

HCI

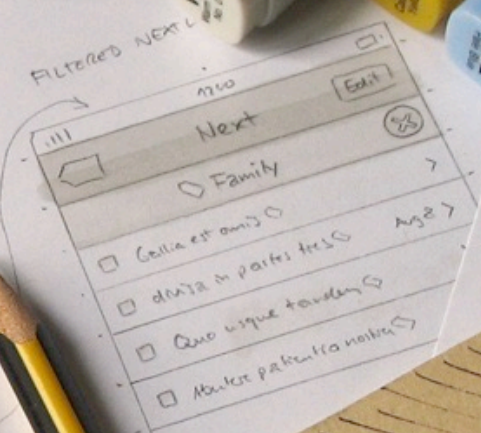
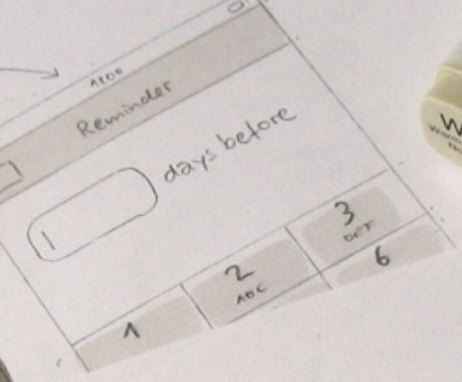
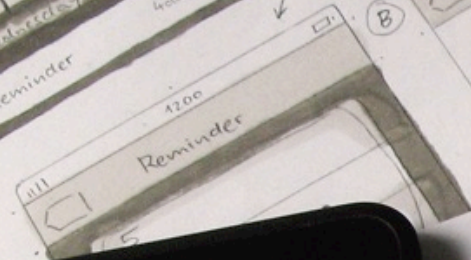
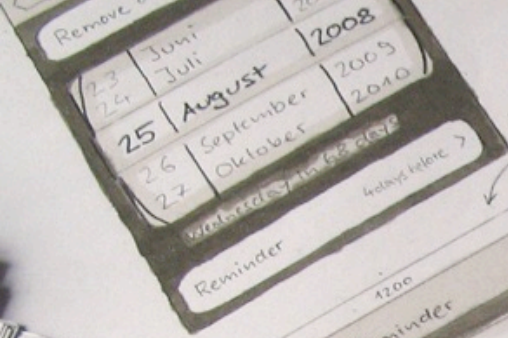
Human-Computer Interaction

“

*HCI involves the design,
implementation and evaluation of
interactive systems in the context of
the user's tasks and work.*

[Dix et al. 2004]

”



LIST

Ne

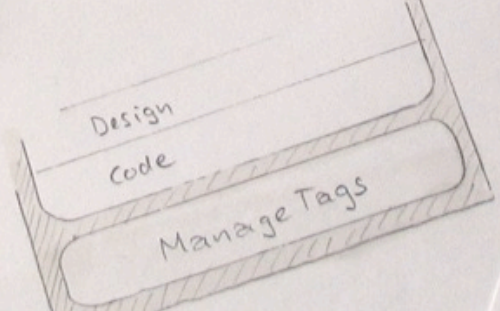
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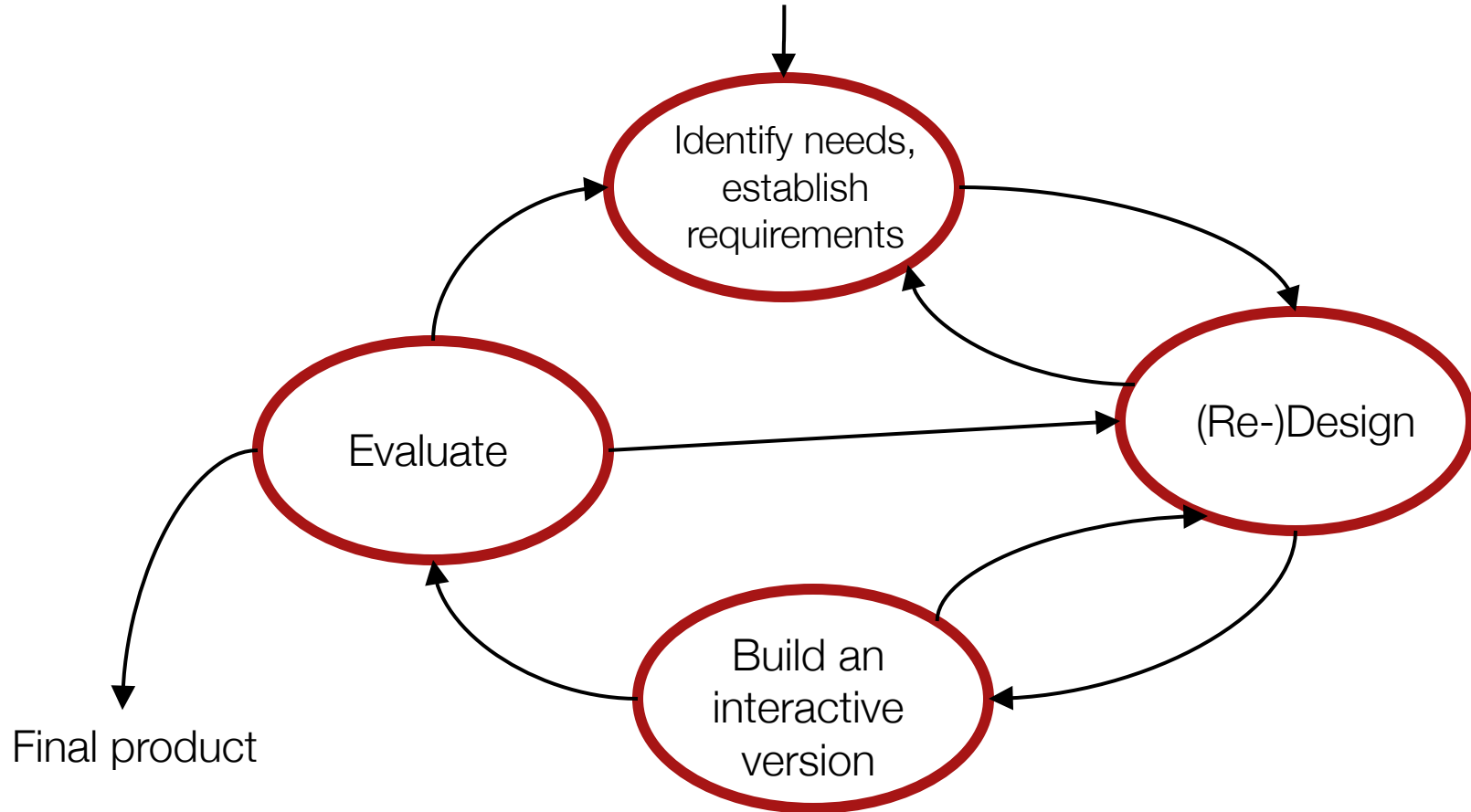
FILTER BY TAG



MANAGE TAGS
BUTTON

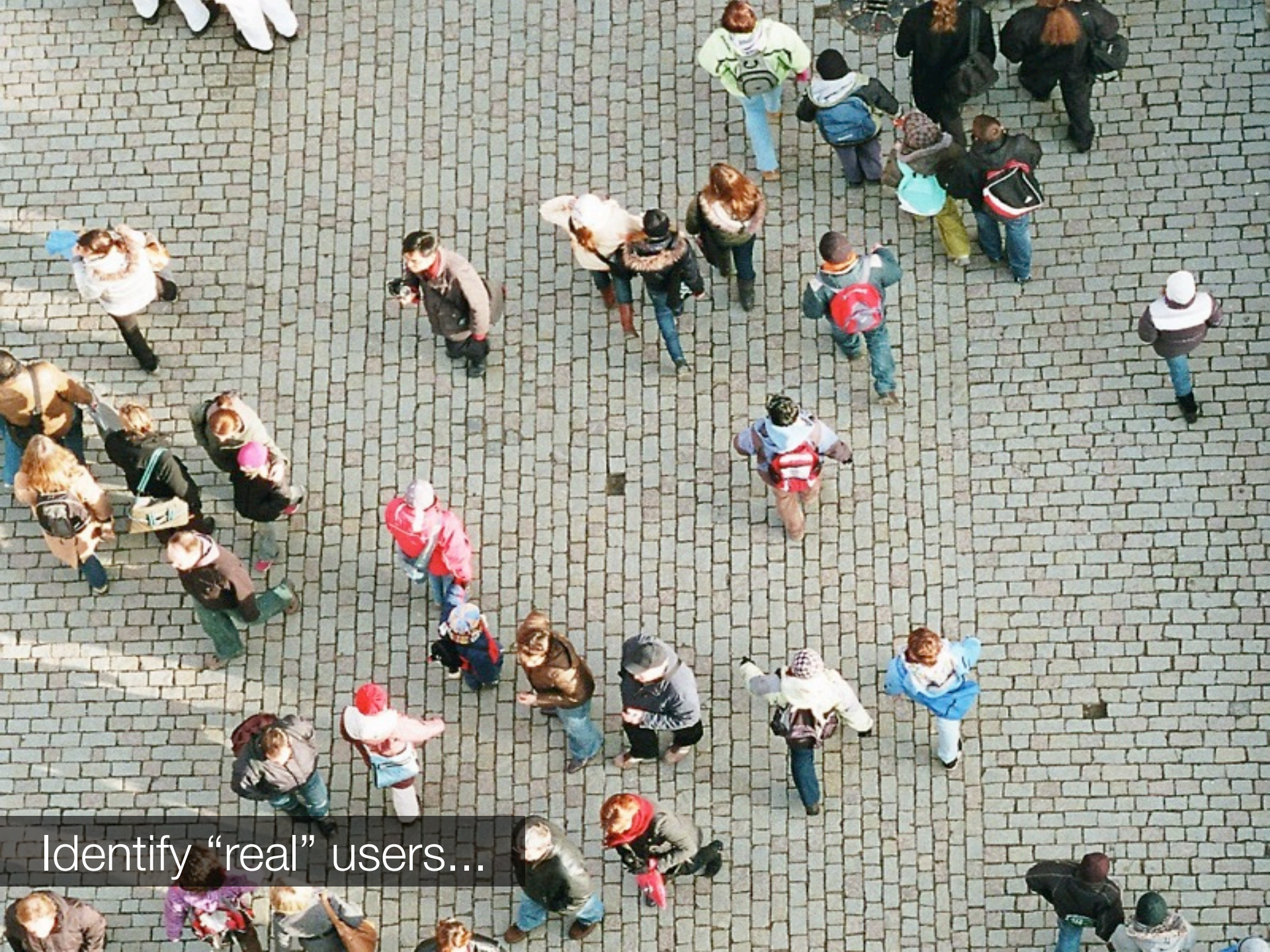


User-Centered Design



Principle I - User-Centered Design

To develop a good usable and interactive system, you have to identify the user and study their behaviors and desires.



Identify “real” users...

“

*UCD processes focus on users
through the planning, design and
development of a product.*

[Usability Professionals' Association]

”

Principle II - User-Centered Design

Users must be involved straight from the beginning and during the **whole development** process.



How the customer explained it



How the Project Leader understood it



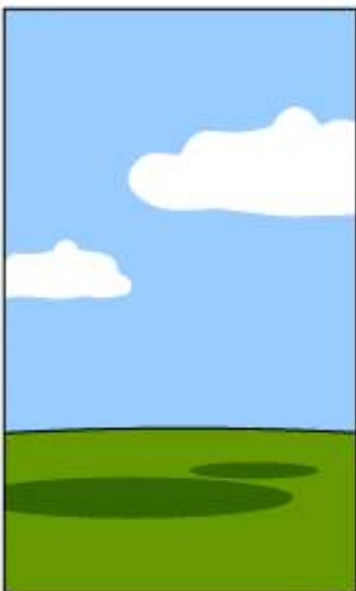
How the Analyst designed it



How the Programmer wrote it



How the Business Consultant described it



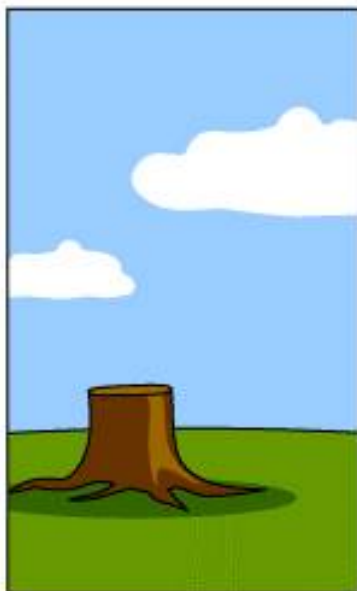
How the project was documented



What operations installed



How the customer was billed



How it was supported



What the customer really needed

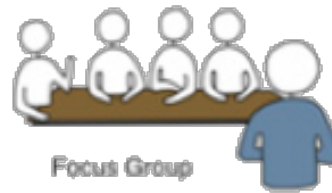
Usability vs. UCD

- Usability \neq User Centered Design
- Usability is:
 - Goal
 - Result
- User Centered Design is:
 - Method
 - Usability is the result of UCD

Common UCD processes



Meeting



Focus Group



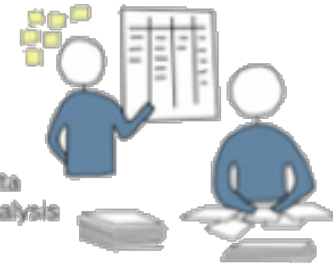
Usability Test



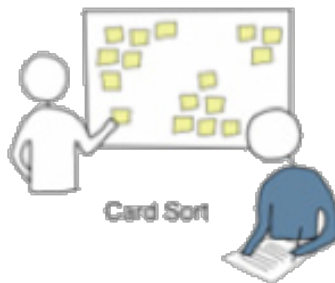
Contextual Inquiry



Interview



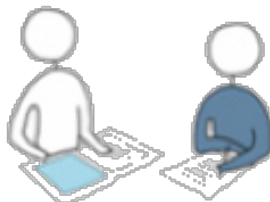
Data Analysis



Card Sort



Participatory Design



Prototyping



Design Critique



Personas

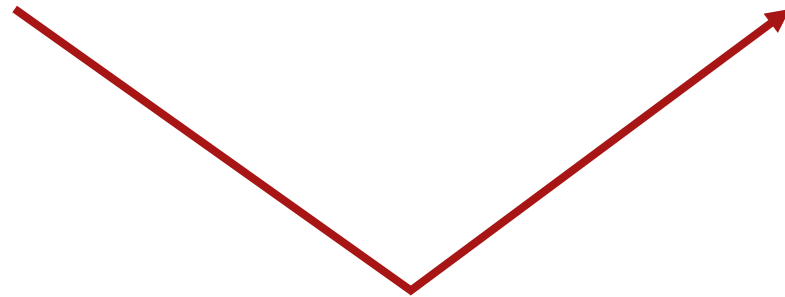
Technology vs. Design

Technology driven

- Focus on components
- System driven (Use Cases)
- Focus on robustness of systems

UCD driven

- Focus on solution
- Scenario driven
- Focus on robustness of User Interfaces



Example

What can the device do?



Example

What can **Max** do with the device?



The User

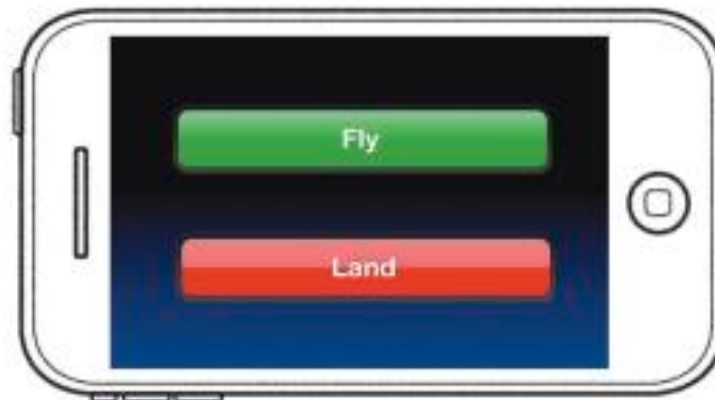
- **Needs:** How can we make the life of a user easier and better?
- **Wishes:** What do the user want? (does not always align with the needs)
- **Skills:** What can the user do and understand?
- **Procedure:** How did users complete their task so far?

So you're building an app to fly an airplane.

You might build this:



...when users really need this:



Source: Josh Clark - Tapworthy: Designing Great iPhone Apps

Assignment

Assignment

Form a Group & Design a mobile application for a Smart Street

Smart Street

Is a place which makes people smarter
and connects them.

Assignment

Focus lies on the **concept/idea**
and the **UI design** of the
application

Tool

Brainstorming/-writing

- Social process
 - New way of thinking → radical new and creative ideas
 - Solution orientated
 - Generate many ideas
-
- Our brain is a “Pattern recognition system”
 - Break out of this pattern!
 - Different form structural orientated problem solving

Brainstorming/-writing: Rules (1)

- Quantity before Quality
 - The more ideas the higher the innovation rate
- Crazy ideas are **wanted**
 - To overcome "blindness" of the group
 - Can cause new think approaches
 - Breaks existing pattern
- Listen to the others
 - Every voice & idea count
 - Shut down personal inclinations
 - There is no boss, no hierarchy in the group

Brainstorming/-writing: Rules (2)

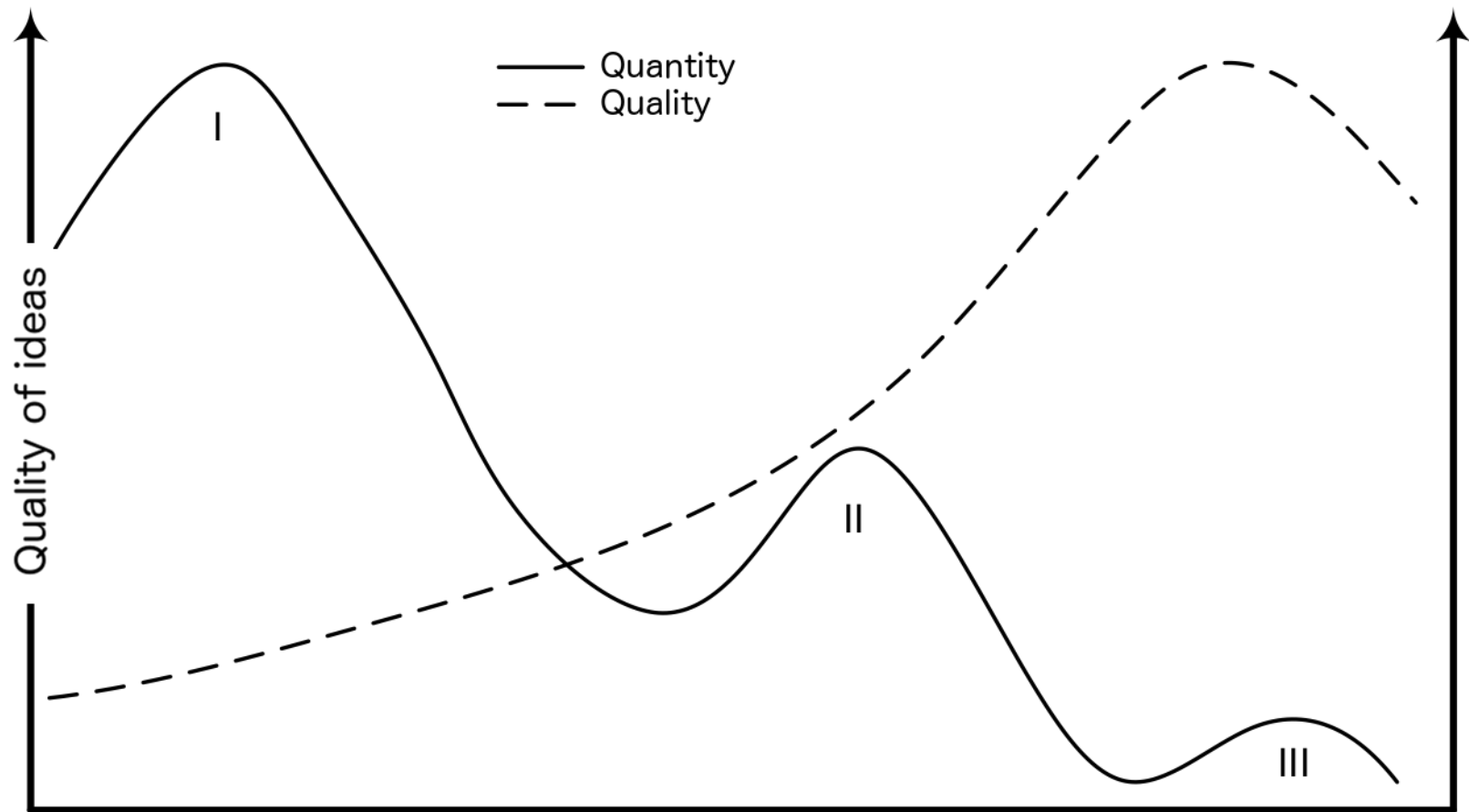
- Criticism is forbidden
 - Any criticism harms the flow of ideas
 - It's not about a discussion it's about a dialog – no “but yes” discussions
 - **Separation** between **finding** ideas and **judging** ideas
- Find a good environment
 - No disruptions, distractions and background noises
 - Take comfortable positions
 - Prepare needed utensils
- Ideas can/should be combined
 - Share, change, combine
 - No „Copyright“ regarding ideas!
 - Archive all variants

Brainwriting: Brainwriting-Pool

■ Procedure

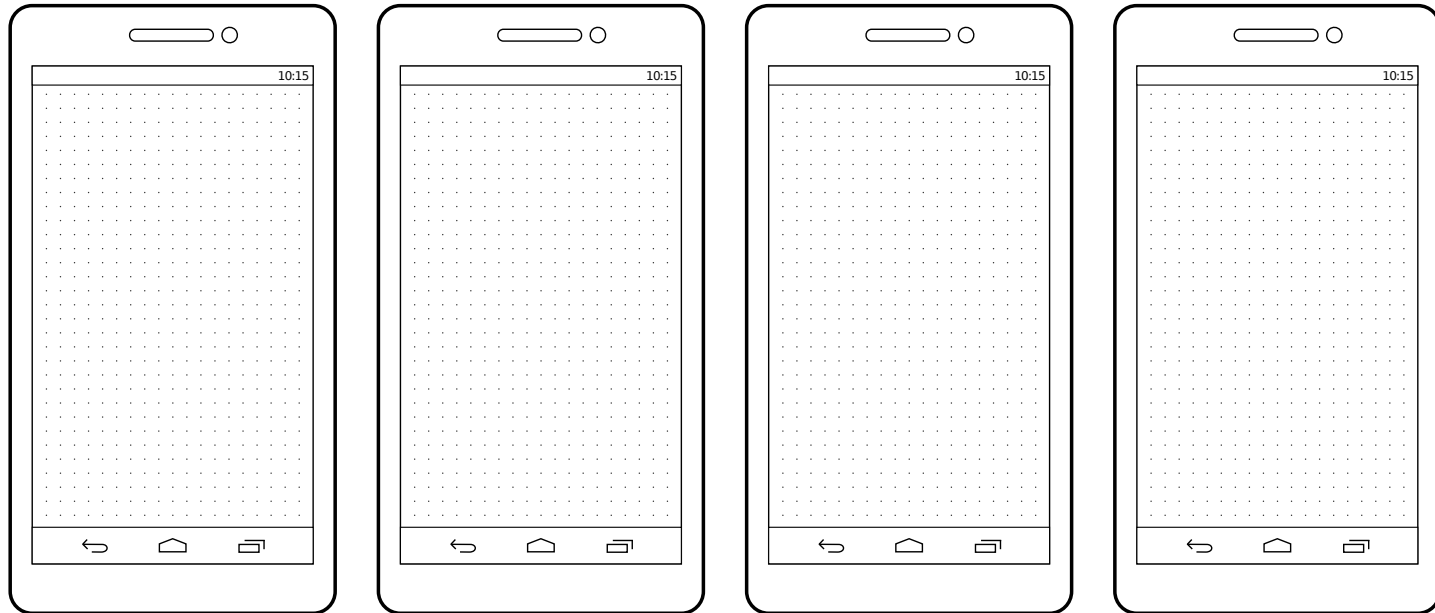
- Talk in the group about the problem/task you have so everybody is on the same page. (Smart Street & rules)
- Write a single idea on a card
- Give the idea to your neighbour
- Neighbour reads the idea and expands the idea (or if there is nothing to add then give it the next person)
- After one round the card goes into the Brainwriting-Pool (middle of the group)
- For new points of connection, ideas can be taken from the pool
- Final evaluation phase: grouping/summarize ideas

Brainstorming: Quantity before Quality



- I Spontaneous ideas and already known ideas of low abstraction
- II Associations, mostly low or middle abstraction
- III New ideas with mostly high abstraction

Mockups



<https://www.interfacesketch.com/>

Android phone

Fun!



Assignment

Form **groups** and **use Brainstroming/-writing** to find a good **idea/concept** for a smartphone application for a **Smart Street**. Then design your solution with a **simplified UCD approach**.



