

Praktikum Entwicklung von Mediensystemen mit iOS

WS 2011

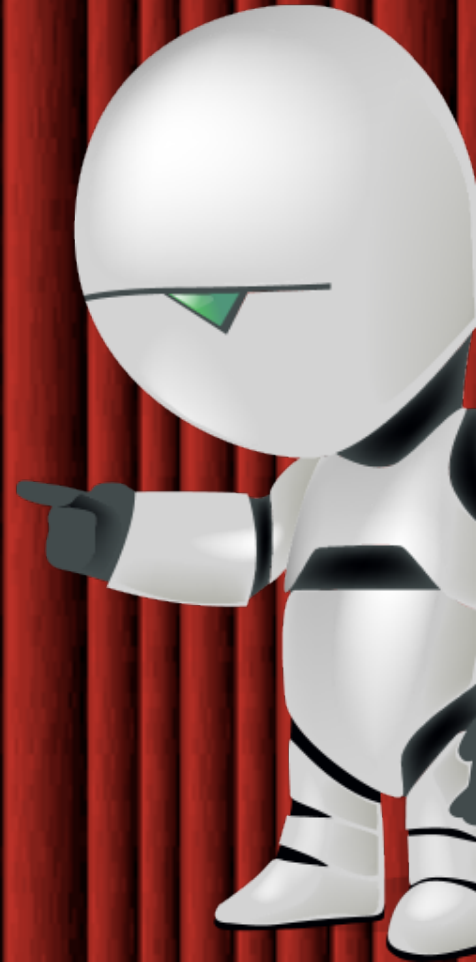
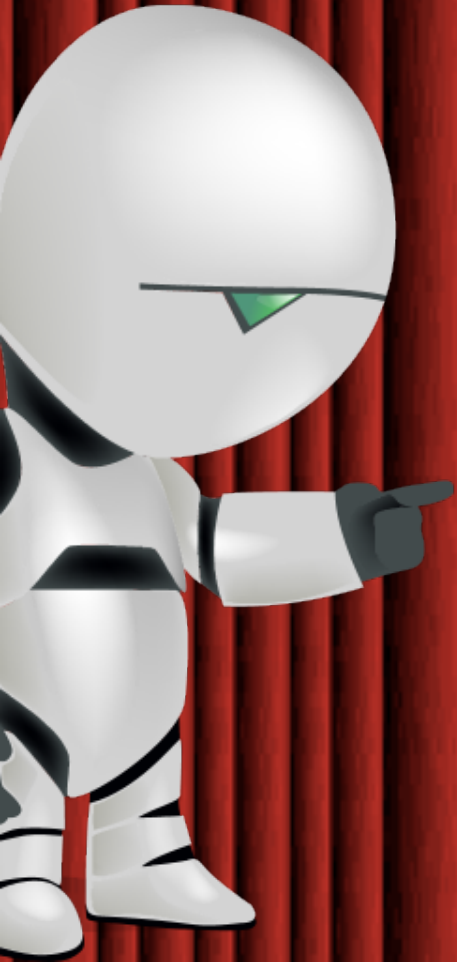
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Today

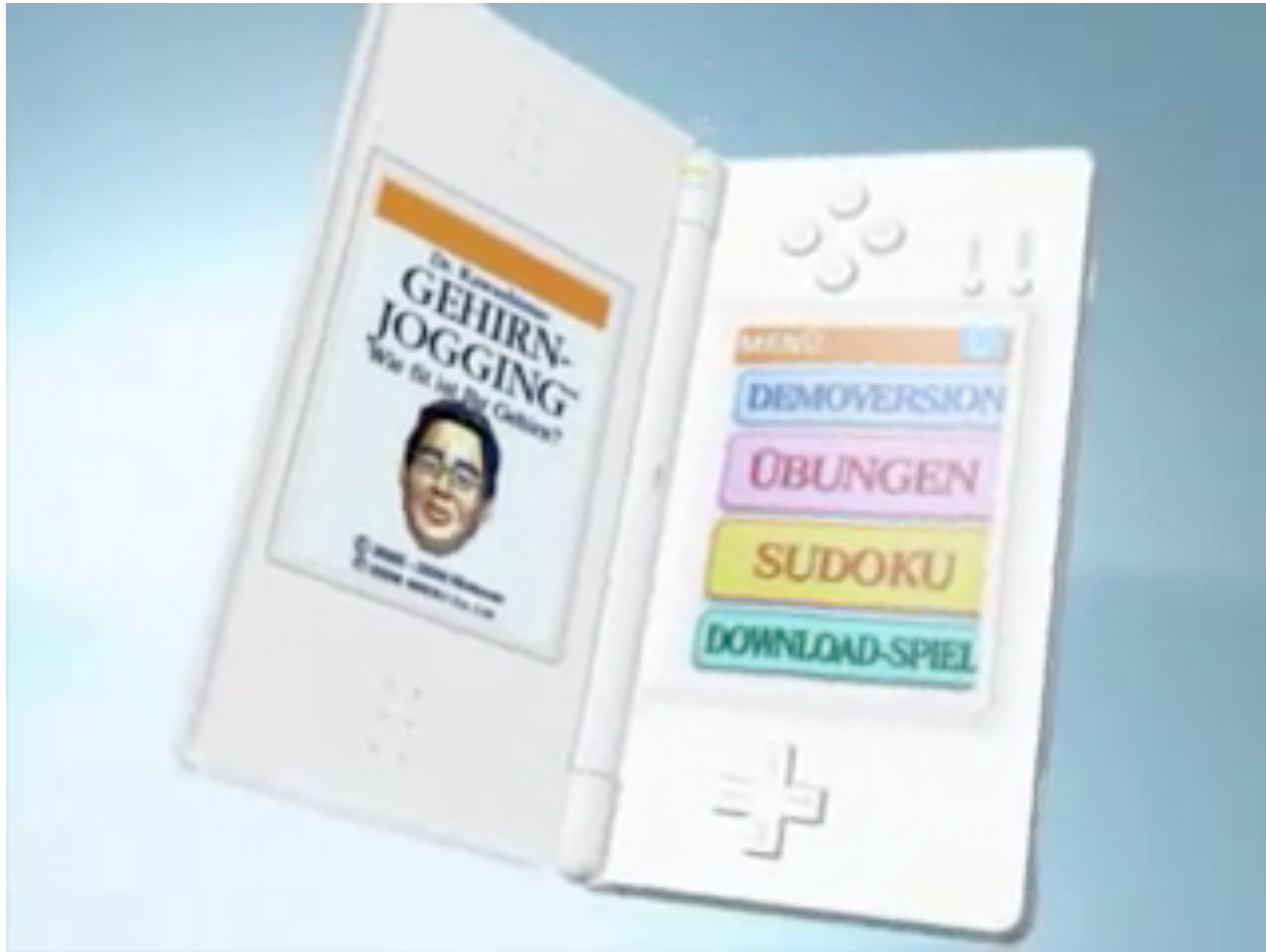
- Project phase begins
- Theme presentation
- Brainstorming
- Interviews
- Storyboarding
- Prototyping

Timeline

#	Date	Topic
1	19.10.2011	Introduction and overview of iOS
2	26.10.2011	App architecture, touch input, saving data
3	2.11.2011	Location, networking, sensors
4	9.11.2011	iOS 5, storyboards, automatic reference counting
5	16.11.2011	Interviews, storyboarding; brainstorming
6	30.11.2011	Paper prototyping test, start of software prototype
7	14.12.2011	Heuristic evaluation of software prototype
8	11.1.2012	Think-aloud user study
9	25.1.2012	Completion of software prototype
10	1.2.2012	Final presentation



Educational Games



<http://www.youtube.com/watch?v=tQp3kY0I56U>

Slide: Max Maurer

Educational Games

- Educational and Entertaining => „Edutainment“
- Identify target users
 - Age range (kids, teenager, adults, seniors)
 - Depth of topic (mathematics, cooking, creating a electronic circuit)
 - Degree of seriousness
- Examples
 - “Brain trainer” games
 - Simulators
 - Trainings

Example 1

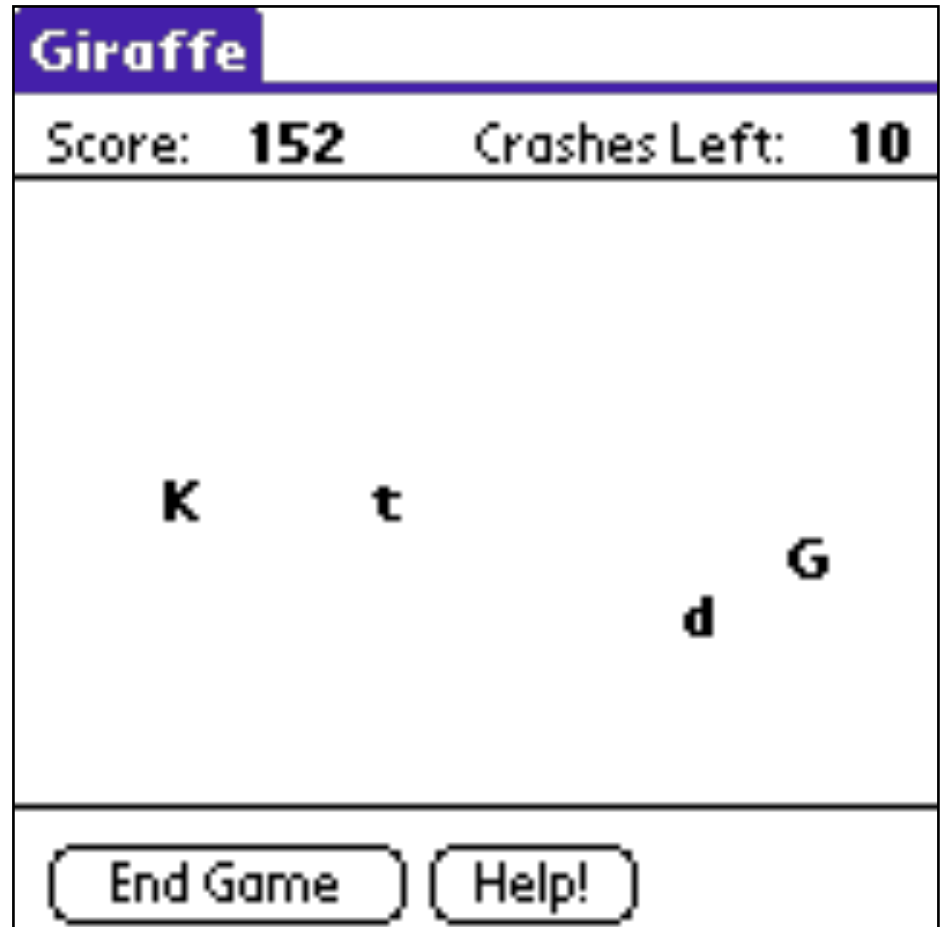


<http://www.youtube.com/watch?v=4fZRgxpXoYk>

Slide: Max Maurer

Example 2

- Learn “Graffiti” text input on the Palm
 - Stroke-based text input
- Task: Draw letters correctly, before they reach the screen bottom



<http://serious.gameclassification.com/EN/games/17062-Giraffe/index.html>

Slide: Max Maurer

Example 3



http://www.youtube.com/watch?v=sNfQ_B6_xy8

Slide: Max Maurer

Example 4

- Learn basic math skills
- Modes
 - Multiples
 - Factors
 - Primes
 - Equality
 - Inequality



http://en.wikipedia.org/wiki/Number_Munchers

Slide: Max Maurer

Example 5



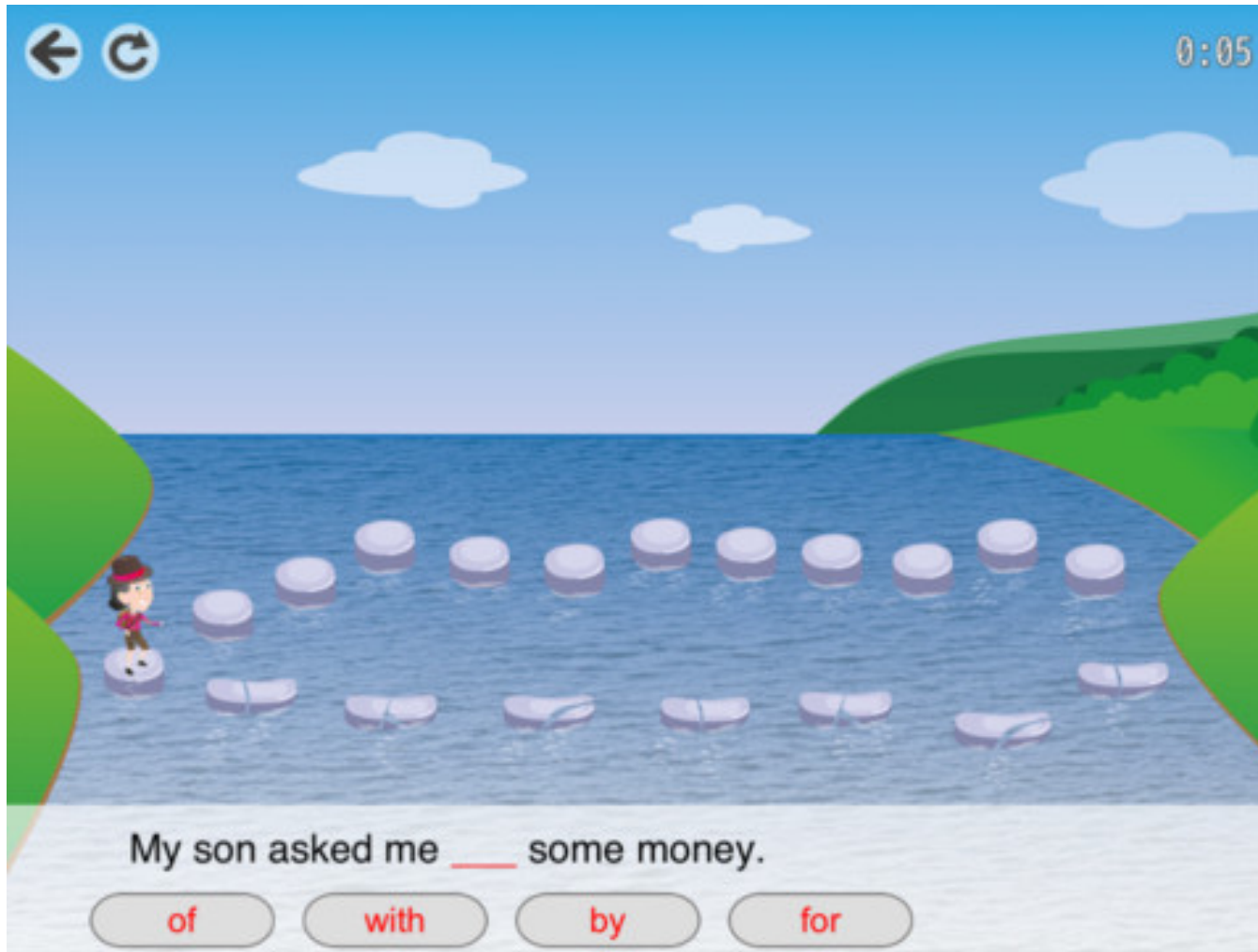
<http://www.bbg-entertainment.com/games/einstein-brain-trainer>

Example 5



<http://www.bbg-entertainment.com/games/einstein-brain-trainer>

Example 6



<http://itunes.apple.com/de/app/getacross-free/id478474198?mt=8>

More...

- Persuasive games
 - Stop smoking / drinking
 - Exercise more
- Location-based games
 - Get to know a city
 - Tourist guides
- Museum guide games
- Learning another language
- Learning to drive
- Learning to play an instrument
- etc.

BRAINSTORMING

Ideas for Educational Game Project

- Game topic?
- Usage situations?
- Strengths of mobile phone / tablets?
- Target users?
- Technological possibilities on the device (sensors...)?

Brainwriting

- Repeat 5 times
 - 3 minutes: On paper, fill one row with 3 ideas
 - Pass on paper clockwise
 - Read other ideas, fill next line with 3 more ideas
- Select the 3 best ideas
 - 10 minutes
 - Present selected ideas

Happy Brainstorming



Slide: Max Maurer

Brainstorming Results



Slide: Max Maurer

Team 5

Team 6

Team 7

Team 8

NEXT SESSION: PRESENTATION

Sketch Your Idea

- Who will be typical users?
- What will be the core features?
- How does the interaction flow look like?
- Create a PowerPoint (or Keynote) presentation for your idea and the start into the development process.

Aufgabe: Initiierung des Projekts

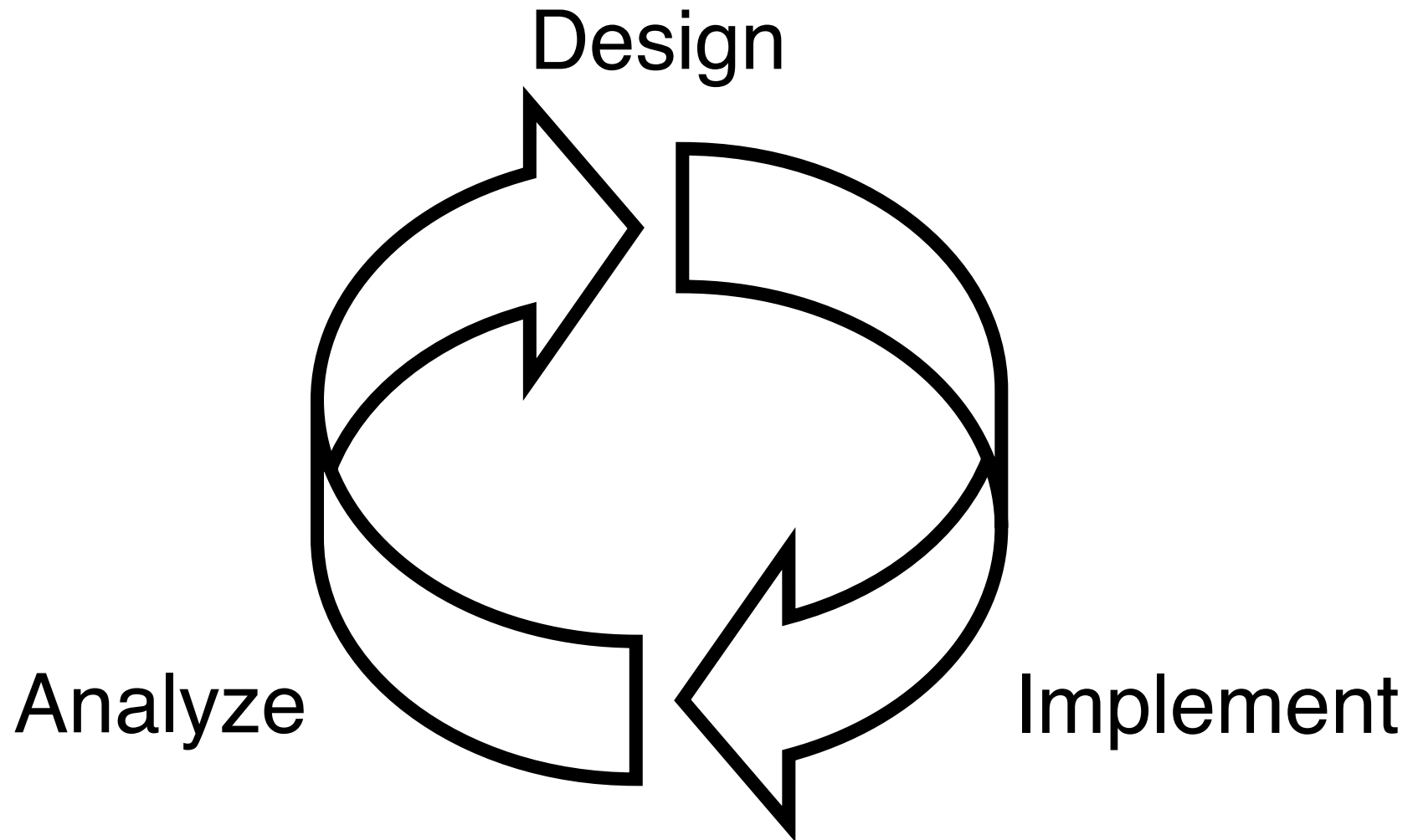
Dokumentieren Sie die Ergebnisse des Brainstormings (z.B. durch Einscannen der Ideenblätter). Einigen Sie sich innerhalb der Gruppe auf eine der drei vorgestellten Projektideen, die Sie im Praktikum umsetzen. Lösen Sie dann gemeinsam die folgenden Aufgaben:

- a) Beschreiben Sie knapp einen **typischen Benutzer** Ihrer App. Entwerfen Sie dazu eine „Persona“. Eine „Persona“ ist ein fiktiver aber typischer Nutzer, der die Zielgruppe repräsentiert.
- b) Überlegen Sie sich die **Hauptfunktionen** Ihrer App und notieren Sie weitere Features und Entwurfsideen. Diskutieren Sie gemeinsam, welche Funktionen am wichtigsten sind und beschränken Sie sich auf diese.
- c) Führen Sie **Interviews** mit 2 typischen Benutzern. Beschreiben Sie ihnen die Idee der App und finden Sie heraus, wie sie ankommt.
- d) Erstellen Sie ein **Storyboard** des Interaktionsablaufs.
- e) Erstellen Sie einen **Papier-Prototyp** der die einzelnen Screens und Abläufe darstellt.

→ Erstellen Sie eine PowerPoint/Keynote Präsentation zu diesen Punkten

DESIGN PROCESS

Iterative Design: DIA Cycle



Focus on Users

- Decide **who** the users will be
- Decide **what** they will be doing with the system
- “You can’t figure out what people want, need, can do, and will do without talking to them.”
- Find real people interested in your planned system (otherwise there’s a problem)
- Methods
 - Talk with users
 - Visit user locations, observe (and videotape) users working
 - Have users think aloud, try it yourself
 - Use surveys and questionnaires

User Profiles or “Personas” (Cooper, 1998)

- Short profiles of typical users
 - Prototypical user for a specific user group
 - Fictitious individual with concrete characteristics
- Building personas
 - Often built from interview results
 - Synthesize fictitious users from real user characteristics
 - Develop multiple personas for different types of users
- Bring them to life
 - With a name, characteristics, experience, personal background, environment they are located in, goals, tasks, skill levels, etc.
- Base design decisions on the needs of the personas

Personas Example

(Cooper, About Face, Chapter 5)

Building a car that pleases everyone



Building a car based on three personas (representing larger groups)



Marge, *mother of three*

Marge wants safety and room for many passengers. A minivan meets her needs.



Jim, *construction worker*

Jim wants cargo space and the ability to carry heavy load. A pickup truck meets his needs.



Alessandro, *software engineer*

Alessandro wants sporty looks and speed. A two-door sports car meets his needs.

Example Persona: Bob



Bob is **52 years old** and works as a **mechanic** with an organisation offering road service to customers when their car breaks down. He has worked in the job for the past 12 years and knows it well. Many of the younger mechanics ask Bob for advice when they meet up in the depot as he always knows the answer to tricky mechanical problems. Bob **likes sharing his knowledge with the younger guys**, as it makes him feel a **valued part of the team**.

Bob works rolling day and night shifts and spends his shifts attending breakdowns and lockouts (when customers lock their keys in the car). About 20% of the jobs he attends are complex and he occasionally needs to refer to his standard issue manuals. Bob tries to avoid using the manuals in front of customers as he thinks it gives the impression he doesn't know what he's doing.

Bob has seen many changes over the years with the company and has tried his best to move with the times. However he found it a bit **daunting** when a new **computer** was installed in his van several years ago, and now he has heard rumors that the computer is going to be updated to one with a bigger screen that's meant to be faster and better.

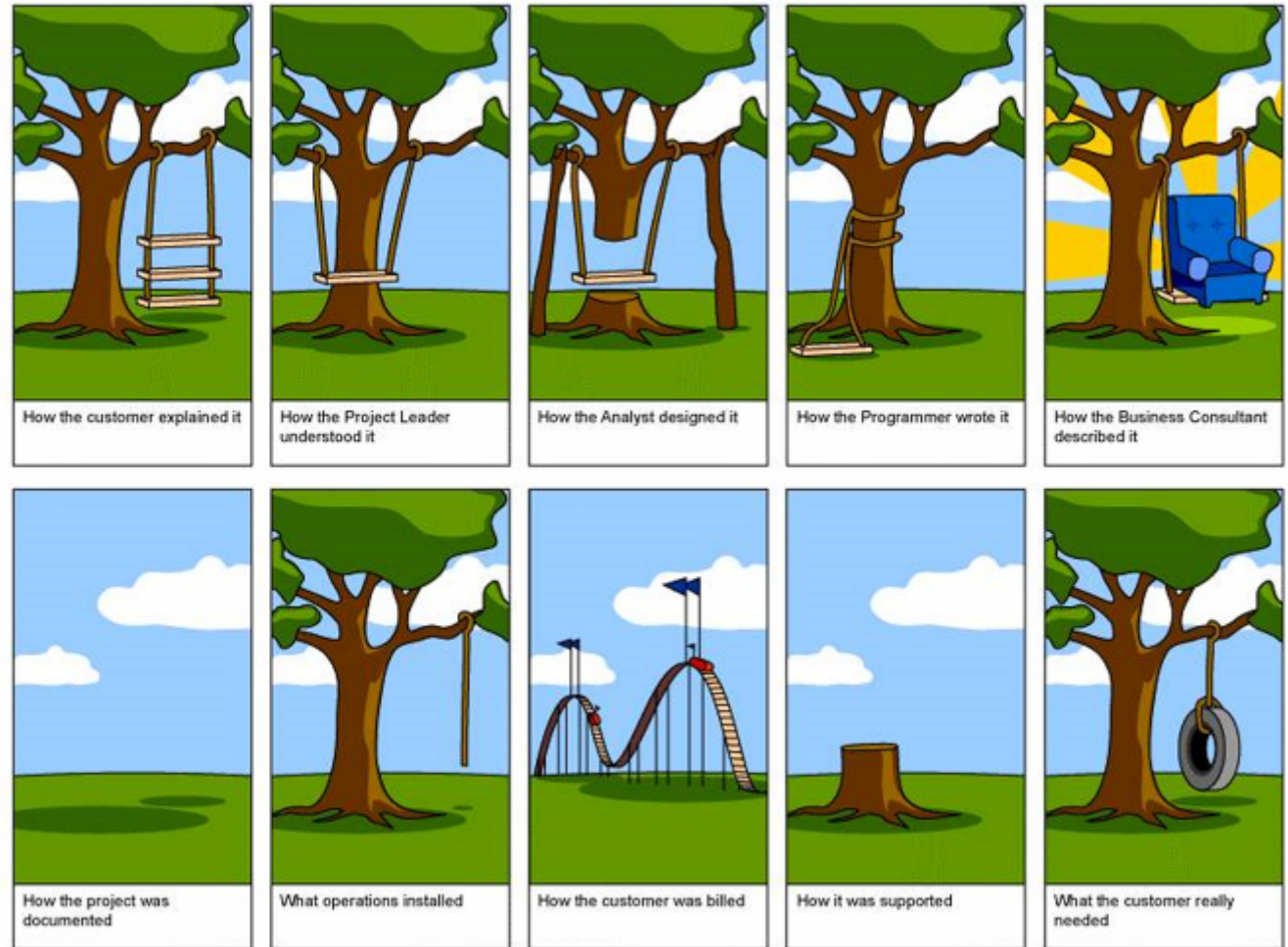
Bob's been told that he will be able to access the **intranet** on the new computer. He has heard about the intranet and saw once in an early version on his manager's computer. He **wonders if he will be able to find out what's going on in the company more easily**, especially as customers seem to know more about the latest company news than he does when he turns up at a job. This can be embarrassing and has been a source of frustration for Bob throughout his time with the company.

Bob wonders if he will be able to **cope with the new computer system**. He doesn't mind asking his grandchildren for help when he wants to send an email to his brother overseas, but asking the guys at work for help is another story.

Source: http://www.steptwo.com.au/papers/kmc_personas/

Getting the Requirements Right

Major cause of project failure:
unclear requirements



Source: Preece et al.: Interaction Design



Gathering Data

- Researching similar products
 - State-of-the-Art
 - Sets level of user expectation
- Interviews
 - Good for exploring issues
 - New perspectives
 - Props, e.g. sample scenarios, paper prototypes
- Focus groups
 - Group interviews
 - Multiple viewpoints, highlighting areas of conflict
 - Can be dominated by individuals

Initial Design Techniques: Storyboarding

- What?

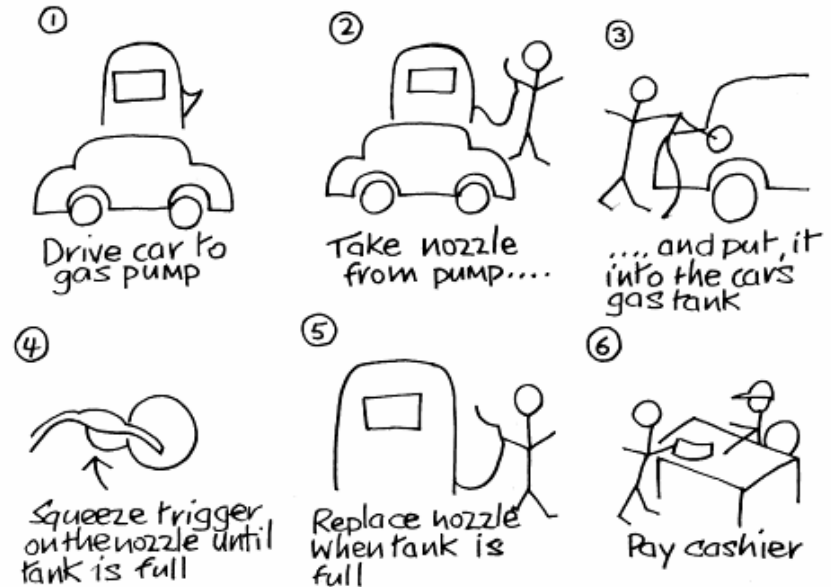
- Sequence of single images
- Like visual outline of a movie
- Illustrates interaction

- Why?

- Describes task showing environment, user, and computer
- Or describes UI as series of screen images
- Helps working out interaction details
- Great at-a-glance overview of interaction
- Helps developing usage scenarios

- When?

- After describing a task, storyboard it, then take back to user



Interviews

- Unstructured
 - Not directed by a script
 - Rich but not replicable
- Structured
 - Tightly scripted, often like a questionnaire
 - Replicable but may lack richness
- Semi-structured
 - Guided by a script but free to explore interesting issues in more depth
 - Good balance between richness and replicability

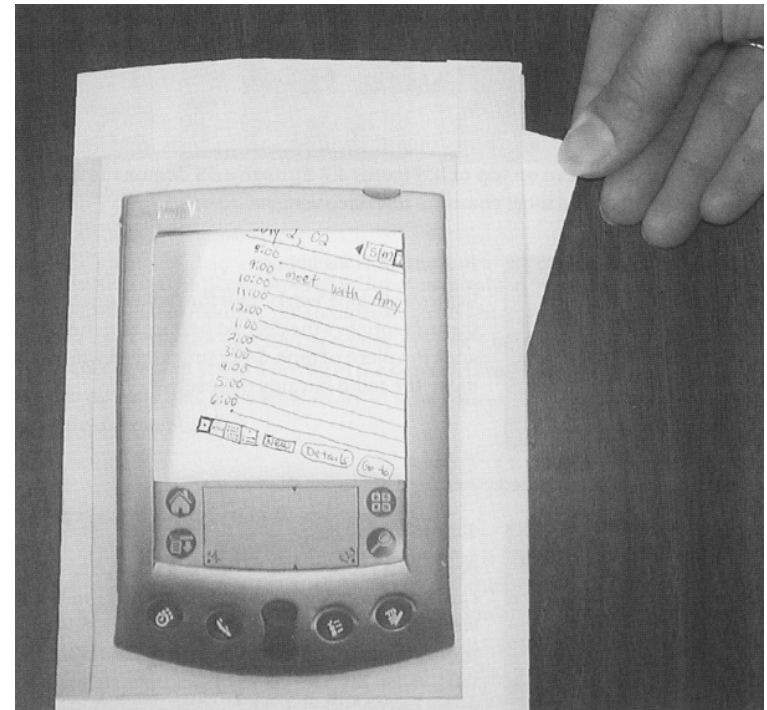


How to Ask Questions

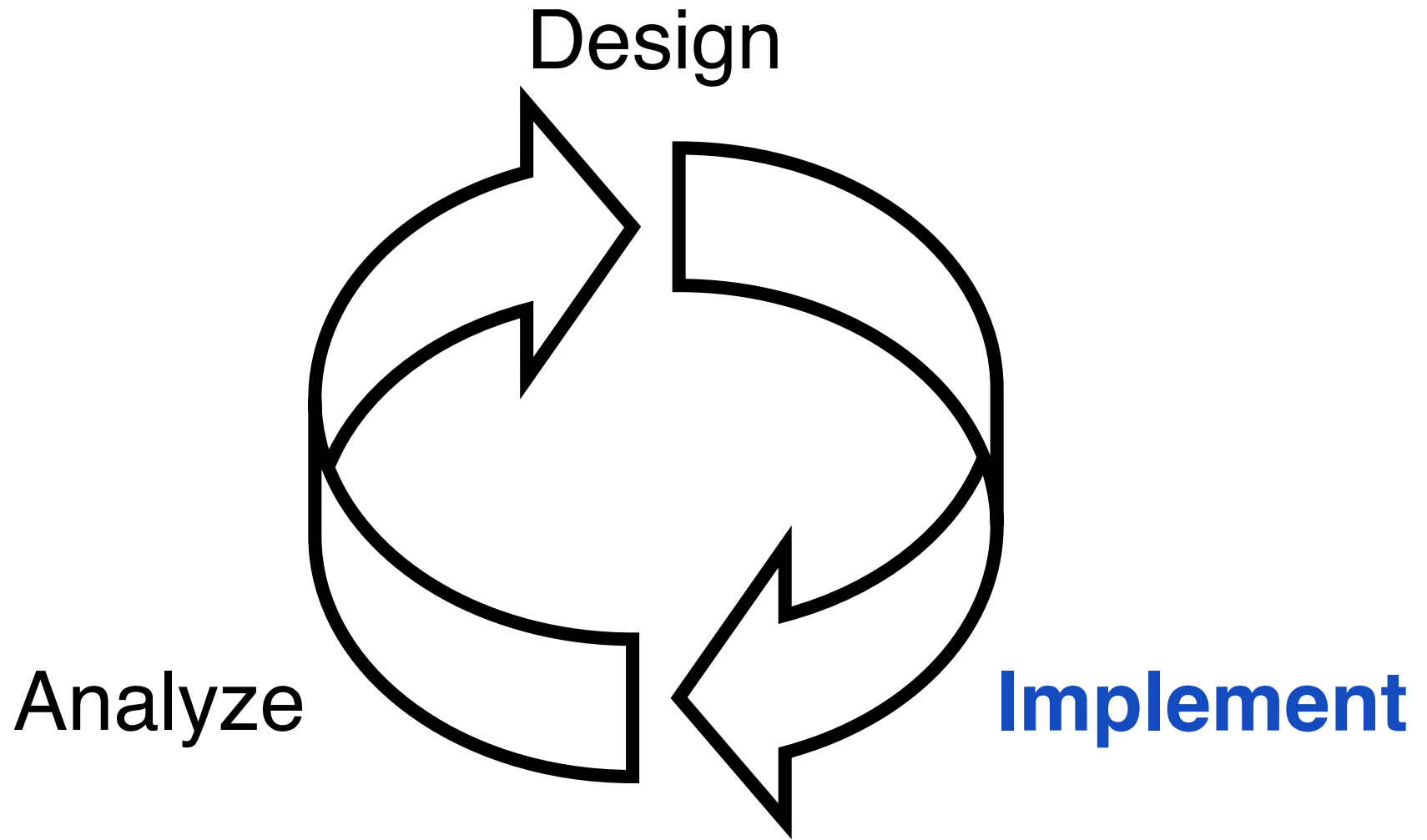
- Clear and simple, not too broad
 - “How do you like the UI?” is too general!
- Affording logical, quantitative answers
 - Bad questions give unusable or wrong answers
 - Open vs. closed questions
- Users don't always answer truthfully
 - Lack of knowledge, bad estimates, embarrassment
 - So formulate questions carefully, maybe indirectly
- No leading questions!
 - For initial input, do not focus on presenting your design ideas, but on learning about the task



PROTOTYPING

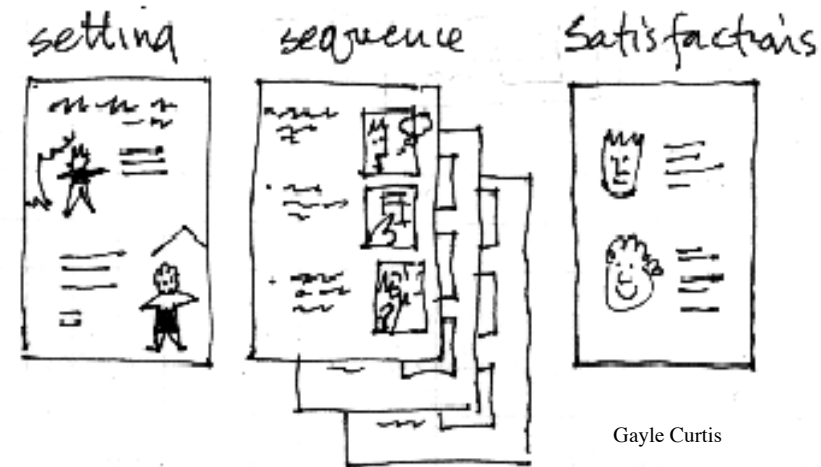
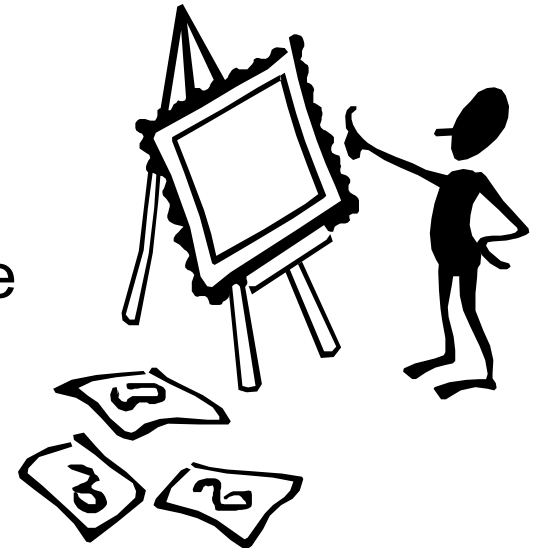


DIA Cycle: How to realize design ideas?



Low-Fidelity Paper Prototypes

- First prototype, quick and cheap
- Paper and pencil mockup of user interface
 - Rough sketches of the main screens and dialogs
 - Textual description of interface functions and relationships between screens
- Goals
 - Brainstorming
 - Expert review of interaction flow
 - First user feedback
 - User tests



Gayle Curtis

Paper / Post-it Prototype Process



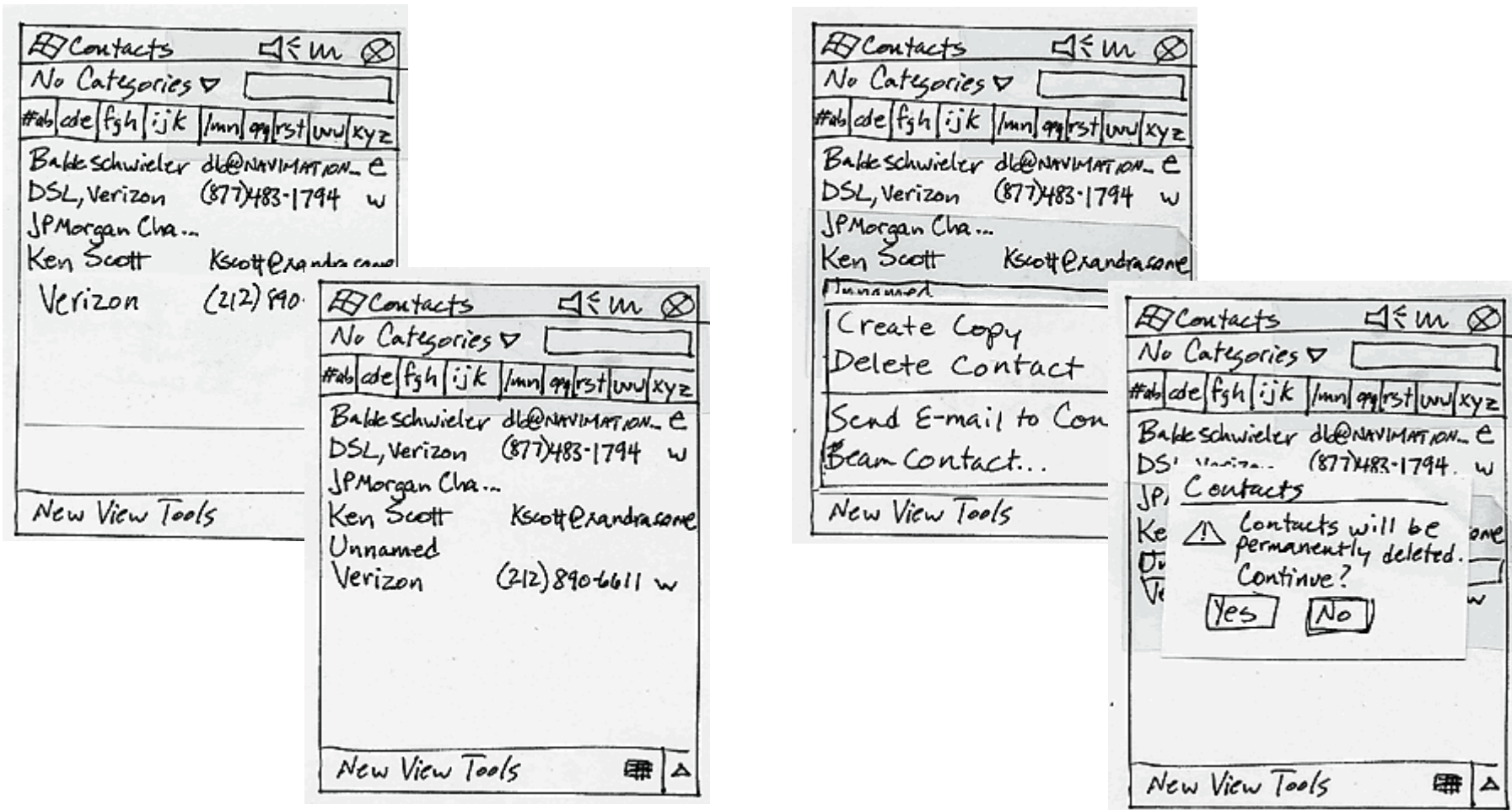
Collaboratively creating
the prototypes

Reviewing the
prototypes



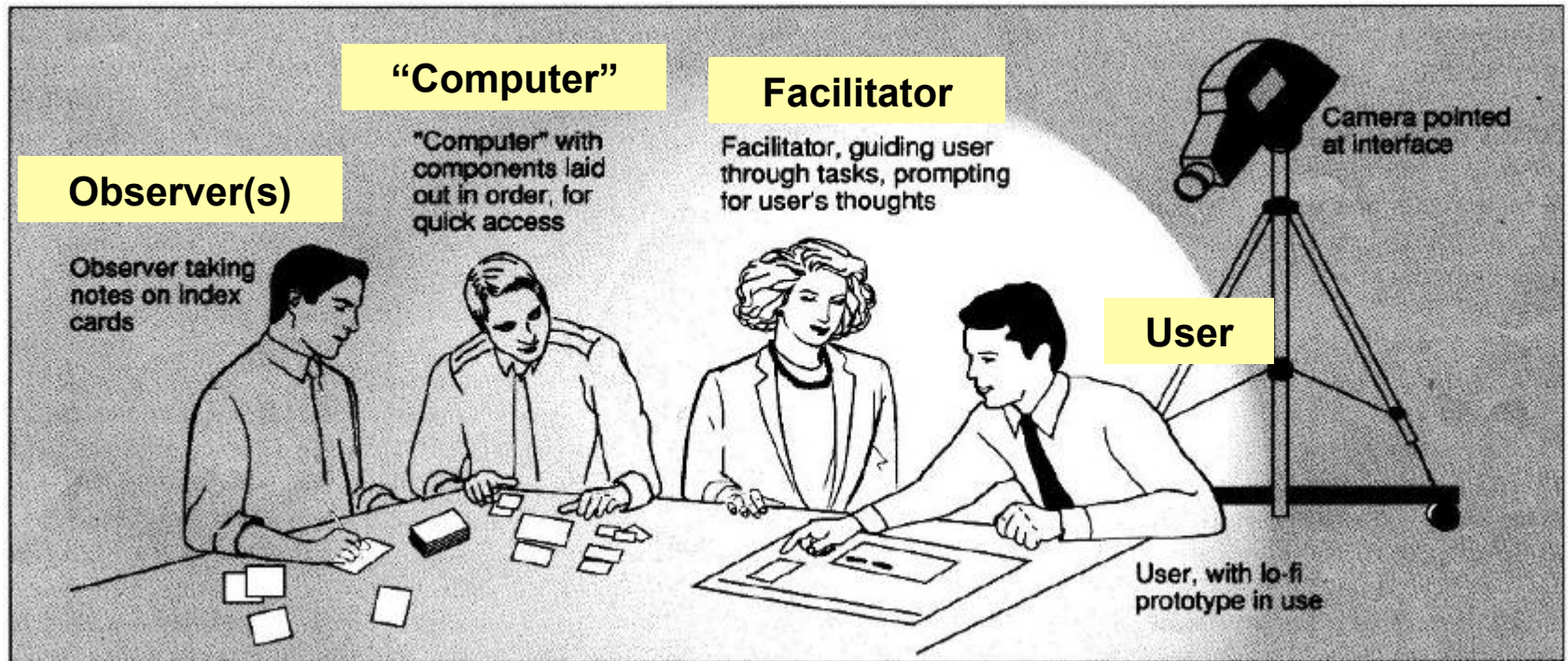
Source: http://www.pocketpcmag.com/_archives/may03/e_prototyping.asp

Paper Prototype Examples



Source: http://www.pocketpcmag.com/_archives/may03/e_prototyping.asp

Low-Fidelity User Testing



Marc Rettig: Prototyping for Tiny Fingers

- Select users
- Prepare test scenarios, drawn from task analysis
 - familiar data, realistic tasks
- Practice
 - team members know their roles, no “computer” delays

Low-Fidelity Prototype Revision

- Evaluation of test results
 - Arrange paper prototype on table
 - Pile note cards next to component
- Summarize and prioritize problems
 - Written report on findings
- Prototype refinement
 - Agenda for meeting to discuss design changes
 - Attach post-it notes with changes to each component

