Two-pager template for Benchside Meetings
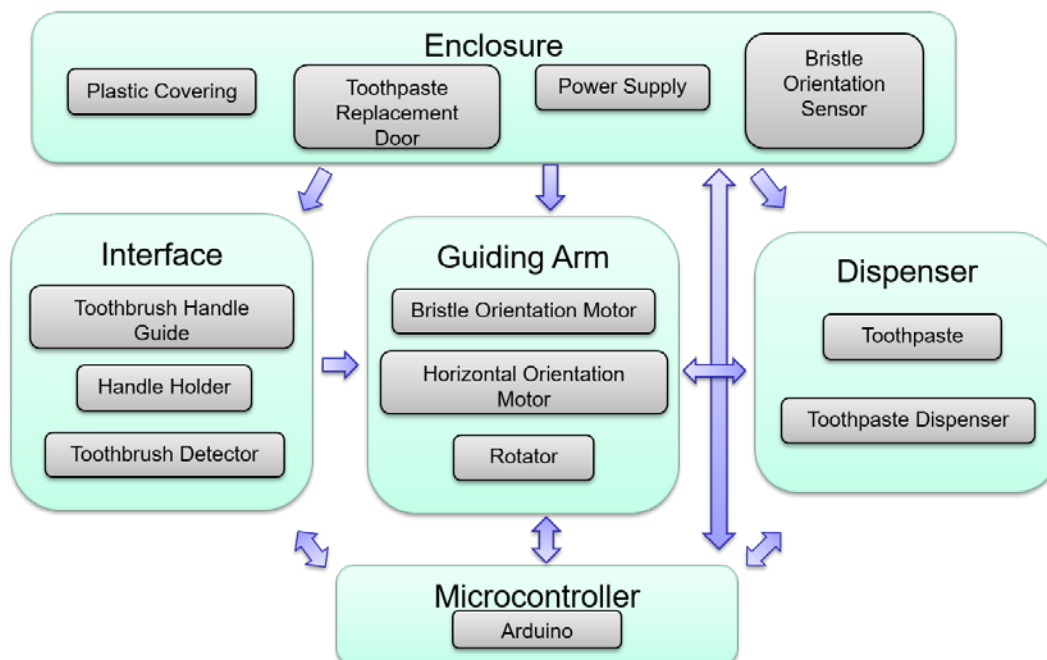
Place 'n Paste (Team 17)
Team Member 1, Team Member 2, Team Member 3, Team Member 4
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Problem Statement: Students with severe disabilities face many challenges with tasks that we perform every day with little thought. For one student in the "Life Skills" program in West Springfield schools, his limited fine motor skills make it impossible for him to squeeze tooth paste onto his tooth brush. Our "Place and Paste" system will offer him independence by allowing him to brush his teeth without assistance. An easy-loading system will secure the toothbrush, move it under the toothpaste, squeeze the toothpaste, and present the toothbrush for use.
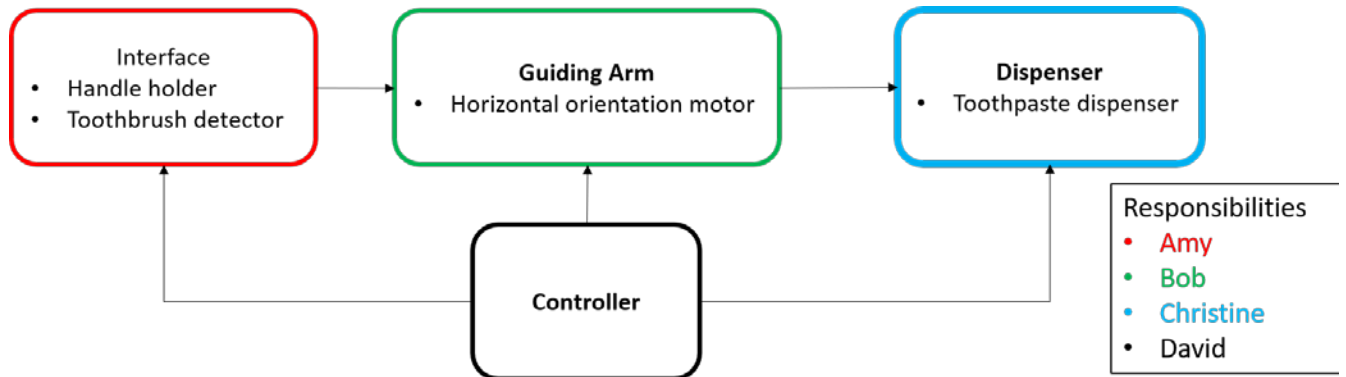
System Specifications:
1. Dispense pea-sized toothpaste onto brush
2. Will hold toothbrush such that the machine and toothbrush will stay sanitary
3. Toothbrush will be placed in a way such that users lacking fine motor skills can insert toothbrush
4. Product will take no longer than 20 seconds from when toothbrush is correctly inserted to return loaded toothbrush
5. Product size will not obstruct normal use of school's single occupancy bathroom
6. Product will be designed such that it will guide toothbrush motion once it is placed into holder

Block Diagram:

MDR Prototype

A successful MDR prototype will:

1. detect when toothbrush is inserted in holder, and then
2. upon button push, automatically position toothbrush under dispenser, and then
3. automatically dispense toothpaste on toothbrush

HW Component: The PCBA will contain:

1. controller
2. motor drivers
3. power management circuit