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Interaksi Manusia dan Komputer

Week 06
Usability

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Outline

- Introduction to Usability
- 10 Usability Heuristics for User Interface Design
- Usability Testing 101

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Introduction to Usability

Usability is a quality attribute that assesses how easy user interfaces are to use. The word "usability" also refers to methods for improving ease-of-use during the design process.

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Usability Quality Components

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Usability Quality Components

1. Learnability: How easy is it for users to accomplish basic tasks the first time they encounter the design?
2. Efficiency: Once users have learned the design, how quickly can they perform tasks?
3. Memorability: When users return to the design after a period of not using it, how easily can they re-establish proficiency?
4. Errors: How many errors do users make, how severe are these errors, and how easily can they recover from the errors?
5. Satisfaction: How pleasant is it to use the design?

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Usability Quality Components

- There are many other important quality attributes. A key one is utility, which refers to the design's functionality: Does it do what users need?
- **Usability** and **utility** are equally important and together determine whether something is useful: It matters little that something is easy if it's not what you want. It's also no good if the system can hypothetically do what you want, but you can't make it happen because the user interface is too difficult.
- Definition of Utility = whether it provides the features you need.
- Definition of Usability = how easy & pleasant these features are to use.
- Definition of Useful = usability + utility.

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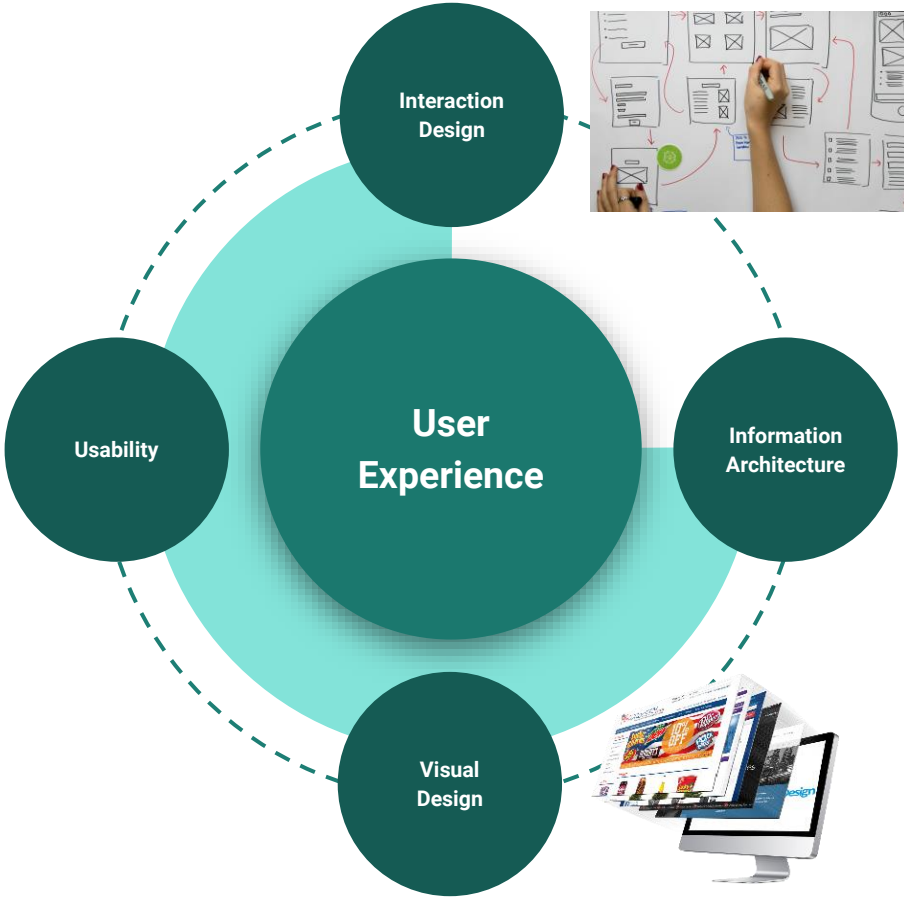

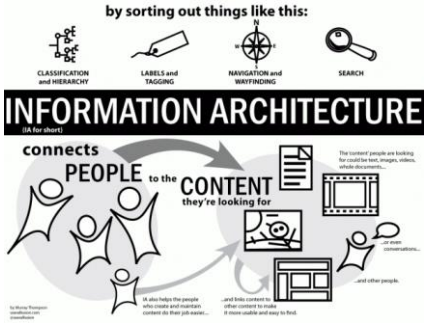

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10 Usability Heuristics for User Interface Design

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10 Usability Heuristics

Visibility of System Status

1

Match Between System & Real World

2

User Control And Freedom

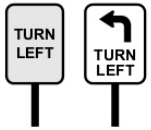
3

Consistency And Standards

4

Error Prevention

5

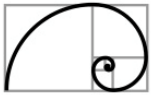


Recognition Rather Than Recall

6

Flexibility And Efficiency of Use

7



Aesthetic And Minimalististic Design

8

Help Users With Errors

9

Help And Documentation

10

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1 Visibility *of* System Status

- When users know the current system status, they learn the outcome of their prior interactions and determine next steps.
- Predictable interactions create trust in the product as well as the brand.

Designs should **keep users informed** about what is going on, through appropriate, timely feedback.

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1. Visibility of system status: Tips

- ➔ Communicate clearly to users what the system's state is — no action with consequences to users should be taken without informing them.
- ➔ Present feedback to the user as quickly as possible (ideally, immediately).
- ➔ Build trust through open and continuous communication.

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1. Visibility of system status: Examples

➔ “You Are Here” maps

- Interactive mall maps have to show people where they currently are, to help them understand where to go next.

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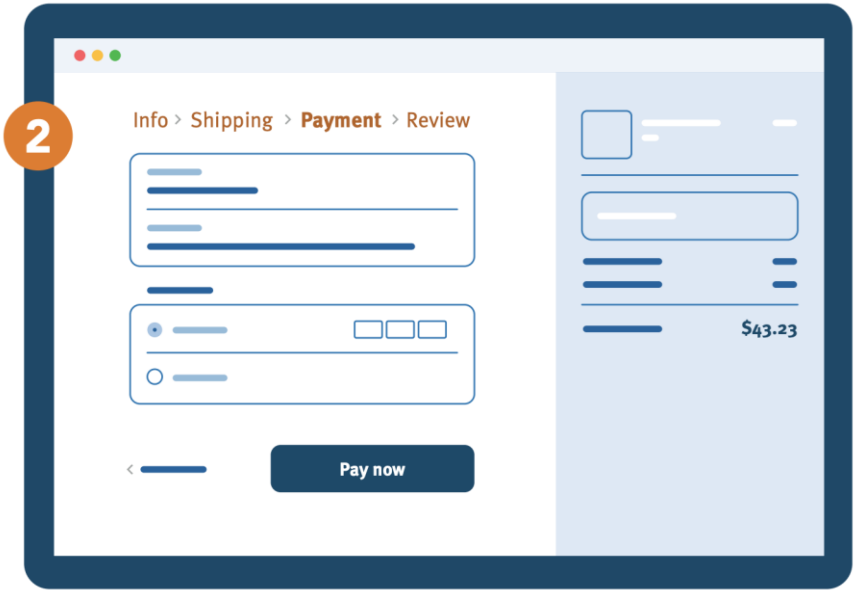
1. Visibility of system status: Examples

➔ **Checkout flow**

- Multistep processes show users which steps they've completed, they're currently working on, and what comes next.



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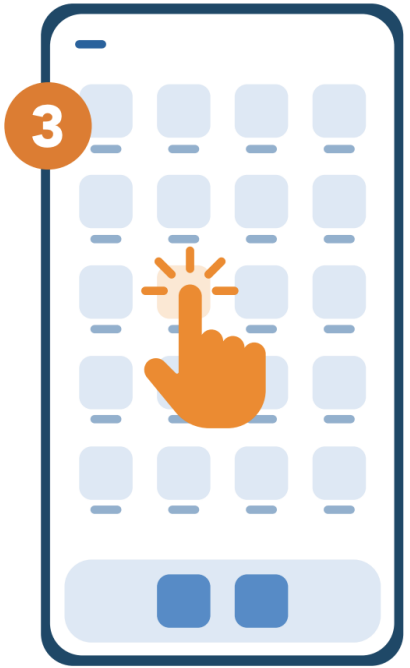
1. Visibility of system status: Examples

➔ **Phone tap**

- Touchscreen UIs need to reassure users that their taps have an effect — often through visual change or haptic feedback.



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2 Match between System and the Real World

- The way you should design depends very much on your specific users. Terms, concepts, icons, and images that seem perfectly clear to you and your colleagues may be unfamiliar or confusing to your users.
- When a design's controls follow real-world conventions and correspond to desired outcomes (called natural mapping), it's easier for users to learn and remember how the interface works. This helps to build an experience that feels intuitive.

The design should speak the users' language. Use words, phrases, and concepts **familiar to the user,** rather than internal jargon.

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2. Match Between System and The Real World: Tips

- ➔ Ensure users can understand meaning without having to go look up a word's definition.
- ➔ Never assume your understanding of words or concepts will match those of your users.
- ➔ User research will help you uncover your users' familiar terminology, as well as their mental models around important concepts.

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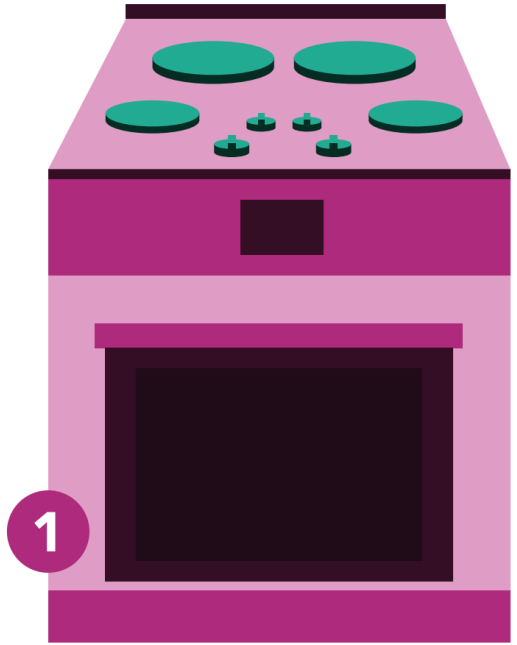
2. Match Between System and The Real World: Examples

➔ **Stovetop controls**

- When stovetop controls match the layout of heating elements, users can quickly understand which control maps to each heating element.



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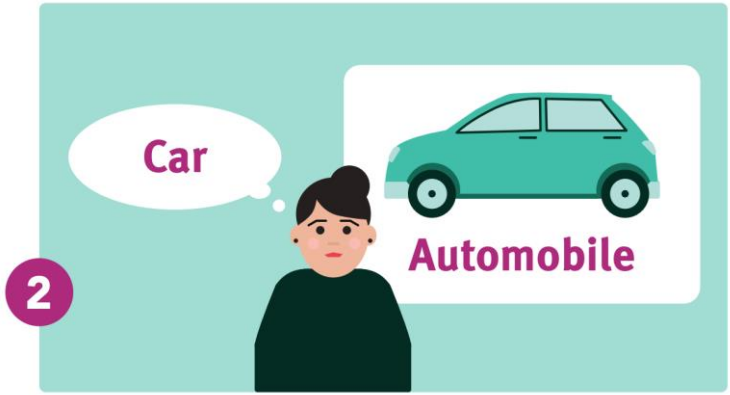
2. Match Between System and The Real World: Examples

➔ **“Car” vs. “automobile”**

- If users think about this object as a “car”, use that as the label instead.



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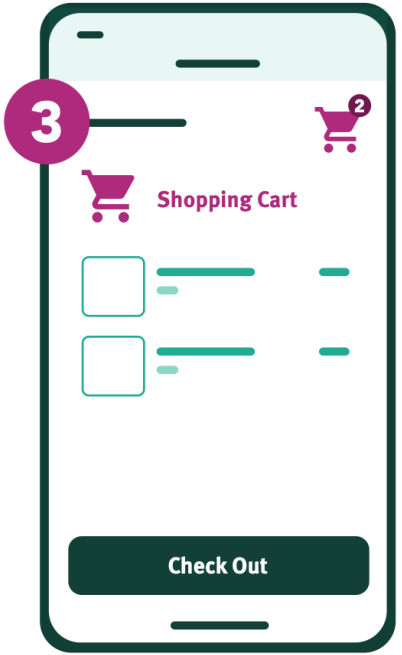
2. Match Between System and The Real World: Examples

➔ **Shopping cart icon**

- A shopping cart icon is easily recognizable because that feature serves the same purpose as its real-life counterpart.



3 User Control *and* Freedom

- When it's easy for people to back out of a process or undo an action, it fosters a sense of freedom and confidence.
- Exits allow users to remain in control of the system and avoid getting stuck and feeling frustrated.

Users often perform actions by mistake. They **need a clearly marked "emergency exit"** to leave the unwanted state.

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3. User Control and Freedom: Tips

- ➔ Support Undo and Redo.
- ➔ Show a clear way to exit the current interaction, like a Cancel button.
- ➔ Make sure the exit is clearly labeled and discoverable.

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3. User Control and Freedom: Examples

➔ Exit sign

- Digital spaces need quick “emergency” exits, just like physical spaces do.

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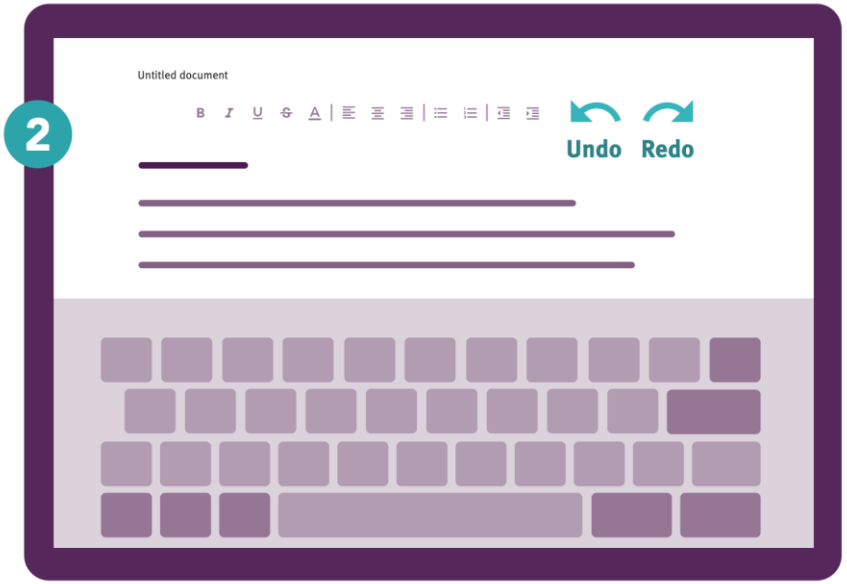
3. User Control and Freedom: Examples

➔ Undo and redo

- These functions give users freedom because they don't have worry about their actions — everything is easily reversible.



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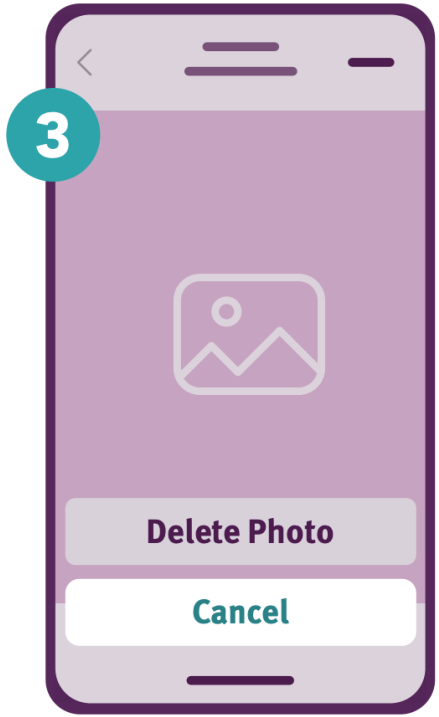
3. User Control and Freedom: Examples

➔ **Cancel button**

- Users shouldn't have to commit to a process once it's started — they should be able to easily cancel and abandon.



4 Consistency *and* Standards

- Jakob's Law states that people spend most of their time using digital products other than yours. Users' experiences with those other products set their expectations.
- Failing to maintain consistency may increase the users' cognitive load by forcing them to learn something new.

Users should not have to wonder whether different words, situations, or actions mean the same thing. **Follow platform conventions.**

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4. Consistency and Standards: Tips

- Improve learnability by maintaining both types of consistency: internal and external.
- Maintain consistency within a single product or a family of products (internal consistency).
- Follow established industry conventions (external consistency).

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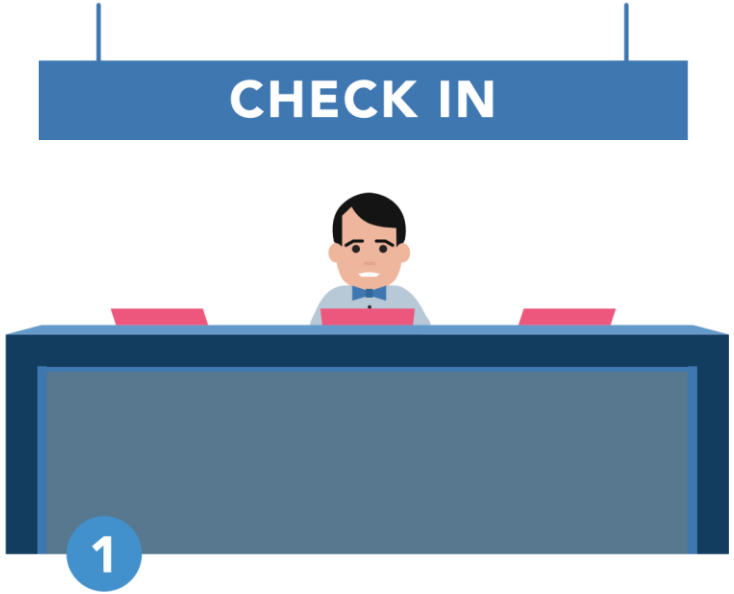
4. Consistency and Standards: Examples

➔ Check-in counter

- Check-in counters are usually located at the front of hotels. This consistency meets customers' expectations.



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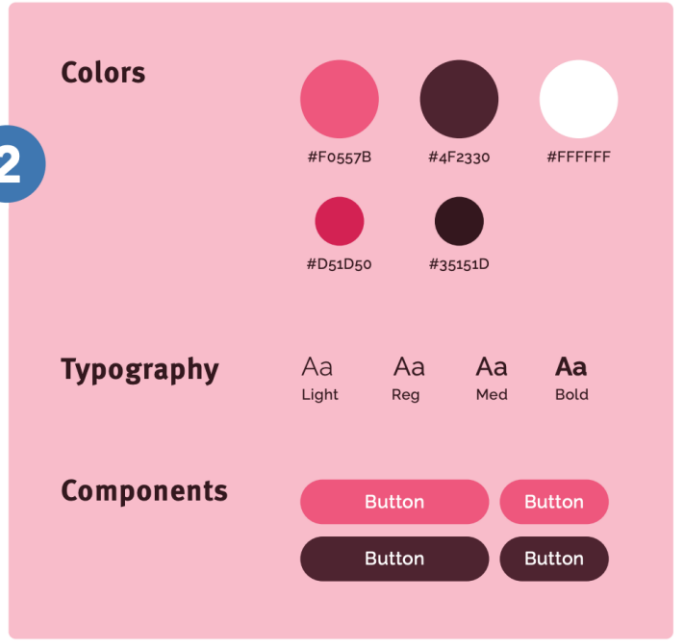
4. Consistency and Standards: Examples

- ➔ **Design system**
  - ◆ Using elements from the same design system across the product lines lowers the learning curve of users.
- ➔ **Atlassian: https://atlassian.design/**
- ➔ **Gojek (Asphalt): https://asphalt.gojek.io/**



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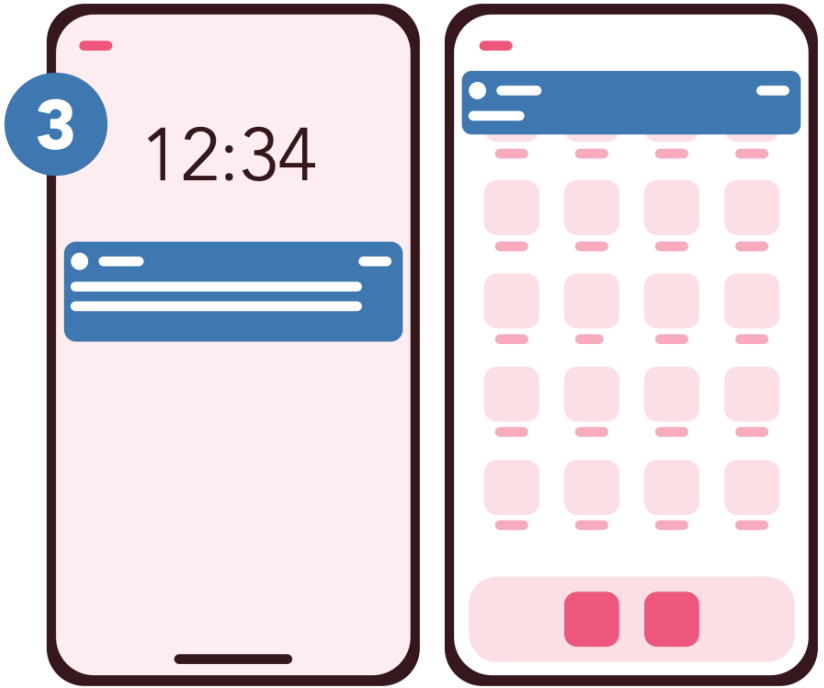
4. Consistency and Standards: Examples

➔ Notifications

- A standardized notification design provides a similar but distinguishable look and feel for different app pop-ups.



5 Error Prevention

- There are two types of errors: slips and mistakes.
- Slips are unconscious errors caused by inattention.
- Mistakes are conscious errors based on a mismatch between the user's mental model and the design.

Good error messages are important, but the best designs **prevent problems** from occurring in the first place.

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5. Error Prevention: Tips

- ➔ Prioritize your effort: Prevent high-cost errors first, then little frustrations.
- ➔ Avoid slips by providing helpful constraints and good defaults.
- ➔ Prevent mistakes by removing memory burdens, supporting undo, and warning your users.

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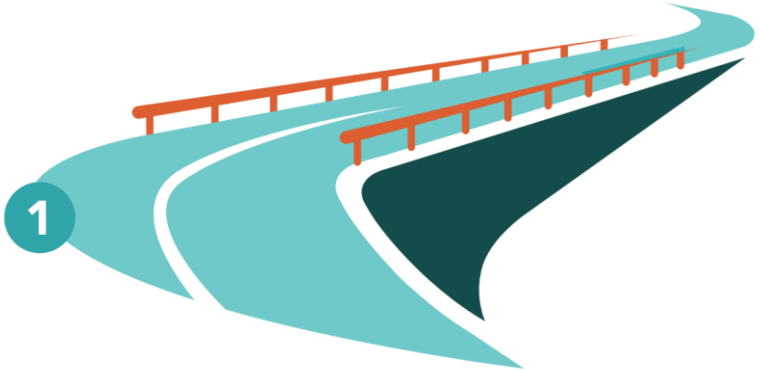
5. Error Prevention: Examples

➔ Guard rails

- Guard rails on curvy mountain roads prevent drivers from falling off of cliffs.



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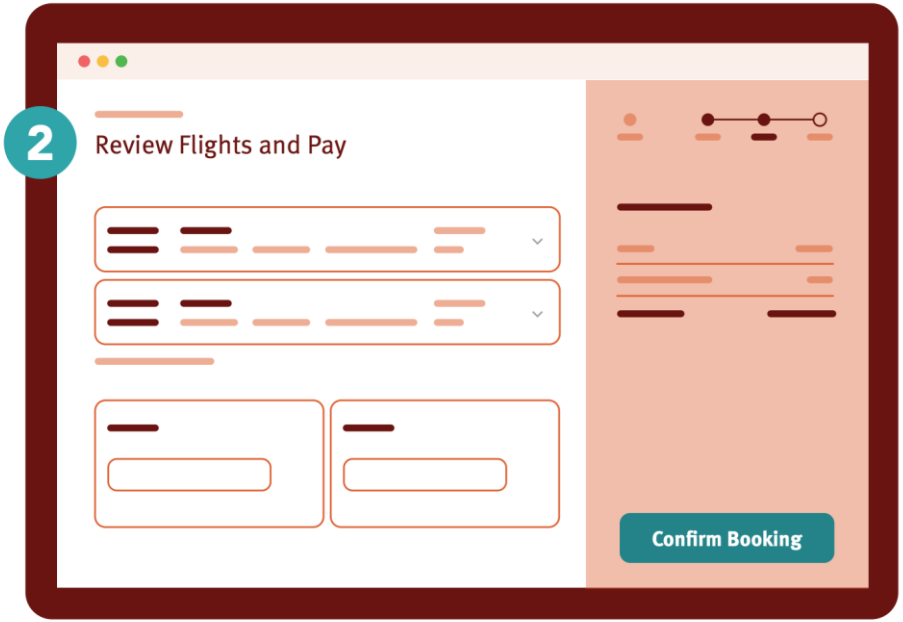
5. Error Prevention: Examples

➔ Airline confirmation

- The confirmation page before checking out on airline websites gives users another chance to review the flight details.



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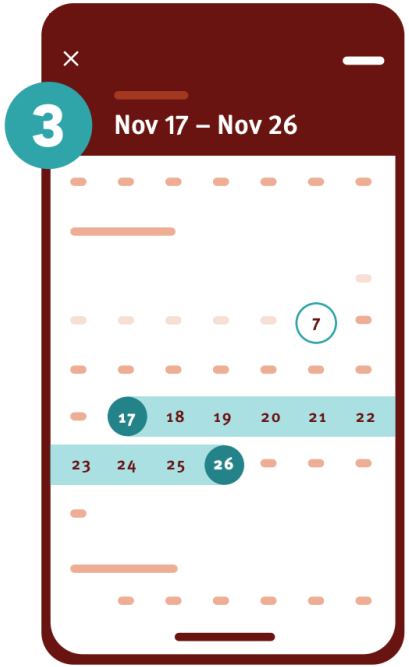
5. Error Prevention: Examples

➔ Date selection on calendar

- Offer good defaults and set boundaries when people book services by dates. Grey out unavailable options.



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6 Recognition Rather Than Recall

- ➔ Humans have limited short-term memories.
- ➔ Interfaces that promote recognition reduce the amount of cognitive effort required from users.

Minimize the user's memory load by making elements, actions, and options visible. Avoid making users remember information.

6. Recognition rather than Recall: Tips

- Let people recognize information in the interface, rather than having to remember ("recall") it.
- Offer help in context, instead of giving users a long tutorial to memorize.
- Reduce the information that users have to remember.

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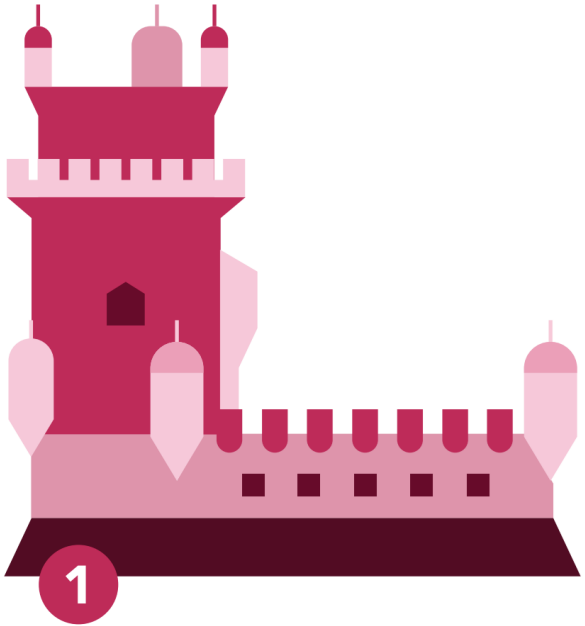
6. Recognition rather than Recall: Examples

➔ Lisbon

- People are more likely to correctly answer the question ***"Is Lisbon the capital of Portugal?"*** rather than ***"What's the capital of Portugal?"***



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6. Recognition rather than Recall: Examples

➔ Comparison table

- Comparison tables list key differences so that users don't need to remember them to make comparisons.

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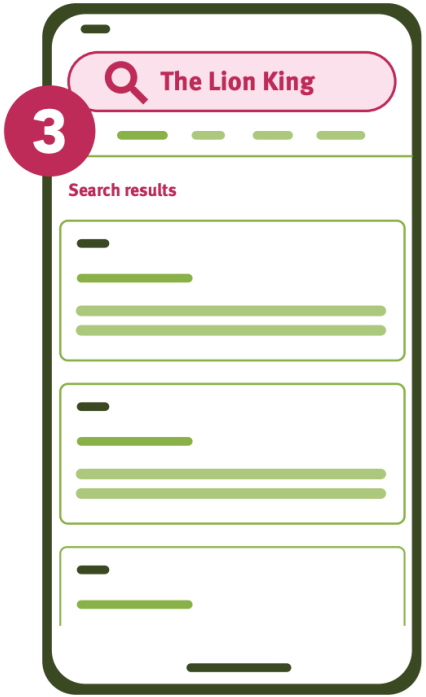
6. Recognition rather than Recall: Examples

➔ Search

- Search queries are presented together with the results as a reference.



- Flexible processes can be carried out in different ways, so that people can pick whichever method works for them.

7 Flexibility *and* Efficiency of Use

Shortcuts — hidden from novice users — may **speed up the interaction** for the expert user.

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7. Flexibility and Efficiency of Use: Tips

- ➔ Provide accelerators like keyboard shortcuts and touch gestures.
- ➔ Provide personalization by tailoring content and functionality for individual users.
- ➔ Allow for customization, so users can make selections about how they want the product to work.

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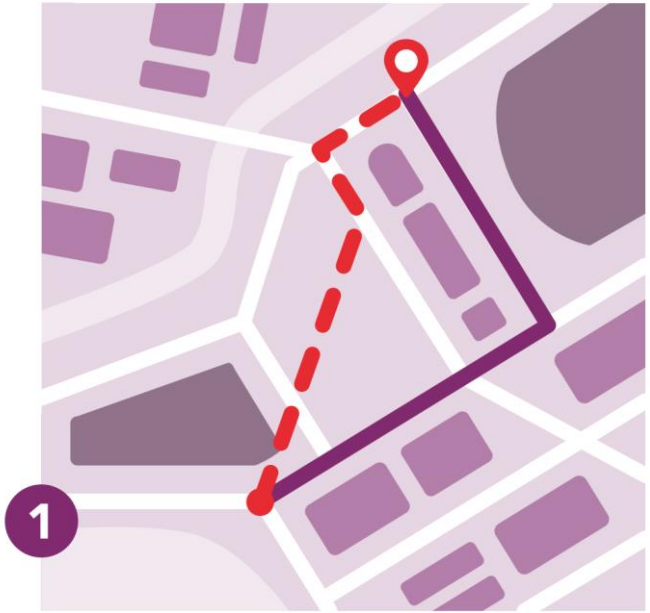
7. Flexibility and Efficiency of Use: Examples

➔ Shortcuts

- Regular routes are listed on maps, but locals with more knowledge of the area can take shortcuts.



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7. Flexibility and Efficiency of Use: Examples

➔ Keyboard shortcut

- Keyboard shortcuts for complex products can help expert users nish their tasks more efficiently.

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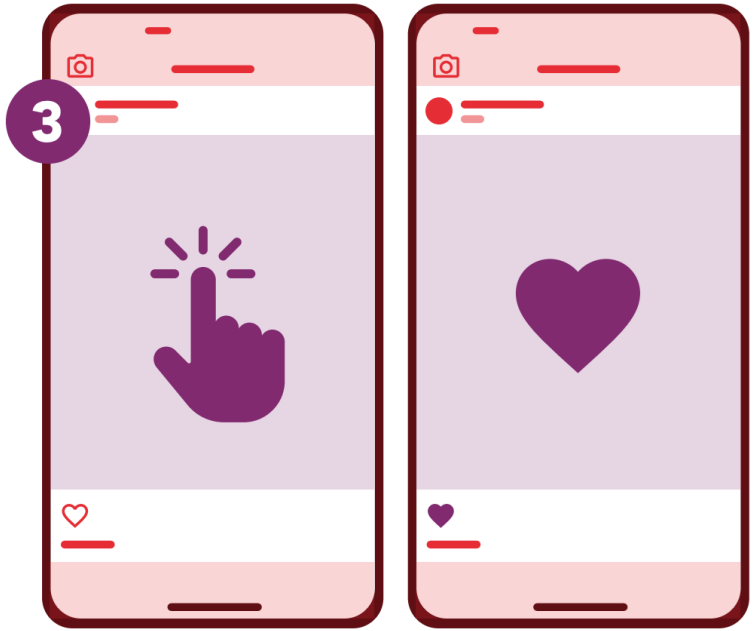
7. Flexibility and Efficiency of Use: Examples

➔ **Tap to like**

- Social apps allow two ways to like posts. Experienced users can tap to like because it speeds up their browsing.



8 Aesthetic *and* Minimalist Design

- This heuristic doesn't mean you have to use a flat design — it's about making sure you're keeping the content and visual design focused on the essentials.
- Ensure that the visual elements of the interface support the user's primary goals.

Interfaces should not contain information which is irrelevant. Every extra unit of information in an interface **competes** with the relevant units of information.

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8. Aesthetic and Minimalist Design: Tips

- Keep the content and visual design of UI focus on the essentials.
- Don't let unnecessary elements distract users from the information they really need.
- Prioritize the content and features to support primary goals.

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8. Aesthetic and Minimalist Design: Examples

➔ **Ornate vs. simple teapot**

- Excessive decorative elements can interfere with usability.

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8. Aesthetic and Minimalist Design: Examples

➔ **Communicate, don't decorate**

- Over-decoration can cause distraction and make it harder for people to get the core information they need.

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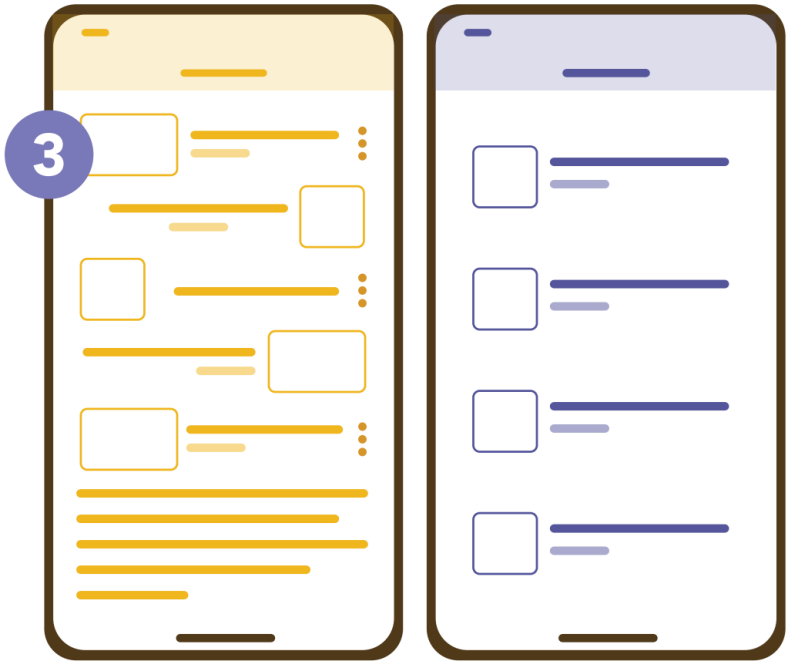
8. Aesthetic and Minimalist Design: Examples

➔ Messy vs organized UI

- Messy UI increases the interaction cost for users to find their desired content.
- Organized UI lowers the cost.



9 Recognize, Diagnose, *and* Recover from Errors

- Error messages should be expressed in plain language (no error codes), precisely indicate the problem, and constructively suggest a solution.
- These error messages should also be presented with visual treatments that will help users notice and recognize them.

Error messages should be expressed in **plain language** (no error codes), precisely indicate the problem, and constructively suggest a solution.

9. Help Users Recognize, Diagnose, and Recover from Errors: Tips

- ➔ Use traditional error message visuals, like bold, red text.
- ➔ Tell users what went wrong in language they will understand — avoid technical jargon.
- ➔ Offer users a solution, like a shortcut that can solve the error immediately.

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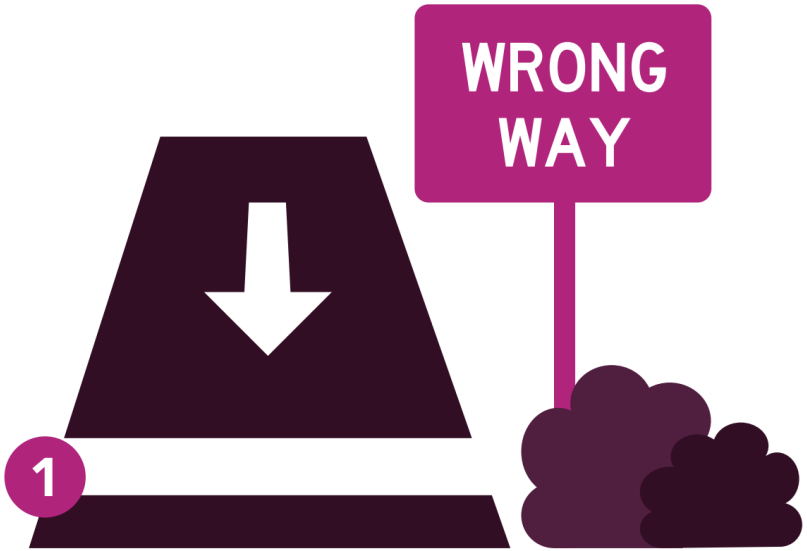
9. Help Users Recognize, Diagnose, and Recover from Errors: Examples

➔ Wrong way sign

- Wrong-way signs on the road remind drivers that they are heading in the wrong direction and ask them to stop.



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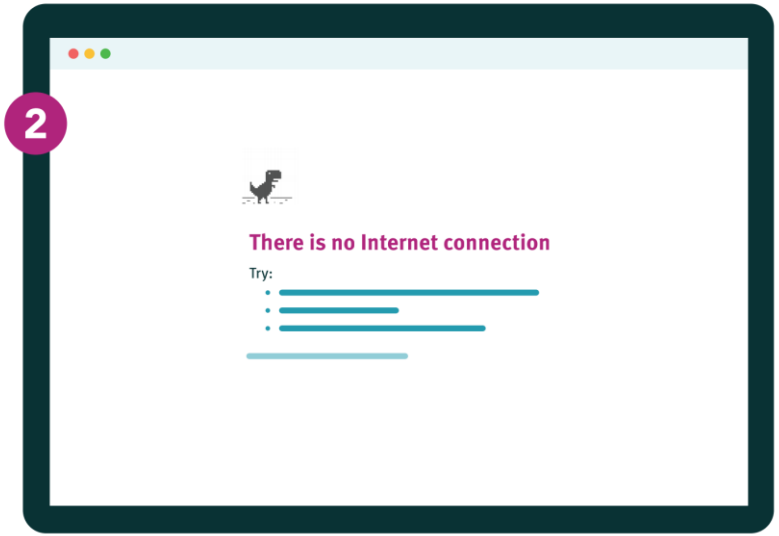
9. Help Users Recognize, Diagnose, and Recover from Errors: Examples

- **Internet connection error**
  - Good internet connection error pages show what happened and constructively instruct users on how to fix the problem.



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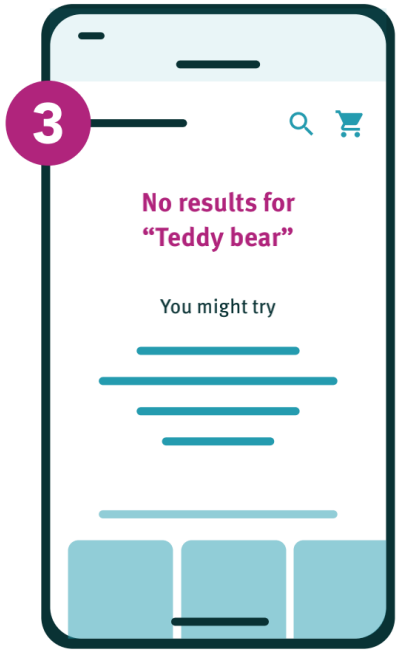
9. Help Users Recognize, Diagnose, and Recover from Errors: Examples

➔ No search results

- Provide useful help when people encounter search-result pages returning zero results, such as popular topics.



10 Help *and* Documentation

- It’s best if the system doesn’t need any additional explanation. However, it may be necessary to provide documentation to help users understand how to complete their tasks.
- Help and documentation content should be easy to search and focused on the user's task. Keep it concise, and list concrete steps that need to be carried out.

It’s best if the design **doesn’t need** any additional explanation. However, it may be necessary to provide documentation to help users understand how to complete their tasks.

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10. Help and Documentation: Tips

- ➔ Ensure that the help documentation is easy to search.
- ➔ Whenever possible, present the documentation in context right at the moment that the user requires it.
- ➔ List concrete steps to be carried out.

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10. Help and Documentation: Examples

➔ Airport information center

- Information kiosks at airports are easily recognizable and solve customers' problems in context and immediately.

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10. Help and Documentation: Examples

➔ Frequently asked questions

- Good frequently-asked-question pages anticipate and provide the helpful information that users might need.

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10. Help and Documentation: Examples

➔ Information icon

- Information icons reveal tooltips to explain jargon when users touch or hover over them, which provides contextual help.

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Usability Testing 101

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Usability Testing 101

- Usability testing is a popular UX research methodology.
- In a usability-testing session, a researcher (called a “facilitator” or a “moderator”) asks a participant to perform tasks, usually using one or more specific user interfaces.
- While the participant completes each task, the researcher observes the participant’s behavior and listens for feedback.

Why Usability Test?

Uncover Problems
in the design

Discover Opportunities
to improve the design

Learn About Users
behavior and preferences

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Core Elements of Usability Testing

Facilitator

Guides the participant through the test process

Tasks

Realistic activities that the participant might actually perform in real life

Participant

Realistic user of the product or service being studied

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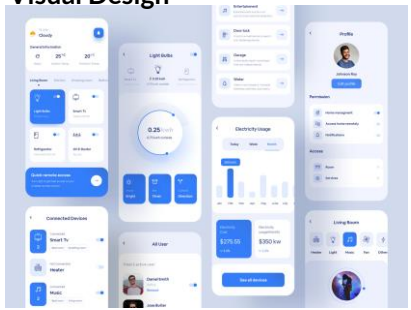
Wireframe

Visual Design



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Tugas 3

- Individual
- Dikumpulkan via E-Learning
- Paling lambat 1 minggu (sebelum pertemuan selanjutnya)
- Buat dengan format dokumen yang sebaik-baiknya (cover, dll).
- Dalam bentuk .pdf

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Soal Tugas 3

- Cari contoh penerapan 10 prinsip *heuristic usability* pada produk digital seperti website atau mobile app.
- Tiap prinsip berikan 6 contoh penerapannya, berikan penjelasan dan *screenshot* produknya.
    - 3 produk indonesia
    - 3 produk luar

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Questions ?