Students: Deepak Bokka, Anika Dighde, Nora Morsi, Varun Suravajhela, Jared Yen

Objectives & Requirements

MISSION

- Enhance Moonbeam AI's virtual reality collaboration space
- Incorporate conversational artificial intelligence to make the space interactive and accessible
- Include new features and enhancements for the company to work on in the future
- Use Symbl.AI, a conversational intelligence API with streaming and audio functionalities to develop
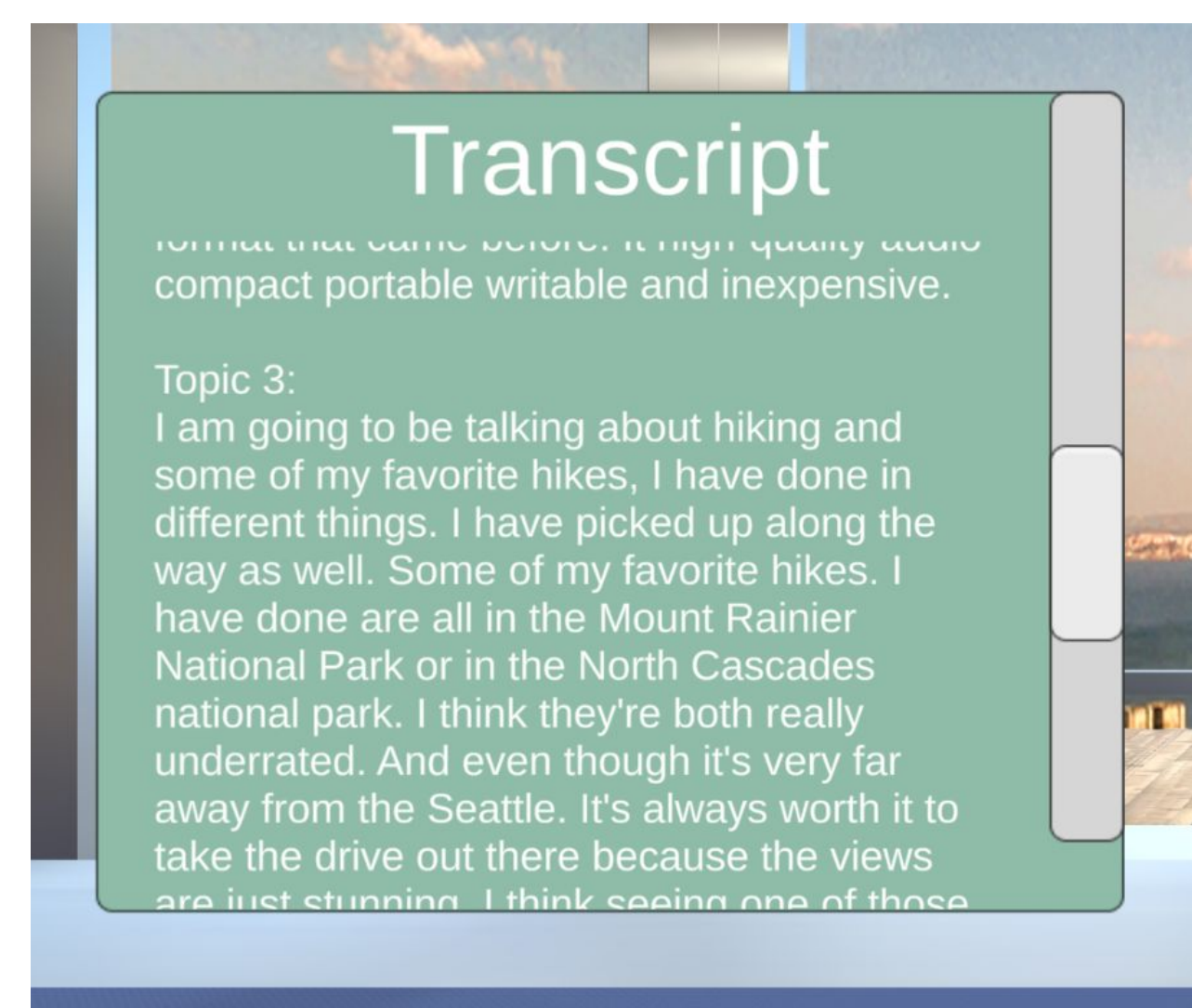- Develop interactive Unity-developed user interfaces

DELIVERABLES

- Meeting transcription
- Collapsible topic summarization
- Free-response and multiple choice polls
- Sentiment analysis
- Voice commands
- Topic sorting post-meeting
- Post-meeting analytics
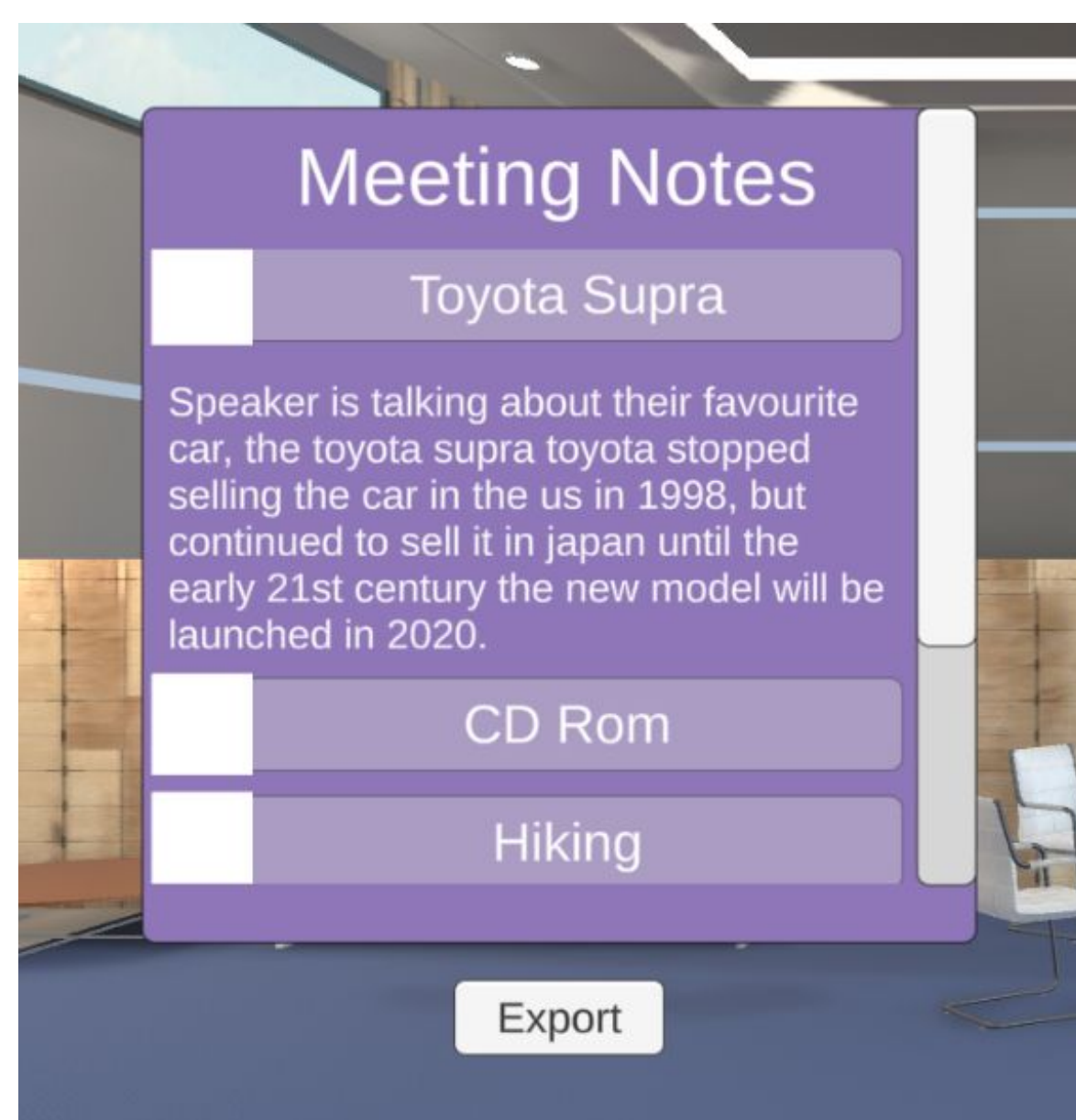
Transcription

- Using speech-to-text capabilities, live transcript visible on scrollable, 3D canvas
- Handled through Symbl.AI's Conversation API for transcribing live speech
- Aids users with hearing issues or late attendees
- Expedite the note-taking process

Scrollable transcript displaying each topic's contents

Summarization

- Automatically summarizes each conversation made during meeting
- Quick way to show meeting attendees what was talked about before they joined meeting
- Automated to produce conversation summary of each meeting topic in meeting agenda
- Each of the meeting notes that outputted raw transcription can be summarized and displayed on agenda notes

Agenda listing summaries of each topic talked about from each audio recording
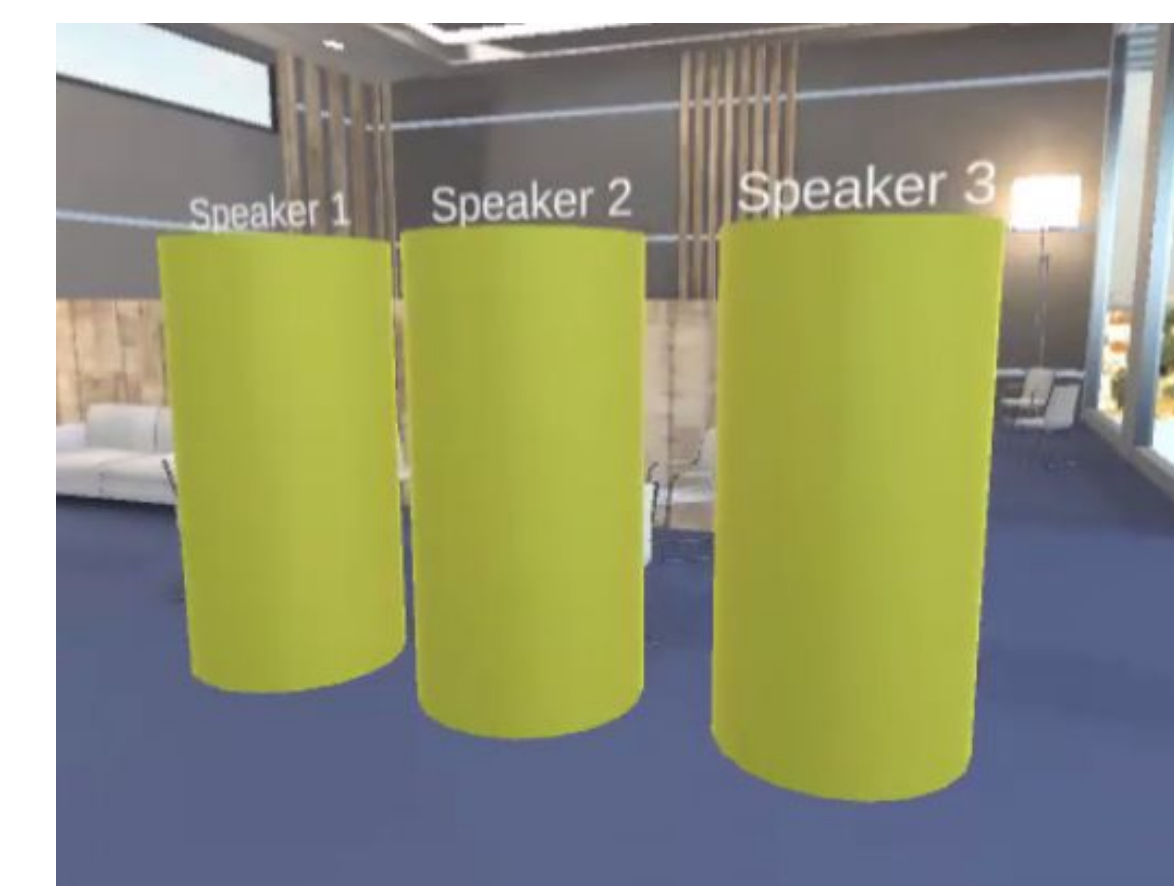
Polls

- Multiple choice or free response
- Questions (and options) parsed from XML file for flexibility in preparing meeting materials
- Interactive using keyboard and mouse
- Live updates for responses
- Can load in multiple questions for free-response polls, with cycling and clearing responses available
- For the free response polls, multiple questions can be prepared and cycled through, with responses being able to be cleared for each question
- Responses for polls exportable into XML file

Free response and multiple choice polls, populated with displayed responses
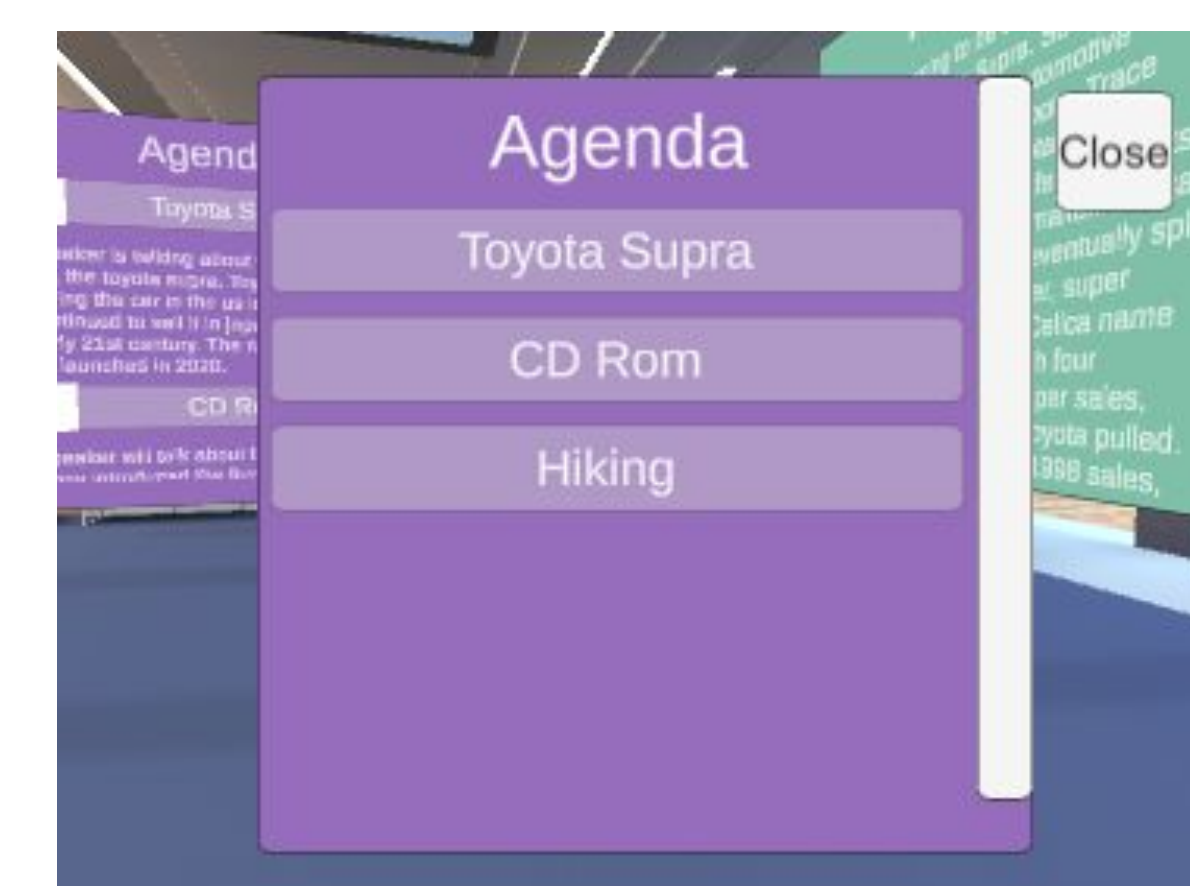
Sentiment Analysis

- Assign each speaker "polarity score"
- Score based on energy & positive levels of the speaker
- Based on the energy level, an object in room assigned a color
  - Red: low
  - Yellow: medium
  - Green: high
- Gauges user interest and analyzes what team should prioritize vs not

Three objects representing three speakers, all speaking with moderate amount of energy

Voice Commands

- Uses "trackers": key phrases detected as commands
- Current command includes pulling up agenda with listed topics
  - "view agenda" detected, agenda automatically pulls up in popup
- Trackers are created and stored through the Symbl.AI platform
- Future: Streaming API to be used for live tracker detection for live voice commands

Separate UI displaying each agenda topic that popups when phrase "view agenda" is detected
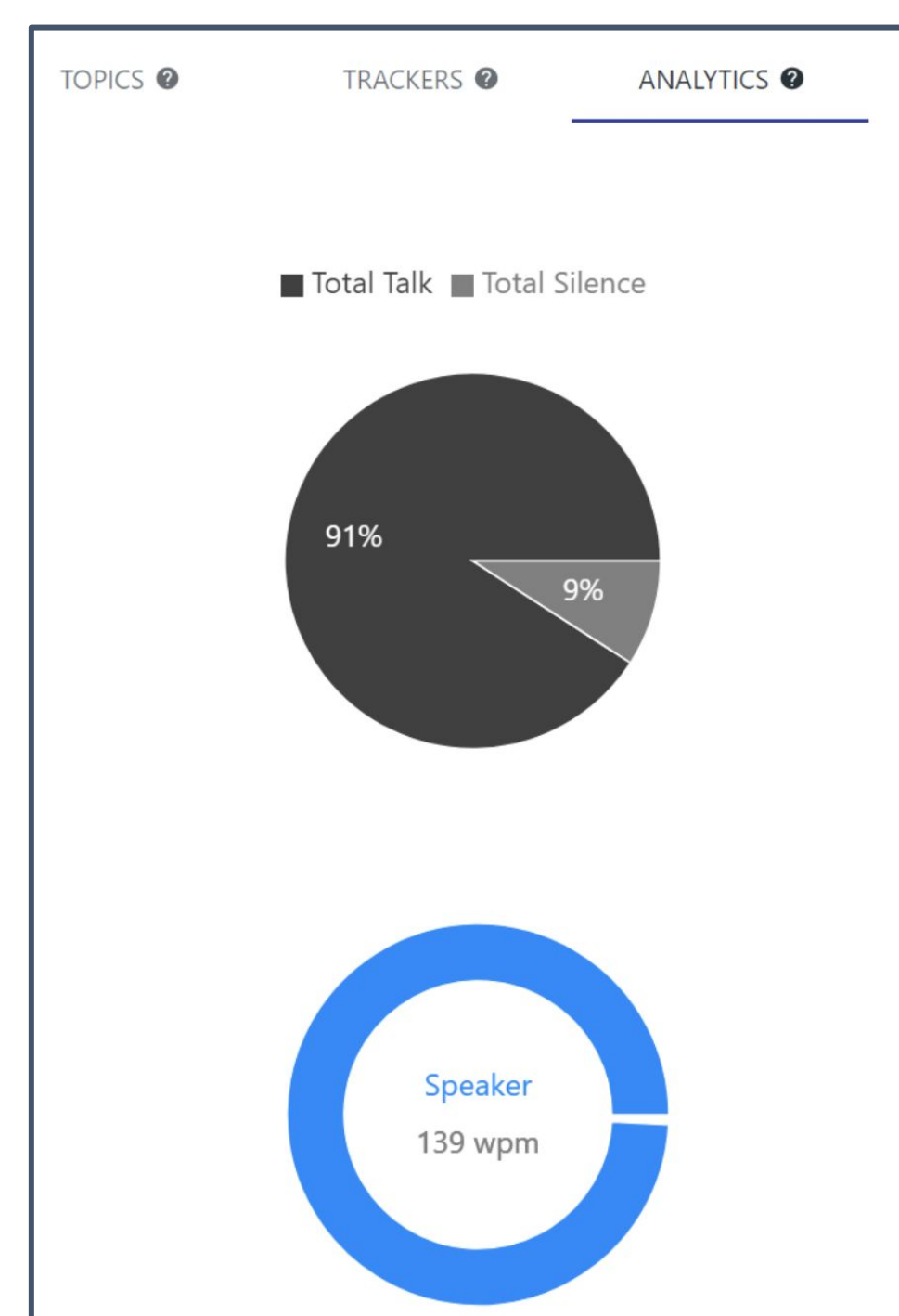
Post-Meeting Analytics

- Provide important insights post-meeting to help gauge participation, interactivity, and conversation
- Sorts topics based on different metrics such as speaking time, amount of words spoken, and sentiment scores (how positive & energetic speech was overall)
- Generates file with sorted transcript and link to analytics website provided by Symbl.AI
- Analytics on website:
  - Auto-detected topics
  - Speaking speed (words per minute)
  - Speaking to silence ratio
  - Auto-detected questions

```
These are the topics sorted by amount of conversation (amount of words spoken):
Topic 3, Length: 268
Topic 1, Length: 151
Topic 2, Length: 142

These are the topic sorted by the talking time (amount of time speaking in seconds):
Topic 3, Talking Time: 83.9
Topic 2, Talking Time: 72.4
Topic 1, Talking Time: 64.4

These are the topics sorted by sentiment scores (how positive or negative the speech
was overall). A negative score is equal to more negative speech and vice versa.
Topic 3, Talking Time: 0.345
Topic 1, Talking Time: 0.152
Topic 2, Talking Time: 0.118
```
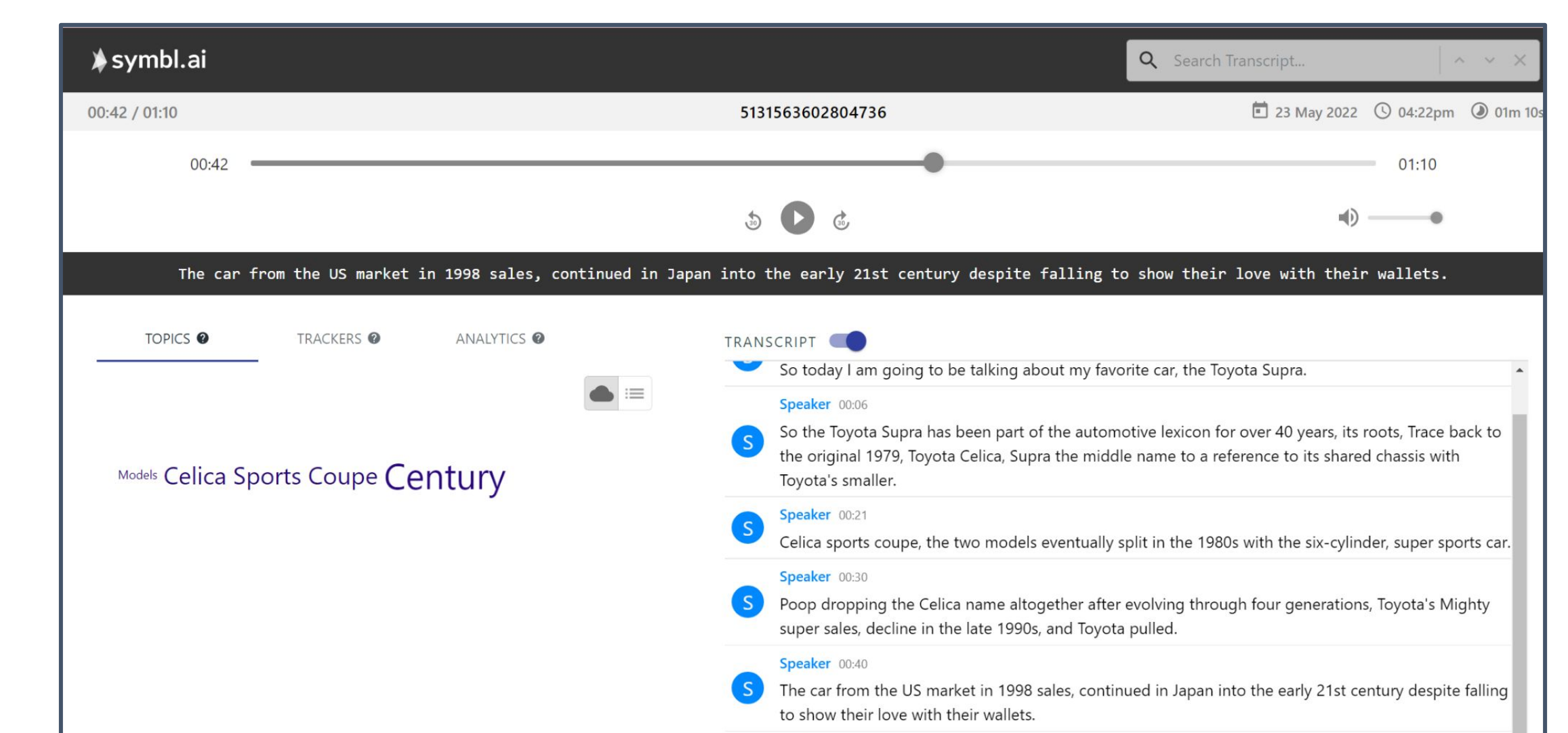
Above: Sample text file generated post-meeting with multiple analytics of each topic

Above: Analytics available within the Symbl provided website, such as words per minute and speech to silence ratio

Below: The analytics website displaying topics, a transcript, a search bar, and additional insights

Conclusion

CONCLUSION

- Gained valuable experience working with conversational APIs and Unity
- Succeeded in delivering our proposed features and more
- Features can be used to help organize and analyze meetings
- Conversational analytics are practical, and can be adapted for additional use cases

FUTURE WORK

- Support multiple users within meeting space
- Support listening to live microphone for transcript, summary, and voice commands
- Add functionality for commands to interact with external applications like calendars, email, etc.

REFERENCES

https://docs.symbl.ai/docs/
https://platform.symbl.ai/
https://github.com/ranjancse26/symbl-csharp-sdk