AI DOCUMENTATION:

**AI Documentation Entry #1**

**Prompt:**  
"I'm working on a Python project where I need to analyze word counts from text files. I've stored word counts per year in a dictionary (word\_lengths), where keys are years and values are lists of word counts. I now need to find the minimum and maximum word counts for each year and store this in a structured way like maybe it can be a dataframe which is easy too work on. I'm not sure how to approach this, could you explain how to summarize this data and convert it into a DataFrame without giving me the full code?"

**Response:**  
"Great question! Here's a step-by-step approach:

1. **Summarizing the Data:**
   * You can loop through your word\_lengths dictionary (year as key, list of word counts as value).
   * For each year, calculate the min() and max() of the word count list.
   * Store these values in a new list of dictionaries, where each dictionary has keys like 'year', 'min\_length', and 'max\_length'.
2. **Converting to DataFrame:**
   * Use pd.DataFrame() on your list of dictionaries—Pandas will automatically convert it into a structured table.
   * You can then sort the DataFrame by year using df.sort\_values('year').

Would you like an example of how to build the summary list step-by-step?"

**Prompt:**  
"Yes, could you show me how to create the summary list without writing the full code for me?"

**Response:**  
"Sure! Here’s a conceptual example:

python

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summary = [] *# Empty list to store results*

for year, lengths in word\_lengths.items():

summary.append({

'year': int(year), *# Convert year to integer*

'min\_length': min(lengths), *# Minimum word count*

'max\_length': max(lengths) *# Maximum word count*

})

This creates a list of dictionaries, where each dictionary represents a year's min/max word counts. Does this help?"

**Prompt:**  
"Yes, that makes sense! How do I then convert this into a DataFrame and sort it?"

**Response:**  
"Pandas makes this easy:

python

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df = pd.DataFrame(summary) *# Convert list of dicts to DataFrame*

df = df.sort\_values('year') *# Sort by year (ascending)*

Now df is ready for further analysis. Let me know if you'd like help with something else!