

DESIGN OF INTERACTIVE SYSTEMS +TER

26 SEPTEMBER 2027



Emma-Jade De Moor

PhD Student, Inria Saclay

emma-jadeDM@lisn.fr



Mélodie Sanchez

PhD student, Inria Saclay

melodie.sanchez@inria.fr

WELCOME

DESIGN OF INTERACTIVE SYSTEMS + TER

Lectures

Tuesday 13:45 - 17:15

Room D101

TER

Friday 13:30 - 17:00

Room E212

NEXT WEEK

HCI EVENTS —

PHD DEFENSE OF XIAOHAN PENG

TITLE: DESIGNER-LED INTERACTION
WITH GENERATIVE AI

DATE: 28TH SEPTEMBER, 4 PM

Location: Digiteo (660), Auditorium

Jury:

Björn HARTMANN - University of California, Berkeley

Nick BRYAN-KINNS - University of the Arts London

Elena L. GLASSMAN - Harvard University

Steven DOW - University of California, San Diego

Nicolas SABOURET - Université Paris-Saclay

SIGCHI Paris Talk

Nick BRYAN-KINNS - University of the Arts London

Date: 29th September, 10 am

Location: Digiteo (660), Auditorium

LECTURES 6

OVERVIEW

Category	Activity	Duration (min)	Start	End
Homework	Future Scenario	10	13:30	13:40
Recap	Recap Telling Stories	15	13:40	13:55
Exercise	Storyboarding	40	13:55	14:35
	BREAK	20	14:35	14:55
Recap	Design Brief	5	14:55	15:00
Recap	Video Prototypes	10	15:00	15:10
Exercise / Homework	Video Prototypes	100	15:10	16:50

GENERATIVE DESIGN

Discovery

— Who is the user?

Inspiration

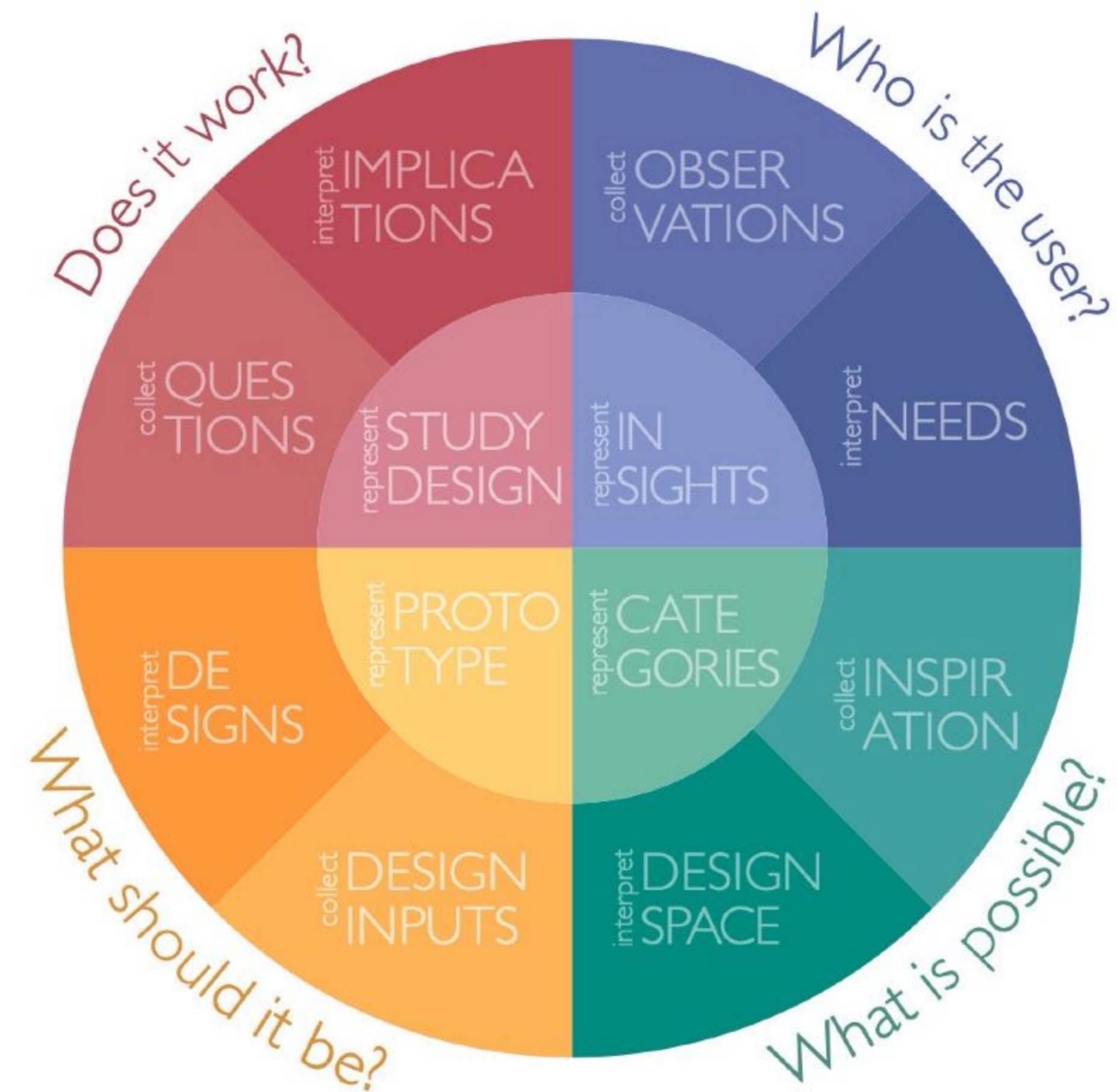
— What is possible?

Design

— What should it be?

Evaluation

— Does it work?



REVIEW HOMEWORK

HOMEWORK OVERVIEW

Design Concept

One-sentence description of the design concept:

- What user problem(s) does it solve?
- What is the interaction?
- Which technology?
- How does it help users?

Interaction Table

Object table:

- Identify user's key objects of interest
- Identify their properties, representation & operations

Operations table:

- Identify key operations, user command, feedback & system response

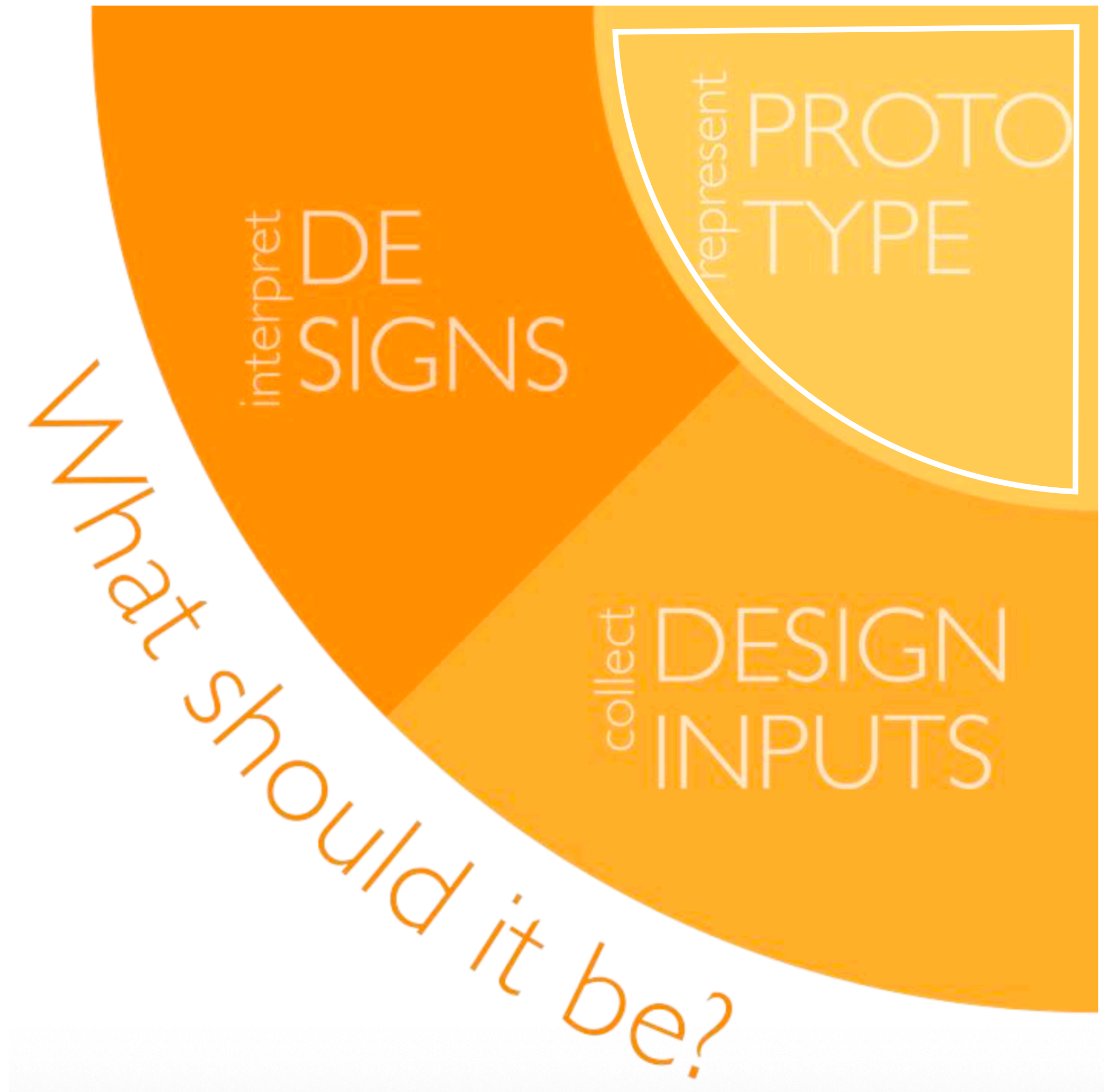
Future Scenario**

Transform your
current scenario into a
future scenario

Modify the scenario to
highlight key interactions
your system solves ...
and challenges that
remain

**** Critical for Today!**

REPRESENTING PROTOTYPES



DESIGN

REPRESENTING DESIGN —

Designing Prototypes	System	Action	Story	
	Collect	Design brief Design requirements	GATHER GENERATE	Persona Current scenario
	Represent	Functional specification Paper prototype	WRITE SKETCH	Future scenario Storyboard
		Tutorial video Wizard of Oz (tasks) Functional prototype	SHOOT SIMULATE CODE	Video prototype (story) Wizard of Oz (scenario) Fixed-path prototype
	Interpret	Interaction table Design diagram	DESCRIBE SKETCH	Concept description Flow diagram

RECAP: TELLING STORIES

Future scenarios lead to
storyboards lead to
video prototypes

**TELLING
STORIES**



Each offers a successively deeper way
to think about situated interaction

**TELLING
STORIES**



Scenario *describes the interaction*

Each paragraph explores one design issue
with one or more interaction snippets

**TELLING
STORIES**



Scenario *describes the interaction*

Each paragraph explores one design issue with one or more interaction snippets

Storyboard *sketches the interaction*

Break up the story into a series of titlecards followed by 1-3 interaction snippets

**TELLING
STORIES**



Scenario *describes the interaction*

Each paragraph explores one design issue with one or more interaction snippets

Storyboard *sketches the interaction*

Break up the story into a series of titlecards followed by 1-3 interaction snippets

Video prototype *shows the interaction*

Use the storyboard to guide shooting.
Intersperse titlecards to tell the story with video clips that show the interaction between realistic users in realistic situations

**TELLING
STORIES**



Each offers a successively deeper way
to think about situated interaction

Highly iterative:

- Creating alternatives is cheap

- Use them to explore alternatives

- Don't be afraid to try

- Reject ideas that don't work

**TELLING
STORIES**

STORYBOARD

Procedure

Divide future scenario into
a series of interaction events

Alternative between:

Title cards Tell the story (silent movie)

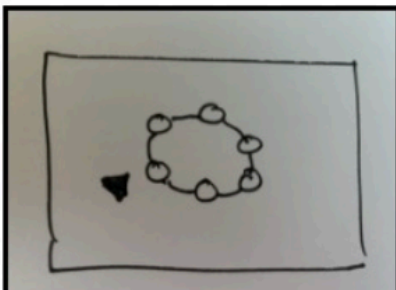
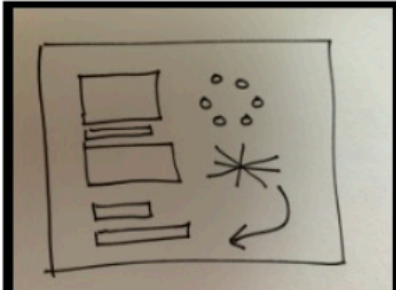
Interaction(s) Sketch the user's actions

Each interaction includes:

Sketch Show user/system action

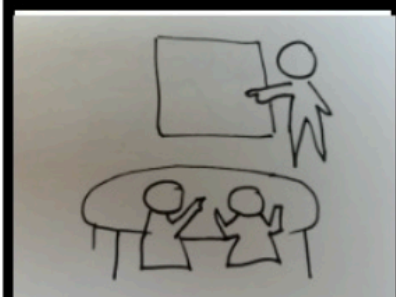
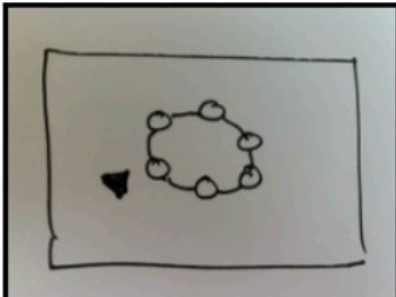
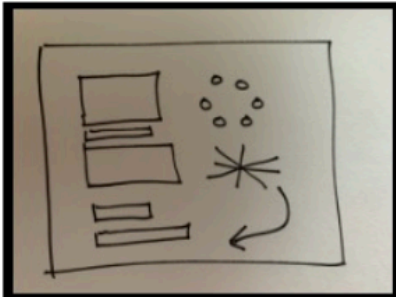
Text Describe what happens
(Also) shooting instructions

STORYBOARD
STRUCTURE

Super Circle Ann: Bob's boss Bob: Designer Chen: Client	Title Personas Situation
	Establishing shot First interaction
Ann selects the new super circle	Title card
	Mid-range shot Second interaction
	Close-up shot Third interaction
	Close-up shot Forth interaction

Standard storyboard structure

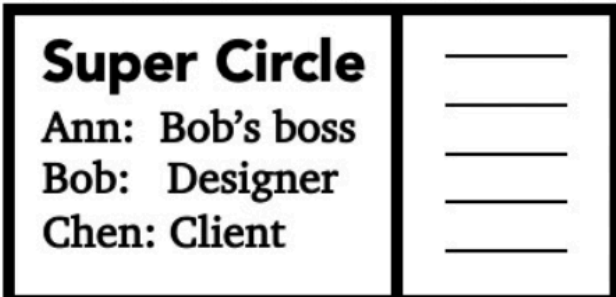
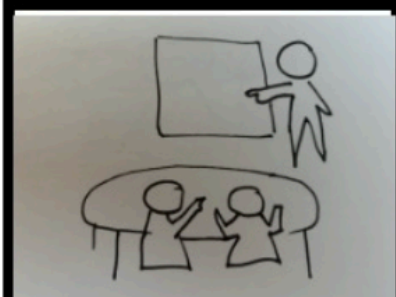
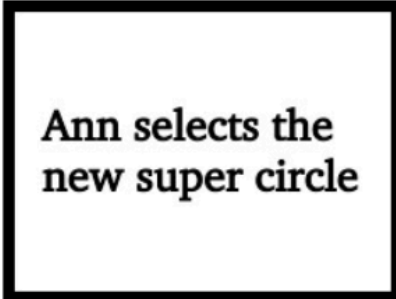
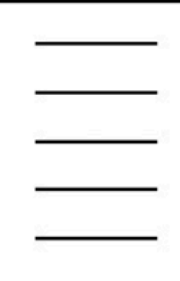
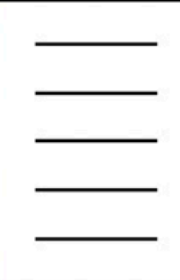
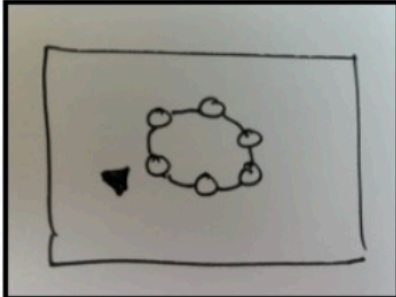
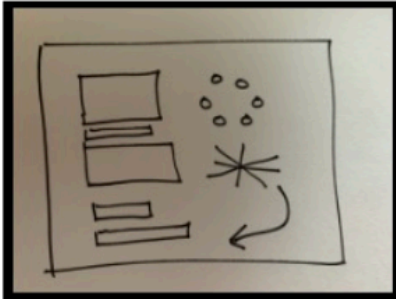
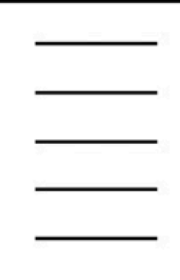
STORYBOARD STRUCTURE

Super Circle Ann: Bob's boss Bob: Designer Chen: Client	Title Personas Situation
	Establishing shot First interaction
Ann selects the new super circle	Title card
	Mid-range shot Second interaction
	Close-up shot Third interaction
	Close-up shot Forth interaction

Standard storyboard structure

Identify key interaction snippets in the scenario

STORYBOARD STRUCTURE

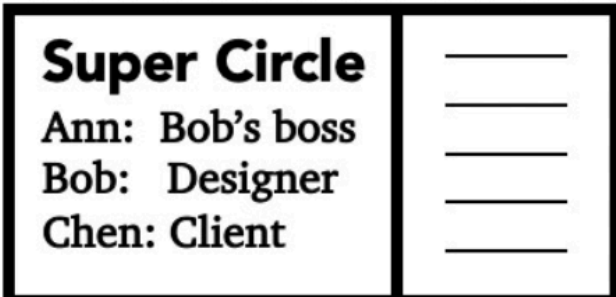
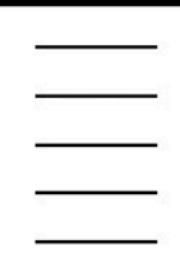
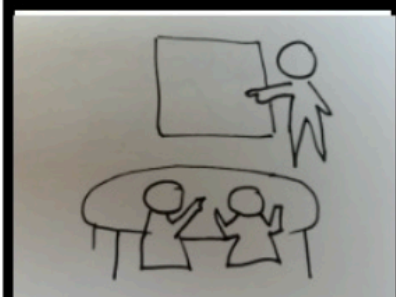
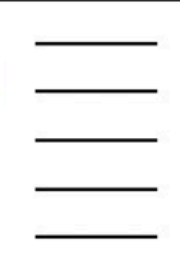
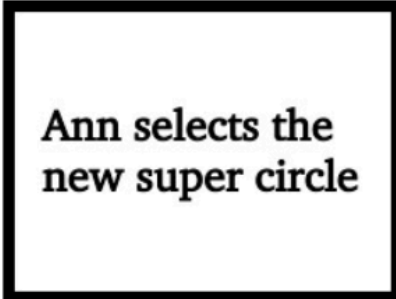
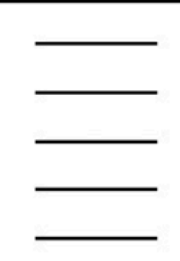
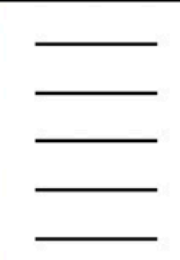
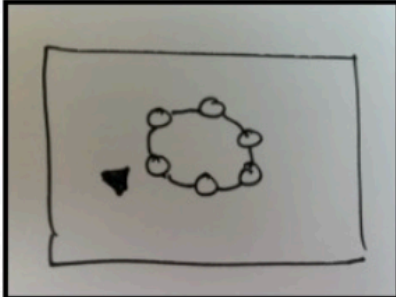
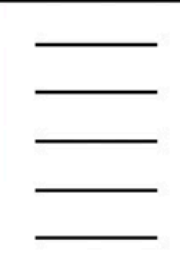
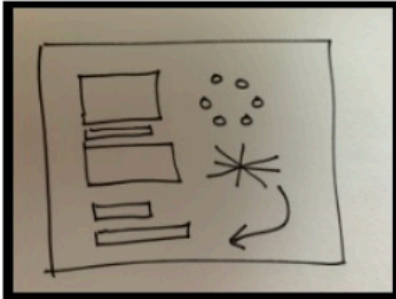
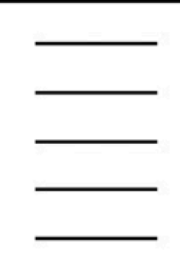
		Title Personas Situation
		Establishing shot First interaction
		Title card
		Mid-range shot Second interaction
		Close-up shot Third interaction
		Close-up shot Forth interaction

Standard storyboard structure

Identify key interaction snippets in the scenario

Examine the key ideas from the design space
(brainstormed ideas)

STORYBOARD STRUCTURE

		Title Personas Situation
		Establishing shot First interaction
		Title card
		Mid-range shot Second interaction
		Close-up shot Third interaction
		Close-up shot Forth interaction

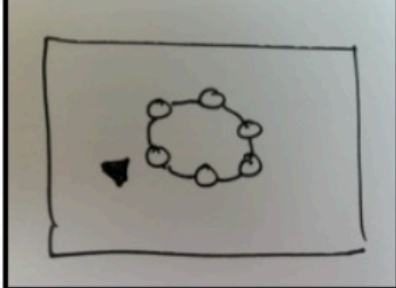
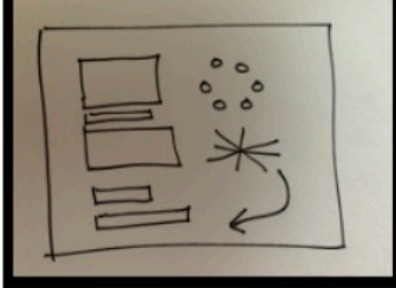
Standard storyboard structure

Identify key interaction snippets in the scenario

Examine the key ideas from the design space
(brainstormed ideas)

Illustrate the interaction between user and novel system

STORYBOARD STRUCTURE

Super Circle Ann: Bob's boss Bob: Designer Chen: Client	Title Personas Situation
	Establishing shot First interaction
Ann selects the new super circle	Title card
	Mid-range shot Second interaction
	Close-up shot Third interaction
	Close-up shot Forth interaction

Standard storyboard structure

Identify key interaction snippets in the scenario

Examine the key ideas from the design space
(brainstormed ideas)

Illustrate the interaction between user and novel system

Describe key issues on the right

Making Comics

by Scott McCloud

Moment Highlight key points, omit the rest
Interaction snippets

Frame Sense of place, position & focus
Overview first, then detail
Intertitles, wide shots, close-ups

Image Evoke characters, objects, settings
Focus on interaction, simple effects

Words Communicate ideas, voices
Intertitle (silent film)
Voice-over (narrated), dialogue

Flow Guide reader
Linear or branching storyboard



STORYBOARD

Getting started

Identify key interaction snippets
from the future scenario

Choose key brainstormed ideas
from the design space

Illustrate the interaction
between user and new idea

Identify key issues

EXERCISE STORYBOARD

Revise the future scenario into a storyboard

Begin with a title card:

System name, Setting

Include 3 personas

(1 is extreme)

Include at least 8 interaction snippets

show how to address breakdowns

End with credits title card:

Team number, name

Remember

One story with all three personas,
Not three stories!

BREAK

REMINDER DESIGN BRIEF

COURSE PROJECT

RETHINK NAVIGATION —

Create an interactive system
that supports navigating
through space and time



COURSE PROJECT

RETHINK NAVIGATION



Create an interactive system
that supports navigating
through space and time

Without a smartphone

Discover problems faced by real users

Identify breakdowns, work arounds,
user innovations and surprises

Design a new interactive tool

Illustrate with realistic story in a real context
...then redesign based based on feedback

COURSE PROJECT

RETHINK NAVIGATION —

Augment the person



Augment the object



Augment the environment



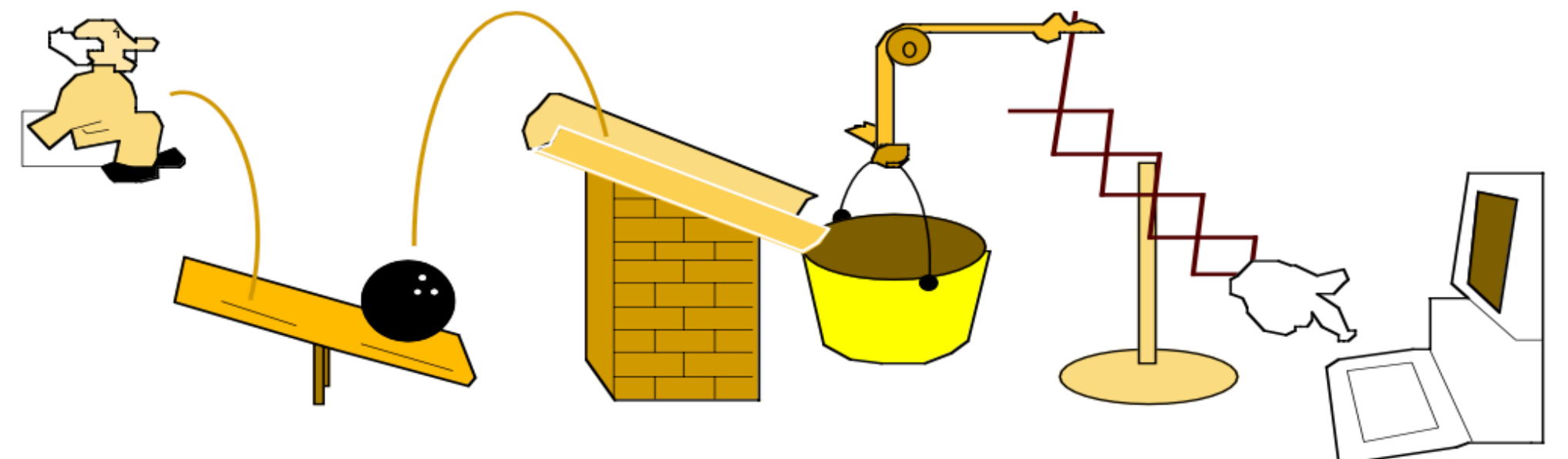
DESIGN REQUIRES CHOICES

Focus on quality over quantity

Prototypes help express specific concepts
at different levels of representation

Careful!

Each design choice limits your options
also poses new questions
and suggests new possibilities



DESIGN REPRESENTING DESIGN

Designing Prototypes	System	Action	Story
Collect	Design brief Design requirements	GATHER GENERATE	Persona Current scenario
Represent	Functional specification Paper prototype	WRITE SKETCH	Future scenario Storyboard
	Tutorial video	SHOOT	Video prototype (story)
	Wizard of Oz (tasks) Functional prototype	SIMULATE CODE	Wizard of Oz (scenario) Fixed-path prototype
Interpret	Interaction table Design diagram	DESCRIBE SKETCH	Concept description Flow diagram

RECAP: VIDEO PROTOTYPING

Base your design concept on user data

“Animate” your personas

use personas to explore the concept

Future scenario – storyboard – video prototype

choose favorite video ideas

illustrate each interaction snippet

create storyboard sequence of events

shoot video prototype

VIDEO PROTOTYPE



Act out the interaction

You will:

- understand each idea better
- spark new ideas
- communicate better with stakeholders
(design team, users, clients, managers...)
- decide which ideas to pursue
and which to let go

**VIDEO
PROTOTYPE**

Video

Set up Video Clipper

Choose: Video Prototype

1st titlecard: System Name, team #, Date

2nd titlecard: Introduce 3 Personas

3rd shot: Establish the context

Next shots: Titlecard (tell the story) or
video clip (illustrate interaction)

Final shot: Team number, team names

Shooting instructions should not be visible

**VIDEO
PROTOTYPE**

Find places to shoot ... but

Let us know where you are!!

Create mockups & supplies

Use the space on the wall or whiteboards

Be creative about what and where to shoot

Each interaction snippet has one director

Choose camera person, actors, makers

Rehearse action once, then shoot

If you make a mistake, delete and reshoot

Avoid editing – just reshoot and move on

**VIDEO
PROTOTYPE**

EXERCISE/HOMEWORK VIDEO PROTOTYPE —

Transfer the title cards from your storyboard to iPad Video Clipper

Make paper prototypes and mock-ups
Use dark pen, transparencies, sticky notes, colored paper ... be creative!

Shoot a 3-5 minute video
One story with all three personas
Include at least 8 interaction snippets

Get approval before you shoot!

This is not a “how-to” video
Reveal how your system works by showing how personas use it in a realistic context

Upload final prototype to your Group Space!

