UiA University of Agder
Norway

IS-104: DIGITAL INTERACTION DESIGN

LECTURE 2: PACT AND THE PROCESS OF INTERFACE DESIGN

Geir I. Hausvik

August 28, 2019

GOALS FOR TODAY

A. Familiarize with PACT (Chapter 2)
  - PACT: a framework for designing interactive systems

B. The process of human-centered UX design (Chapter 3)
  - Overall processes: understand, design, envision, evaluate
  - Two key constructs: personas and scenarios

C. Group project and the first deliverable

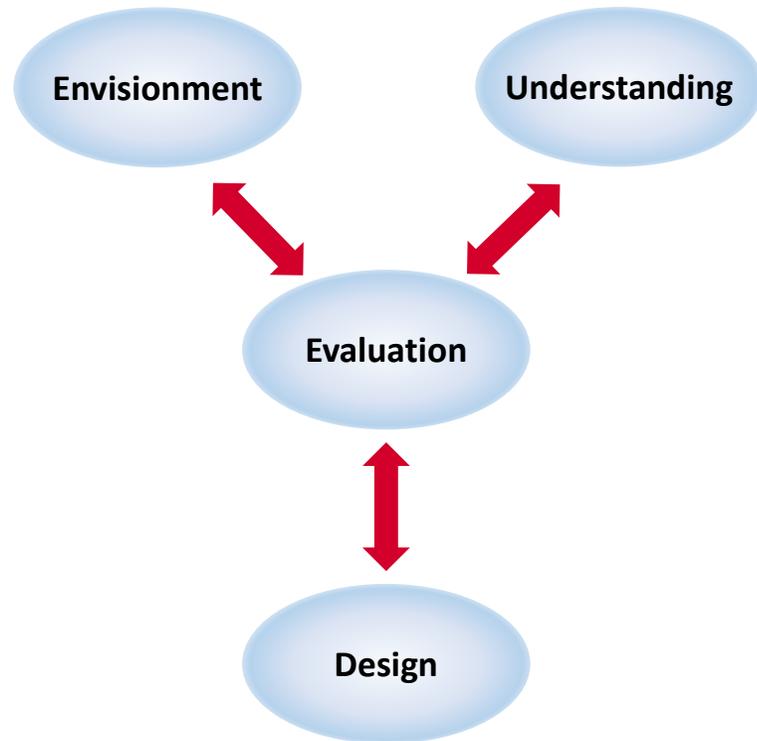*Geir I. Hausvik, 2019*

RECAP FROM FIRST LECTURE

- Importance of design

- Design

- Digital interaction design

- Interface

- User experience

- Human-computer interaction

- Human-centered design

A. FAMILIARIZE WITH PACT

THE BIG PICTURE

Envisionment

Understanding

Evaluation

Design

People, Activities, Contexts, and Technologies (PACT) are key for all four activities

Designers need to:

- Understand the **activities** of **people** and the **contexts** within which they will use **technology**

- Design and visualize **technological** solutions that will fit with **people** and their **activities** in the **contexts** where they occur

- Evaluate alternative designs and iterate until a satisfactory solution is arrived at

Geir I. Hausvik, 2019

PACT

People

Activities

Contexts

Technologies

We use the acronym PACT as a useful framework for thinking about a design situation

(source: Coulourbox.com)

PACT - Alexa

Geir I. Hausvik, 2019

https://www.youtube.com/embed/XWBNQEgLNhE

PACT?

PEOPLE

People differ from one another in a variety of ways

- Physical differences
- Psychological differences
- Mental models
- Social differences
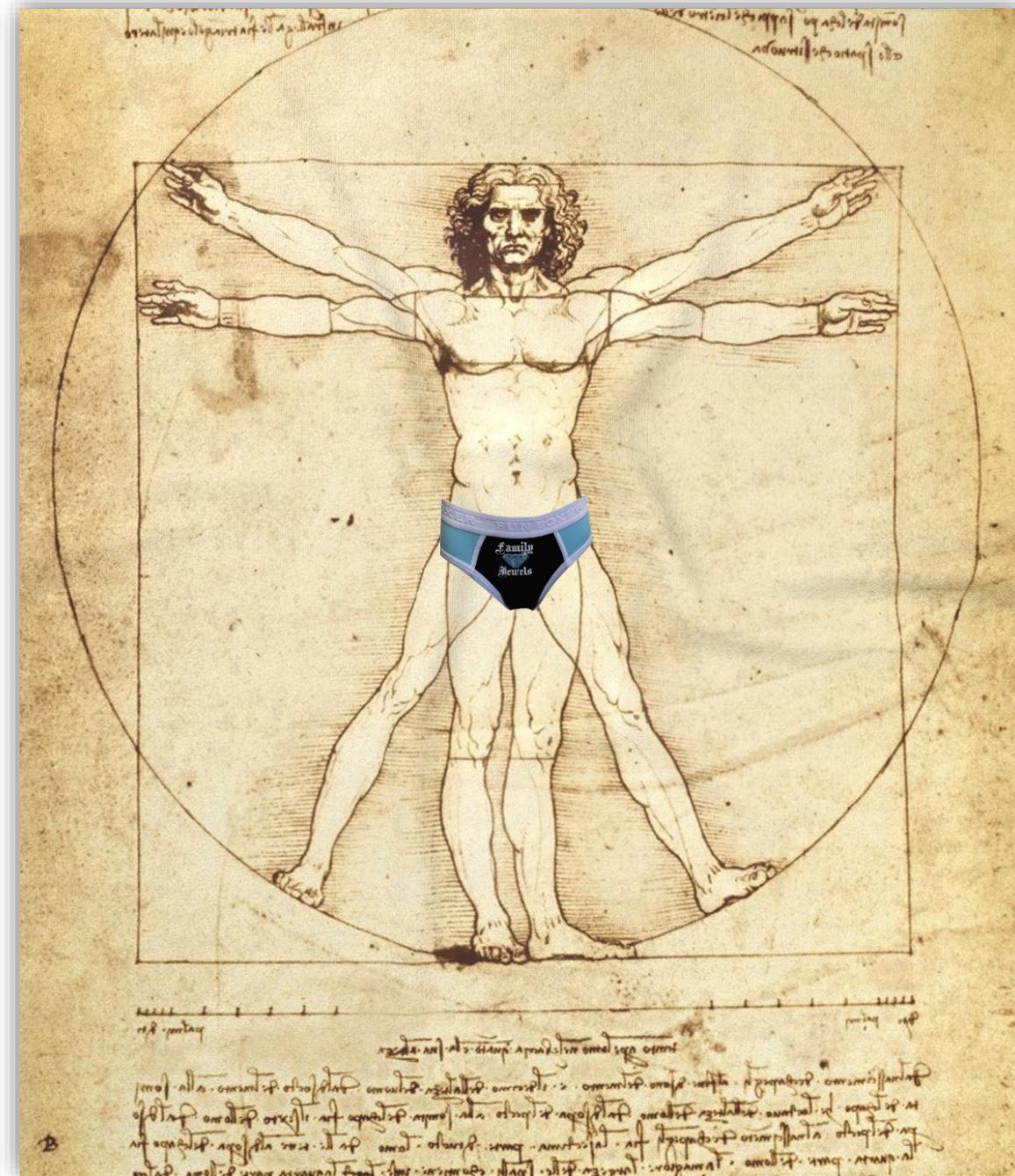- Attitudinal differences

Need to understand the singularities of your users!

(source: www.inc.com*)*
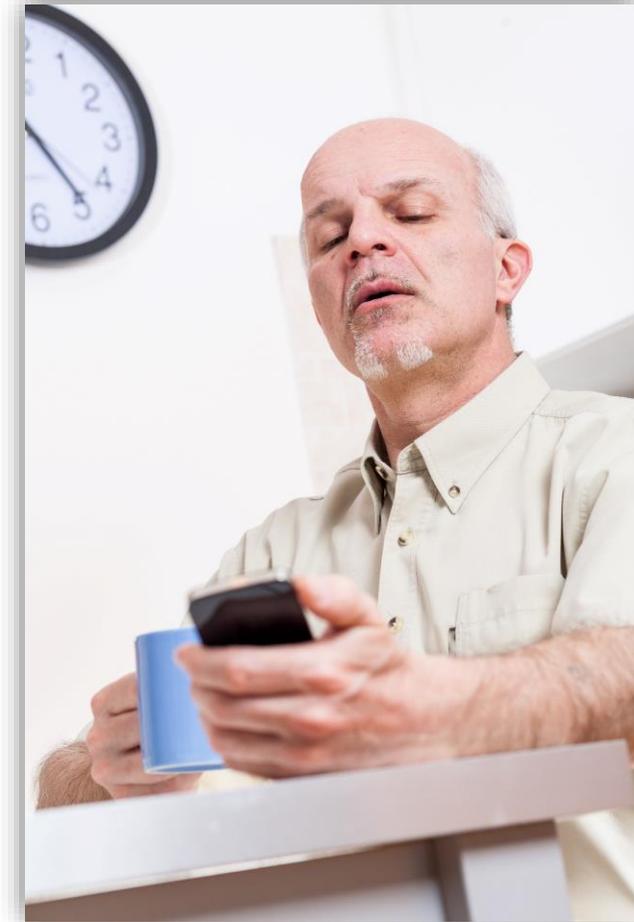
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PEOPLE – PHYSICAL CHARACTERISTICS

- Anthropometrics

- Senses

- Abilities / disabilities

PEOPLE – PHYSICAL CHARACTERISTICS

Physical characteristics affects how accessible, how usable, and how enjoyable using a technology will be

(sources: Coulourbox.com)

PEOPLE – PHYSICAL CHARACTERISTICS

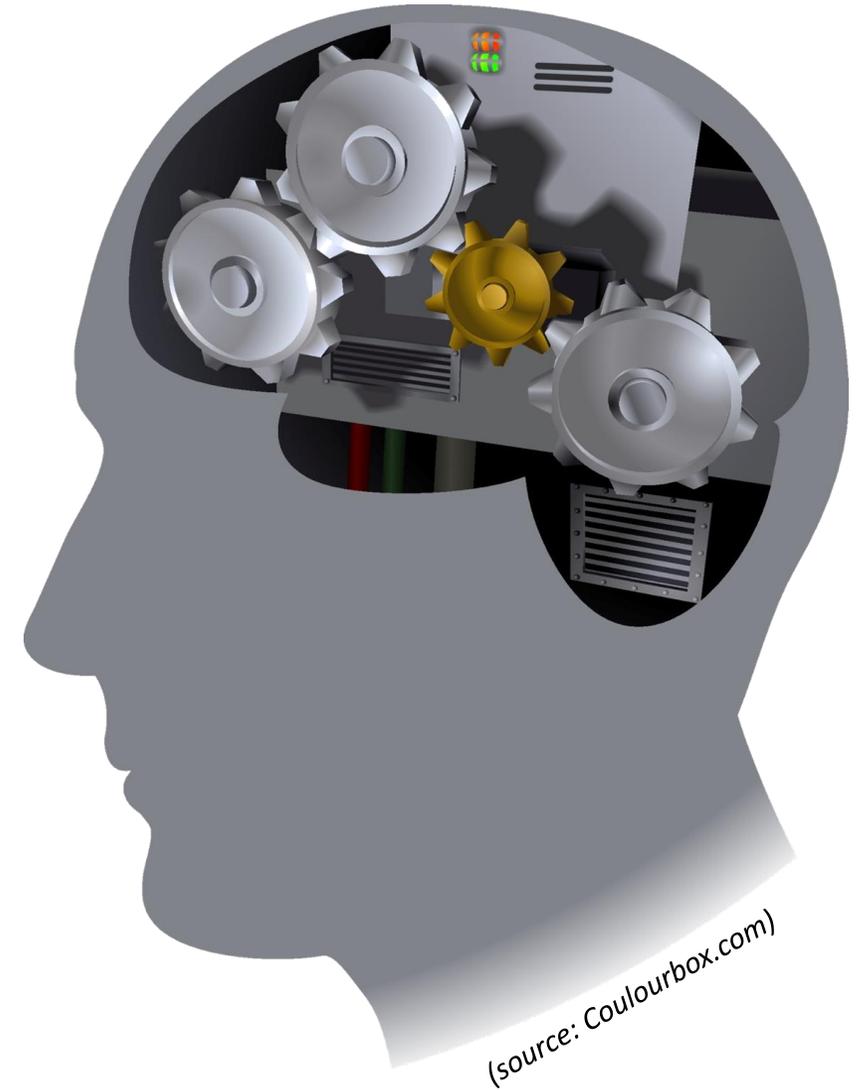http://www.color-blindness.com/coblis-color-blindness-simulator/

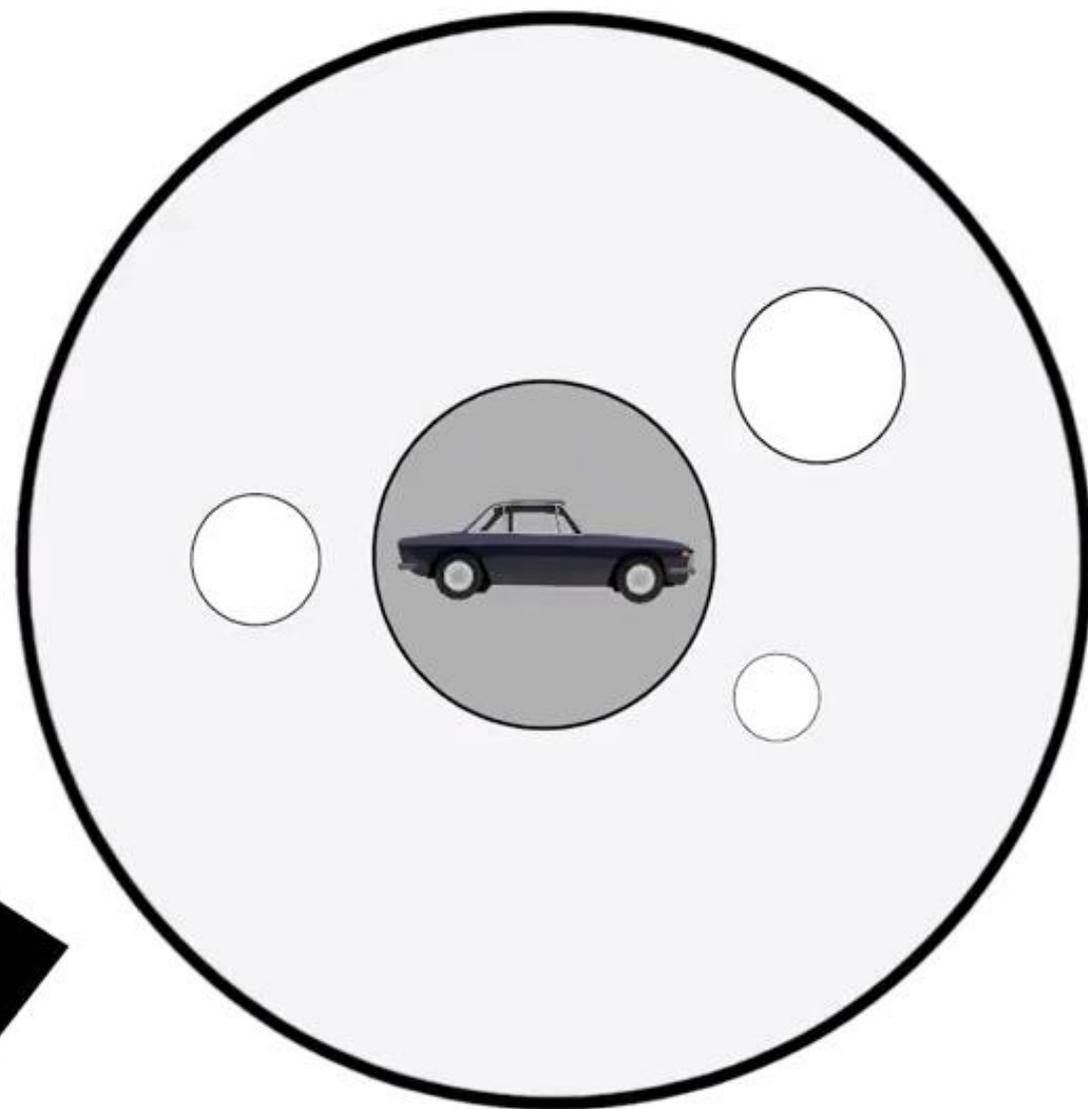# PEOPLE – PSYCHOLOGICAL CHARACTERISTICS

There are differences in peoples' psychological abilities:

- Memory

- Orientation

- Words and numbers

- Attention and focus

(source: Coulourbox.com)
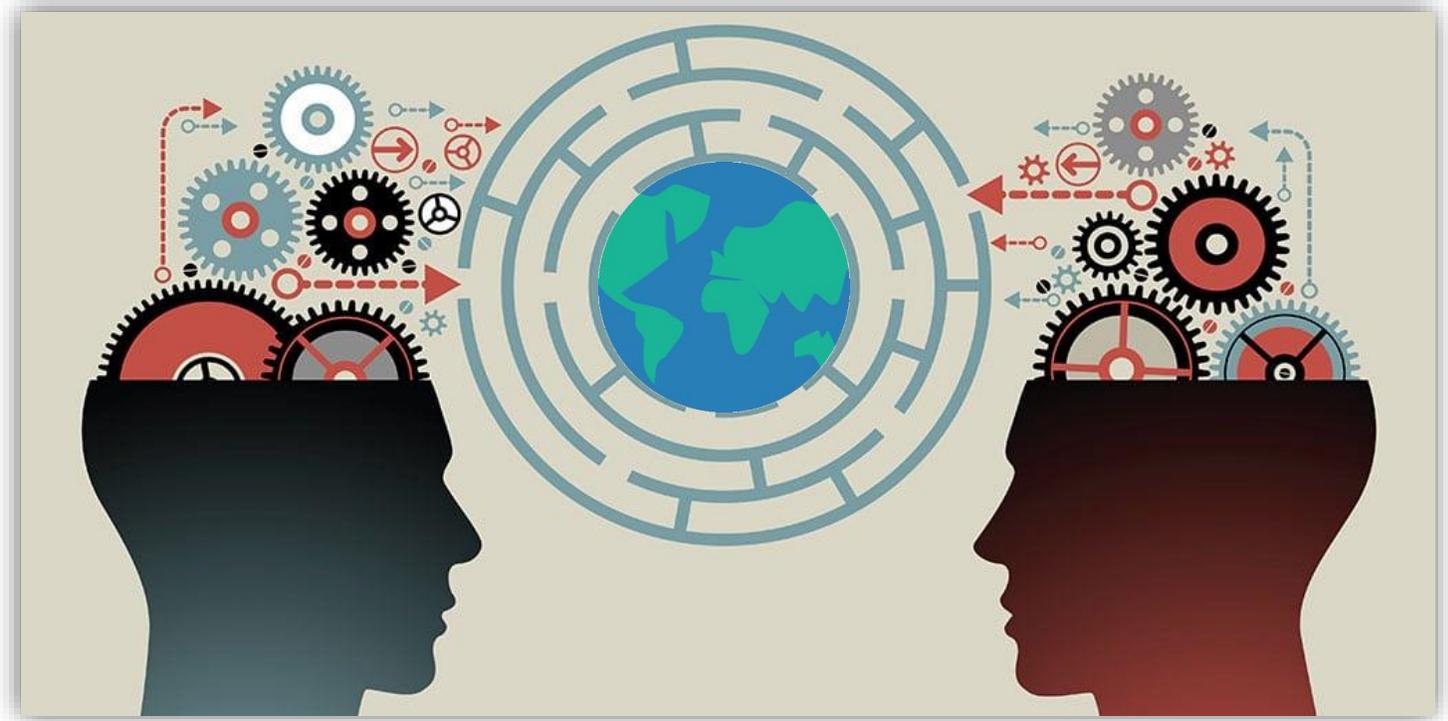
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Mental Model

https://www.youtube.com/embed/N--ptZ0UPp8

PEOPLE – MENTAL MODELS

A mental model is a mental structure that reflects the user's understanding of a system and therefore is a source of expectancies about how a system will respond

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PEOPLE – SOCIAL DIFFERENCES

People have different backgrounds and make sense of signs and symbols in different ways

People make use of systems with different motivations and aims

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PEOPLE – ATTITUDINAL DIFFERENCES

- Values

- Aspirations

- Ideological stances

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(source: Coulourbox.com)

ACTIVITIES

Designers should focus on:

1. The overall **purpose** of the activity

2. Then the **main features**:

   - Temporal aspects
   - Cooperation
   - Complexity
   - Safety-criticality and error tolerance
   - The nature of the content

(source: Coulourbox.com)

CONTEXTS

Three useful types of contexts are distinguishable:

• Physical context

• Social context

• Organizational contexts

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TECHNOLOGIES

Interactive technologies change rapidly. Designers need to be aware of technological possibilities for input and output

Input technologies support people to enter data into a system reliably and efficiently

Technologies for **output** rely primarily on vision, hearing, and touch

(source: www.blessthisstuff.com)

(source: Coulourbox.com)

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SCOPING A DESIGN PROBLEM WITH PACT

By doing a PACT analysis the design group scopes out the multiple Ps, As, Cs, and Ts that are possible. This helps focusing.

This can be done initially using brainstorming within the design group

(*source:* Coulourbox.com)

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PACT EXCERCISE

- Work with 3-4 students sitting close to you

- Think of **People**, **Activities**, **Technologies**, and **Context** for the topic

- Write down notes from discussion

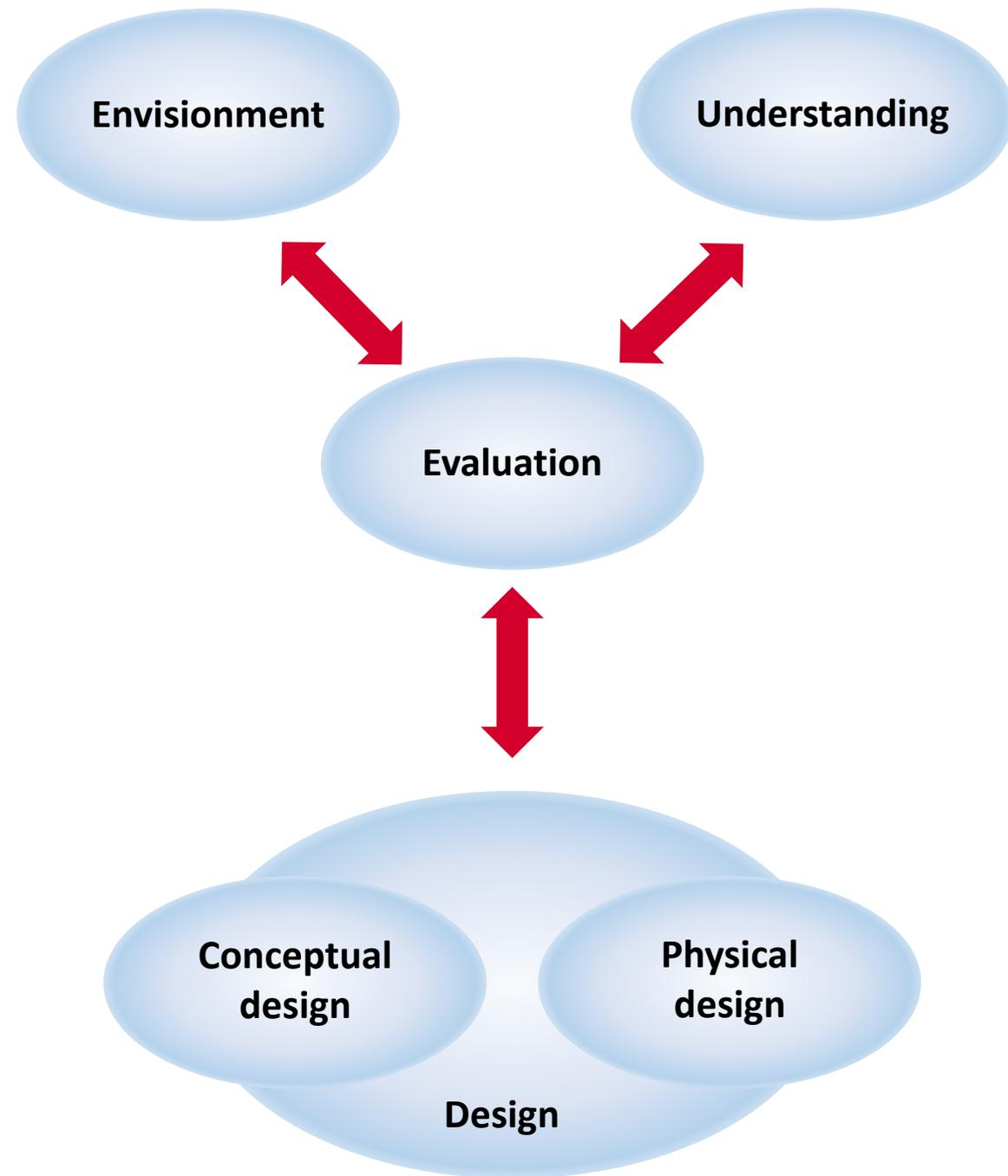- After 5 minutes, we will discuss notes in plenum

Topic:

A mobile solution for booking washing machines in a building

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A. THE PROCESS OF HUMAN-CENTERED UX DESIGN

OVERALL DESIGN PROCESS

Four key activities in the overall process of creating good user interfaces

- Can start at any point

- Can follow any order

- Evaluation is central

Envisionment

Understanding

Evaluation

Conceptual design

Physical design

Design

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UNDERSTANDING

- User research

- Aim: To understand the requirements

- Involves collecting and analyzing data

Requirements are essentially about understanding

("Understanding" will be the topic of the next lecture, September 4)

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DESIGN

Conceptual design (the "**what**")

• An abstract view of a design solution

Physical design (the "**how**")

• Operational design

• Representative design

• Interaction design

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ENVISIONMENT

Designs need to be visualized:

- to help designers clarify their own ideas
- to enable people to give feedback

Sketches, fully functioning prototypes, scenarios
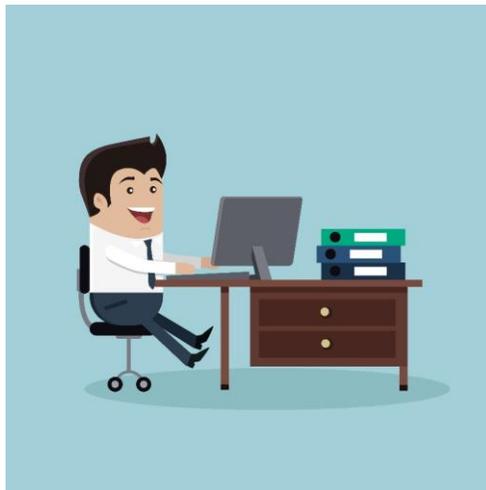
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EVALUATION

We can evaluate the outcome of any of the other three activities: understanding, design, and envisionment

Many different techniques for evaluation

- Analytical evaluations
- Field studies
- Testing with users

PERSONAS AND SCENARIOS

(sources: Colourbox.com

People who will use the system are represented by **personas** (profiles of different archetypical users)

Activities and the **contexts** are captured in **scenarios** of use

Thinking about people involves thinking of what they do. Thinking about scenarios involves thinking of who will undertake them. Personas and scenarios are interrelated

PERSONAS

https://www.youtube.com/embed/W1kw5xK1C30

PERSONAS

(sources: Colourbox.com

Imaginative descriptions of users based on the understanding developed (through interviews, questionnaires, observations)

- Personas are fictitious – they are synthesized from knowledge of real people
- Personas need to have goals. Personas want to be able to do things using your system
- It is best to develop a few concrete personas who have specific characteristics, such as age, interests, a name, etc.
- Try to bring the characters alive – perhaps include a picture

Borat

age: **35-40**
residence: **Kuczek, Kazakhstan**
education: **No school**
occupation: **Reporter**
marital status: **Married w. cousin**

Please, you come see my film. If it not success, I will be execute.

Training seriously for first marathon
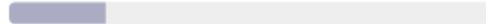His usual training partner has moved away
He leads a wild social life and tends to burn the candle in both ends
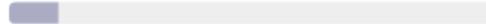He has got a targeted schedule
His Apple Watch is very proactive in pace making and motivation
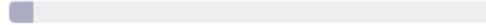
Comfort With Technology
INTERNET
SOFTWARE
MOBILE APPS
SOCIAL NETWORK

Criteria For Success:
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Lloyd Christmas

age: **25-30**
residence: **Providence, Rhode Island. USA**
education: **School of Life**
occupation: **Pet driver**
marital status: **Single, but really wants a woman**

So you're telling me there's a chance!

Drives a lot
Spends all his time with his friend, Harry
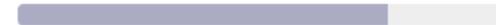Is eager to finding the love of his life
His friend, Harry, recently gave him an Apple watch

Comfort With Technology
INTERNET
SOFTWARE
MOBILE APPS
SOCIAL NETWORK

Criteria For Success:
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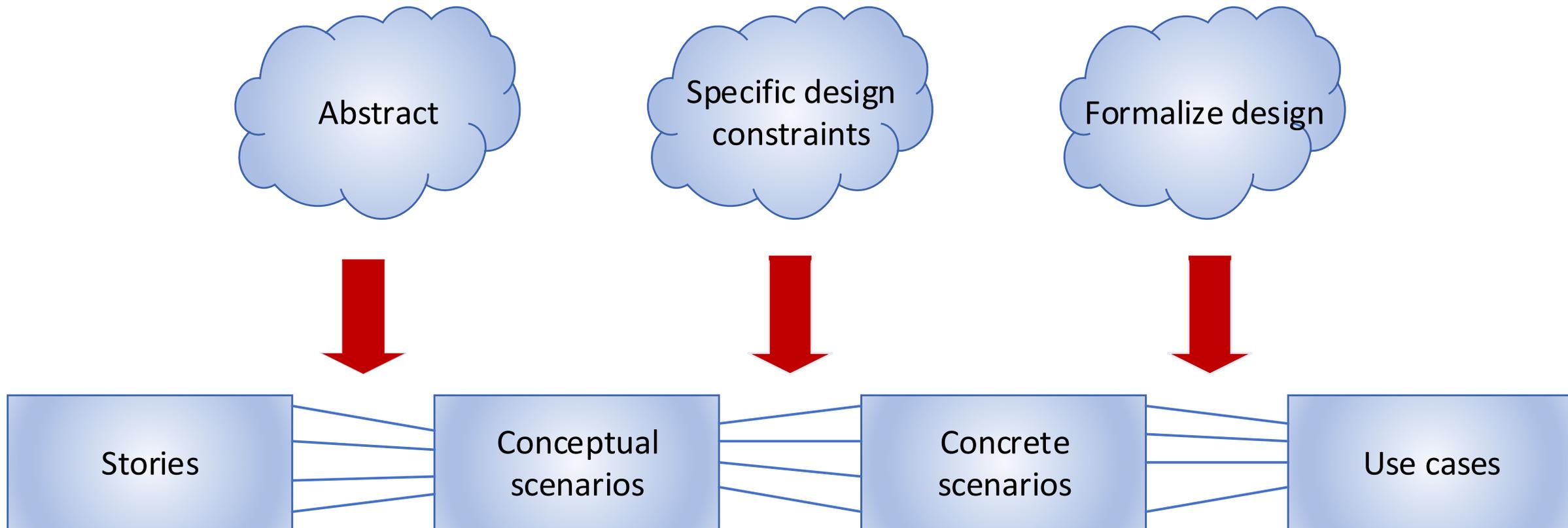- Sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam

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SCENARIOS

- Stories about people undertaking activities in context using technologies

- Scenarios (and their associated personas) are core constructs for interactive systems design

- They are useful in understanding, envisioning, evaluation, and both conceptual and physical design

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USING SCENARIOS

Abstract

Specific design constraints

Formalize design

Stories → Conceptual scenarios → Concrete scenarios → Use cases

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STORY

I needed to order soil and nutrition to my botanic center. This is something that I usually do every Friday when I have a complete overview of what is left in stock after the week. I contacted my wholesaler to place an order, which was pretty much the same as last week – but with some additional nutrition. The wholesaler needed some time to figure out the exact batch from previous order. Meanwhile, I continued to trim the rose garden. After 30 minutes, the wholesaler was ready to place my order.

CONCEPTUAL SCENARIO

Ordering botanic products

People will be able to order botanic products quickly, directly, and at any time. They can place orders by reordering previous orders and can change quantity and products

CONCRETE SCENARIO

Story background, setting

Goal "quick extra orders"

It's Friday afternoon. Petter opens his desktop computer at the botanic center's office. He wants to be quickly done with the extra flower soil orders.

Petter decides to order the same combination of products as four weeks ago, but in smaller quantity. He does not order nutrition this time.

Petter is not interested in staying at the office long. As soon as the order is done, he leaves work to pick up his daughter from school.

(source: http://togetherfarm.com)

High-level actions (e.g. re-ordering X with changes, not ordering Y)

Motivation: efficiency

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USE CASE

To order botanic products:

- Go to the home page of Wholesaler
- Enter username and password
- Select 'previous orders'
- Select 'reorder'
- Change quantity
- Add products
- Place order
- Receive receipt

BUY

B. GROUP PROJECT AND THE FIRST DELIVERABLE

GROUP PROJECT

- Practicing is the key to learning in IS-104

- Semester-long group project

- All deliverables revolves around the project

- All members must contribute equally to all deliverables

- Group sessions are dedicated to work on deliverables

- You need to allocate sufficient time on the project

GROUP PROJECT

Timebanking

https://www.youtube.com/embed/QJFmzCMba-E
https://www.youtube.com/embed/70AE6rtVCrg

https://www.youtube.com/embed/HAMLSmbvDSg

https://www.smithsonianmag.com/innovation/time-banking-is-catching-on-in-digital-world-180969437/

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TIMEBANKING

Design an app for timebanking

- Among UiA students
- Among people in your neighborhood
- Among friends and family of elderly living in a nursing home
- Among kids' parents in a kindergarten
- Among a global community of people that want to practice foreign languages
- Or any match-making/service-swapping platform within a "community"

You may also propose topics beyond this year's theme. Just note:

- Need to be able to contact the prospective users
- Need simple ideas

Discuss project ideas within your group and come with proposals next week. You can also use the grouptime today for developing ideas. The teaching assistants will be available from 11.15-13.00

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FIRST ASSIGNMENT

Deliverable 1: Group project scoping and plan

✔ Published ✎ Edit ⋮

Assignment:

- Describe the interactive system´s **goal** and overall idea.
- Perform an initial **scoping using the PACT framework**: identify the variety of People, Activities, Contexts and Technologies that are relevant for the system use. For this you will need to:

  a) Identify the key people groups and think about their physical, psychological and social characteristics. It is better to list all relevant people groups and then focus on 2 or 3 selected ones.

  b) Describe the complexity of the activity (focused or vague, simple or difficult, few steps or many), the temporal features (frequency, peaks, with recurrent or casual users), cooperative features.

  c) Describe the physical, social and organizational contexts.

  d) Describe the technological aspects concentrating on input and output needs and the type of data required (e.g. numbers, free text, predefined standardized categories).

- Present your choice of **methods to be used for understanding** (e.g. interviews, questionnaire, observations etc.). Explain why you have chosen these methods. Include an interview guide or questionnaire or other artefacts that might be used e.g. sketches during interviews.
- Prepare a **team plan and a distribution of tasks** among the members of your group. The team plan needs to cover the four upcoming deliverables.
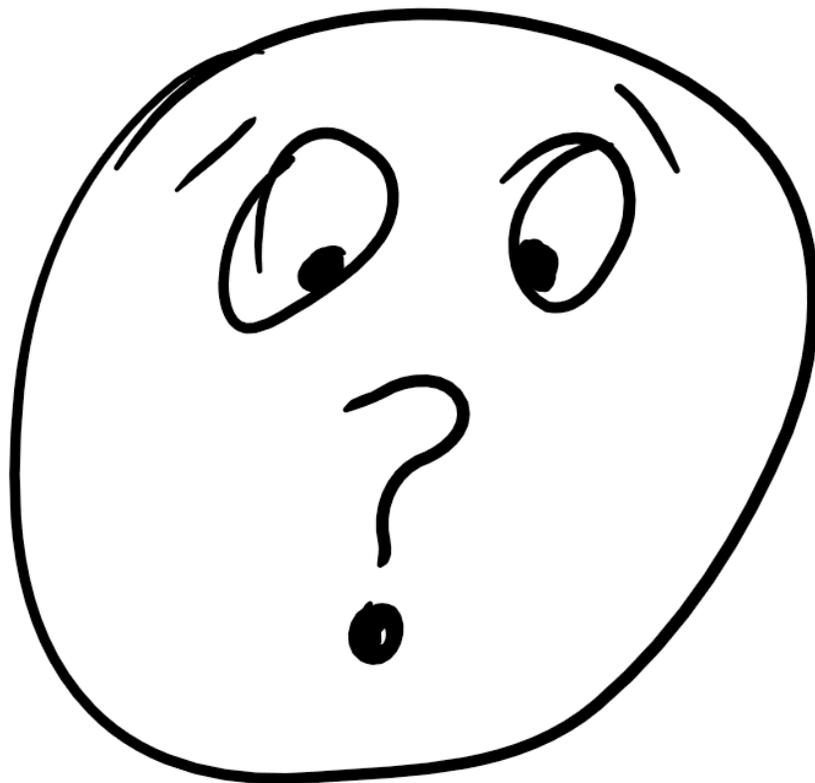
Report requirements:

- Total length of report: 5-7 pages text, and a table for the team plan (team plan template: team_plan_IS_104_2019.docx 📄)
- Please use 12pt fonts and 1,5 line spacing
- Provide a cover page of your document, including student names and emails.
- Either the cover page or the team plan do not include in the page limit
- Sumbit two **docx** or **pdf**-files per group (the report and the team plan)

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SUMMARY

- People, activities, context, technology (PACT)
- Understanding, envisionment, design, and evaluation
- Personas
- Scenarios

QUESTIONS?

NEXT WEEK

NEXT WEEK

NEXT WEEK

- Understanding