Dynamic Balance Device, BME 200/300

Client: Mr. Daniel Kutschera

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Problem Statement

Many elderly people–especially those who have suffered from strokes–sustain lasting mobility problems as they attempt to recover and return to "everyday" life. Currently, the solutions for physicians to use in addressing this issue are either too expensive to easily acquire, or are inadequate and are too hard to use while giving sufficient attention and support to the patient. The goal of this project is to provide a solution that remedies the issues with current designs at an affordable cost.

Brief Status Update

The team had a meeting to discuss design options for the different components of the device and put together a design matrix with ratings based on different criteria.

Summary of Weekly Team Member Design Accomplishments

- Team:
    - Created three designs for each of the three components of the design: the display screen, the handle, and the shaft.
    - Created design matrices to compare the various designs and determine which design to move forward with.
- Gabriela:
    - Did research on a series of design options
    - Worked on the design matrix with the team
    - Made sketches for some of the design ideas

- Gracie:
    - Researched LED screens for the display screen portion of the design.
    - Worked on the design matrices for the various components of the design.
- Jack:
    - Researched for the LED screens as well as the carbon fiber for the shaft on our device
    - Worked on the design matrix with the entire team
- Kyle:
    - Did research on possible materials and vendors.
    - Worked on design matrix with the team

Weekly/Ongoing Difficulties

Upcoming Team and Individual Goals

- Team:
    - Create our preliminary presentation.
    - Create a full design from the design matrices of the various components of our design.
- Gabriela:
    - Think about how to assemble the electronic components of the device
    - Do more research on fabrication methods for the handle and shaft
- Gracie:
    - Continue to research the display screen and microcontrollers.
    - Begin to research how to program the chosen display screen to display various colors and shapes.
- Jack:
    - Start researching different ways to store the power source in the handle
    - Continue researching the LED display and how to connect it to a power source
- Kyle:
    - Continue researching potential LED displays and the electronics\Arduino work that may come with it.
    - Continue looking into different vendors to purchase potential materials from.
    - Look at how to fabricate different pieces of the device.

Project Timeline

Project Goal	Deadline	Team Assigned	Progress	Completed
Preliminary Presentations	Oct 4	All	In progress	No
Preliminary Deliverables	Oct 9	All	–	No
Show and Tell	Nov 1	All	–	No
Poster Presentations	Dec 6	All	–	No
Final Deliverables	Dec 11	All	–	No

Expenses

Item	Description	Manufacturer	Part Number	Date	QTY	Cost Each	Total	Link
Component 1								

Component 2								
Component 3								
TOTAL:								**$0.00**