



Design Thinking

1. Empathise

1. Heavy
2. Inconvenient design
3. The design is not suitable with every weather condition

2. Define (the Problem)

| | | | |
|-------------------------------------|-------------|---|-------------------------------|
| Stakeholders of the problems | Low | | |
| | High | 1. Heavy | |
| | | 3. The design is not suitable with every weather condition | 2. Inconvenient design |
| | | High | Low |
| | | Directions to solve problems | |

Core problem

The design is not suitable with every weather condition

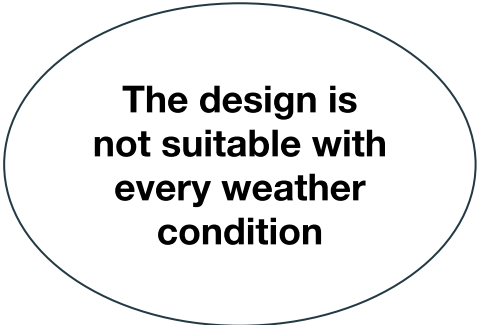
Causes

The clothesline layout is too narrow

Clothes can get wet easily when it's raining

It can fall down easily due to the wind

Problems



The design is not suitable with every weather condition

Effects

The clothes don't get dry when it's not sunny enough

The clothes get wet

The clothes get dirty

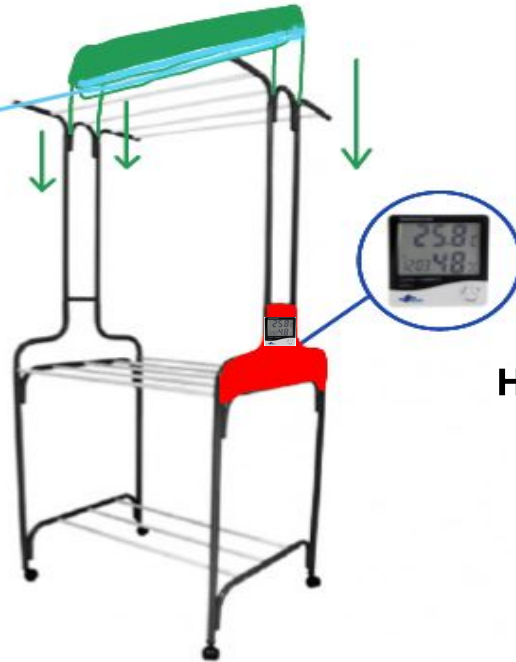
3.Ideate

- **Stick clear and durable plastic on clothesline**
- **Make sensor to detect humidity and sunlight**
- **Automate the clothesline to an indoor area**
- **Make the clothespin which will make the plastic to fall automatically**
- **Create the wider layout**

4. Prototype



Vinistar super PVC



Hygrometer

Materials



Clothesline



Vinistar super PVC



Hygrometer

References

- <https://www.qualitylogoproducts.com/promo-university/different-types-of-plastic.htm>
- <https://www.skylineclotheslines.com/humidity-affect-clothes-drying-outside/>
- <https://www.testmeter.sg/products/GMM-3-in-1-LCD-Digital-Temperature-and-Hygrometer-with-Clock-function/149>
- <http://www.comptus.com/blog/the-importance-of-temperature-and-humidity-sensors>

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