Purpose: The purpose of my design is to make the limited space in my kitchen more functional.

Metrics:

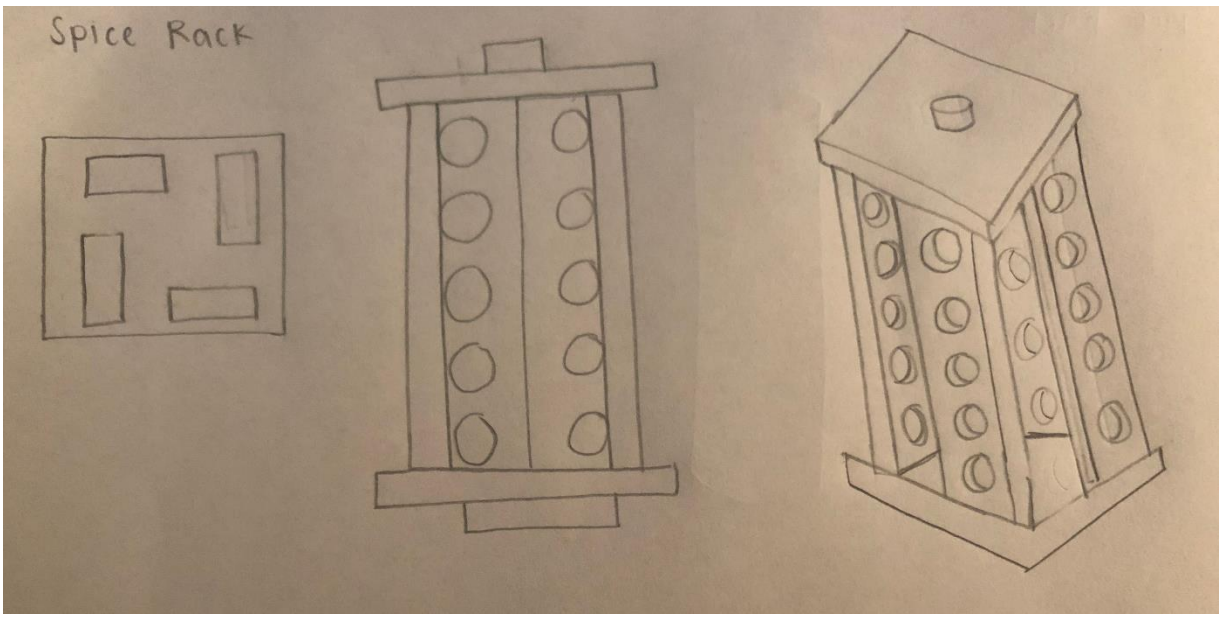
- Compact
- Easily manufactured
- Inexpensive
- Ease of use
- Strength

Assumptions About the Problem: My kitchen has limited space so the product must be small, could be at high risk of breaking so the product must be strong.

Solutions 1: Rotating Spice Rack

FRDPARRC Table

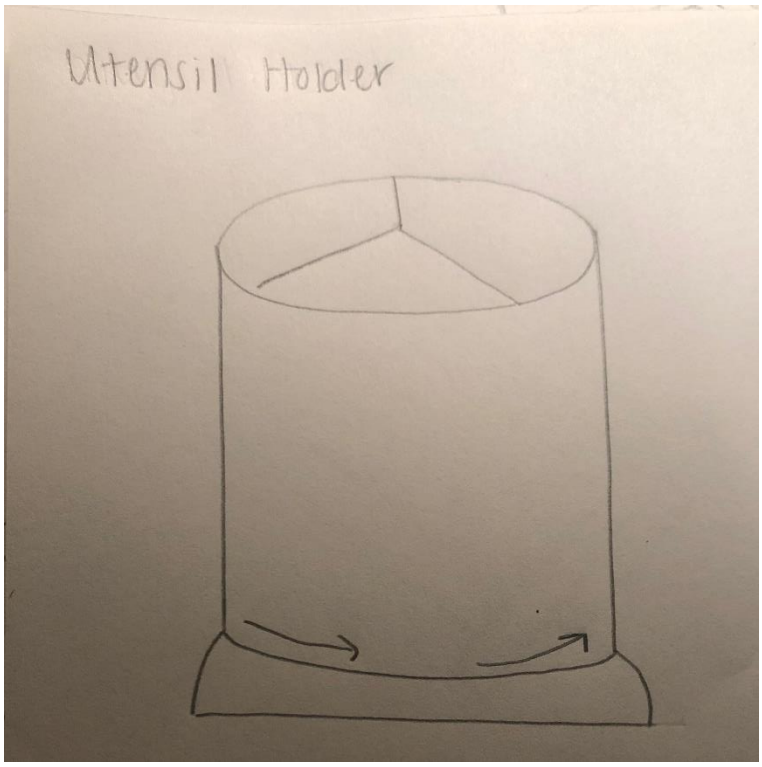
FR	DP	A	R	R	C
Rotation	Around center dowel, see drawing	P=torque x rotational speed		Gets jammed and rotation stops working	Have some sort of thread to rotate around
Up and down translation	Collapsible, sliding up and down about center dowel	P= force x velocity		Center dowel breaks	Reinforce the center to be stronger



Solution 2: Rotating Utensil Holder

FRDPARRC Table

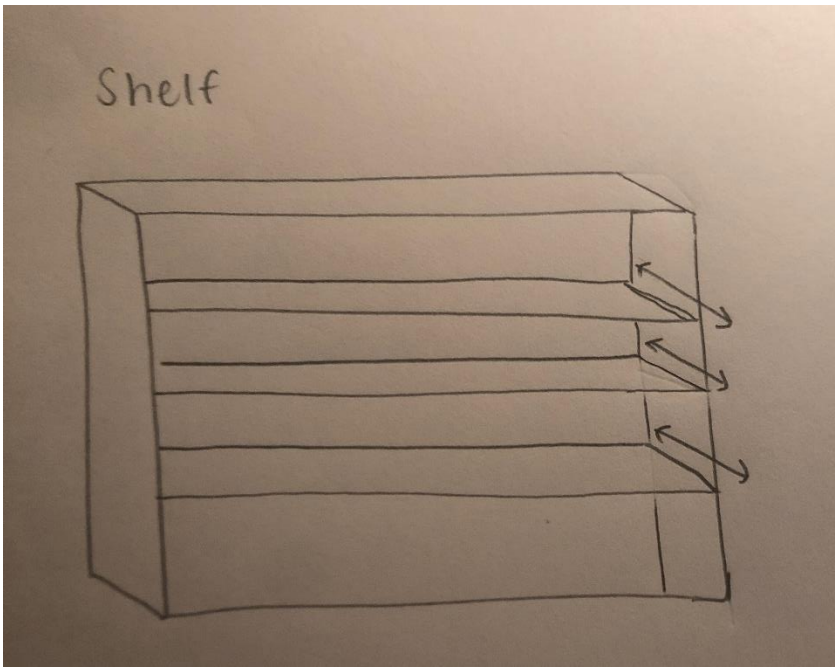
FR	DP	A	R	R	C
Rotation	Rotates about base	P= torque x rotational speed		Base cannot handle load	Design base with a large factor of safety



Solution 3: Shelf

FRDPARRC Table

FR	DP	A	R	R	C
translation	Drawers pull out	P= force x velocity		Shelf is weak at center point and may bend	Design in a factor of safety



Lessons Learned: must have multiple strategies to solve a problem and must analyze each strategy through pros and cons, each strategy has risks that must be countered.

Activities Date and Time:

- Brainstormed strategies: 2/4/2019- 2/5/19
- Organized processes into FRDPARRC tables, and sketched designs 2/5/19 11AM- 1PM
- Created Gantt chart 2/6/19 10AM- 11AM

Comments to Each Advisee:

- Add sketches
- Come up with more metrics