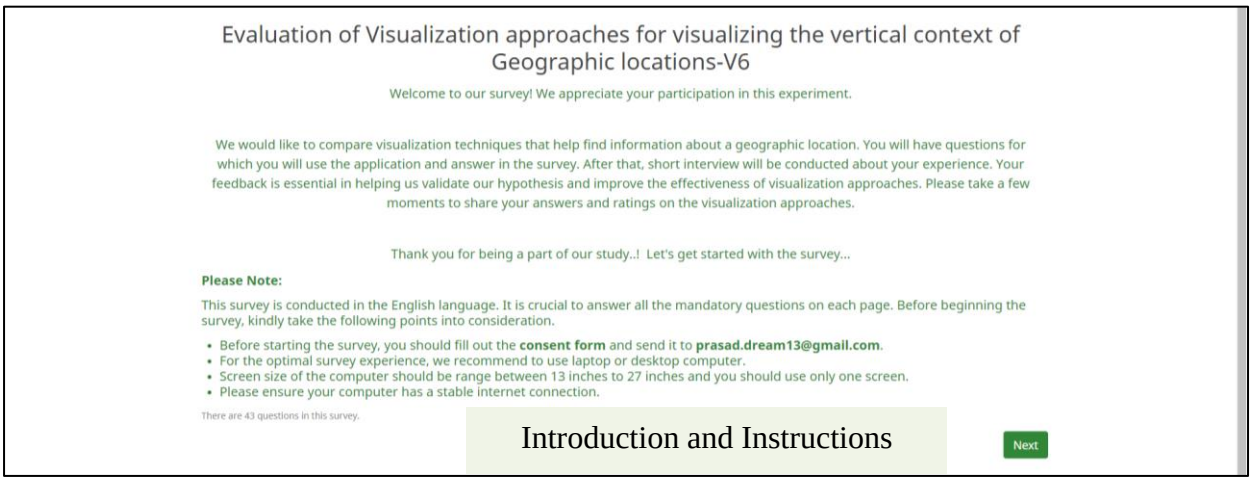
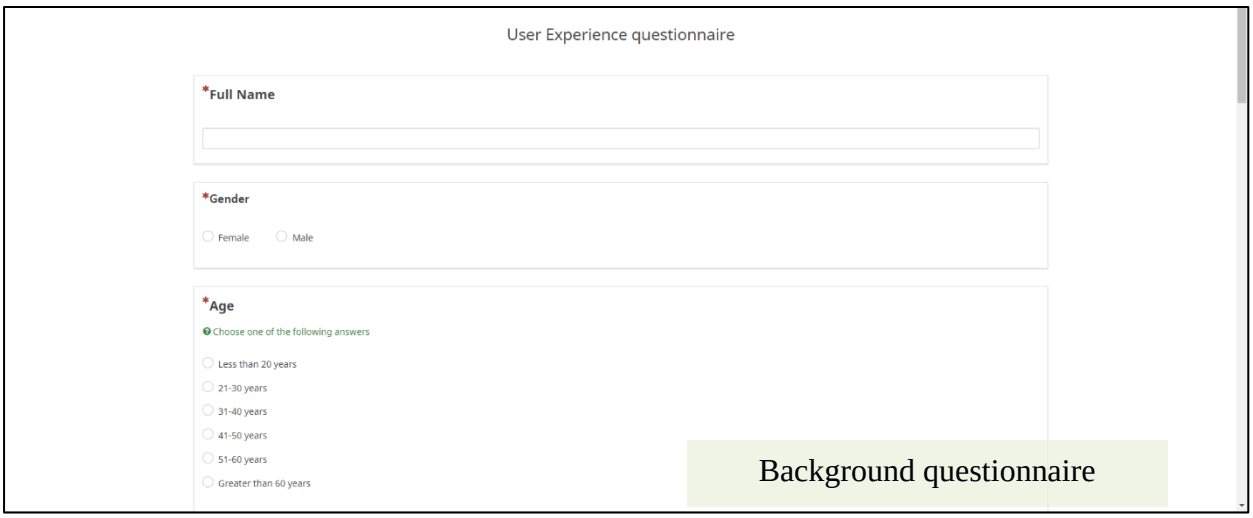
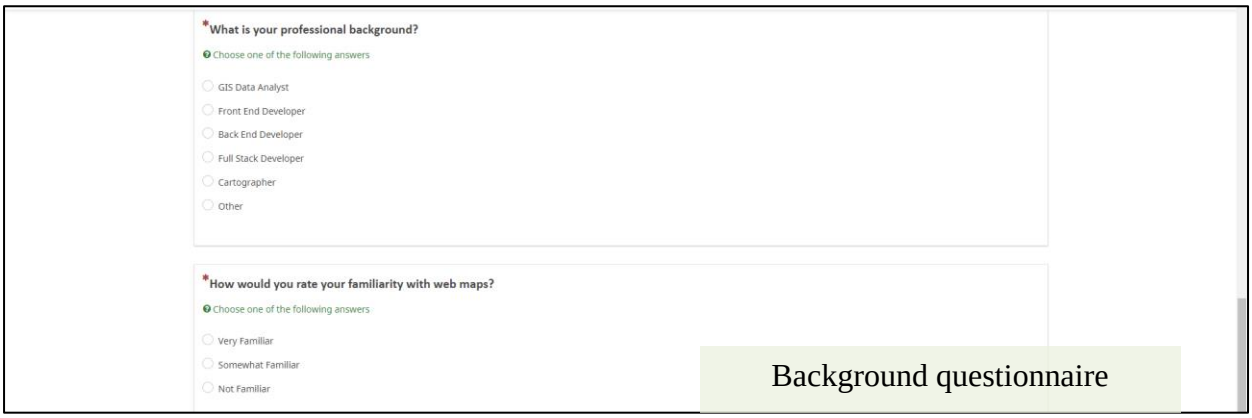
(Experimental material designed using LimeSurvey platform)

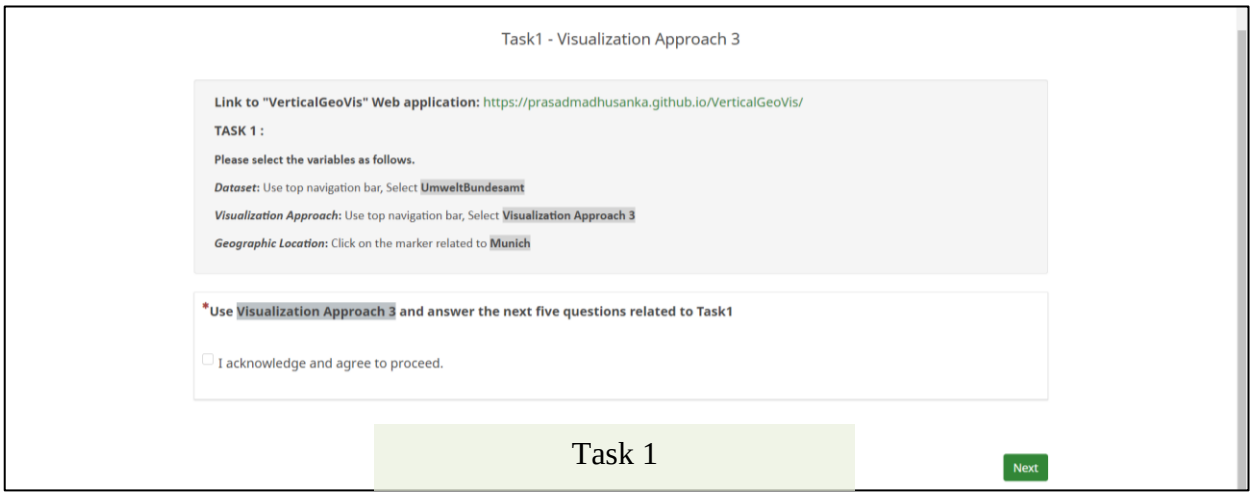
For example, the following screenshot images are the experiment materials designed for Participant 6, 12, 18 (P1, P12, P18).

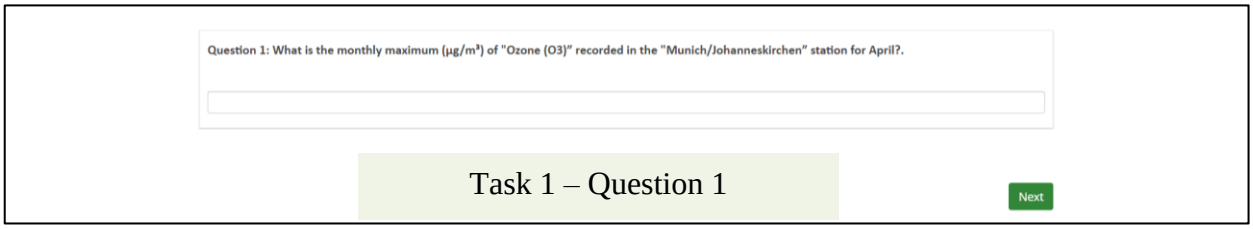


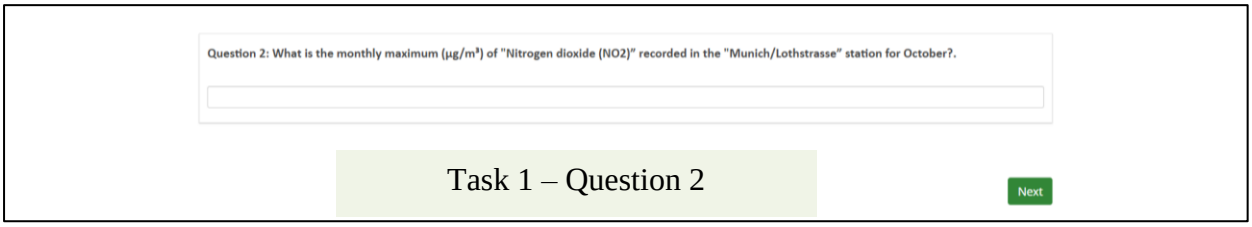


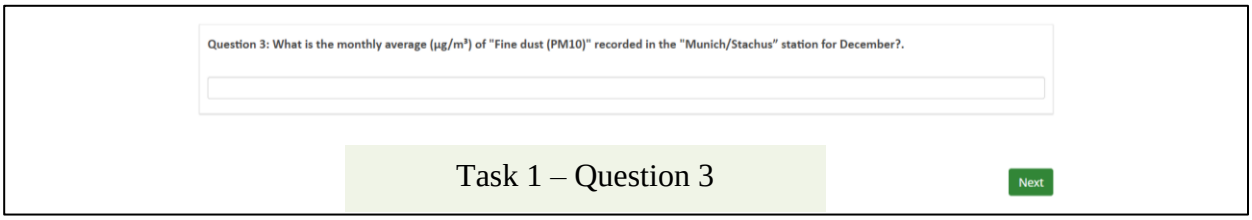

*What is your professional background?
Choose one of the following answers
GIS Data Analyst
Front End Developer
Back End Developer
Full Stack Developer
Cartographer
Other
*How would you rate your familiarity with web maps?
Choose one of the following answers
Very Familiar
Somewhat Familiar
Not Familiar
Background questionnaire

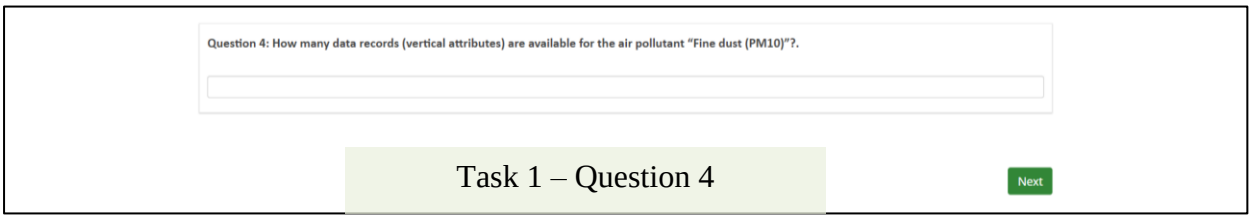

*How would you rate your familiarity with web maps?
Choose one of the following answers
Very Familiar
Somewhat Familiar
Not Familiar
*How would you rate your familiarity with leaflet.js markers and leaflet.js marker patterns?
Choose one of the following answers
Very Familiar
Somewhat Familiar
Not Familiar
*How would you rate your familiarity with the D3.js Zoomable circle packing Visualization?
Choose one of the following answers
Very Familiar
Somewhat Familiar
Not Familiar
Background questionnaire

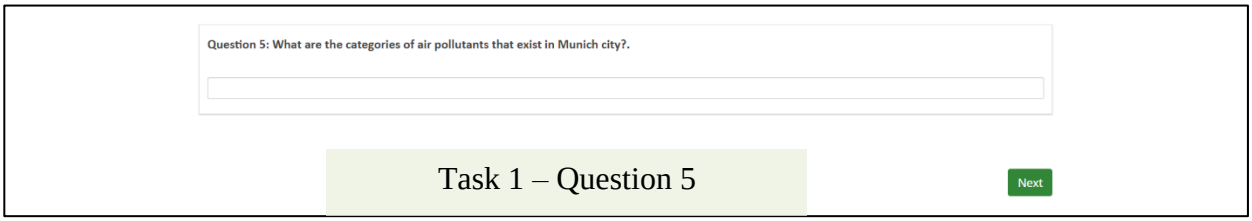

Task1 - Visualization Approach 3
Link to "VerticalGeoVis" Web application: https://prasadmadhusanka.github.io/VerticalGeoVis/
TASK 1 :
Please select the variables as follows.
Dataset: Use top navigation bar, Select UmweltBundesamt
Visualization Approach: Use top navigation bar, Select Visualization Approach 3
Geographic Location: Click on the marker related to Munich
*Use Visualization Approach 3 and answer the next five questions related to Task1
I acknowledge and agree to proceed.
Task 1
Next

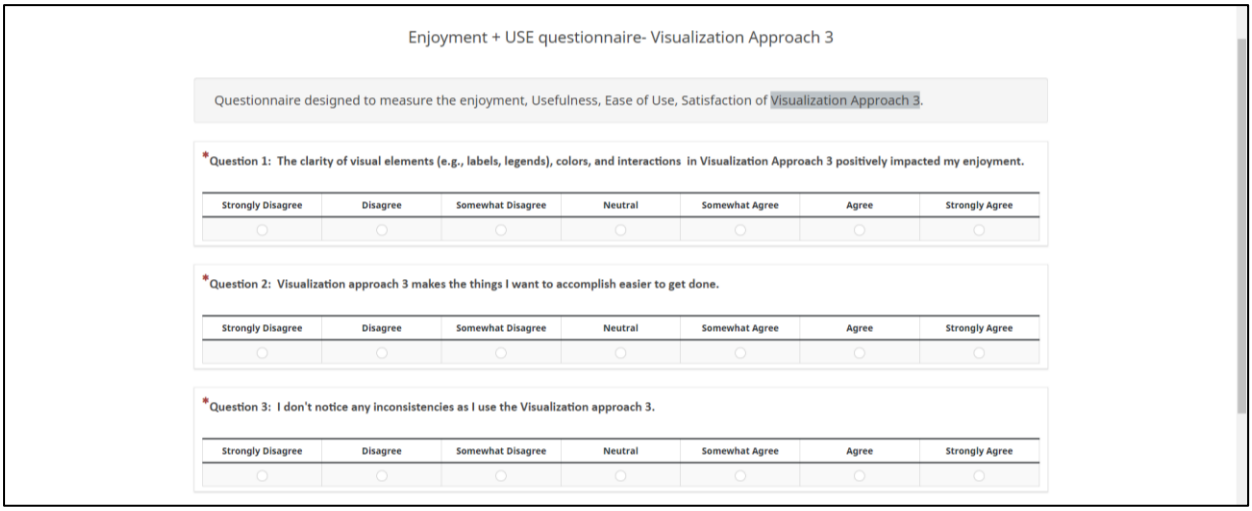

Question 1: What is the monthly maximum (µg/m³) of "Ozone (O3)" recorded in the "Munich/Johanneskirchen" station for April?.
Task 1 – Question 1
Next

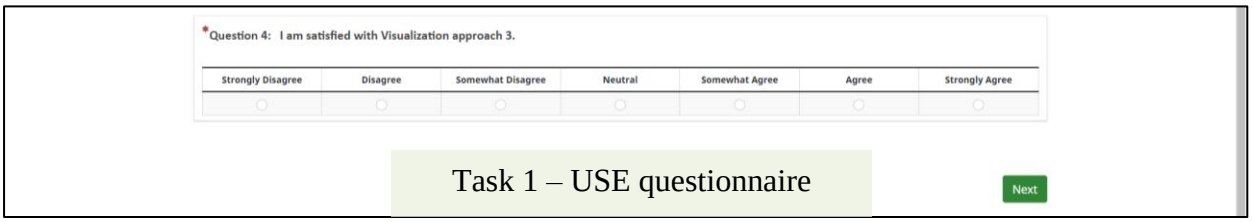

Question 2: What is the monthly maximum (µg/m³) of "Nitrogen dioxide (NO2)" recorded in the "Munich/Lothstrasse" station for October?.
Task 1 – Question 2
Next

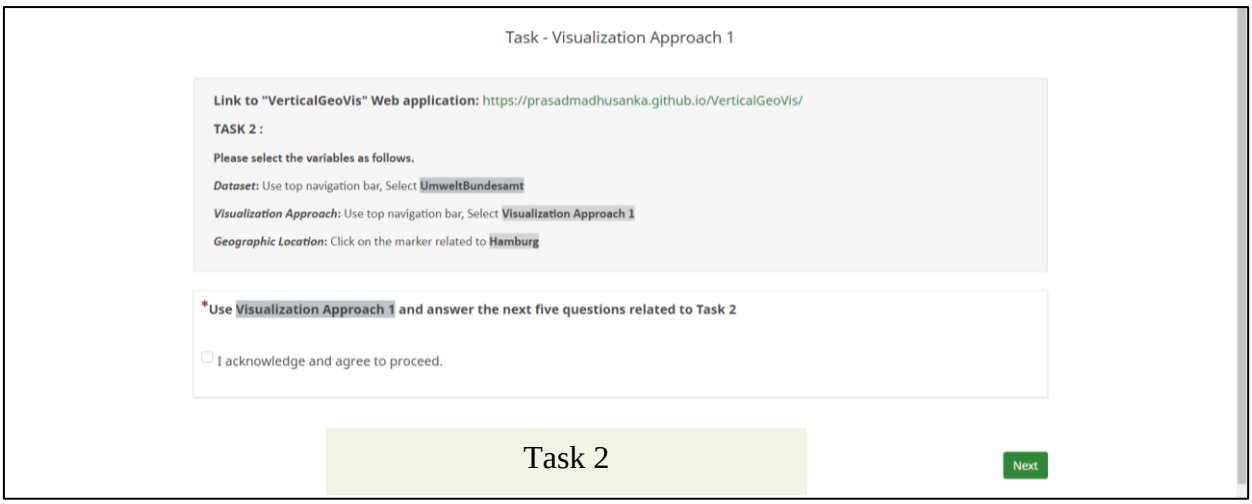

Question 3: What is the monthly average (µg/m³) of "Fine dust (PM10)" recorded in the "Munich/Stachus" station for December?.
Task 1 – Question 3
Next

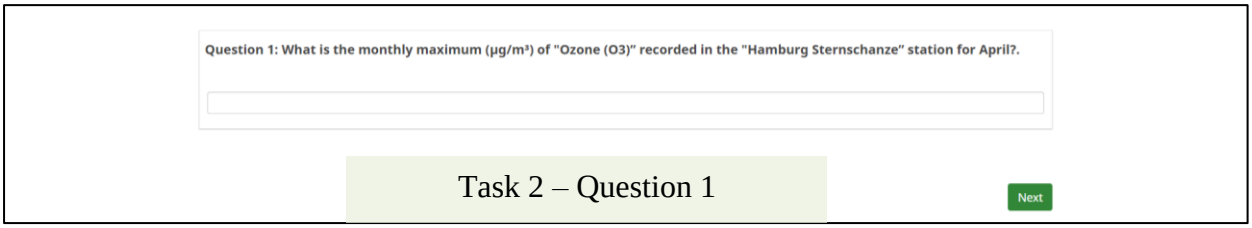

Question 4: How many data records (vertical attributes) are available for the air pollutant "Fine dust (PM10)"?.
Task 1 – Question 4
Next

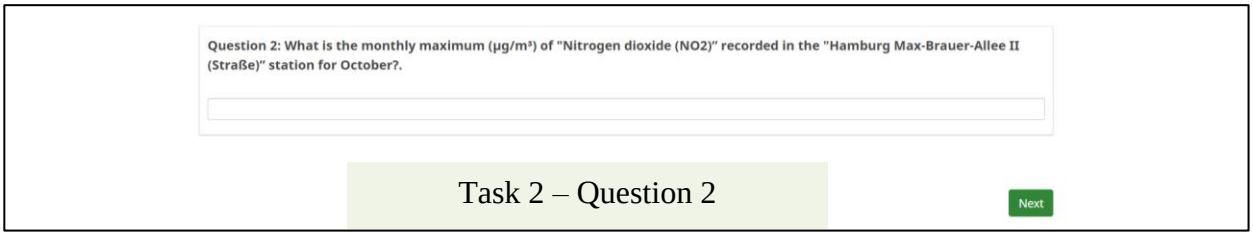

Question 5: What are the categories of air pollutants that exist in Munich city?.
Task 1 – Question 5
Next

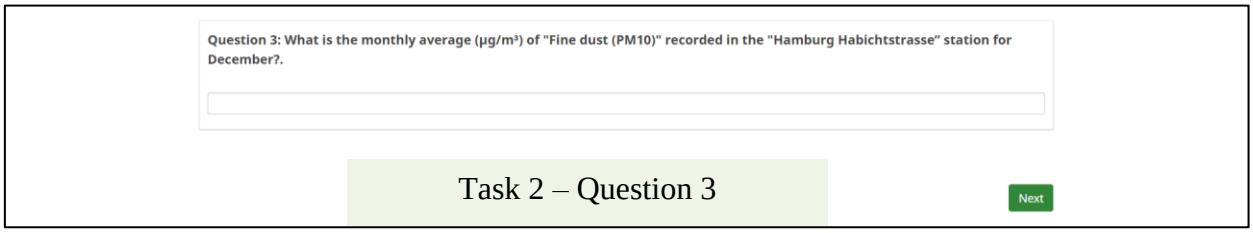

Enjoyment + USE questionnaire- Visualization Approach 3
Questionnaire designed to measure the enjoyment, Usefulness, Ease of Use, Satisfaction of Visualization Approach 3.
*Question 1: The clarity of visual elements (e.g., labels, legends), colors, and interactions in Visualization Approach 3 positively impacted my enjoyment.
Strongly Disagree
Disagree
Somewhat Disagree
Neutral
Somewhat Agree
Agree
Strongly Agree
*Question 2: Visualization approach 3 makes the things I want to accomplish easier to get done.
Strongly Disagree
Disagree
Somewhat Disagree
Neutral
Somewhat Agree
Agree
Strongly Agree
*Question 3: I don't notice any inconsistencies as I use the Visualization approach 3.
Strongly Disagree
Disagree
Somewhat Disagree
Neutral
Somewhat Agree
Agree
Strongly Agree

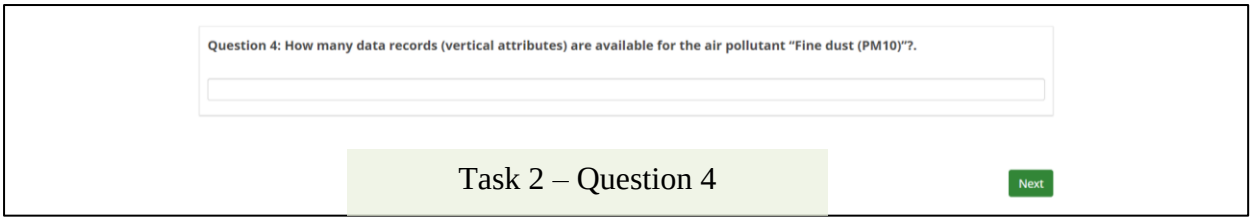

*Question 4: I am satisfied with Visualization approach 3.
Strongly Disagree
Disagree
Somewhat Disagree
Neutral
Somewhat Agree
Agree
Strongly Agree
Task 1 – USE questionnaire
Next

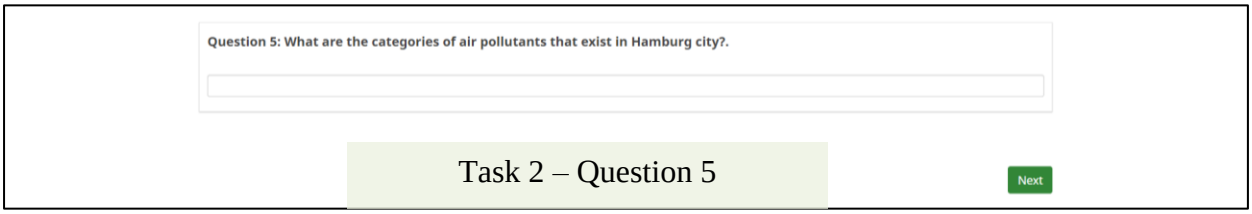

Task - Visualization Approach 1
Link to "VerticalGeoVis" Web application: https://prasadmadhusanka.github.io/VerticalGeoVis/
TASK 2 :
Please select the variables as follows.
Dataset: Use top navigation bar, Select UmweltBundesamt
Visualization Approach: Use top navigation bar, Select Visualization Approach 1
Geographic Location: Click on the marker related to Hamburg
*Use Visualization Approach 1 and answer the next five questions related to Task 2
I acknowledge and agree to proceed.
Task 2
Next

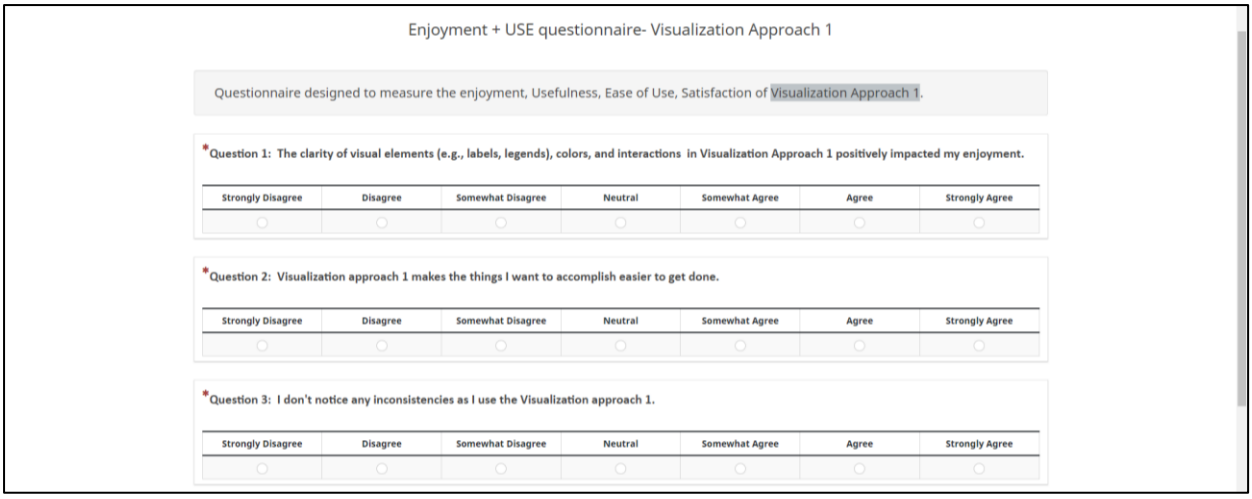

Question 1: What is the monthly maximum (µg/m³) of "Ozone (O3)" recorded in the "Hamburg Sternschanze" station for April?.
Task 2 – Question 1
Next

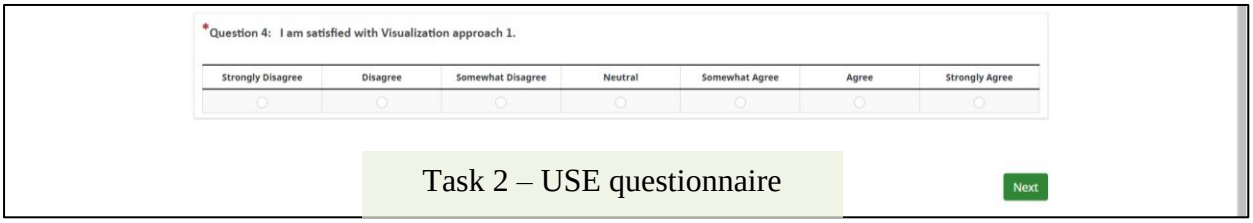

Question 2: What is the monthly maximum (µg/m³) of "Nitrogen dioxide (NO2)" recorded in the "Hamburg Max-Brauer-Allee II (Straße)" station for October?.
Task 2 – Question 2
Next


Question 3: What is the monthly average (µg/m³) of "Fine dust (PM10)" recorded in the "Hamburg Habichtstrasse" station for December?.
Task 2 – Question 3
Next


Question 4: How many data records (vertical attributes) are available for the air pollutant "Fine dust (PM10)"?.
Task 2 – Question 4
Next


Question 5: What are the categories of air pollutants that exist in Hamburg city?.
Task 2 – Question 5
Next


Enjoyment + USE questionnaire- Visualization Approach 1
Questionnaire designed to measure the enjoyment, Usefulness, Ease of Use, Satisfaction of Visualization Approach 1.
*Question 1: The clarity of visual elements (e.g., labels, legends), colors, and interactions in Visualization Approach 1 positively impacted my enjoyment.
Strongly Disagree
Disagree
Somewhat Disagree
Neutral
Somewhat Agree
Agree
Strongly Agree
*Question 2: Visualization approach 1 makes the things I want to accomplish easier to get done.
Strongly Disagree
Disagree
Somewhat Disagree
Neutral
Somewhat Agree
Agree
Strongly Agree
*Question 3: I don't notice any inconsistencies as I use the Visualization approach 1.
Strongly Disagree
Disagree
Somewhat Disagree
Neutral
Somewhat Agree
Agree
Strongly Agree


*Question 4: I am satisfied with Visualization approach 1.
Strongly Disagree
Disagree
Somewhat Disagree
Neutral
Somewhat Agree
Agree
Strongly Agree
Task 2 – USE questionnaire
Next

Task - Visualization Approach 2

Link to "VerticalGeoVis" Web application: https://prasadmadhusanka.github.io/VerticalGeoVis/

TASK 3 :

Please select the variables as follows.

***Dataset*:** Use top navigation bar, Select **UmweltBundesamt**

***Visualization Approach*:** Use top navigation bar, Select **Visualization Approach 2**

***Geographic Location*:** Click on the marker related to **Berlin**

*Use **Visualization Approach 2** and answer the next five questions related to Task 3.

☐ I acknowledge and agree to proceed.

Task 3

Next

Question 1: What is the monthly maximum (µg/m³) of "Ozone (O3)" recorded in the "Berlin Friedrichshagen" station for April?.

Task 3 – Question 1

Next

Question 2: What is the monthly maximum (µg/m³) of "Nitrogen dioxide (NO2)" recorded in the " Berlin Wedding" station for October?.

Task 3 – Question 2

Next

Question 3: What is the monthly average (µg/m³) of "Fine dust (PM10)" recorded in the "Berlin Schildhornstraße" station for December?.

Task 3 – Question 3

Next

Question 4: How many data records (vertical attributes) are available for the air pollutant "Fine dust (PM10)"?.

Task 3 – Question 4

Next

Question 5: What are the categories of air pollutants that exist in Berlin city?.

Task 3 – Question 5

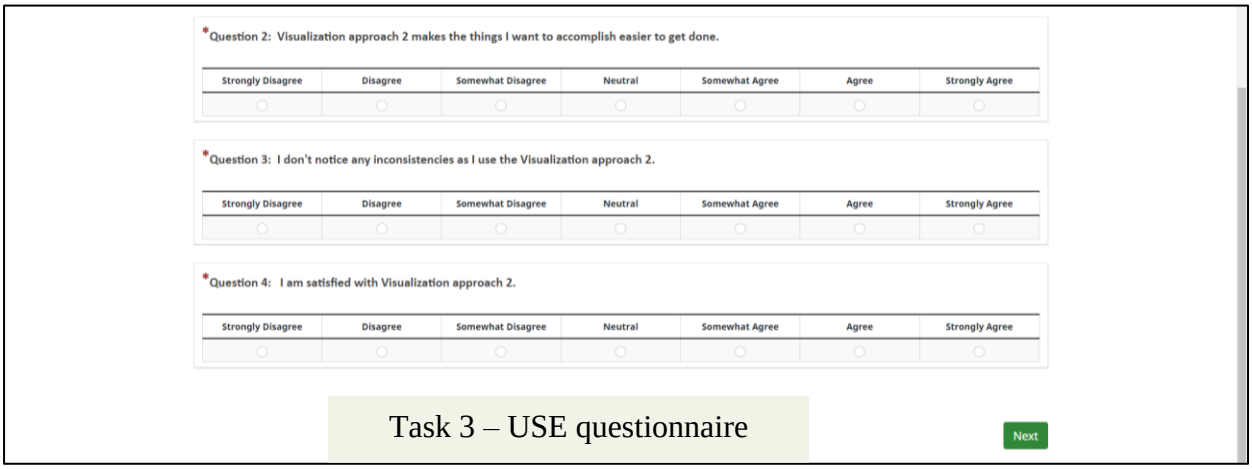
Next

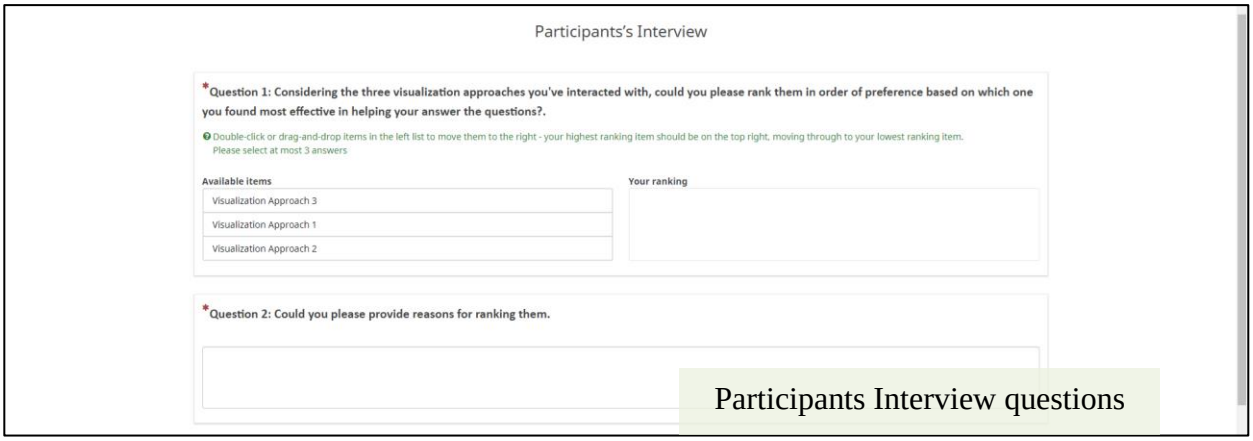
Enjoyment + USE questionnaire- Visualization Approach 2

Questionnaire designed to measure the enjoyment, Usefulness, Ease of Use, Satisfaction of Visualization Approach 2.

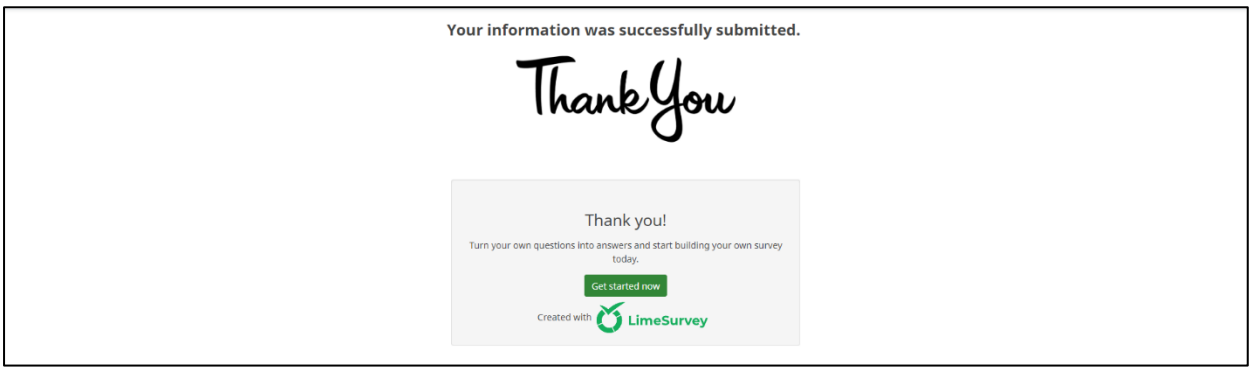
*Question 1: The clarity of visual elements (e.g., labels, legends), colors, and interactions in Visualization Approach 2 positively impacted my enjoyment.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○


*Question 2: Visualization approach 2 makes the things I want to accomplish easier to get done.
Strongly Disagree
Disagree
Somewhat Disagree
Neutral
Somewhat Agree
Agree
Strongly Agree
*Question 3: I don't notice any inconsistencies as I use the Visualization approach 2.
Strongly Disagree
Disagree
Somewhat Disagree
Neutral
Somewhat Agree
Agree
Strongly Agree
*Question 4: I am satisfied with Visualization approach 2.
Strongly Disagree
Disagree
Somewhat Disagree
Neutral
Somewhat Agree
Agree
Strongly Agree
Task 3 – USE questionnaire
Next


Participants's Interview
*Question 1: Considering the three visualization approaches you've interacted with, could you please rank them in order of preference based on which one you found most effective in helping your answer the questions?.
Double-click or drag-and-drop items in the left list to move them to the right - your highest ranking item should be on the top right, moving through to your lowest ranking item.
Please select at most 3 answers
Available items
Visualization Approach 3
Visualization Approach 1
Visualization Approach 2
Your ranking
*Question 2: Could you please provide reasons for ranking them.
Participants Interview questions


Question 3: Do you have any suggestions regarding this Web Application for further improvements?.
Participants Interview questions
Submit


Your information was successfully submitted.
ThankYou
Thank you!
Turn your own questions into answers and start building your own survey today.
Get started now
Created with LimeSurvey