"SmartMeetings" Vision Statement

Project Name: SmartMeetings
Team Name: Meeting is Believing
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Problem
Meetings are crucial for any line of work. They are absolutely necessary for communication between colleagues about ideas, problems, roadblocks, etc… However, repetition of discussions and materials from previous meetings are downfalls that cause present-day meetings to be very inefficient and leads to more unnecessary meetings. Other common problems in meetings are undistributed speaking time, downfalls of groupthink, members absence, and run on meetings.

Our project aims to solve this problem using machine learning technologies, primarily audio recognition and natural language processing tools to provide annotated transcript, note-taking, and automatic to-do list creation based on spoken keywords. The project also aims to track meetings progress and emotional sentiments of each member as they contribute to provide a well-rounded summary of the meetings.

The problem is currently being solved using audio transcription by various companies; however, the processing and analysis of the transcription is lacking. Most applications focus on having a simple transcription of the meeting afterwards, which catch absent members up when necessary, but does not access real-time information that can benefit current, as well as the future meetings.

Outcome
This project will produce a tool that makes meetings more productive and collaborative by providing a more meaningful analysis of the meeting. This will be accomplished by displaying and maintaining specific scrum information to detect progress. The application will prompt pre-meeting questions about the type of meetings (stand-up, long board meetings, etc.) and the estimated/desired meeting time that the application will use to predict how the pacing and runtime of the meeting. Additionally, video analysis will be used to detect restless/anxious behaviors (e.g. fidgeting) to inform via a popup message that the meeting participants that the meeting may be running too long.

Milestones
- Specification
    - Product Requirements Document
    - User Stories and Use Cases creation
- Design
    - Investigate programming languages, frameworks, and supporting software for use in our application
    - Identify components of application and their interfaces
- Prototyping
    - Wireframe model developed on using Adobe XD
    - Application Interface designed by the end of week 3 for the purposes of visualizing progress weekly
    - Setup the base parts of application: user login and data saving, video/audio call embedded, basic audio transcription.
    - Provide an interface for the user to interact with the transcriptions, upload audio files, and modify account settings.

Platforms and Technologies
- Possible Implementation Platforms:
    - Web (first)
    - Mobile
- Possible Technologies:
    - Material Design Principles guidelines for the development of application interface
    - ReactJS/AngularJS for development of application interface
    - Materials-ui will be used as a css framework for ReactJS components
    - Ruby on Rails will serve as a back-end renderer and router for ReactJS components
    - Natural Language Processing (nltk)
    - Realtime audio/voice processing utilizing Watson IBM speech-to-text API.
    - Audio/video conferencing through WebRTC

Process Model
- Agile development: sprints, continuous reanalysis of requirements
- Keep track of sprint plans using Trello, including story-writing and tasks
- Use Cases and User Stories into tasks for sprints
- Daily scrum meeting with team reviewing accomplished tasks, blockers, and future tasks to be done
- Burndown Chart to keep track of team progress and improve timing estimates
- Weekly meetings with mentor
- Weekly meetings with TA
- Test-driven development
- Unit testing
- Frequent deployment