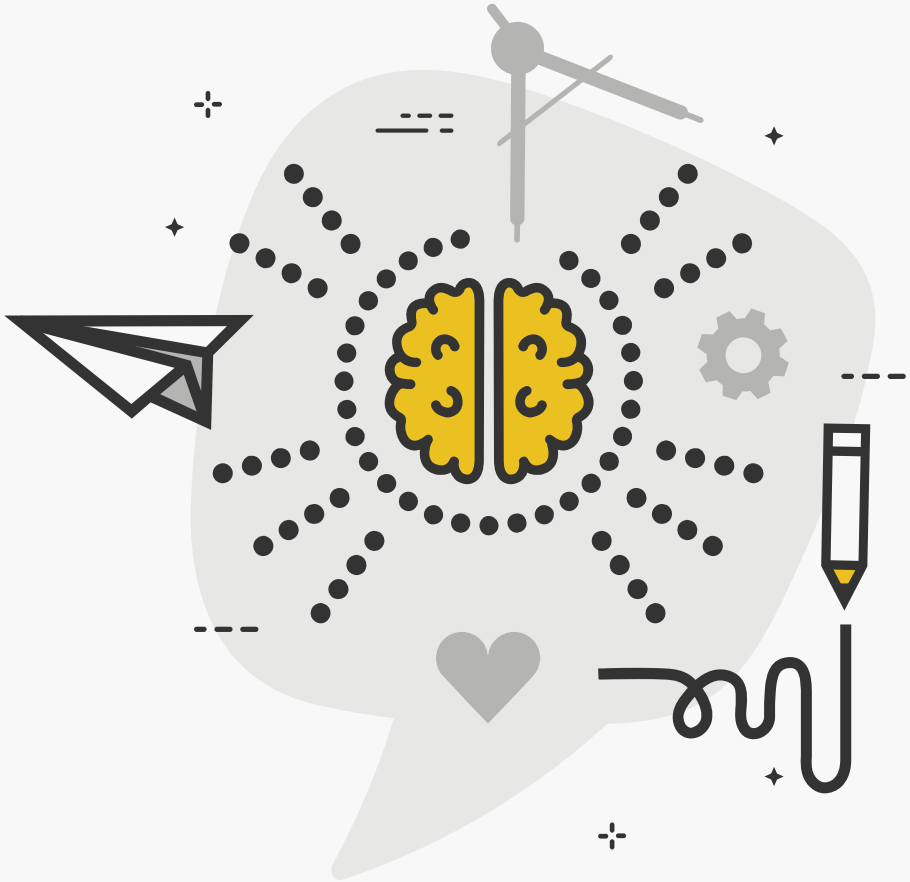
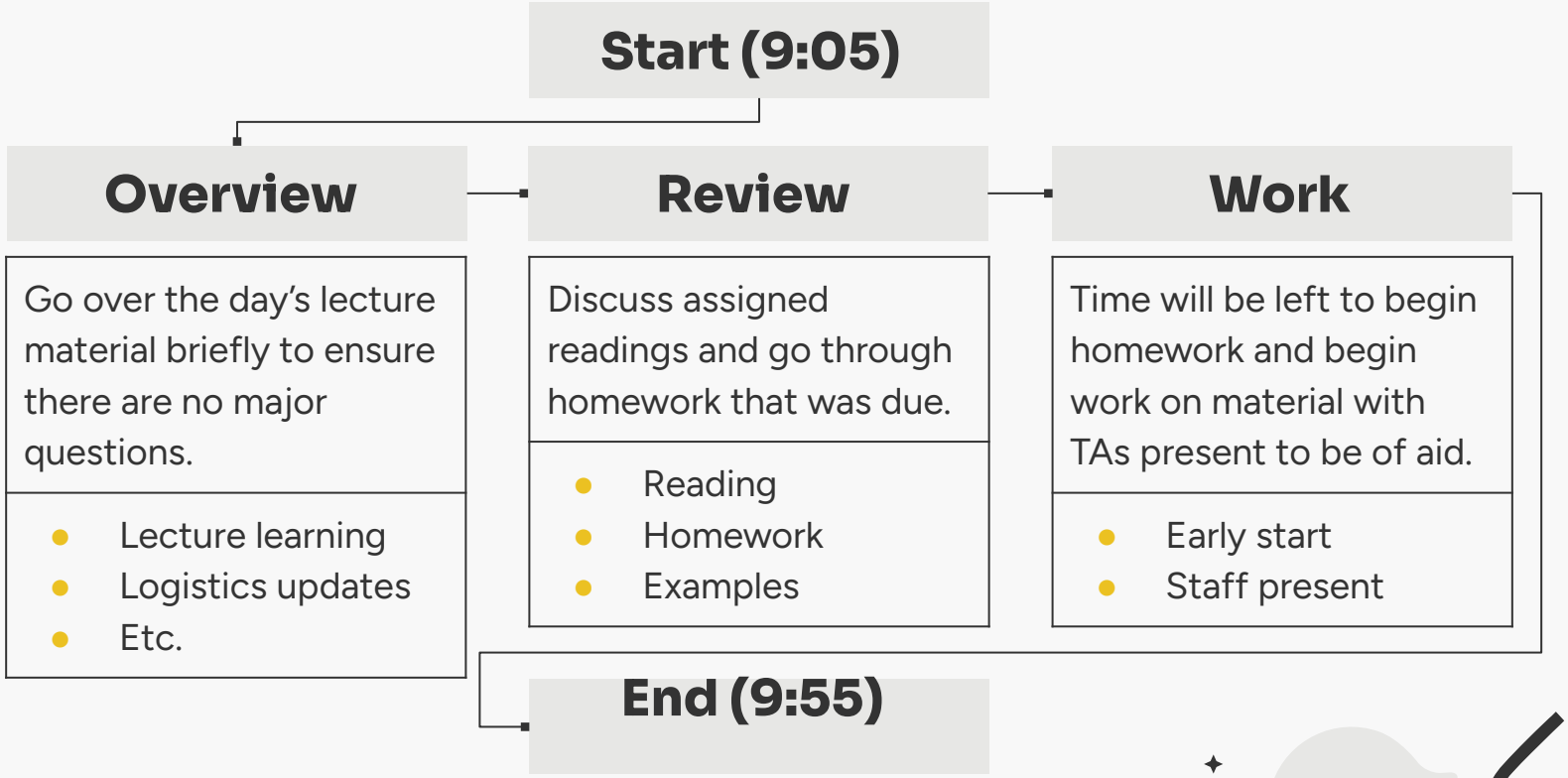
Recitation

Week 3



Attendance

Rough Layout of Recitations



Material Review

6. Specify Desired Outcomes

- Outcomes should be *aggressive*, *attainable*, *clear*, and *inspiring*
- Not too specific and not too vague
- Desired outcomes should create a vision

Types of Desired Outcomes

Emotional

Appeals to feelings

Intellectual

Appeals to the rational mind

Deliverable: At least one of each type of outcomes

How to Measure Success

Objective

i.e. complete a task in x amount of time

Subjective

i.e x% of people gave the experience a 8/10 or higher

Deliverable: Try to have each type of criteria for each desired outcome

7. Concept Generation

- Brainstorming
- Mind Mapping
- Forced Relationships
- “To”-”By”-”Using”
- Constraints can increase creativity!

Deliverable: As many ideas as you can generate

Think on your own first before doing as a group!

8. Concept Downselection

Criteria	Weight	Concept 1 (1-5)		Concept 2 (1-5)	
		Score	Weighted	Score	Weighted
Meets user needs	5	3	15	3	15
Aligns to brand	2	4	8	2	4
Easy to prototype	2	3	6	3	6
Totals			29		25

Deliverable: Table with at least three concepts and three criteria

9. Concept Articulation

Visual

- Sketching
- 3D Models

Textual

- K-Scripts
- Audio Recordings

- Can work for physical objects, processes, software, etc.
- Want to show the vision: “works-like” models and “feels-like” models

Deliverable: Prototype, Sketches, K-Scripts

Homework Review

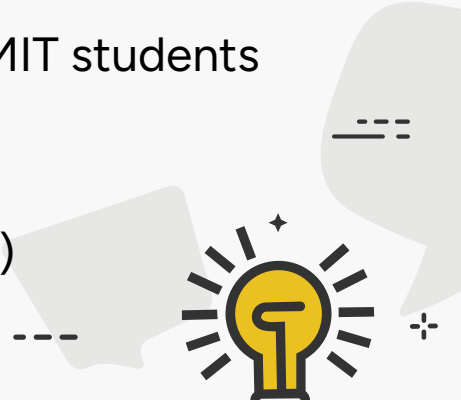
Homework Example

Problem Statement

MIT students often struggle with *meal planning* and *dining hall use*. Dining menus change daily, dining dollars run out quickly, and students with dietary restrictions may find limited options. Current solutions (like static menu websites or scattered group chats) don't personalize to student needs, leaving many students to waste time or money.

Therefore, we will innovate by creating a system that helps MIT students quickly determine:

- What dining options are available today
- Which meet their preferences (budget, dietary, location)
- How to make efficient decisions in the moment



Needs & Assumptions

Needs (5):

1. Daily menu information for each dining hall/cafe
2. Cost information for each meal
3. Information on dietary restrictions for each offered meal
4. Information on the times that each dining hall/cafe is open
5. System is accessible to all students

Assumptions (3):

1. Students would want to have the ability to access system from anywhere
2. The food staff knows menus far enough in advance to share
3. System would hit higher traffic close to meal times and needs to be able to accommodate

Research & Discovery

	Accessibility	Usability	Physical Resource Consumption
Electronic kiosks scattered across campus	High if student lives near/has class near kiosk but low otherwise	High – students can go to a kiosk and navigate to a specific dining hall's options or filter by cost/dietary restriction	High while building infrastructure but low after that
App/Website	High – can access from any laptop or mobile device	High – app can contain filters for dining halls, cost, and dietary restrictions	Low (no physical resources necessary)
Printed menus outside each dining hall	Low – need to go to dining hall before knowing options	High – easy to read from a physical piece of paper	High (hundreds of sheets of paper every day)

Stakeholder Analysis

Stakeholder	Type	Why we care	Priority	How to Satisfy
Students	Users	They should have a high quality of life	High	Create a user-friendly product that is accessible to students
Dining staff	Transformer	They input menu information	Medium	Create a product that is easy to write information to
Dining admin	Approver/Blocker	They input cost information and oversee the dining staff	Medium	Create a product that is easy to write information to and won't take too much time from the dining staff
MIT admin	Approver/Blocker	They have the ability to reject the idea	High	Create a cost-effective and resource-efficient solution
Product developers/ distributors	Supplier	They have to make the product	Medium	Create a solution that is easy to implement

Boundary & Hazard Mitigation

Boundary/Hazard	Likelihood (1-10)	Severity (1-10)	Impact	Mitigation Strategy	Cost Effectiveness (1-10)
Incorrect information	5	7	35	Have someone double-check information before its posted	5
System shuts down	2	10	20	Have a backup system on another server	2
Delay in updated information	6	4	24	Put timestamps on latest update	9

Reading Discussion

Waterfall Methodology
Radical Innovation Through Design Thinking

Question 1

Discuss how the Waterfall Method is different from the 12 Step Design Process.

- In what ways can the two methods work together?
- In what ways does Waterfall conflict with the 12 Steps?

Question 2

Share an example of a time when a product/service failed to consider user needs. How do you think applying design thinking could have improved their design?

Question 3

What leadership skills are necessary to overcome the organizational resistance to change when pursuing radical innovation?

What strategies could leaders use to reduce this resistance when applying design thinking?

Questions?

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

MUD Cards

Homework 

D-TILE Techniques Part II: Creating the Future of Forks

- Specify Desired Outcomes
- Concept Generation
- Concept Downselection
- Concept Articulation
- Fork Prototype!