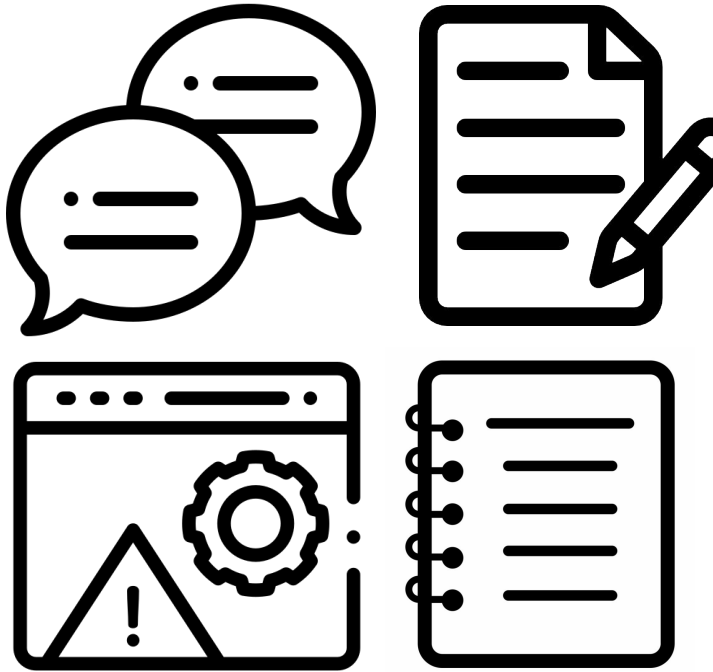
Improving writing instruction Through LLM Scripting

- Starting points
- Creating self-grading assignments
- Organizing assignment results
- Checking grammatical accuracy



Starting points

- Go to: github.com/cburst/LLMscripting
  - Download and install the software
- Go to: platform.openai.com/api-keys
  - Create an API key
  - Setup billing and add $5

Starting points

- Think critically about AI (i.e., applied statistics)
- Large Language Models are revolutionary
  - human languages
  - programming languages

Starting points

- As a result, educators should:
  - make their own programs (i.e., python scripts)
  - streamline their workload
  - focus on direct interaction with students

Starting points

- Ipsative assessment:
  - assessment based on improvement
  - rather than criteria or peer comparison
- Implementing ipsative assessment:
  - with extensive assistance from LLMs
  - careful integration with achievement criteria

Zero shot,
Chain of thought

- Zero shot:
  - single prompt
  - no background information
- Chain of thought:
  - series of prompts
  - initial/continuous processing of background information

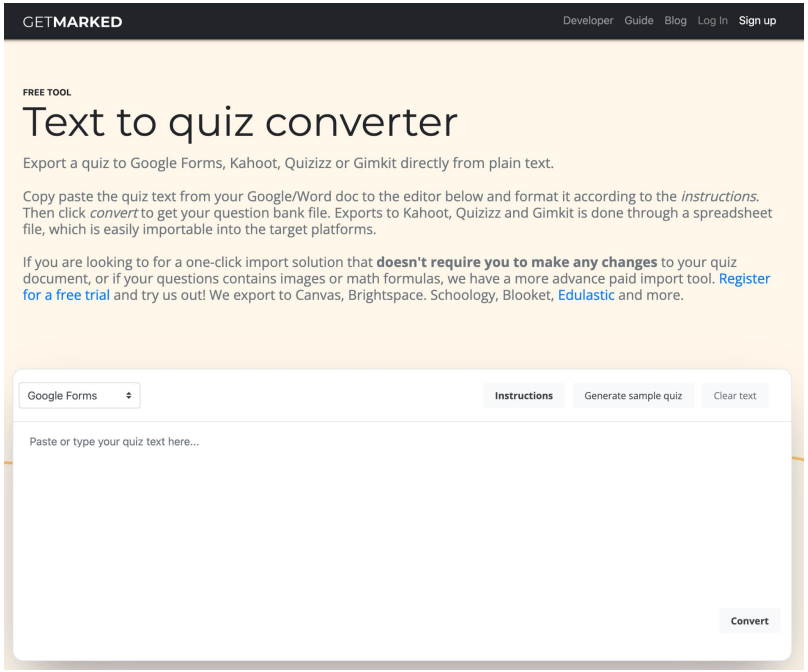
Creating self-grading assignments

- Why Google Forms?
  - can insert questions from PDFs or ChatGPT
  - self-grading for certain data types
  - variety of possible data types
    - text, multiple-choice, audio, video
  - data output to spreadsheets
  - data output in real-time

Creating
self-grading assignments

- Please follow the instructions in this link to create a Google form using GetMarked: https://forms.gle/Sb7TcJDp1tkJ7qqc9

Creating self-grading assignments



Creating
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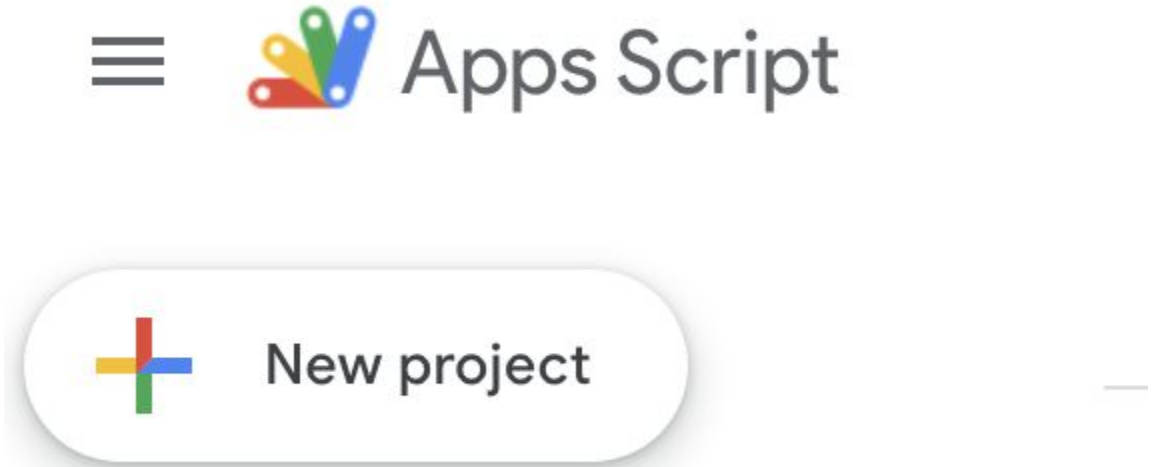

Creating
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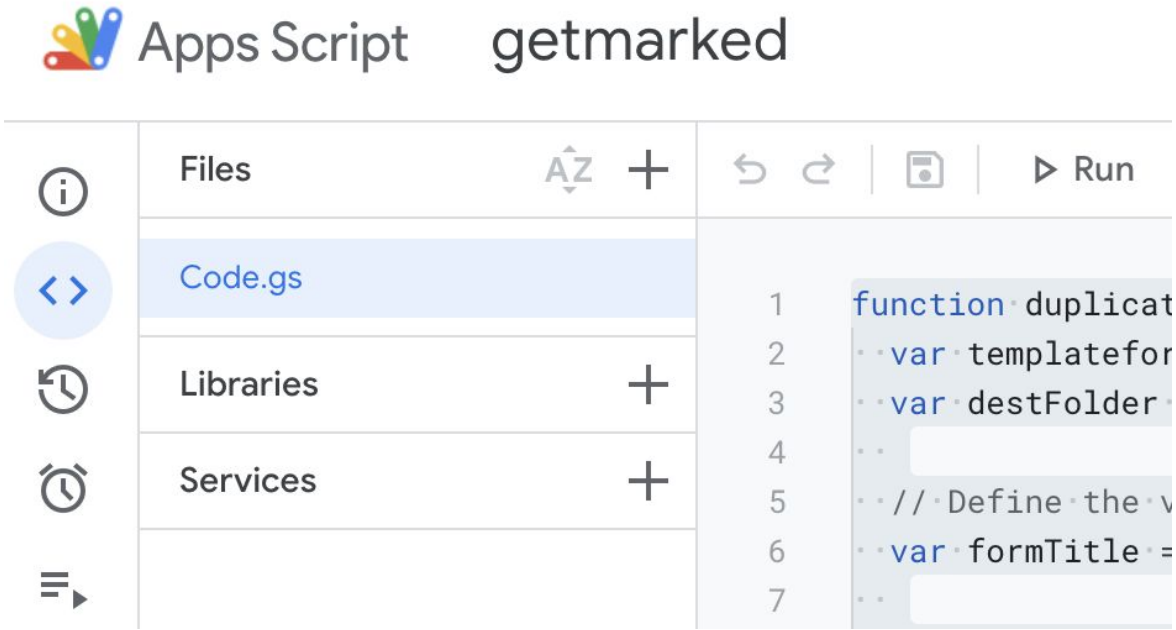

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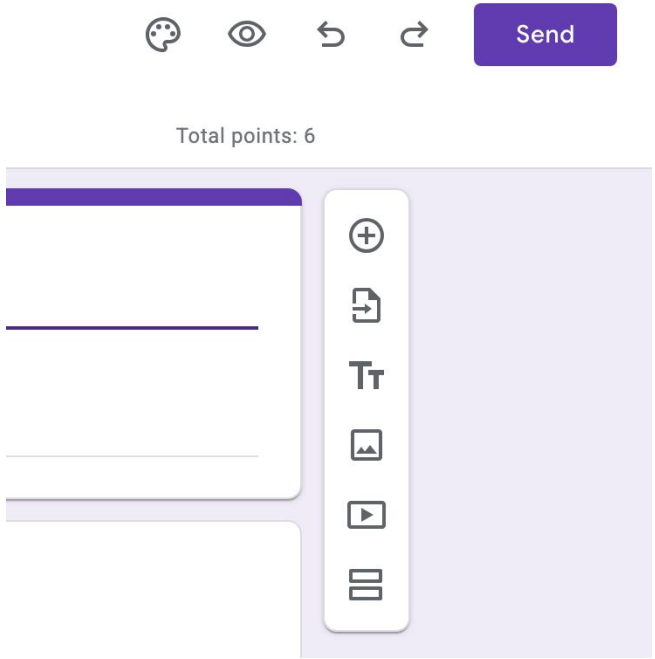

Creating
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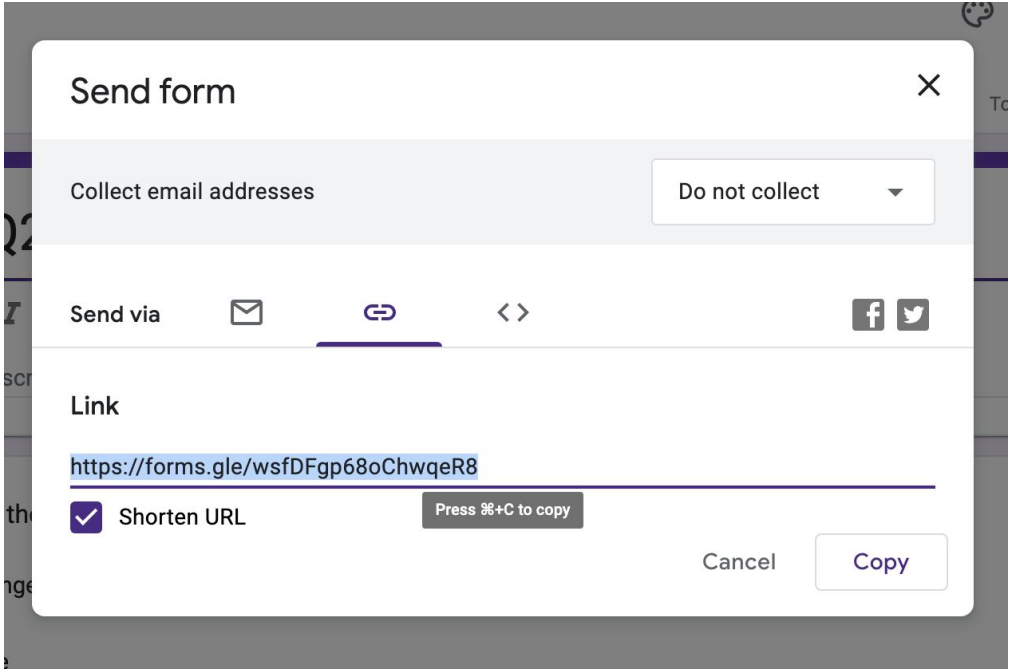

Creating
self-grading assignments

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Organizing assignment results

- Why Google Sheets?
  - receive data in real-time
  - sophisticated data processing
    - attendance, assignments, grades
    - plagiarism detection, content analysis
  - easy output to third-party resources
  - easy input from third-party resources

Organizing assignment results

- First columns:
  - each student's name, ID number, e-mail address, & class section
- Later columns
  - attendance, assignments, scores, text of assignments, text of ChatGPT feedback
  - participation grades, statistics (e.g. average number of grammar errors)

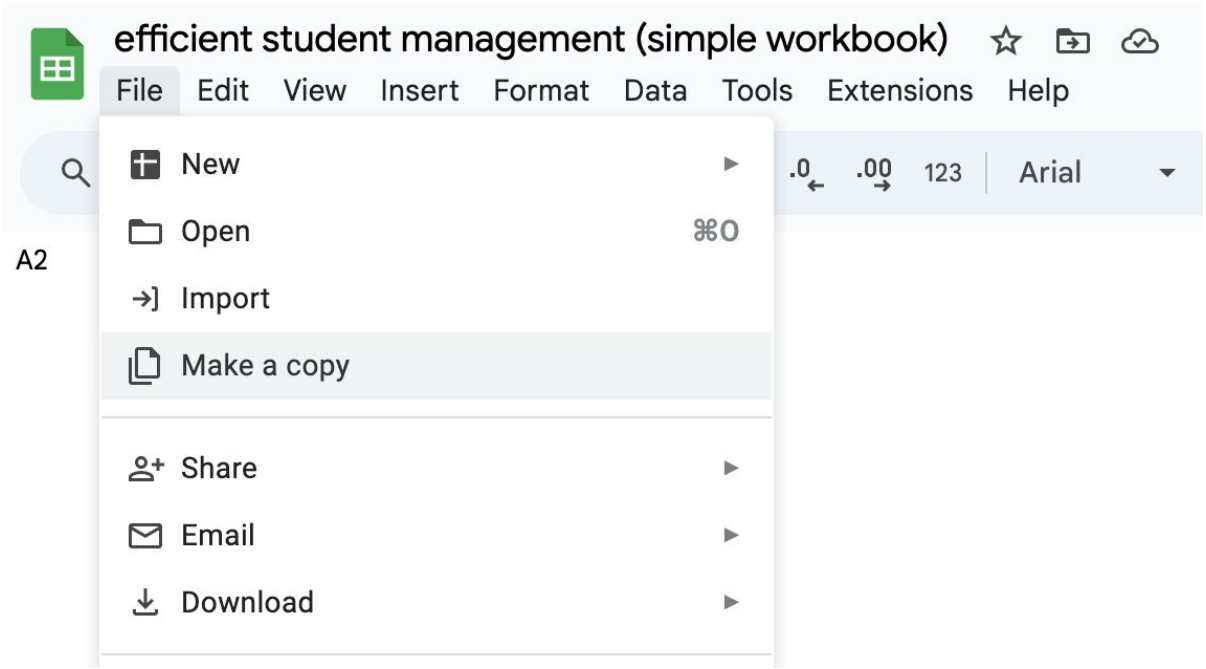
Organizing assignment results

- Later sheets:
  - Google forms output for each assignment
  - datasets for ChatGPT (& third-party resources)
- Third party resources:
  - TSV output (File>Download>Tab Separated Values)
  - run python script
  - paste output in appropriate place

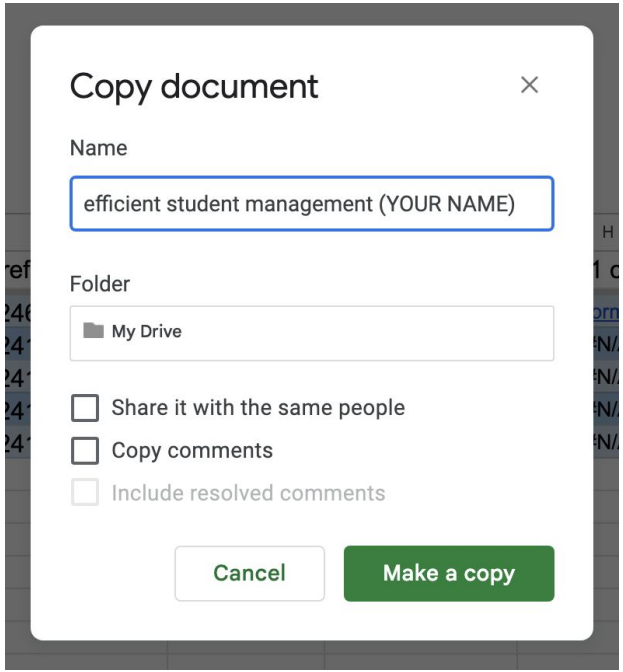
Organizing assignment results

- Please follow the instructions in this link to create a Google Sheet: https://forms.gle/z5pwfzABdT5X7sns9

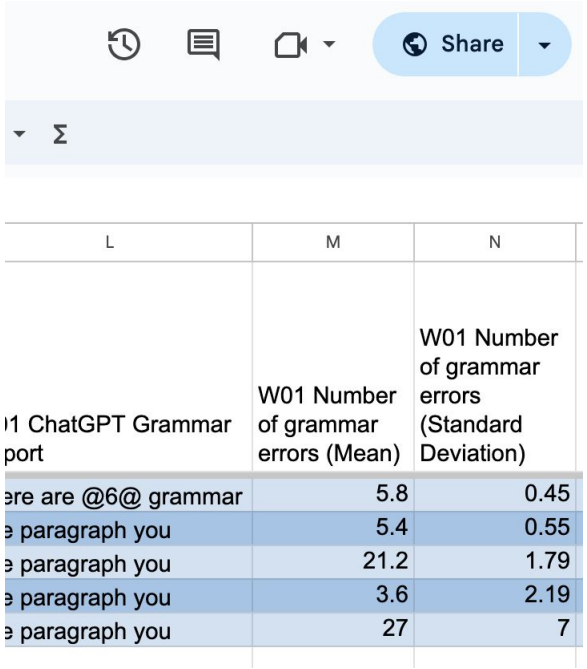
Organizing assignment results



Organizing assignment results

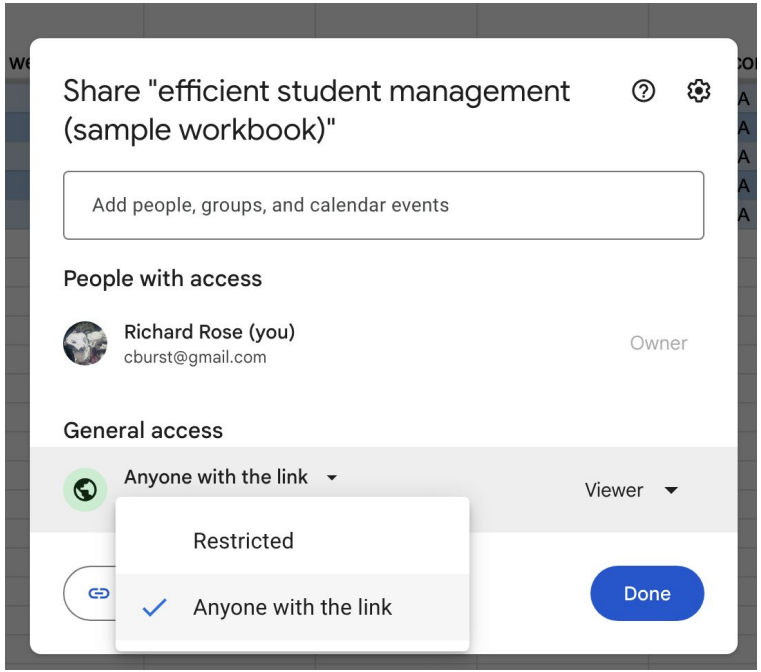


Organizing assignment results

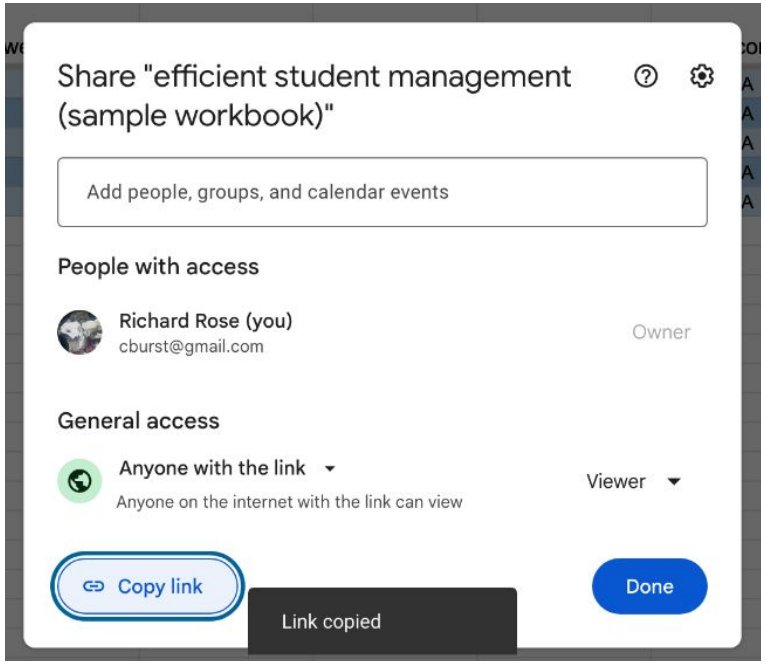


L	M	N
1 ChatGPT Grammar port	W01 Number of grammar errors (Mean)	W01 Number of grammar errors (Standard Deviation)
ere are @6@ grammar	5.8	0.45
e paragraph you	5.4	0.55
e paragraph you	21.2	1.79
e paragraph you	3.6	2.19
e paragraph you	27	7

Organizing assignment results



Organizing assignment results



Organizing assignment results

- Please follow the instructions in this link to create a Google Sheet: https://forms.gle/z5pwfzABdT5X7sns9

Checking grammatical accuracy

- Download and use scripts shared HERE
  - Python (install version 3.11)
  - OpenAI API Key (place as ENV variable)
  - GPT-CLI & dependencies
- Follow along at your own pace

Checking grammatical accuracy

- Why Python?
  - easy to write (with help from ChatGPT)
  - easy to read (mostly plain English)
- Why the command line interface?
  - conduct 1000s of ChatGPT queries in just a few seconds

Checking grammatical accuracy

- get OpenAI API Key & copy to clipboard
  (https://platform.openai.com/api-keys)
  Create a Key, Setup Billing, Give them $5
- Windows/Mac instructions:
  Go to LLMscripting Releases
- Tutorials:
  Windows Tutorial - English
  Windows Tutorial - Korean
  Mac Tutorial - English
  Mac Tutorial - Korean

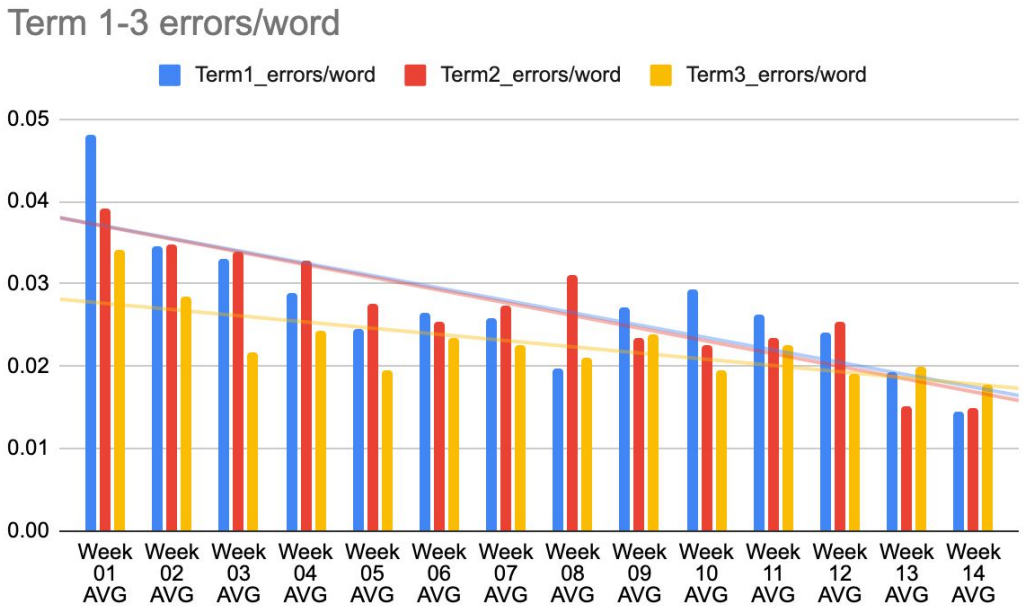
Checking grammatical accuracy

- download speeches-gen-prompts.tsv
- place TSV file into input-files folder
- go to ‘LLMscripting-main’
  in Windows Powershell / Mac Terminal
  - On Windows type: python GPT.py speeches-gen-
  - On Mac type: python3 GPT.py speeches-gen-
- monitor script, use ChatGPT for errors
- copy processed output in output-files
- into speeches-gen-GPTresults B39

Chain of thought
grammatical accuracy

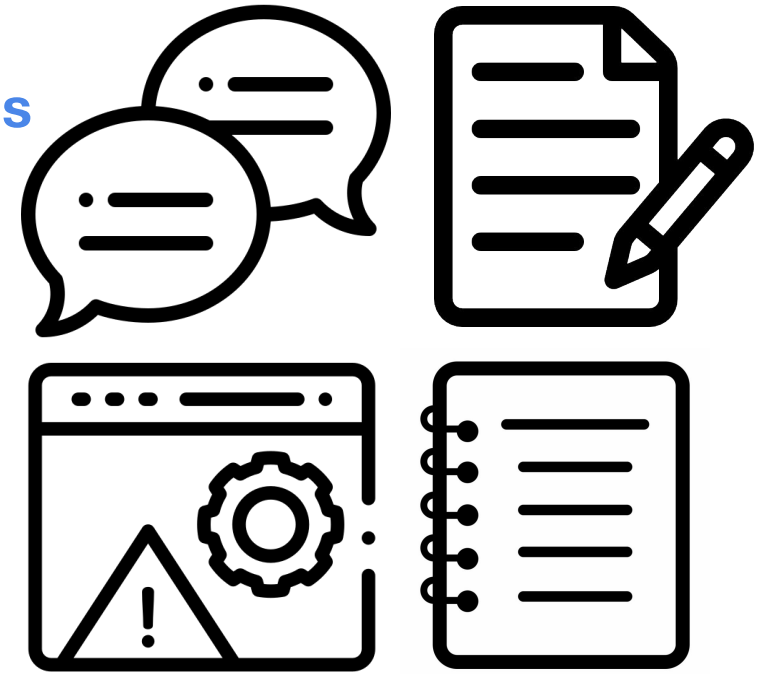
- download speeches-raw.tsv
- place TSV file into input-files folder
- go to ‘LLMscripting-main’
  in Windows Powershell / Mac Terminal
  - On Windows type: python GPT.py speeches-
  - On Mac type: python3 GPT.py speeches-
- monitor script, use ChatGPT for errors
- copy processed output in output-files
- into speeches-multi-GPTresults D126

Checking grammatical accuracy



Improving writing instruction Through LLM Scripting

- Thanks for your time and attention
- Let me know if you have any questions
- richard.rose@yonsei.ac.kr



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Rose, R. (2024). Improving syntactic complexity in engineering students' writing through digital portfolios and visual analytics. Manuscript in preparation.

Starting points

Task	Human Component	Machine Component	Human Only Possible?	Machine Only Possible?	Labor type
Getting an eSIM	Telecom Clerk	Software (e.g., Saily)	No	Yes	Primarily machine labor
Transportation	Driver	Software (e.g., Grab)	Yes	Yes	Mostly machine labor
Foot Massage	Massage therapist	Hardware (e.g., Bodyfriend) Software (e.g., Google Maps)	Yes	Yes	Mostly human labor
Raising a child	Parent	Hardware (e.g., baby monitors) Software (e.g., Youtube)	Yes	No	Primarily human labor
Academic Writing	Writer/Editor	Hardware (e.g., pen, paper, computer) Software (e.g., Google Docs, ChatGPT)	No	Yes/No/Maybe	Uncertain labor type