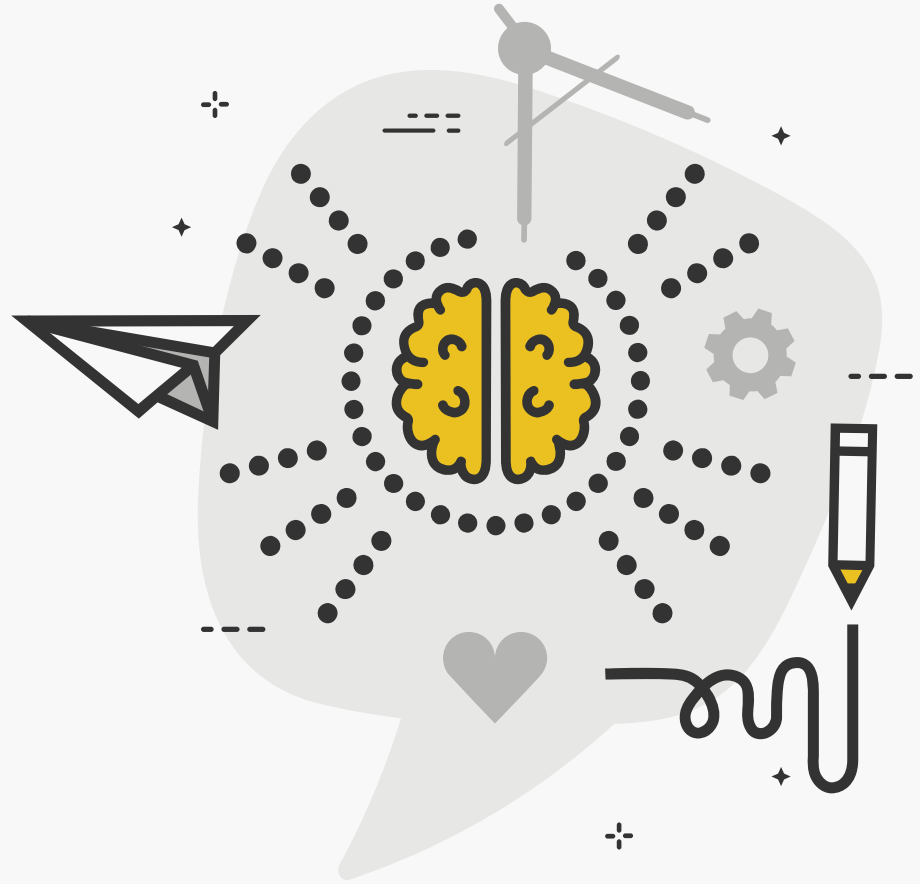


Recitation

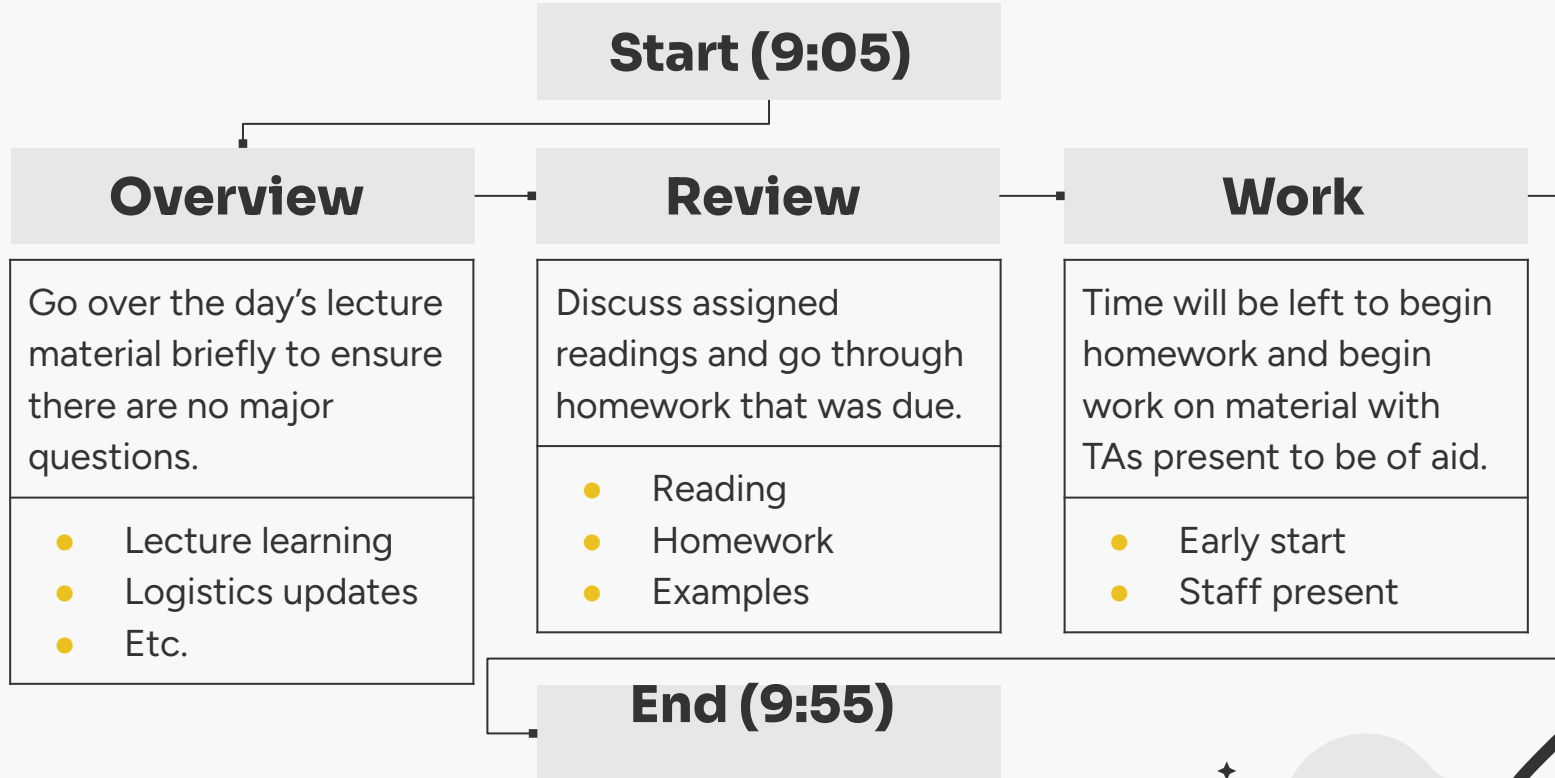
Week 4

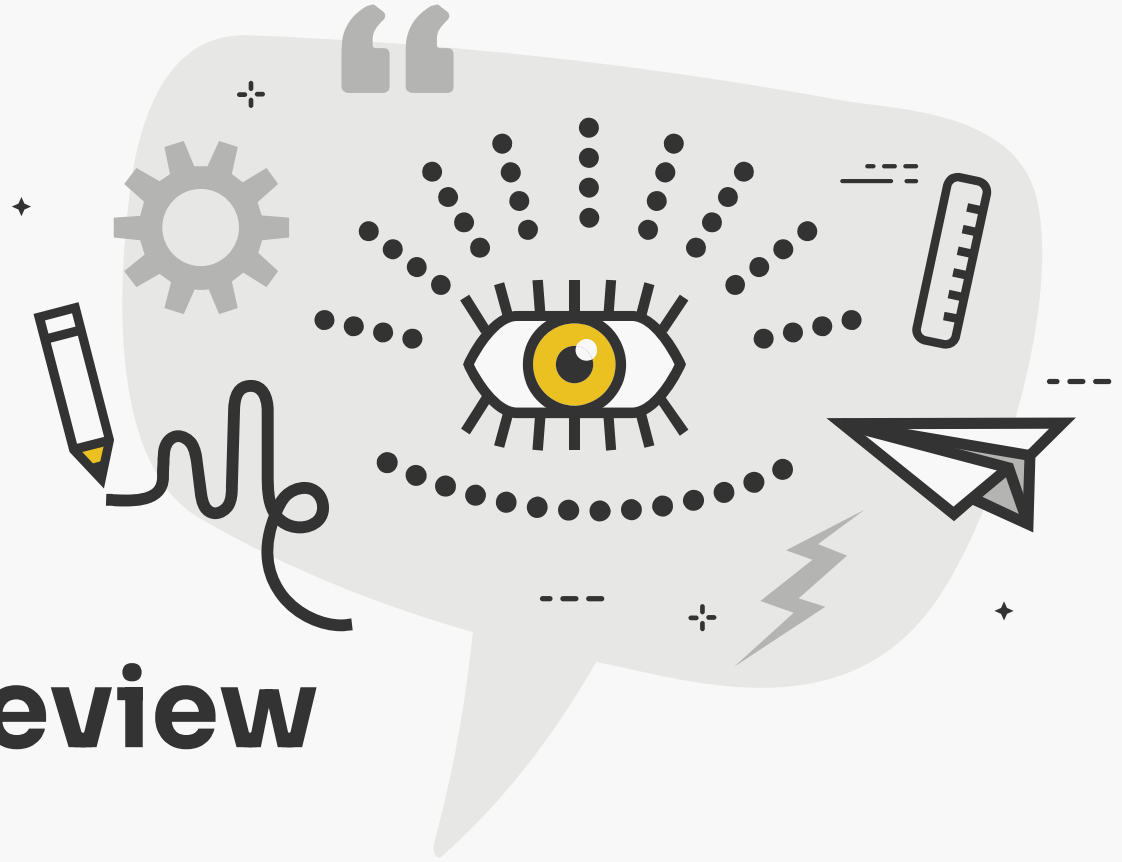




Attendance

Rough Layout of Recitations





Material Review




K-Scripts

Continuation of Step 9 – Concept Articulation

K-Scripts:

- Interactive
- Precise
- Incomplete
- Create a compelling vision
- One of many tools you can use to articulate a concept
- Abstraction of ideas

Who	Observable Action	Unobservable Action / Notes
Customer	Walks into the fair ground and sees a bunch of very modern touch-screen kiosks in a row, like at an airport. She sees the screen which has 2 buttons, "Buy Tickets", "Make dinner reservations"	In research, we found that people generally want these 2 options, and we expect to have a limited number of staff there to handle other kinds of requests
Customer	Clicks on "Buy tickets"	Is this odd if they have a coupon for free tickets? How about just "Tickets" ?
Kiosk	The screen shows "Number of Adults?" with a "+" and "-" button and it's default is set to "1", and "Number of Children?" with a "+" and "-" button and it's default is set to "0" and a "Next" button	What if the user made a mistake? Can they start over? Why not show prices here too? Prices aren't displayed now, because there's another screen which allows people to enter or scan discount codes/coupons Smart idea to have "1" as the default number of adults!
Customer	Hits the "Next" button	
Kiosk	Screen shows the price "\$24.00 Enter discount code, or scan a coupon" and a "Next" button	Will people know how to scan a coupon? where's the scanner?
Customer	Taps "Next"	
Kiosk	With the price still on the screen, directs the customer to swipe their credit card.	Are we going to be able to use ApplePay here?
Customer	Swipes the card	
Kiosk	Plays a success sound, shows a success message and a ticket is printed out	I love the idea of the sound — can we have more sounds in this interaction?
Customer	There's a "Done" button that takes them back to the home screen. A confirmation number is shown so that if tickets don't print out they can talk to someone about their transaction.	How about this? I just want to make sure we don't have issues if the printers don't work



Pro Tip: Review **boundaries**
and hazards to ensure
associated uncertainties
have been identified

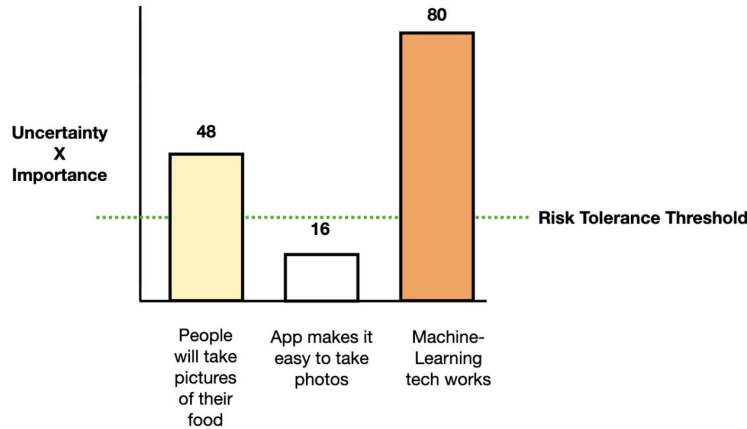
10. Uncertainty Identification

You are trying to develop a new item for head protection on bicycles/scooters/motorcycles that people will actually use. Identify some uncertainties associated with this process.

Feature	Uncertainty (1-10)	Importance (1-10)	Uncertainty x Importance

11. Uncertainty Reduction

Uncertainty Reduction for a Smartphone Health app



1. Plot Risk (Uncertainty x Importance) for each uncertainty
2. Identify your risk threshold
3. Propose cost-effective mitigation strategies for each item over the threshold

Homework Review



Homework Example

Problem Statement

For this assignment, you'll reimagine one of the simplest daily objects: the fork. Forks have existed for centuries, but they aren't perfect. Can they be more efficient, sustainable, ergonomic, or inclusive? Could a fork serve multiple functions... or become something entirely new?

This exercise is about **thinking boldly while practicing prototyping**: making your ideas tangible, not just conceptual.



Specify Desired Outcomes

Problem to solve:

- The handle of a fork can limit where it is stored and kept, especially when someone is on the move

Intended users:

- Backpackers
- Taste testers at a food convention
- Travelers
- Those limited on space



Specify Desired Outcomes (cont.)

Intellectual Objectives:

- Pick up food and bring it to my mouth as a normal fork would
- Should be stable and not rattle or shake
 - Shouldn't warrant concern when it is in use
- Size should be reduced so it isn't tedious or a hassle to carry

Emotional Objectives:

- Appealing to look at
- Should look normal, don't want weird looks for your fork



Concept Generation

- Extendable handle like the magnet rod *
- Foldable handle that goes flat *
- Inflatable handle
- Expandable, spring or something that is held in by a latch that when released expands into a handle
- The handle is on a hinge attached to the tines with a latching mechanism
- Magnetic handle that attaches
- Magnetic segments that attach all together *
- The snap bracelet technology applied to the end of a fork so that the handle could just roll up
- Tent pole technology in a handle *



Concept Downselection

Design:		Foldable Handle		Extendable Handle		Tent Pole Handle		Magnetic Snap Handle	
Criteria	Weight (1-10)	Score (1-10)	Weighted	Score (1-10)	Weighted	Score (1-10)	Weighted	Score (1-10)	Weighted
Do-ability	8	7	56	4	32	1	8	4	32
Durability	5	4	20	5	25	7	49	6	42
Rigidity	7	5	35	4	28	8	40	5	25
Ease of use	3	6	18	5	15	4	12	8	24
Fixability	4	1	4	2	8	3	12	6	24
		Total	133	Total	108	Total	121	Total	147

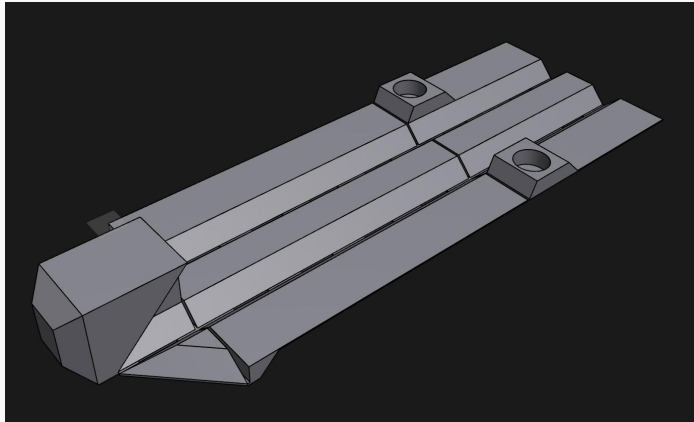
Concept Articulation & Prototyping

The fork will have a foldable handle that is intuitive to use. It will have two positions, one collapsed where it is not much longer than the tines themselves and then an extended position where it functions as any other fork would. It should be able to snap into either of these positions using the magnets embedded into the handle.



Concept Articulation & Prototyping (cont.)

CAD Mockup



Prototype



Final Result



Reading Discussion

Agile Manifesto
Quantifying Innovation in the Modern Workplace
K-Scripts



Question 1

What kinds of problems are best suited for an Agile design approach?

How do these compare to problems that are better suited for the 12 Step Design Process?

Question 2

What are the main challenges associated with measuring innovation in the modern workplace?

Question 3

What are some advantages and disadvantages of using K-scripts in Concept Articulation?



Homework

D-TILE Techniques Part III: Concept Development & Reducing Uncertainty

- Specify Desired Outcomes
- Concept Generation
- Concept Downselection
- Concept Articulation
- Uncertainty Identification & Reduction

Questions?

Contact D-TILE Staff @ Any Time
dtile@mit.edu



MUD Cards

