

# Human Factors and Human-Machine Interaction

## Usability Engineering – Evaluation: Usability Tests

**FACULTY**

OF COMPUTER SCIENCE

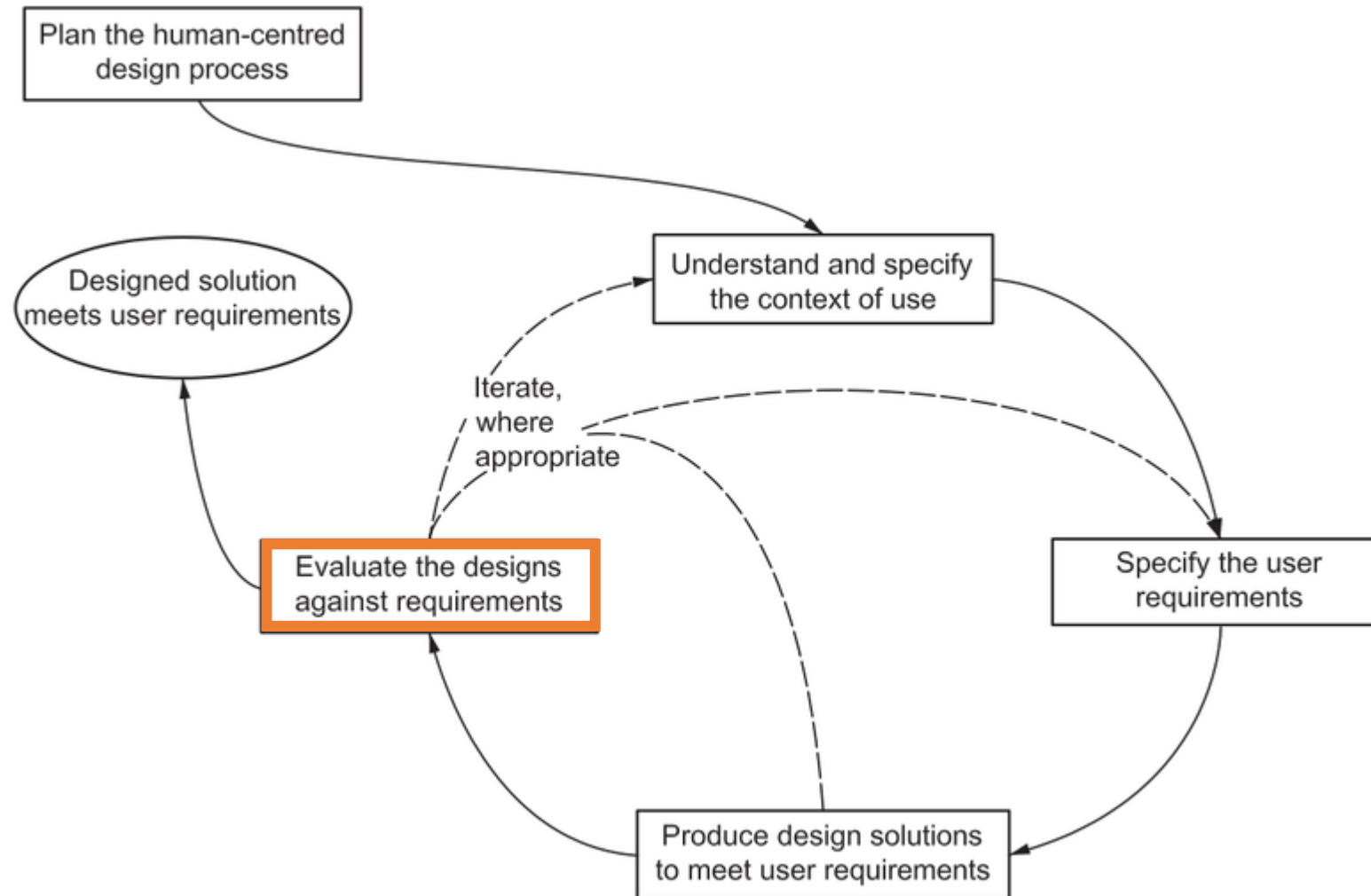


# OVERVIEW

- Motivation
- Demo Test
- Recommendations
- Literature



# USABILITY: PROCESS







Steve  
Krug



# Why Usability Testing?



# WEB DESIGN FUNNIES

Today's episode: "Religious Debates"

featuring...

Caroline makes a suggestion...

Kim the  
Project  
Manager

Rick from  
Marketing

We could use a  
pull-down menu for  
the product list.

Bob the  
Developer

Caroline the  
Designer

I hate  
pull-downs.

People don't like  
pull-downs. My father  
won't even go near  
a site if it uses  
pull-downs.

Well, I don't think most  
people mind them.  
And they'd save us a  
lot of space.

Besides, have  
you got a  
better idea?



CEO

Registration

Follow these 2 quick steps for **FREE** stock tracking, analyst alerts, bank account tracking, and much more!

**Already Registered?** Click here to sign in.

Step 1: Enter a Website ID and enter your email address and zip code.

Website ID:  (Use 4-40 letters, numbers, dashes and/or underscores. No spaces)

Email Address:

ZIP Code:

☒ YES, I would like to receive periodic financial updates, earnings from Quicken.com via email. (You can unsubscribe later if you want.)

[Continue Step 2](#)

Developer



Designer



Business development



## USABILITY TESTING: INTRO

- Not all people are the same - in fact, most are **different**
- **Focus groups** are not usability tests
- Better to have **one** test than none - Why? Because tests always work!
- Better to have a test at the **beginning** than 50 at the end





# DEMO USABILITY TEST

<https://www.youtube.com/watch?v=QckIzHC99Xc>



# USABILITY TESTING

- "Definition": *In a usability test, you observe a single user as they attempt to solve a typical task (either on a website, a prototype, or the designs of a new product) in order to identify and address issues that confuse or frustrate them.*
- Qualitative vs. quantitative
- Most severe problems are easy to find
- Usability tests provide insights into **why** users do certain things



# USABILITY TESTING

- *A morning a month, that's all we ask* (Agile: every two weeks)
- *Start earlier than you think makes sense*
  - No need for a functional product
  - Napkin test
- *Recruit loosely and grade on a curve*
  - Representativeness is not crucial
  - Three per session



# UT: TASKS → SCENARIOS

- Selecting tasks
  - Important!
  - Represent actual user goals
  - Quantity/length can vary (one to ten; max. 35 minutes)
- Developing (UT) scenarios:
  - Provide tasks with details and context, as necessary
  - From the perspective of a persona, as necessary
  - Use user vocabulary
  - Print: one scenario per A5 page
- Pilot test





# UT: PHASES

- Introduction – 4 min
- Questions – 2 min
- "Home Page Tour" – 3 min
- Tasks & Scenarios – 35 min
- Tips:
  - If you don't know what the user is thinking, ask
  - Encourage participants to think aloud (Thinking Aloud)
  - Remain neutral
  - Participants should not be in a worse condition after the test than before



# USABILITY TESTING: VARIANTS

- **Classic:**
  - Usability lab with observation room
  - Many & representative participants
  - Cost: \$20,000 - \$50,000
- **Discount Usability Testing:**
  - No need for a lab
  - Fewer participants are sufficient
  - Cost: \$5,000 - \$10,000
- Alternative: **Do-it-yourself UT**



## UT.: CLASSIC VS. DIY

	Classic or Discount	DIY
<b>Time Investment</b>	1-2 days for testing, reporting, presentation, further planning	One morning per month with subsequent debriefing
<b>When</b>	Towards the end of development	Continuously
<b>Iterations</b>	One iteration per project	Once per month
<b>Participants</b>	Approx. eight	Three
<b>Participant Selection</b>	Target group	Relatively arbitrary
<b>Where</b>	Off-site, Usability Lab	On-Site
<b>Observers</b>	Few observers due to duration	Short duration → many observers
<b>Reports</b>	20-50 pages	Short email
<b>Analysis</b>	Experimenter	Development team plus stakeholders
<b>Purpose</b>	Identify as many problems as possible	Identify the most critical problems
<b>Cost</b>	\$ 5 – 10.000	\$ 100 - 300



Half a day every month

June						
Su	Mo	Tu	We	Th	Fr	Sa
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			
July						
Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
1	2	3	4	5	6	7
August						
Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4
5	6	7	8	9	10	11

Thursday, June 24	
9 <sup>am</sup>	First test
10 <sup>am</sup>	Second test
11 <sup>am</sup>	Third test
12 <sup>pm</sup>	
1 <sup>pm</sup>	Debriefing lunch







# Start earlier than you think is necessary

## Usability Testing Checklists

### Three weeks before

- ☐ Figure out what you're going to be testing (site, wireframes, prototype, etc.)
- ☐ Create your list of tasks to test
- ☐ Decide what kind(s) of users you want to test with
- ☐ "Advertise" for participants
- ☐ Book a test room for the entire morning with Internet access, table or desk and two chairs, and speakerphone
- ☐ Find a place near the test room for participants to sit and wait when they arrive
- ☐ Book an observation room for the entire morning with Internet access, table and enough chairs for observers, speakerphone, and projector and screen (or plan to bring a projector or large monitor)
- ☐ Book the observation room or a similar-size room for the debriefing lunch

### Two weeks before

- ☐ Get feedback on your list of tasks from the project team and stakeholders
- ☐ Arrange incentives for participants (e.g., order gift certificates, requisition cash)
- ☐ Start screening participants and scheduling them into time slots
- ☐ Send "save the date" email inviting team members and stakeholders to attend

### One week before

- ☐ Send email to the participants with directions, parking instructions, location of the test room, name and phone number of someone to call on the test day if they're late or lost, and the non-disclosure agreement if you're using one
- ☐ Line up a stand-by participant in case of a no-show
- ☐ If this is your first round of testing, install and test the screen recording and screen sharing software



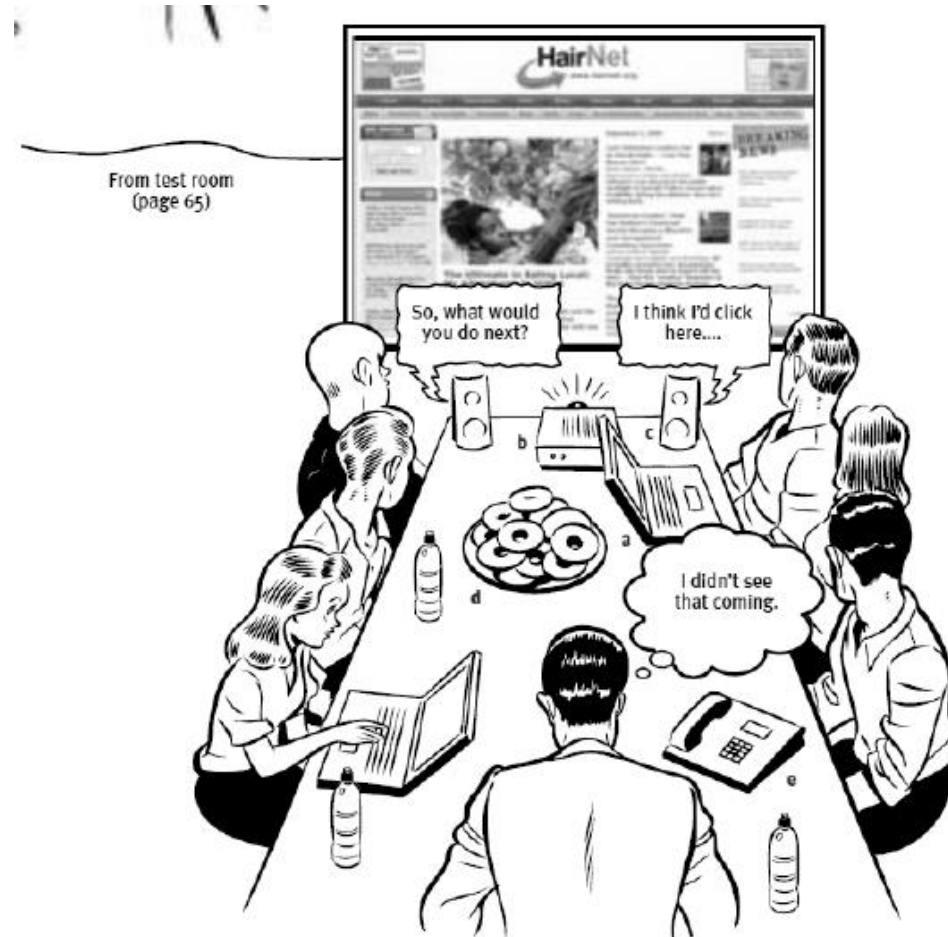


## Recruit loosely and grade on a curve.





Make it a spectator sport.



From test room  
(page 65)

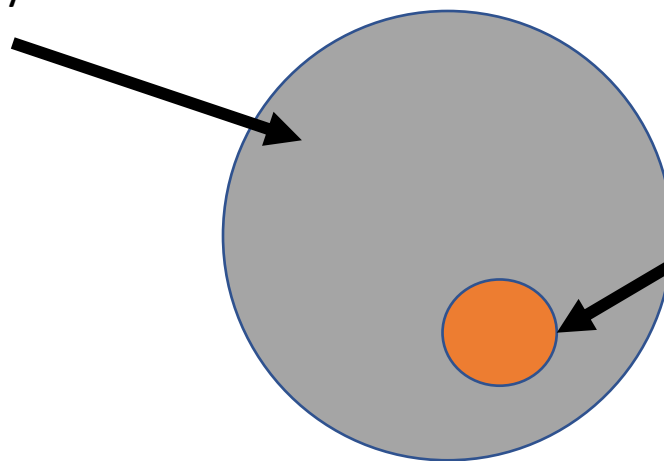
a Computer b Projector c Speakers d Snacks e Speakerphone



# PROBLEM: IT WORKS!

- Usability testing **identifies many problems** in a short amount of time.
- You discover more problems per day than can be **fixed** in a month.

Problems that you identify  
with few participants.



Problems that you can  
address with your resources.







**Focus on a small number of important problems.**

### Top Three Usability Problems

After each test session, list the three most serious usability problems you noticed.

Participant #1

1. ....
2. ....
3. ....

Participant #2

1. ....



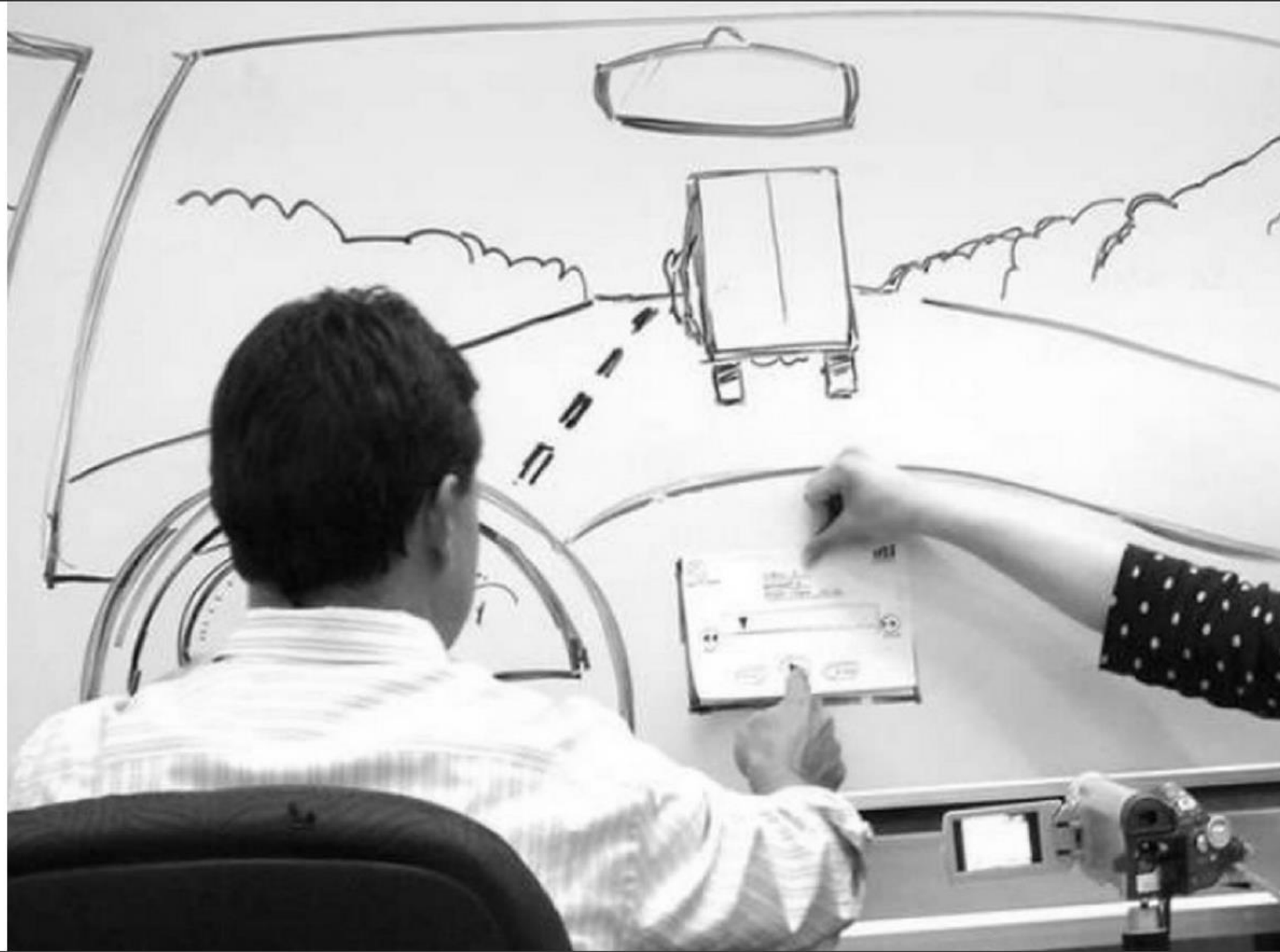


**When fixing problems, do no more than necessary.**



# MOBILE USABILITY TESTING








# THE TOP FIVE PLAUSIBLE EXCUSES FOR NOT TESTING

„We don't have the time“	Simplify testing as much as possible No additional to-dos for all involved Time savings through shortened discussions
„We don't have the money.“	Do-it-yourself tests are cost-effective, especially when participants are recruited on their own
„We don't have the expertise.“	Every test produces usable results. <i>It's not rocket surgery</i>
„We don't have a usability lab.“	We don't need it! - Room with desk, chairs, computer plus observation room with monitor
„We wouldn't know how to interpret the results.“	The most important lessons are obvious. The most serious problems are hard to overlook.

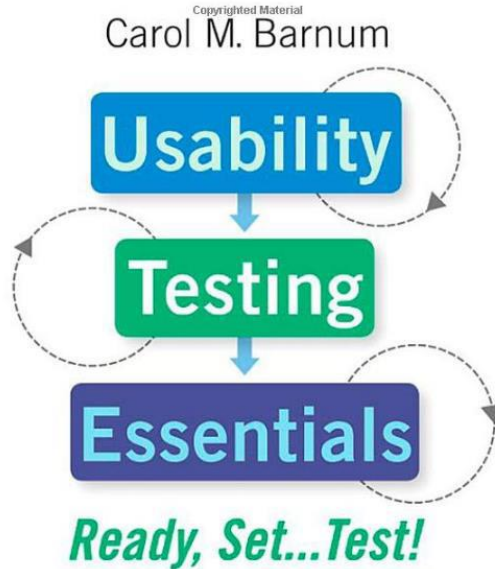


The how-to companion to the bestselling *Don't Make Me Think!*  
A Common Sense Approach to Web Usability

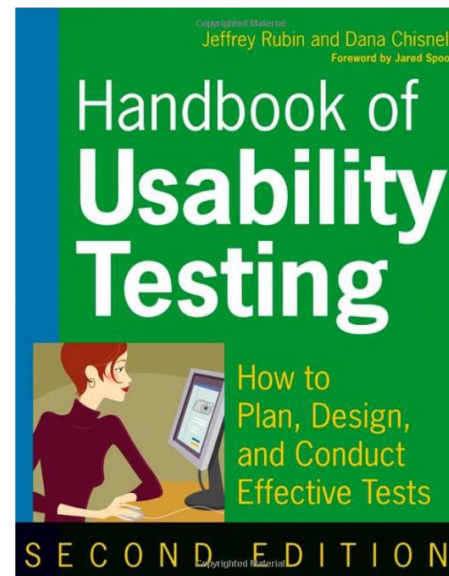
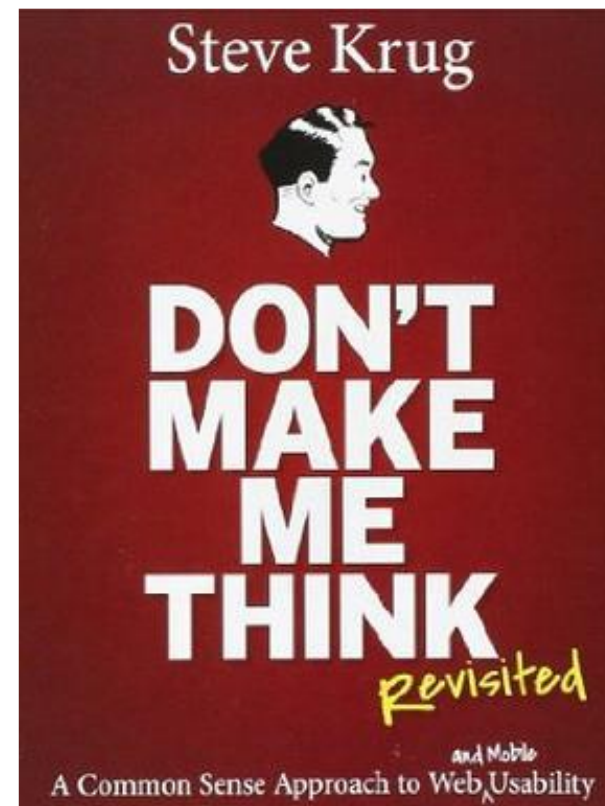
# Steve Krug ROCKET SURGERY MADE EASY



The Do-It-Yourself Guide to Finding  
and Fixing Usability Problems



Foreword by Steve Krug, author  
of *Don't Make Me Think!*  
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# EXERCISE: USABILITY ENGINEERING

- Option 1: Design the user interface of an **alarm clock** (which can also be an app).
- Option 2: Design the user interface of an **answering machine** (which can also be an app).
- Option 3: Design the user interface of an app that allows you to track and assess the **fuel consumption of your car**.
- Option 4: **Any other app** with similar complexity



# EXERCISE: USABILITY TESTS

1. Create plausible scenarios
2. Create a usability test plan and justify your decisions

