Project Title: Sensory Substitution Device for Hearing Impairment

Team Members:

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Client:
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Problem Statement:
The goal is to design and develop an auditory substitution device that through the use of vibro- or electro-tactile stimulation can substitute for regional frequency hearing loss. We will continue the work from last semester, mainly focusing on integrating vibro-transducers into the system in order to prepare the system for laboratory trials.

Statement of team goals:
1. Create problem statement
2. Create first draft of PDS
3. Begin to research and develop design ideas
4. Continue the design project
   a) Research all possible background information.
   b) Research existing and design alternatives
   c) Brainstorm for all possible solutions
   d) Meet with experts to gain ideas about possible solutions
   e) Develop possible design solutions
5. Choose final three design solutions
6. Develop final three solutions
7. Create Power point presentation
8. Finish mid semester report, PDS
9. Discuss possible final design alternative
10. Finalize Design
11. Build and test prototype
12. Present final design & poster

**Project Schedule**
1/26 – 2/2 Choose project, assign roles, meet with client
2/3 – 2/9 Draft first version of PDS, preliminary design ideas to improve prototype
2/10 – 2/16 Continue research and write PDS
2/17 – 2/23 Decide on design alternatives, brainstorm ideas
3/23 – 3/2 Work on design
3/3 – 3/9 Work on presentation and report, mid-semester oral presentations
3/10 – 3/16 Write and hand in written report, PDS, and notebooks
3/17 – 3/31 Work on design
4/1 – 4/8 Spring Break and continue to work on design
4/9 – 4/25 Work on Design, plan tests for the prototype
4/26 – 5/4 Work on final poster, presentation and report. Test the prototype and present to client. Give final poster presentation.

**Last week’s goals**
1. Further test piezoelectric transducers with different voltage and frequency to try to make them vibrate
2. Make final decisions about what stimulation to use, obtain and test them
3. Look into possible outside help we might require with signal processing, frequency analysis and electronics.
4. Divide roles for the mid semester report
Write and submit the mid semester report

**Summary of Team Accomplishments:**
1. Finalized mid semester presentation.
2. Delivered mid semester presentation.
3. Divided roles for mid semester report
4. Wrote, compiled and edited mid semester report

**Statement of Team Goals for Upcoming Week:**
1. Further test the piezoelectric transducers in the lab.
2. Brainstorm ways to improve filtering
3. Look for other transducers that could be better implemented into the circuit.
4. Set work schedules and divide roles for the rest of the semester

**Team Difficulties:**
None this week.

**Activities and Individual Accomplishments:**
Team In-class/lab meeting – Mid semester presentations (2 hours)
Sunday night meeting- Compiled and edited mid semester report (2 hours)

- Jimmy 2 hr  Wrote vibrotactile section, edited, paper
- Matt  2 hr  Wrote frequency analysis section, edited paper
- Ryan  2 hr  Wrote electrotactile section, edited paper
- Jack  2 hr  Wrote background, research sections, edited, compiled paper
- Becky 2 hr  Wrote future work and design matrix sections, edited, printed paper

**Total hours for this week: 12.0 hrs**
**Cumulative hours to date: 105.0 hrs**
<table>
<thead>
<tr>
<th>Task Name</th>
<th>Start Date</th>
<th>End Date</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Research Interview Transcription</td>
<td>2/18/2023</td>
<td>3/10/2023</td>
<td>2 weeks</td>
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<tr>
<td>Presentation of Final Project</td>
<td>3/30/2023</td>
<td>4/7/2023</td>
<td>1 week</td>
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<tr>
<td>Final Report Draft</td>
<td>4/15/2023</td>
<td>4/22/2023</td>
<td>1 week</td>
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<tr>
<td>Final Presentation and Submission</td>
<td>5/10/2023</td>
<td>5/17/2023</td>
<td>2 weeks</td>
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