Meeting #1 (1/27/23) - 2:15PM - 3:40PM

Equipment I have: Raspberry pi, breadboards, wires, Circuit Components, Zybo FPGA board

Current Ideas:

1.) Life Alert Security
- Too Simple
- Needs upscale (Security System)

2.) Cooking device
- Needs downscale
- Measure temperature
- Way to check if food is seasoned properly

3.) Plant Health
- Testing will take too long

4.) Beer Brewing
- Reverse Osmosis Water
- Main idea is to match mineral profile for particular beers.

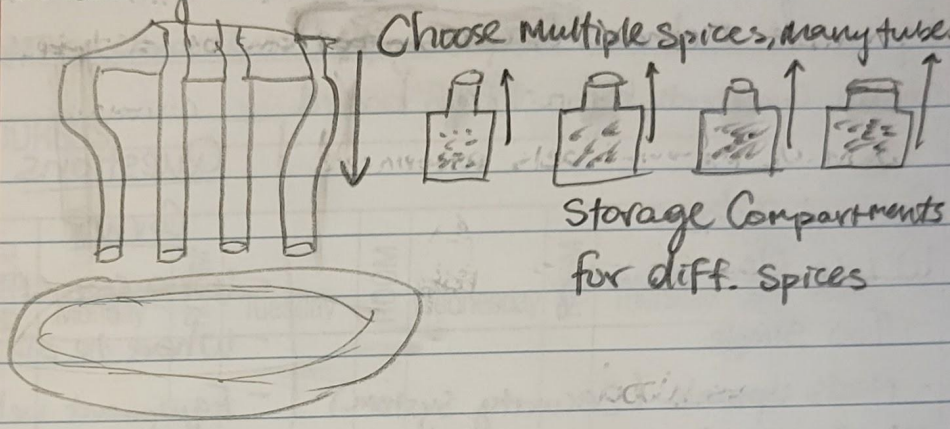
Top 2: Cooking device & Beer Brewing

Questions Corner
- Who can CAD?
- Where to 3D print?
- Equipment we already have?

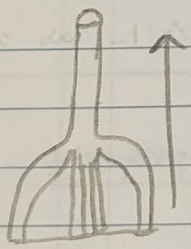
TODO: Research reverse osmosis, general beer production process, Ways to heat map 3D objects (food)

New Idea: Seasoning device to dispense different types of seasonings

Seasoning Device Sketch:



OR

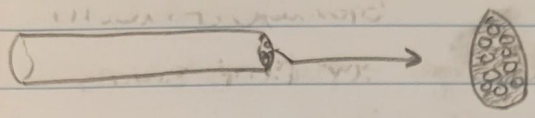


Final Project Idea: Spice Rack device

Combined Idea: General dispenser capable of dispensing spices, diff. water minerals for beer, or any other product that can be contained via dispensing.

Meeting #2 (1/30/23) - 8:00 AM - 10:30 AM

"Sprinkle" mechanism: Cover up bottom of a tube & poke tiny holes at the bottom to control how much material gets dispensed



3D Print vs. Wood
- Price of wood is really high
- 3D Print is cheap & even free (Zach has 3D print room)
- Wood would look nicer
- Wood is more durable
- Wood requires physical tools to shape
- 3D print can be done via software (solidworks)
- Errors can easily be fixed in a 3D print

Final Approved Project: Automated Spice Rack

Product Name Brainstorm:
- SmartRack
- iRack

Logo: Salt & pepper shaker w/ logo arced.

Meeting #3 (2/3/23) - 3:00PM - 4:30PM

Similar projects found as senior projects & patented items.

Uniqueness: Have our product allow liquid items as well as spices.

Have our product allow recipe inputs via internet → parse recipes off urls.

Combine project idea w/ beer brewing instead.

Other things that can be dispensed: pills, meats, drinks, paint.

Deadlines: Literature Review Feb 8th.

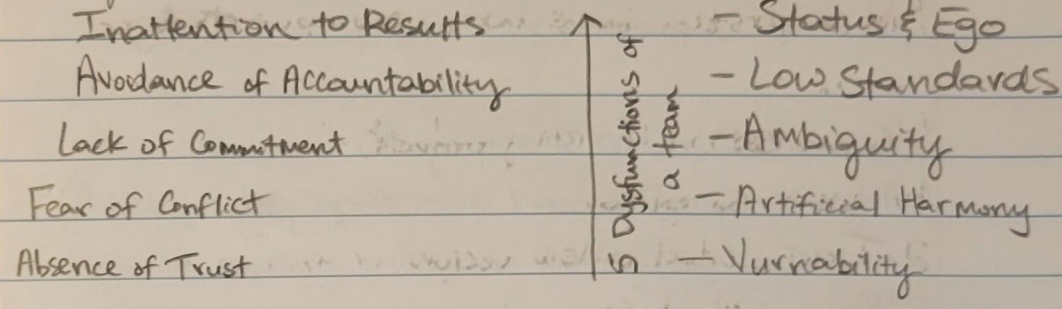
Introduction: Feb 13th

Proposed work: Feb 6th

Executive Summary & Engineering Standards: Feb 15th

Start Presentation: Feb 10th

Meeting #4 (2/6/23) - 8:00AM - 10:10 AM



Project Proposal Need Statement

- For elderly people who wish to stay independent while cooking.
- Make cooking easier for elderly or those with disabilities.
- Some products already exist within the market, but none of them are perfect.
  - Limited features
  - High Cost
  - Overwhelming to use

Plan to meet again to review proposal to finalize ideas - Around 8PM

Meeting #4.5 (2/6/23) - 8:05 PM - 9:25 PM

- Finished intro information
- Sleep on a new name for product

Meeting #5 (2/8/23) - 8:00 AM - 10:00 AM

Add citations to proposal - makes argument stronger.

Literature Section (Existing projects)

1. Automatic Spice Dispenser (Senior design project (UCLA)
2. TasteTro (Commercial product)
3. MeasureMint (Senior design project)
4. Spicer (Senior design project (UCF)
5. Fab Academy

Things to make S.P.I.C.E unique:

Include liquid containers as well as spices.

Ability to get spice info off recipes online.

Cleaning mechanism to make cleaning easier.

Meeting #6 (2/10/23) - 2:30PM - 4:00PM

TODO:

- [x] Reformat proposal
- [x] Start presentation slides
- [x] Finish literature & technical survey
- [x] Research statistics for need statement
  - Disability stats
  - Generational cooking gaps

Q's

- Is environmental analysis just considering the finished product's impact or also the environmental impact through building it?

Meeting #7 (2/13/23) - 8:00AM - 10:30AM

Mobile App vs. Interface on Device

Mobile App

- Convinient
- older people might not own Smartphone
- older people might find it hard to use Smartphone
- Harder to implement

Interface

- less Convinient
- More logical to use for elderly
- Slightly easier to implement

Conclusion: S.P.I.C.E. will have an interface attached to it instead of a mobile app

Support Recipe Options & Individual Spice Options

Recipe Options

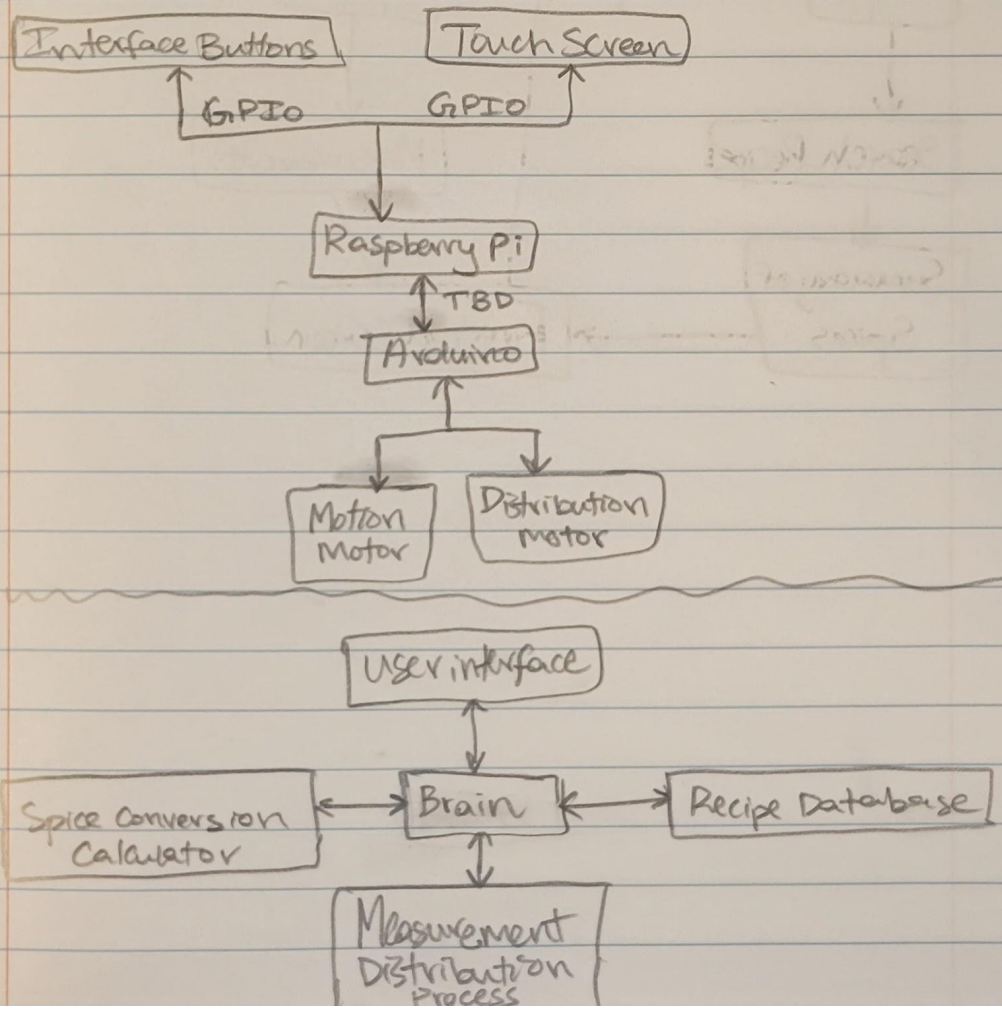
- Convinient
- Run S.P.I.C.E only one for multiple spices
- Recipe parsing algorithm

Individual Spice Options

- Would have to run multiple times for multiple spices.
- Could include a queue system
- User has to know what spices they want

Conclusion: By supporting recipe options we ensure a unique feature not found in many other products of a similar nature. It has been decided S.P.I.C.E will support recipes & potentially do both proposed functions.

High Level Block Diagrams



User Interface