

Lecture 18, Oct 22, 2021

Prototyping

- Prototyping: A model whose purpose is to generate or communicate information about a **design concept**
- Types of prototype:
 1. Functional prototype: Communicate specifically how one or more of its elements **accomplishes a task**
 - Does not have to have everything, can simply show one feature
 2. Scale prototype: Will this fit? Communicate specifically the size, orientation, organization, etc
 3. Graphical prototype: Communicate through the medium of drawings, sketches, renderings, etc
 4. Mathematical prototype: Ensure designs are feasible using math
 5. Simulation prototype: How does it behave over time?
- Questions to ask:
 - What information is it intended to communicate?
 - What information is it intended to generate?
 - What aspects of the design concept is it focusing on?
 - How does it integrate with all of the other prototypes?
- Prototype the stuff that's the most unbelievable/does not already exist
 - Consider your audience but don't give them too much credit for prior knowledge
- Prototypes are for others *and* yourself (**build to think**); answer your own questions
- Prototypes don't have to be perfect or look good or be complete; focus on the critical parts
- Prototypes crystallize your thinking and express ideas effectively, even if the prototype is very crude
 - Use representations to enable progress