

# HCI Fundamentals

**Introduction to the course**

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Academic Year 2026/2027

# Disclaimer

**Students (you!)**

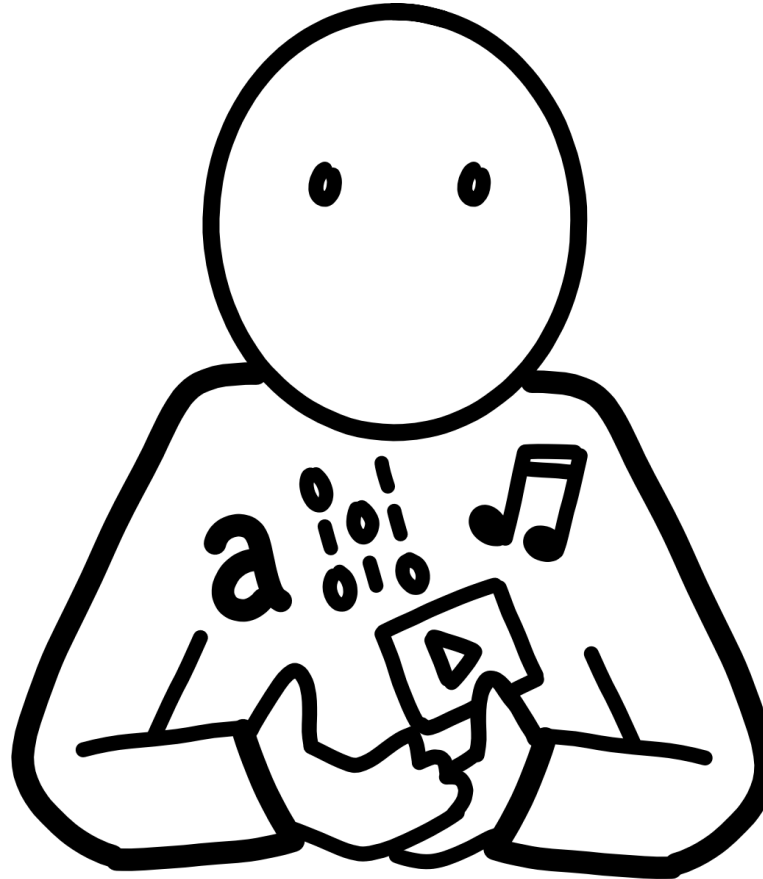
*Expectations?*

**Students (last year)**

*End-of-course questionnaire*

**Teachers (us)**

*Goals and  
motivation*



**Everybody here**

*Topics, organization, and  
exam*



Students  
(you!)



What do you hope to learn in this course?



Teachers  
(us)

# Goals and Motivation

# Goals

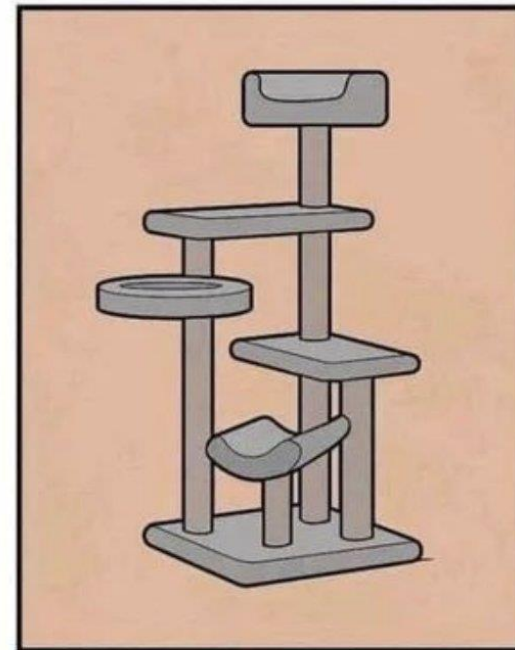
- Understanding how to design the user experience when interacting with modern applications, devices, and environments
- Gaining in-depth knowledge of a human-centered process to create interactive systems
  - and how to apply it in practice
- Becoming familiar with methods to gather and listen to users' needs
- Learning to evaluate interactive systems with their users

# Why?

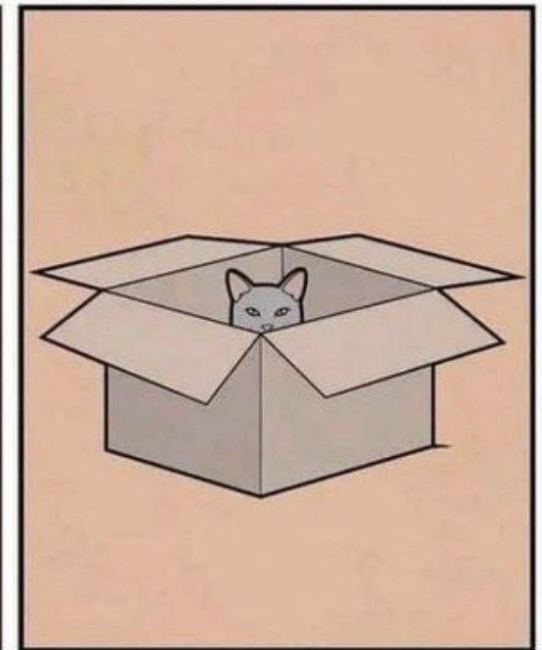


source: [https://www.instagram.com/p/CT8qVYaDE\\_R/](https://www.instagram.com/p/CT8qVYaDE_R/)

**Product  
features**

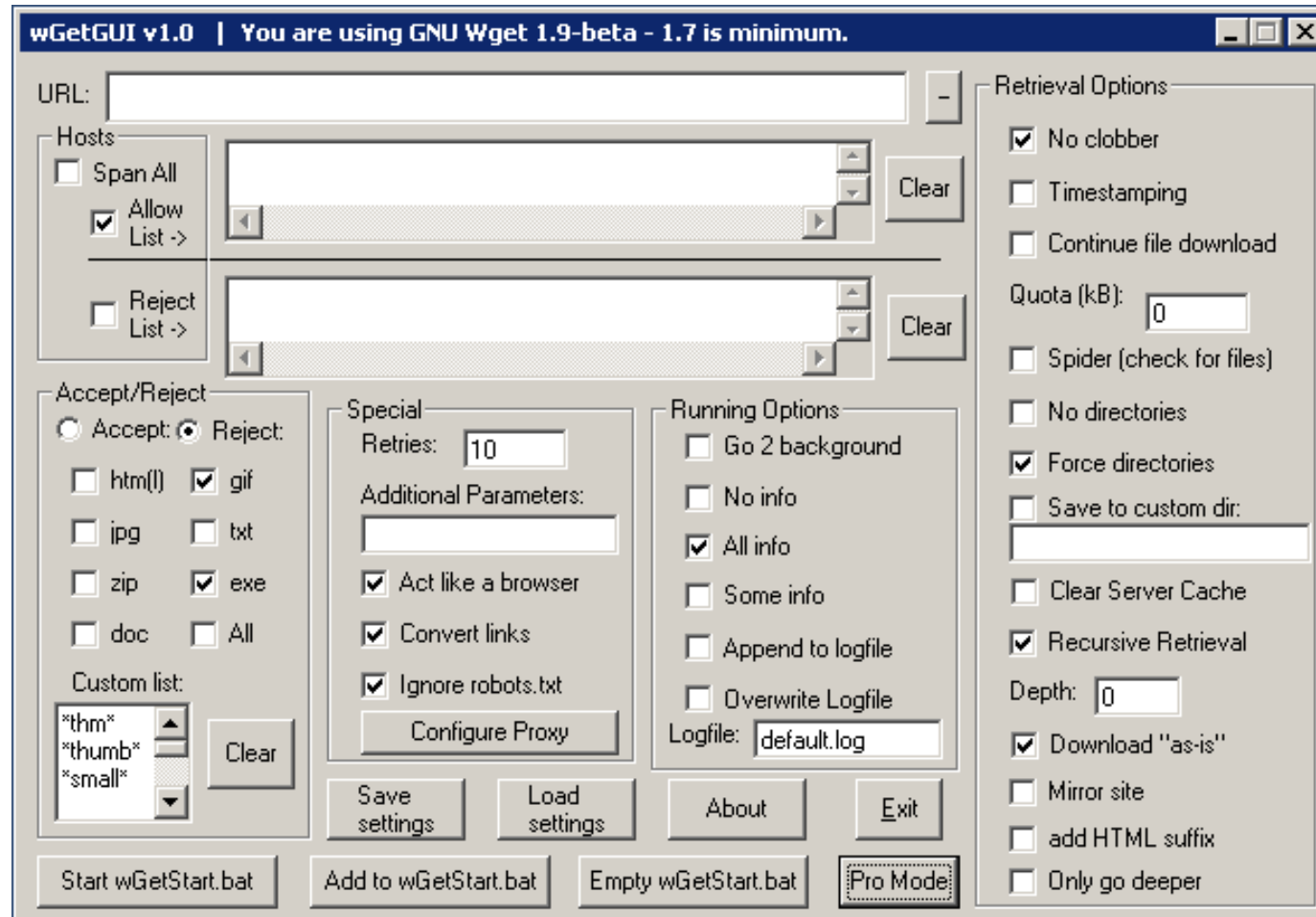


**User  
needs**



© \_yes\_but

# Why?



# How to Design and Develop Good Interactive Systems?

- *Iterative and human-centered process*
- People needs (not “wants”)
- Design principles and guidelines
- Usability goals
- Prototyping (rapidly and frequently)
- Evaluation (various kind)
- Programming



Students  
(last year)

# 2025 End-of-course Questionnaire

➔ From the former “Human Computer Interaction” course

Full responses: 83%    Course satisfaction: 96%    Teacher(s) satisfaction: 99%

- Relevant critiques\*:
  - More time for the first assignment
  - Some constraints in the assignments should be relaxed
  - More initial guidance on the projects

*\* considered in planning this year's course*



Everybody  
here

# Topics, Organization, and Exam

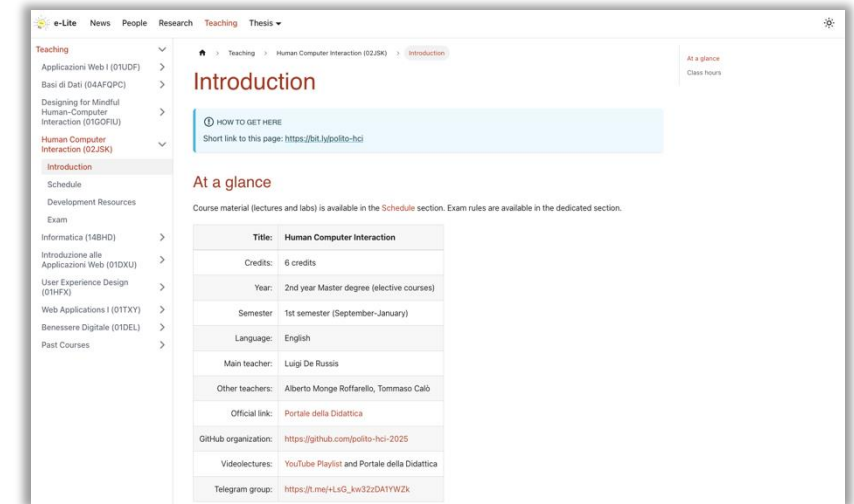
# Course Topics... At a Glance!

1. Introduction to HCI (*this week!*)
2. Problem framing and needfinding
3. Tasks and their analysis
4. Prototyping at various levels of fidelity
5. Design guidelines, principles, and heuristics
6. Visual design and design patterns
7. Heuristic evaluation
8. Usability testing
9. Advanced interactions



# Learning Material - UPDATE

- Course website – <https://elite.polito.it/hci-fun-ii>
  - Slides, exercises, lab texts
  - Full schedule
  - Templates and deadlines
  - Supplementary material
- Video lectures (for classes, only)
  - YouTube - <https://www.youtube.com/playlist?list=PLF8hxTIqIFzU>
  - Portale della Didattica
- GitHub - <https://github.com/polito-hci-fun-2026>
  - Slides, lab texts, examples, ...





# Communications - UPDATE

- We will use **Telegram** for quick communications
  - Among students, with teachers, etc.
- Join at <https://t.me/+jsURNfA-TclyODVk>
- Two **topics**:
  - News and Updates -> Announcements, reminders, and official information
  - Q&A -> For questions and feedback
- Private conversations can be done via direct messages
- Emails are an **alternative** for longer, slower, and private conversations
  - Use “Office Hours”, too

# Office Hours – UPDATE/REMOVE

## Why?

- An opportunity for *individual students (or groups)* to discuss any need or challenge
- To clarify information and ask questions on the course
- To discuss academic or career goals
- To know more about certain topics
- ...

## When?

- On request, in person or remotely

# Course Methodology

- Project-based
  - students learn by doing a project, in teams
- Problem-based
  - the project work starts from elicited and real users' needs (*needfinding*)

# Course Methodology

- Projects developed **during** the semester and **step-by-step** (*assignments*)
  - Within a given *theme* and mostly in the *labs*
  - Iterating on *prototypes*
- During the labs: continuous **feedback** to the teams
  - Feedback is there to help students improve the next step in their projects in addition to possibly improve the final grading

# Course Organization - UPDATE

- Classes
  - 3 h/week
  - Interactive lectures + exercises
- Laboratories
  - 1.5 h/week
  - 3 Lab slots
  - Starting from **Week 2**
  - For group projects
- **Exception:** first week
  - Class instead of Lab (first 3 hours)

|       | MO          | TU           | WE | TH | FR         |
|-------|-------------|--------------|----|----|------------|
| 08:30 |             |              |    |    |            |
| 10:00 |             |              |    |    |            |
| 11:30 |             |              |    |    |            |
| 13:00 |             |              |    |    |            |
| 14:30 |             |              |    |    | Lab<br>R1b |
| 16:00 | Class<br>11 | Class<br>10I |    |    | Lab<br>R1b |
| 17:30 |             |              |    |    | Lab<br>R1b |

# Classes

- In-person, *mostly* in rooms with power outlets at the desks
- Lectures video-recorded and made available soon after each class
  - not *streamed live*
  - not in-class exercises and labs
- **This week:** lecture on Friday at 14:30 (3 h)

# Laboratories

- Starting **October 2, 2026**
  - in rooms with power outlets at the desk
- For group activities
- Assignment text online some days in advance
  - we *aim* at “one week in advance”

# Laboratories

- **Collaborative** and interactive places, to work and share feedback
  - In-person attendance is *fundamental*!
  - Each team will be in the **same slot** and will work with the **same teacher** for the entire semester
  - The teacher is there to **support** the teams' work, not just reply at questions
- Two **main activities** within labs, identical for the three slots:
  1. Teams work on steps of the project with the guidance of the teacher
  2. Teams discuss their ongoing assignment work with the teacher and receive feedback

# Laboratories – UPDATE THEMES ORDER IF NEEDED

- Each of the three slots will have a specific **theme**
  - All the projects must fall in the slot's theme and specialize it
  - Slots must have around the same number of assigned teams
  
- 2026 themes:
  1. **Playful Health and Wellbeing** (14:30-16:00)
  2. **Playful Exploration of the World** (16:00-17:30)
  3. **Playful Education and Learning** (17:30-19:00)

# Teams

- 3-4 students (*preferably 4*)
- It is students' responsibility to form teams
  - Teachers may help, but not automatically assign anyone
- Teams cannot be changed during the semester
- In case of issues among teammates: please, **TALK** with the teacher
- Each team will work on their own GitHub repository
  - we will create and assign private repositories to each group



We will provide a *template* for the reports, which will need to be documents (not slides)

# About The Exam

1. **Project development** (in team, up to 20 points)
    - Final report – process, execution, and outcomes of *four group assignments*
    - Prototypes “source”
  2. **Heuristic evaluation** (individual, up to 6 points)
    - Report – outcome and execution of *one individual assignment*
  3. **Oral discussion** on the project (up to 4 points)
    - As a group, mandatory
- The realized project will be valid until the end of the **academic year**
  - Additional points (max 2) can be assigned for the participation and effort during the course, the project quality and creativity, and the oral discussion

# Evaluation Criteria

- Invested effort in the project activity, including the willingness to incorporate the provided feedback
- Originality, complexity, and richness of the work
- Methodological and technical correctness of the entire process
- Completeness and communication quality of the assignments' outcomes and report(s)
- Quality of the presentations and oral discussion
- Individual contribution

# Project Development

- **Goal:** to give hands-on experience with the modern human-centered design process described during the course
- Projects will be built **step-by-step** and mostly carried on *during* labs
- Project's topic proposed by each group
  - Within the chosen theme and based on *needfinding*
- *Group assignments* represent the various process steps
  - Start during a lab
  - Work and discuss with teachers (in the following labs)
  - Evaluated at the exam through reports and discussion

# (Planned) Assignments

- Assignment 1 [group]
  - *Needfinding*
  - Starts at week 2, ends at week 5 (duration: **4 week**)
- Assignment 2 [group]
  - *Storyboard and Low-fidelity prototype*
  - Starts at week 6, ends at week 7 (duration: **2 week**)
- Assignment 3 [individual]
  - *Heuristic evaluation on another group's low-fidelity prototype*
  - To be done **during** the labs of week 8 and 9; cannot be changed after
  - Results passed to the other group

# (Planned) Assignments and Checks – cont'd

- Assignment 4 [group]
    - *Medium- to high-fidelity prototype*
    - Starts and ends at week 10 (duration: **1 week**)
  - Assignment 5 [group]
    - *High-fidelity prototype and evaluation (+ final report)*
    - Starts at week 11, ends **one week before each exam date**
      - The course is composed of 14 weeks
- { Coding will start here, not before!

# Assignments and Checks – Summary

|    | W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 | W11 | W12 | W13 | W14 | ... | Exam<br>-1 week |
|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----------------|
| A1 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |                 |
| A2 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |                 |
| A3 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |                 |
| A4 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |                 |
| A5 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |                 |

# Oral Discussion

- **All teammates** present and presenting
- Each group will have 30 mins to:
  1. Give a brief *introduction* to the project (*no slides*)
  2. Do a *demonstration* of the implemented prototype, where students cover the main features and everybody in the team speak
  3. Answer some *questions* from the teachers, about what students showed and/or about the submitted report(s)
- **Beware:** the demonstration is typically the most critical part
  - it needs to be carefully prepared, and not rigged up at the moment
- Teachers will have already read the report(s) and had a look at the final prototype code, so there is no need to cover those

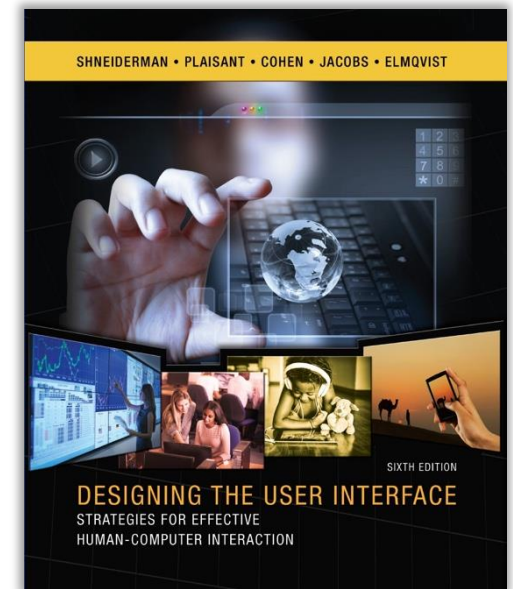
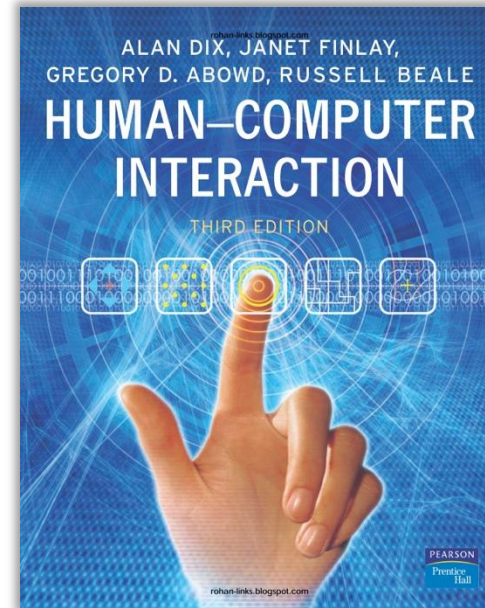
# Introducing... the Assignment Zero – UPDATE LINK

- Submit group composition
  - Group name
  - 4 persons (max), for each:
    - ID (matricola), Surname, Name, GitHub username, e-mail
  - Two preferred lab slots/themes
- Submission link (Google Form):
  - <https://forms.gle/VPhpeZboe9gRFFnU9>

**Deadline:**  
**October 1, 2026**  
End of Day (EoD)

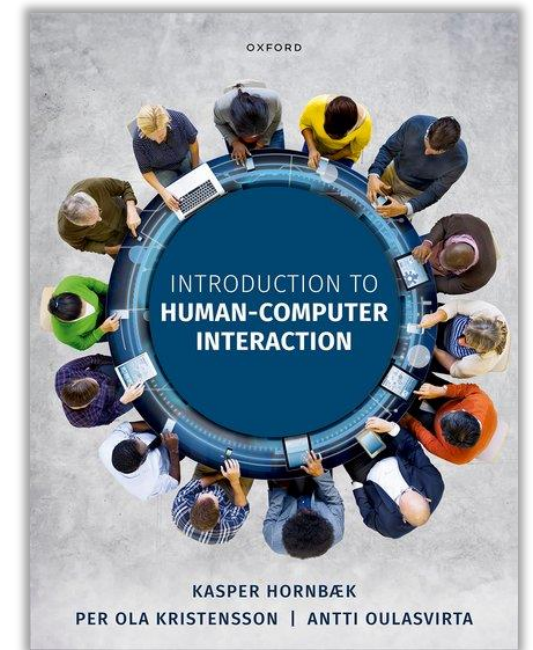
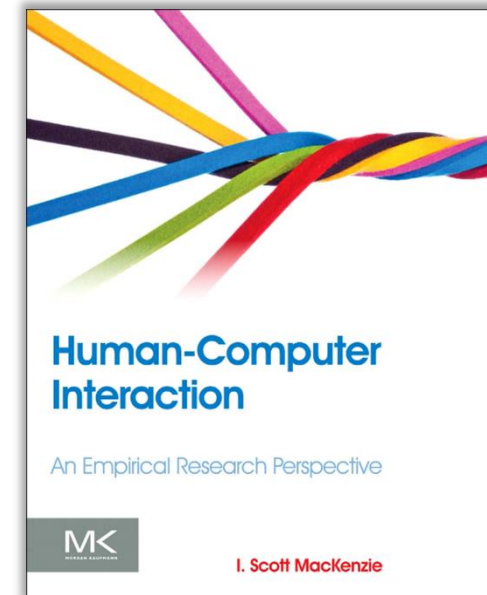
# Suggested Books

- Alan Dix, Janet Finlay, Gregory D. Abowd, Russel Beale, “Human-Computer Interaction”, 3<sup>rd</sup> edition, Prentice Hall, 2004, ISBN 0-13-046109-1
- Shneiderman, Plaisant, Cohen, Jacobs, Elmqvist, “Designing the User Interface: Strategies for Effective Human-Computer Interaction”, 6<sup>th</sup> edition, Pearson, 2016, ISBN 013438038X / 9780134380384



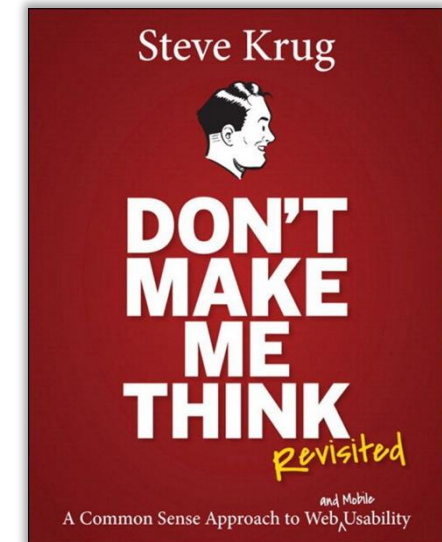
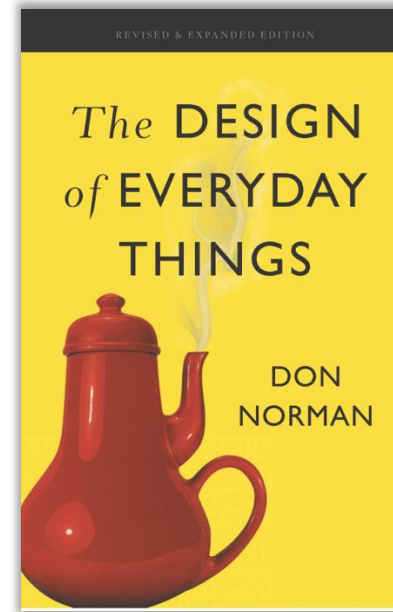
# Suggested Books

- I. Scott MacKenzie, “Human-Computer Interaction: An Empirical Research Perspective”, Morgan Kaufmann, 2013, ISBN 978-0-12-405865-1
- Kasper Hornbæk, Per Ola Kristensson, Antti Oulasvirta, “Introduction to Human-Computer Interaction”, Oxford Press, 2026, ISBN 978-0191959363



# Suggested Books

- Don Norman, “The Design of Everyday Things: Revised and Expanded Edition”, Hachette UK, 2013, ISBN 0465072992/9780465072996
- S. Krug, “Don’t Make Me Think: A Common Sense Approach to Web and Mobile Usability – revisited”, Pearson Education, 2014, ISBN 0321648781/9780321648785



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