HUMAN COMPUTER INTERACTION

Lecture 5:

Design Rules

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Google Class Room

What are design rules, and why do they important?

Design rules are reusable principles and recommendations that guide how an interface should look, behave, and respond to users.

Goal: usable interaction **Goal: fewer errors** **Goal: faster learning**

What they help designers control

- Consistency across screens and controls
- Visibility of actions and system status
- Useful feedback after every important action
- Prevention and recovery of user errors

Four forms of design rules

Principles

High-level ideas that shape design choices across many contexts.

Standards

Formal requirements or platform rules that should be followed.

Guidelines

Practical advice for labels, layout, readability, spacing.

Heuristics

Rules of thumb used for expert review and quick interface critique.

The key distinction

Principles are broad. Standards are strict. Guidelines are practical. Heuristics are evaluative. A strong designer uses all four together, not as separate silos.

Core rules every interface should satisfy

Consistency

Same actions should look and behave the same way.

Visibility

Users should see available actions and current system state.

Feedback

Every important action needs a timely response.

Simplicity

Reduce clutter and cognitive load.

Error prevention

Stop mistakes before they happen.

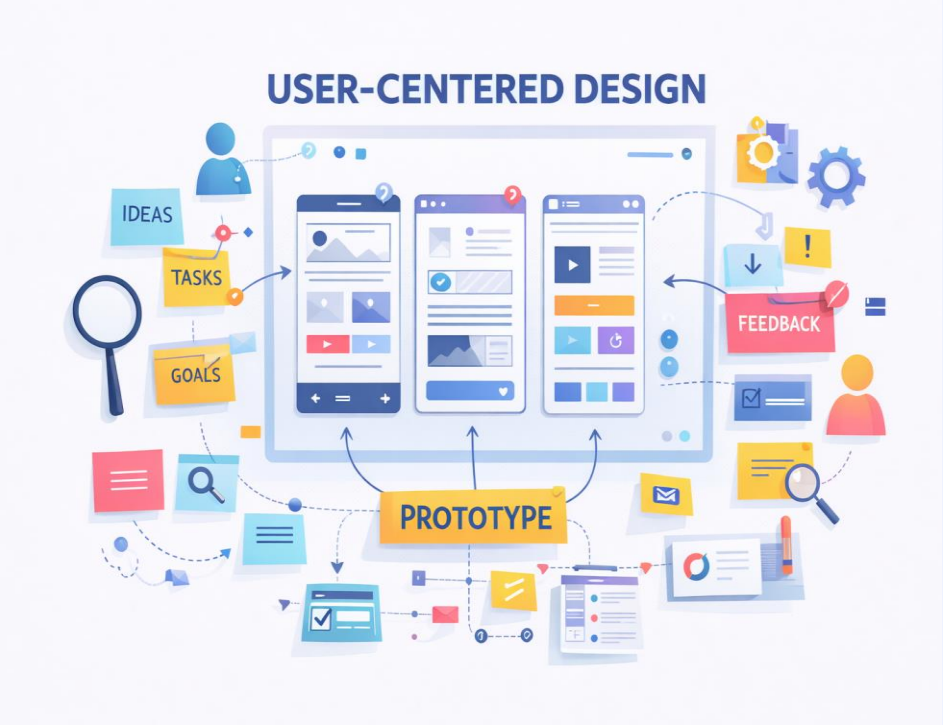
Recovery

If an error occurs, make repair easy.

Design rules support the whole user journey

Beyond the basics

- Match the real world: use familiar terms and sequences
- Recognition over recall: keep choices visible
- User control: offer back, cancel, undo, and edit
- Flexibility: support beginners and efficient experts
- Minimalist design: keep only what helps the task



Rules are not decoration. They shape the flow from ideas → prototype → feedback → revision.

Nielsen’s 10 usability heuristics

Classic expert checklist

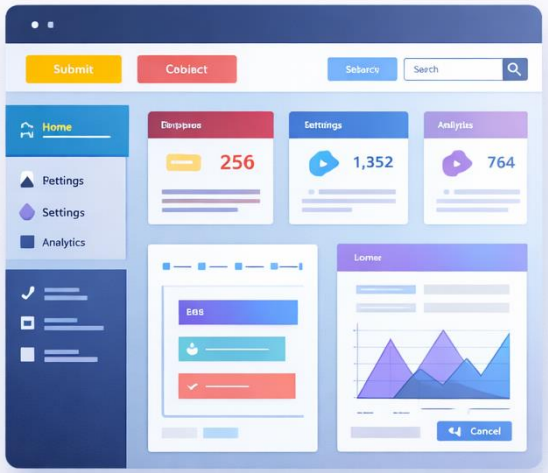
- 1. Visibility of system status
- 2. Match between system and real world
- 3. User control and freedom
- 4. Consistency and standards
- 5. Error prevention
- 6. Recognition rather than recall
- 7. Flexibility and efficiency of use
- 8. Aesthetic and minimalist design
- 9. Recover from errors clearly
- 10. Help and documentation

Use for quick interface review

Find usability issues early

Example: a strong interface vs a weak interface

Consistency



Inconsistency

What changes between the two screens?

- Predictable navigation supports faster learning
- Stable color meaning reduces hesitation
- Uniform controls improve trust and confidence
- Inconsistent labels and layouts force relearning

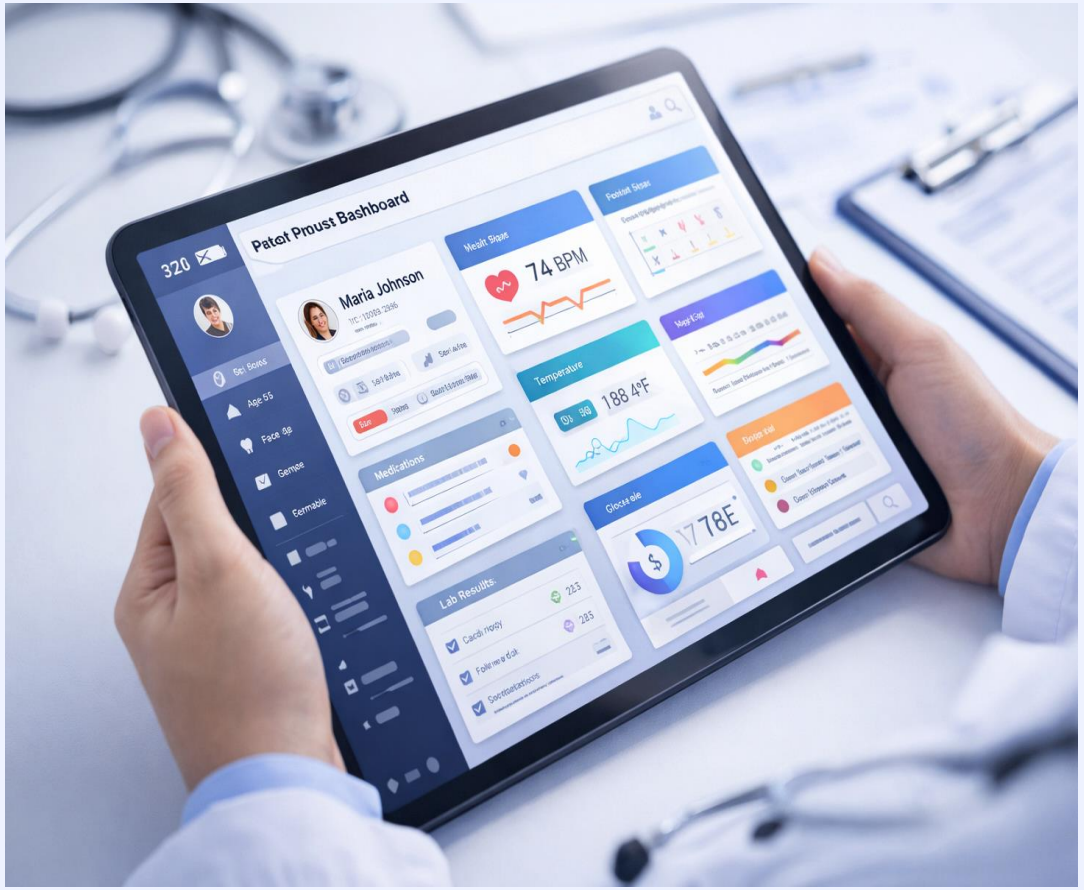
Good design = lower cognitive load

Applying design rules in healthcare interfaces

Why the stakes are higher?

- Patient identity must always be visible
- Warnings must stand out without becoming noise
- Medication, values, and labels must be readable
- Forms should prevent entry mistakes
- Navigation must stay clear under time pressure

Bad HCI in healthcare is not merely inconvenient; it can contribute to clinical error.



How to apply design rules in practice

1. **Understand users and tasks**
2. **Draft screens and interaction flows**
3. **Check against principles and heuristics**
4. **Test, revise, simplify, repeat**

Quick evaluation prompt Can the user see what to do, predict what will happen, avoid mistakes, and recover easily if something goes wrong?

In-class activity and homework

Classroom activity

- Pick an app or website students already use.
- Inspect it with five design rules or heuristics.
- Mark strengths, violations, and possible redesigns.
- Discuss which problems are cosmetic vs usability-critical.

Homework

Analyze one interface using at least five design rules. For each rule, include:

- rule name
- evidence from the interface
- whether it follows or violates the rule
- one improvement suggestion

Outcome: move from memorizing rules to applying them


Any Questions? Let's Code and Discuss!