**Neural Data Visualization Report Template**

**Title Page:**

* **Title**: Neural Data Visualization and Analysis
* **Name**: [Your Name]
* **Date**: [Submission Date]
* **Course**: [Course Name]
* **Instructor**: [Instructor’s Name]

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1. **Introduction**
   1. **Purpose**:
      1. Explain the purpose of the activity.
      2. Describe the importance of neural data visualization.
   2. **Background**:
      1. Provide a brief overview of neural data and its significance.
      2. Mention the previous activity, “Neural Data Processing and Database Creation with Python.”
   3. **Objectives**:

State the specific objectives of this activity.

1. **Methods**
   1. **Data Acquisition**:
      1. Describe how the neural data was obtained.
      2. Mention the conversion of neural data from audio signals to .csv format.
   2. **Data Processing**:
      1. Explain the steps taken to process the data for visualization.
      2. Include any techniques used, such as downsampling and smoothing.
   3. **Visualization Techniques**:
      1. Discuss why *graphics.py* was chosen for this activity.
      2. Briefly mention the potential use of other libraries such as *matplotlib.py*.
2. **Results**
   1. **Raw Data Visualization**:
      1. Include graphs and visualizations of the raw neural data.
      2. Provide descriptions and initial observations for each visualization.
   2. **Processed Data Visualization**:
      1. Include graphs and visualizations of the processed neural data.
      2. Highlight the differences and improvements compared to the raw data.
3. **Discussion**
   1. **Interpretation of Results**:
      1. Interpret the visualizations and explain any patterns or trends observed.
      2. Discuss the differences between visualizations of different types of movements (e.g., finger vs. wrist movements).
   2. **Significance of Findings**:
      1. Explain the significance of your findings in the context of neural data analysis.
      2. Discuss how visualization helped in understanding the data better.
4. **Conclusion**
   1. Summarize the key findings of your report.
   2. Reflect on what you learned from the activity.
   3. Mention any potential future work or applications of these techniques.
5. **References**
   1. List all the references and resources you used in your report.
   2. Use a consistent citation style (e.g., APA, MLA).
6. **Appendices**

Include any additional materials, such as code snippets, detailed data tables, or extra visualizations.