

Sensory & Wellness Parameters Sentiment Analysis Web App

General Description of the Project

This project aims to create a web application that allows museum visitors to input sensory parameters via sliders, resulting in a numeric value from 1 to 5 based on UCL museum wellbeing measures. There will also be an optional text input. The collected input will be processed through a sentiment analysis algorithm to generate an overall sentiment score. Initially, the input mechanism will be a simple interface, either a Tkinter form or an HTML form, which will save the values into a CSV file. Eventually, this web app will be hosted on a platform like PythonAnywhere to enable mobile device access.

The primary goal is to visualize these sensory values and sentiments in an artistic manner. The visualization will depict participants data and generate graphics using p5.js. These graphics will be displayed in a web page linked to a scanned floor plan of the museum, with images positioned accurately using CSS. The initial goal would be to create this assessment application for one gallery exhibition and possibly expand it for all gallery spaces within the museum.

Task Vignettes

User Input of Sensory Parameters

Vignette:

Anna, a museum visitor, wants to provide her sensory feedback after visiting an exhibit. She opens the app on a laptop and is presented with a form containing sliders for different sensory parameters (e.g., sound, light, temperature, etc.) and/or UCL wellbeing questionnaire parameters (e.g. happy, engaged, comfortable, safe & secure, company of others, discussion, etc.) and an optional text box for additional comments. Anna adjusts the sliders to reflect her experience and types a brief comment in the text box. She then clicks the 'Submit' button, and her input is saved.

Technical Details:

- A form with sliders for sensory and wellbeing parameters (values 1-5).
- Optional text input for comments.
- 'Submit' button saves data to a CSV file.
- Form validation to ensure all sliders are used.

Generic Wellbeing Questionnaire

Full 12-item version

Please circle a number for each statement to indicate how much you agree with it.

1) I felt happy

None of the time 1	Not very often 2	Some of the time 3	Very often 4	All of the time 5
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2) I felt engaged

None of the time 1	Not very often 2	Some of the time 3	Very often 4	All of the time 5
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3) I felt comfortable

None of the time 1	Not very often 2	Some of the time 3	Very often 4	All of the time 5
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4) I felt safe and secure

None of the time 1	Not very often 2	Some of the time 3	Very often 4	All of the time 5
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5) I enjoyed the company of other people

None of the time 1	Not very often 2	Some of the time 3	Very often 4	All of the time 5
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6) I talked to other people

None of the time 1	Not very often 2	Some of the time 3	Very often 4	All of the time 5
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7) I was interested

None of the time 1	Not very often 2	Some of the time 3	Very often 4	All of the time 5
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8) I enjoyed it

None of the time 1	Not very often 2	Some of the time 3	Very often 4	All of the time 5
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9) I was amazed

None of the time 1	Not very often 2	Some of the time 3	Very often 4	All of the time 5
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10) I was entertained

None of the time 1	Not very often 2	Some of the time 3	Very often 4	All of the time 5
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11) I felt confident

None of the time 1	Not very often 2	Some of the time 3	Very often 4	All of the time 5
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12) I felt healthy

None of the time 1	Not very often 2	Some of the time 3	Very often 4	All of the time 5
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*Wellbeing scale from the UCL Museum Wellbeing Measures Toolkit. There is also a simplified 6 question assessment and a Positive Wellbeing Umbrella as well as a Negative Wellbeing Umbrella. (Versions exist specifically for Older Adults and Younger Adults).

Sentiment Analysis Processing

Vignette:

The application backend processes the submitted sensory data. It reads the latest CSV entries and runs the comments through a sentiment analysis algorithm to assign a sentiment score to each entry. These scores are then stored in the system for visualization purposes.

Technical Details:

- Read CSV file entries.
- Apply sentiment analysis to text comments.
- Assign and store sentiment scores.

Artistic Visualization of Data

Vignette:

The museum curator wants to visualize the aggregated sensory data. The web app reads the data and generates visual representations using p5.js. These visuals are then overlaid on a scanned floor plan of the museum. The curator can view the overall sentiment and sensory feedback from different visitors, helping to identify patterns and areas for improvement.

Technical Details:

- Aggregate sensory and sentiment data.
 - Use p5.js to generate graphics based on data.
 - Display graphics on a webpage
 - Save graphics in a cumulative “gallery” folder
 - Add links to each “sentiment response collection page” on a museum floor plan using CSS.
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Technical Flow

1. User Input:

- Sliders and text input from the form.
- GUI with sliders created in TKINKER or HTML form
- Data saved as CSV.

2. Processing:

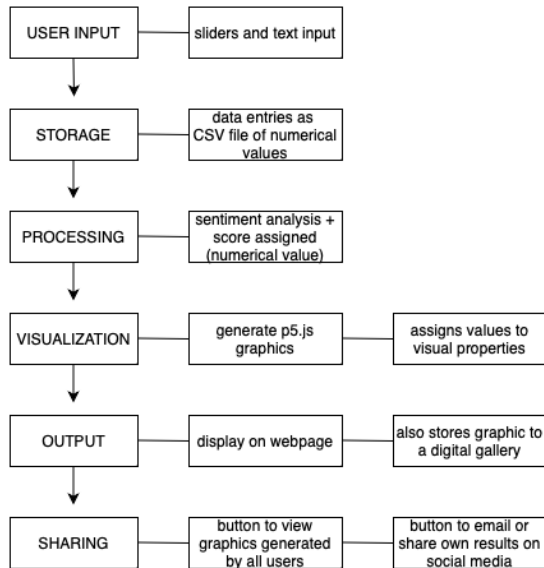
- Backend reads CSV entries.
- Sentiment analysis applied to text comments.
- Sentiment scores assigned.

3. Visualization:

- Aggregate sensory & wellbeing data and sentiment scores.
- Generate p5.js graphics using the data input
- Display resulting graphics in a webpage (digital gallery).

Blocks:

- Input Block: Handles user input via sliders and text.
- Storage Block: Saves input data to a CSV file.
- Processing Block: Runs sentiment analysis and assigns scores.
- Visualization Block: Generates artistic interpretations.
- Output Block: Displays visualization on webpage.
- Sharing Block: (optional) user can click to email results, share on social media, or view all user visualizations



Data Types:

- Input Data: List of numeric values (1-5) and text strings.
- Processed Data: List of sentiment scores (numeric values)
- Visualization Data: JSON objects (? Or CSV file) for p5.js script.

User Interaction:

- Input: Sliders and text fields.
 - Output: Visual graphics on a webpage
(also stored in a “digital gallery” along with the visual results of others)
 - Input: buttons to share, email, or view all
 - Output: Action requested
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Conclusion

This project will provide a platform for museum visitors to input their sensory feedback and see artistic visualizations of aggregated data. The initial development phase involves creating a simple input form and processing sentiment analysis, with future phases focusing on enhancing the visualization and deployment aspects. This approach ensures a structured and scalable implementation of the sensory parameters sentiment analysis web app.