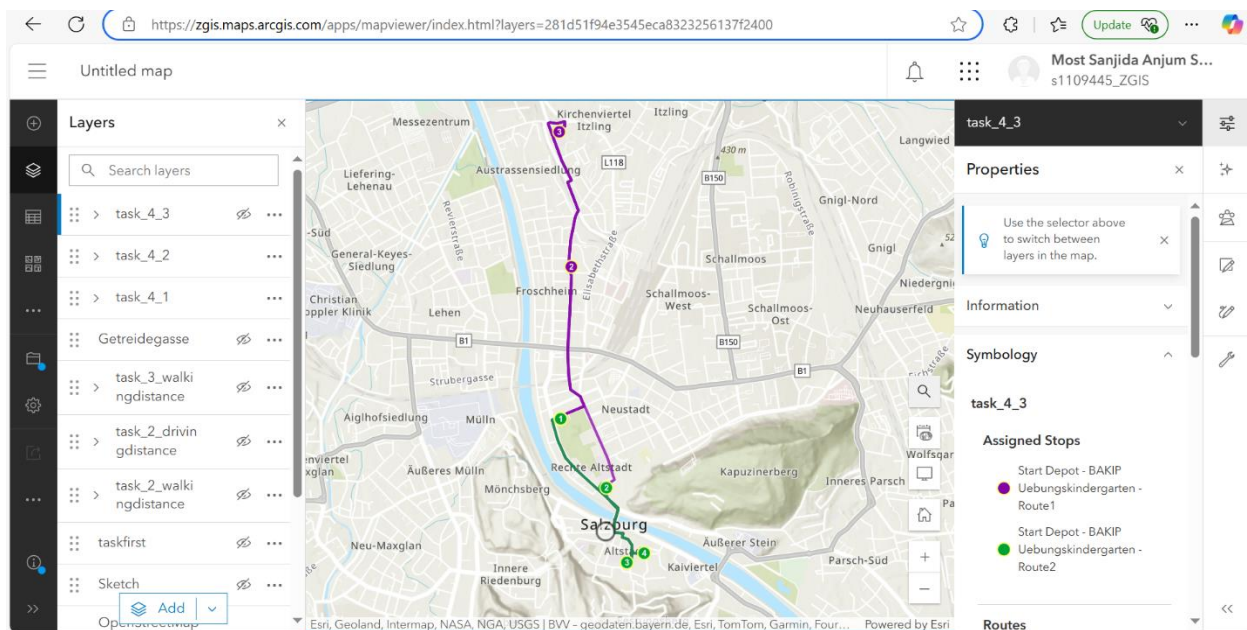


For 2 vehicles when maximum stoppage will be 5



For 3 vehicles when maximum stoppage will be 5

Comparison between the routes with 1, 2, and 3 vehicles:

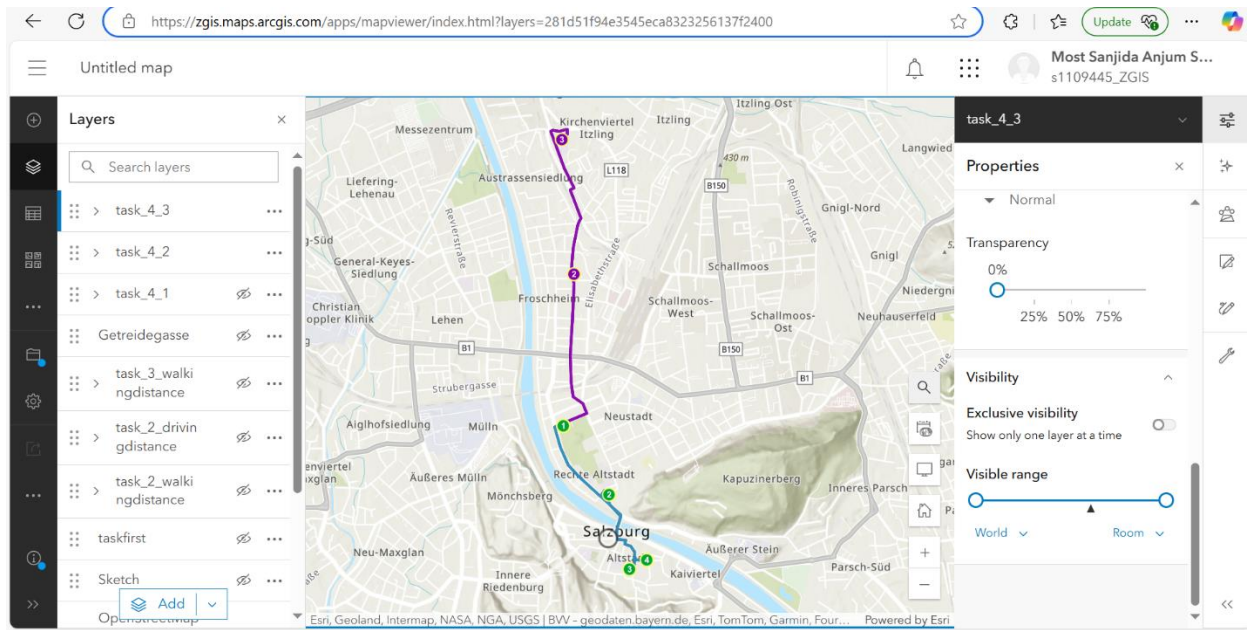


This above picture shows the difference in route of 1 and 2 vehicle.

Route 1 indicates Purple Line and route 2 indicates green line. Route 1 appears to be slightly longer than Route 2. This is evident from the visual length of the lines on the map.

Route 1 takes a more direct path, following the river Salzach closely. Route 2, on the other hand, seems to take a more winding route, potentially going through more residential areas.

Both routes pass through the city center of Salzburg, where several points of interest, including museums, are located. However, Route 2 might offer a more scenic view due to its proximity to the river.



This above picture shows the difference in route of 2 and 3 vehicle.

For the route 3 (blue line) it shows the same result as the route 2. This result tells that there are no significant differences in the routes for 2 and 3 no vehicle as shown in the picture. The slight differences in distance and path may not significantly impact the overall travel time or experience, especially considering the relatively short distance between the starting point and the destination.