Project Proposal

Group 5: Muted

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Robot idea

As it has been discussed in class, we changed our robot idea. Originally, we wanted to build a Morse code learner robot. Users would interact with the robot in order to learn Morse code. However, after giving it some thought, we were not satisfied with our robot idea.

That's where our new idea came up. The robot would be an alarm-clock that would help people wake up in the morning. Many individuals struggle waking up early even while trying various methods: multiple consecutive alarms for example, causing unnecessary stress. With the help of our robot, users would effectively wake up without worrying about being late. Our robot would move backwards and forwards while it's ringing until the user types a certain combination of buttons. The robot would have to give him the pattern demanded using LEDs.

The robot could actually really help users wake up because it is more difficult to stop the alarm by concentrating on following a certain pattern given by the robot - who is actually moving at the same time - to type it in afterwards, than just pressing a simple "Stop" button.

Research plan for evaluation and collecting data

Our robot needs to have the time at which the user would like to wake up. This information will be later used to set the alarm at the correct hour.

Moreover, we thought about adding a light sensor to the robot in order to know how much time after the alarm is turned off, the user switches on his light. Then, we'd be able to look at the efficiency of the system.

Another method discussed to evaluate this robot was to survey some test users so that we can receive honest and extensive feedback to look through the quality of the HRI. Each team member would have to select a user from his entourage as a tester. Participants will have to test the robot and fill out a google form filled in with some prepared questions for the team. Some example questions are:

1. On a scale of 0 to 10, how would you rate the overall performance of the robot?
2. On a scale of 0 to 10, how visually appealing is the robot's design?
3. How has the robot positively impacted your daily life or work processes?
4. Can you describe any challenges or issues you've encountered while using the robot? Please provide suggestions for improvements or additional features you'd like to see in future robot versions.
5. On a scale of 0 to 10, how much would you recommend this robot to others based on your experience?
6. Is there anything else you'd like to tell us about your experience with the robot?

Division of labor

Although we have already distributed the work, each task assigned for each team member isn't solely given to him. Each team member would cooperate with the others in every part of the project so that each one of us can learn a little about every task. Our preliminary distribution of the tasks was divided as follows:

- Programming:

  Coding: The programmer will write the software that controls the robot. This involves translating the team's ideas and design into actual lines of code. The programming language used will depend on the hardware and software platform chosen.

  Testing: The programmer will be responsible for thoroughly testing the robot's behavior. This includes debugging and ensuring that the code works correctly, efficiently, and safely. They may also need to create simulation environments for testing, especially if the robot's physical components are not available at all times.

  Integration: The programmer needs to ensure that all the hardware components, such as sensors, actuators, and the main control board, work seamlessly with the software. They must write code to interface with these components.

- Design:

  Physical Appearance: The designer will be in charge of the robot's aesthetics. This involves not only how it looks but also how it fits its intended purpose. The robot's design should take into consideration factors like its size, shape, and color, which can impact its usability and acceptability.

  Materials Sourcing: The designer should research and select appropriate materials for constructing the robot. All the needed parts should be found in the Arduino box provided, if not, then the team should order the missing components early on so they could move on with the project.

  Assembling: The designer is responsible for physically assembling the robot. This includes connecting components while making sure they fit on the breadboard used as well as ensuring they correlate with the robot's structure design

- Documentation:

  Project Tracking: The person assigned with this task will have to keep track of the robot's development process. This includes maintaining a record of all project activities, eventually the changes brought to the robot, as well as all the milestones reached in the building of this project.

  Feedback Gathering: They will need to collect feedback from the team members and from the users. This involves collecting the results of the survey to gather valuable insights into the robot's performance and user satisfaction.

  Analysis: This person should analyze the feedback and data collected to identify areas for improvement. They will inform the other two team members of the results and make decisions about adding or changing components in the robot to enhance its performance.