

# Collaborative Notes

A note-taking and sharing app for students and coworkers
Including a simple user interface and focusing on note-taking
Jacob MacLeod

#### Motivation

- Support collaboration in note taking
- Create accessible solution for notes
- Facilitate remote learning and remote work
  - Stay at home
  - 45% of U.S. employees working from home [1]
    - 25% working from home exclusively
  - Reduces workspace costs [2]
  - No commute time
  - Gives students and workers flexibility
  - Allows people to live where they want [3]

#### Solution

- Web application for sharing notes
- Desktop and mobile browser
- Al speech-to-text

#### Collaboration

- Collaborative note taking
- Users can share link to notepad
- Real-time update of collaborative notepad

- Supports collaboration for students taking notes and employees working remotely
- Like Google Workspace collaboration [4]

### Speech-to-text

- Users can speak into microphone and dictate text
- From context menus or speech-to-text button

- Dictation available in Microsoft OneNote [5]
- Speech-to-text for other note-taking apps only from third-party plugins [6]

### Al Text Summary

- Using AI, creates a summary of selected text
- From context menus or summarize button
- Writes summary text below users' text with summary header
- Microsoft OneNote with Windows 11 Copilot has this feature [7]
- Google Workspace for Business includes Gemini AI features including summarization [8] – [10]
- Editpad has Al summarizer [11]
- Other note-taking apps require third-party plugins. Popularity of these depends on the app [12] [14]

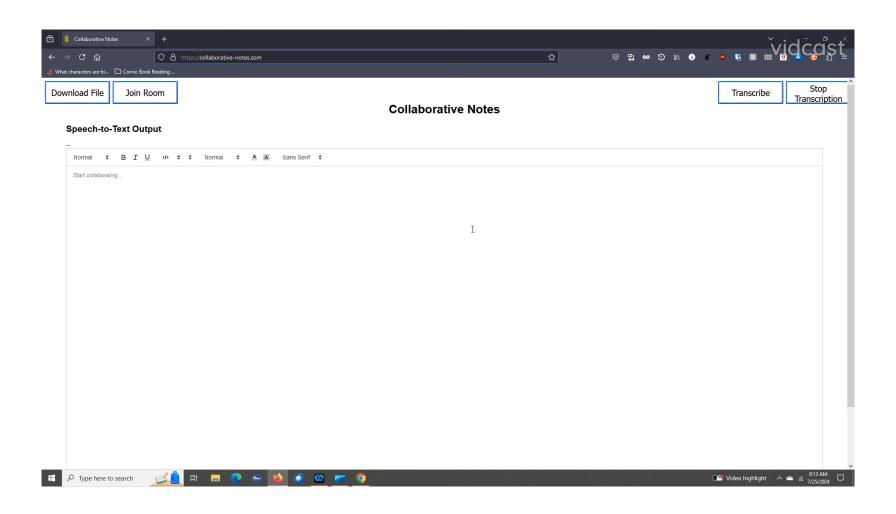
### **Current Status of Prototype**

- Collaboration Implemented
  - Every user in same room on main page, no separate rooms

- Speech-to-Text Implemented
  - Output above editor, also connected to collaborative editor

AI Text Summary Not Implemented

### Demo Video



#### **Business Model**

- Subscription-based service
  - Payment of monthly fee
  - Yearly subscription also available
  - Convenient for customer
  - Encourages improvement
  - Brand loyalty [19]

#### **Team Contributions**

 Jacob MacLeod: Developed server and browser frontend, set up connection server

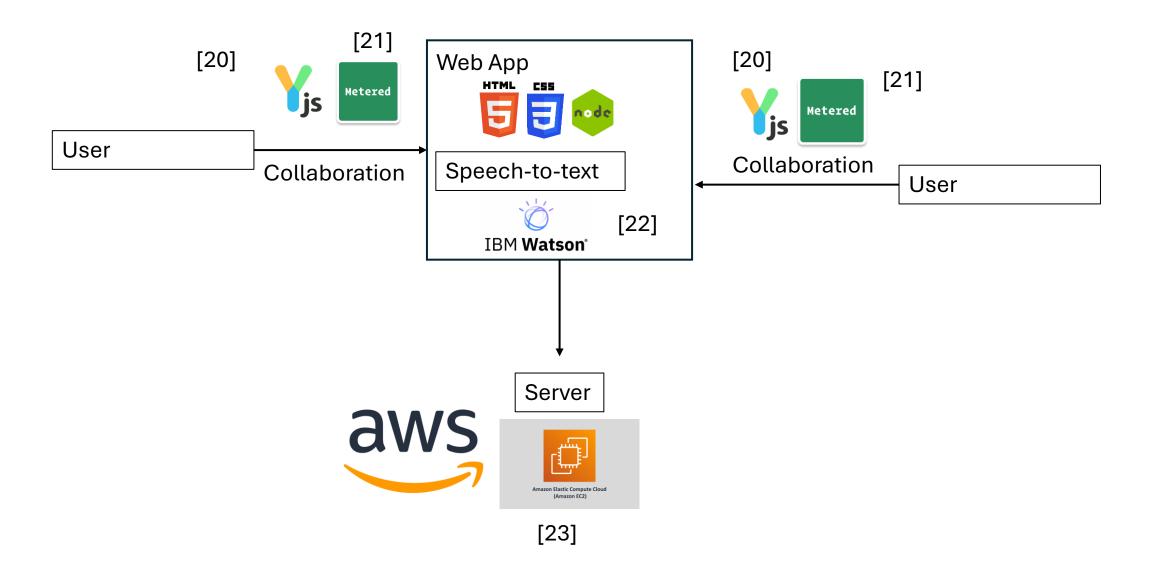
## Plan for Implementation

Implement AI Text Summary

Implement creation of separate rooms for collaboration

Test collaboration feature on different networks

## System Diagram



#### References

- [1] Lydia Saad and Ben Wigert. "Remote Work Persisting and Trending Permanent." Gallup.com. <a href="https://news.gallup.com/poll/355907/remote-work-persisting-trending-permanent.aspx">https://news.gallup.com/poll/355907/remote-work-persisting-trending-permanent.aspx</a>
- [2] "How Remote Work Can Increase Business Profits." Forbes.com. <a href="https://www.forbes.com/sites/theyec/2021/10/13/how-remote-work-can-increase-business-profits/?sh=6eea5fc117b8">https://www.forbes.com/sites/theyec/2021/10/13/how-remote-work-can-increase-business-profits/?sh=6eea5fc117b8</a>
- [3] "The New Geography of Remote Work." Upwork.com. <a href="https://www.upwork.com/research/new-geography-of-remote-work">https://www.upwork.com/research/new-geography-of-remote-work</a>
- [4] "Google Workspace." workspace.Google.com. <a href="https://workspace.google.com/">https://workspace.google.com/</a>
- [5] "Dictate your notes in OneNote." support.Microsoft.com. <a href="https://support.microsoft.com/en-us/office/dictate-your-notes-in-onenote-2f5d1549-afe1-4abd-95ff-829a839e3d00">https://support.microsoft.com/en-us/office/dictate-your-notes-in-onenote-2f5d1549-afe1-4abd-95ff-829a839e3d00</a>
- [6] Nik Danilov. "Speech-to-text in Obsidian using OpenAl Whisper." GitHub.com. <a href="https://github.com/nikdanilov/whisper-obsidian-plugin">https://github.com/nikdanilov/whisper-obsidian-plugin</a>
- [7] "Summarize your OneNote notes with Copilot for Microsoft 365." support.Microsoft.com. <a href="https://support.microsoft.com/en-us/office/summarize-your-onenote-notes-with-copilot-for-microsoft-365-89e1f3cd-9cbc-4b34-84da-40d52b39aff5">https://support.microsoft.com/en-us/office/summarize-your-onenote-notes-with-copilot-for-microsoft-365-89e1f3cd-9cbc-4b34-84da-40d52b39aff5</a>
- [8] "Gemini for Google Workspace." workspace.google.com. <a href="https://workspace.google.com/solutions/ai/">https://workspace.google.com/solutions/ai/</a>

#### References

- [9] "Create Content with Gemini." cloudskillsboost.google. <a href="https://www.cloudskillsboost.google/paths/249/course\_templates/914/video/484003">https://www.cloudskillsboost.google/paths/249/course\_templates/914/video/484003</a>
- [10] "Edit Prompts and Refine Text." cloudskillsboost.google. <a href="https://www.cloudskillsboost.google/paths/249/course\_templates/914/video/484004">https://www.cloudskillsboost.google/paths/249/course\_templates/914/video/484004</a>
- [11] "Text Summarizer." Editpad.org. <a href="https://www.editpad.org/tool/text-summarizer">https://www.editpad.org/tool/text-summarizer</a>
- [12] HahaBill. "Summarize your notes with Joplin AI!" discourse.joplinapp.org. <a href="https://discourse.joplinapp.org/t/summarize-your-notes-with-joplin-ai/36983">https://discourse.joplinapp.org/t/summarize-your-notes-with-joplin-ai/36983</a>
- [13] pchuer. "Plugin: GPT." discourse.joplinapp.org. <a href="https://discourse.joplinapp.org/t/plugin-gpt/30660">https://discourse.joplinapp.org/t/plugin-gpt/30660</a>
- [14] quentin\_42fr. "Introducing Obsidian AI Assistant: Your Gateway to AI Models in Obsidian Notes." forum.Obsidian.md. <a href="https://forum.obsidian.md/t/introducing-obsidian-ai-assistant-your-gateway-to-ai-models-in-obsidian-notes/59437">https://forum.obsidian.md/t/introducing-obsidian-ai-assistant-your-gateway-to-ai-models-in-obsidian-notes/59437</a>
- [15] "A Collaborative Editor." docs.yjs.dev. <a href="https://docs.yjs.dev/getting-started/a-collaborative-editor">https://docs.yjs.dev/getting-started/a-collaborative-editor</a>
- [16] SebTota. "Y-Webrtc Server." GitHub.com. https://github.com/SebTota/y-webrtc-server

#### References

- [17] "Watson-speech." npmjs.com. <a href="https://www.npmjs.com/package/watson-speech">https://www.npmjs.com/package/watson-speech</a>
- [18] IBM Watson APIs. "Speech JS SDK." GitHub.com. <a href="https://github.com/watson-developer-cloud/speech-javascript-sdk">https://github.com/watson-developer-cloud/speech-javascript-sdk</a>
- [19] Moira McCormick. "The Power of Subscription Pricing." Blackcurve.com. <a href="https://blog.blackcurve.com/the-power-of-subscription-pricing">https://blog.blackcurve.com/the-power-of-subscription-pricing</a>
- [20] "Yjs Shared Editing." Yjs.dev. <a href="https://yjs.dev/">https://yjs.dev/</a>
- [21] "WebRTC Stun Turn Servers." metered.ca. <a href="https://www.metered.ca/stun-turn">https://www.metered.ca/stun-turn</a>
- [22] "IBM Watson Speech to Text." IBM.com. <a href="https://www.ibm.com/products/speech-to-text">https://www.ibm.com/products/speech-to-text</a>
- [23] "Amazon EC2 Cloud Compute Capacity AWS." aws. Amazon.com. https://aws.amazon.com/ec2/