

Lecture 5, Sep 20, 2021

- Stakeholder Statement →Objective →Metrics (characteristic, units, how to measure) →Criterion
 - Units need not be overly precise
- Stakeholder statement: “The backpack should have pockets to separate out different things and ensure that your lunch does not make contact with your laptop and so that you can find your pen or power cord easily”
 - Objective: have a range of useful pockets
 - Metric #1: Simple count of pockets, corresponding to a utility curve that looks like a parabola (too few pockets is bad, but too many is also bad)
 - * The cut off is fuzzy and requires judgement
 - * How do we distinguish between things in the acceptable range?
 - Metric #2: Specific attributes for “useful”, e.g. a laptop sleeve, phone holder, pen pocket, etc, maybe with different weights on different things
 - * Gets further than the previous metric because it focuses on specific characteristics and allows for differentiating between things more finely

The Role of Research

- What is research?
 1. **Secondary research:** Finding sources for proof, information, processes, “reference designs”, and related concepts
 - “Reference design”: The design of the same or a similar product that we can refer to and learn from (what worked? what didn’t work?)
 - Don’t reinvent the wheel
 2. **Primary research:** Testing through experimentation, modelling, surveying or prototyping
 3. Discovering something new