

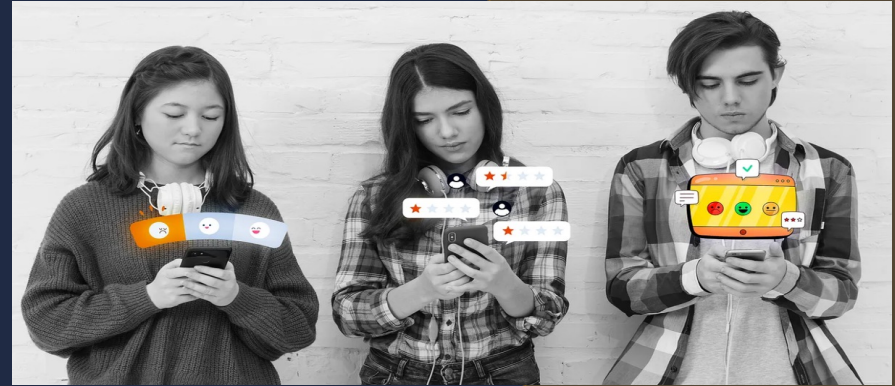


DIKTISA INTEK
BERDAMPAK

Human-Centered Interaction Design

From User Requirements to Design
Decisions

Interaksi Manusia dan Komputer



Requirements



Design Space



Decision



Prototype

"Requirement menjawab APA yang dibutuhkan; desain memutuskan BAGAIMANA memenuhinya."

Learning Outcomes

1. Menjelaskan prinsip human-centered design (ISO 9241-210)

2. Menerjemahkan user requirement menjadi implikasi desain

3. Menyusun alternatif desain dan menimbang trade-off

4. Menerapkan prinsip Norman, Nielsen, dan Shneiderman

5. Mendokumentasikan design rationale

6. Membuat Design Decision Log kelompok

Output hari ini: Design Decision Log (requirement → keputusan → alasan)

Menghubungkan W5 → W6 → W7

W5: Research

Mengumpulkan data:
observasi, wawancara,
survey.



W6: Requirements

Menganalisis data menjadi
insight dan user
requirements.



W7: Design Decisions

Mengubah requirement
menjadi keputusan desain
yang beralasan.



Data → Insight → Requirement → Keputusan Desain → Prototype

Requirement ≠ Desain

Requirement = WHAT



"Mahasiswa harus tahu apakah tugas sudah berhasil dikumpulkan."

Design = HOW



Banner hijau? Email konfirmasi? Status di daftar tugas? Kombinasi? Kita harus memilih dan beralasan.

Satu requirement dapat dipenuhi banyak desain. Tugas kita: memilih secara sadar.

Prinsip Human-Centered Design



Berbasis user, task, konteks

Desain dimulai dari pemahaman nyata.



User terlibat

Sepanjang proses desain dan pengembangan.



Dikendalikan evaluasi user

Keputusan diuji dengan user.



Iteratif

Dirancang, diuji, diperbaiki berulang.



Seluruh user experience

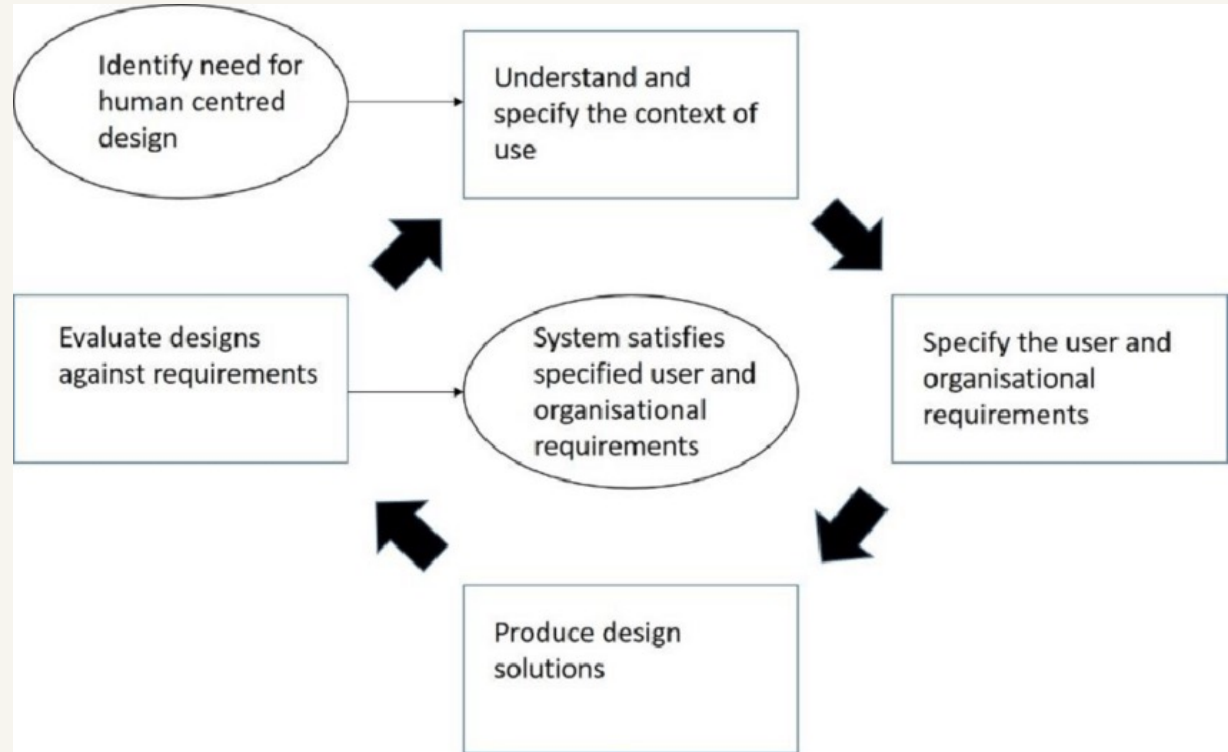
Bukan hanya tampilan.



Tim multidisiplin

Perspektif beragam.

Siklus Human-Centered Design



W7 berfokus pada tahap 3, dengan tahap 2 sebagai masukan.

Jenis requirements

Functional



Apa yang harus bisa dilakukan sistem.

Data



Jenis dan struktur data yang dibutuhkan.

Environmental



Konteks fisik, sosial, organisasi.

User



Karakteristik dan kemampuan user.

Usability



Mudah dipelajari, efisien, minim error.

User experience



Rasa: menyenangkan, percaya diri.

Dari requirement ke keputusan desain

User requirement	Implikasi desain	Keputusan desain
Mahasiswa harus tahu tugas sudah terkirim	Perlu visibilitas status dan feedback	Banner konfirmasi + badge "Terkirim" di daftar tugas
Mahasiswa sering mengunggah file yang salah	Perlu pencegahan error	Pratinjau file + tombol "Ganti file" sebelum kirim
Banyak mahasiswa mengakses lewat ponsel	Perlu target sentuh besar dan layout ringkas	Tombol Kumpulkan lebar penuh di bagian bawah layar

Requirement → Implikasi → Keputusan: tiap keputusan harus bisa ditelusuri ke requirement.

Design space: alternatif & trade-off



A: cepat

Efisien untuk user berpengalaman; risiko salah kirim lebih tinggi.

B: aman

Mencegah error lewat tinjauan; langkah lebih banyak.

Conceptual design

Conceptual model



Gambaran sistem: apa yang user dapat lakukan dan bagaimana kerjanya.

Metafora



Menghubungkan ke hal yang dikenal (folder, keranjang belanja).

Jenis interaksi



Instructing, conversing, manipulating, exploring.

Mental model user



Selaraskan desain dengan model mental, bukan sebaliknya.

Scenario-based design

Persona



Skenario



Use case / task flow



Sketsa layar

Contoh skenario



Rina (semester 3) menyelesaikan laporan pukul 23.50. Ia membuka LMS di ponsel, mengunggah file, dan khawatir tugasnya belum terkirim karena sinyal lemah.

Pertanyaan desain



Feedback apa yang meyakinkan Rina? Bagaimana jika koneksi putus? Berapa langkah minimal?

Task flow: setiap langkah = peluang keputusan



Telusuri task flow, tandai titik rawan, lalu putuskan desainnya.

Don Norman's Principles of Design

Affordance & signifier



Apa yang bisa dilakukan, dan petunjuk yang terlihat.

Mapping



Hubungan kontrol dan hasilnya terasa natural.

Feedback



Sistem merespons setiap aksi.

Constraints



Batasi aksi yang salah.

Conceptual model



User memahami cara kerja sistem.

Error tolerance



Desain untuk kesalahan manusia.

Heuristic Evaluation

Heuristic Evaluation

Heuristic Evaluation adalah metode evaluasi usability di mana suatu antarmuka diperiksa berdasarkan prinsip-prinsip usability (heuristics) yang telah ditetapkan.

Read More . . .

1 Visibility of System Status

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



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

2 Match between System and the Real World

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



Users can quickly understand which stovetop control maps to each heating element.

5 Error Prevention

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



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

8 Aesthetic and Minimalist Design

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



A minimalist three-legged stool is still a place to sit.

Nielsen Norman Group

Jakob's Ten Usability Heuristics

3 User Control and Freedom

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



Just like physical spaces, digital spaces need quick "emergency" exits too.

6 Recognition Rather Than Recall

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



People are likely to correctly answer "Is Lisbon the capital of Portugal?"

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.



Wrong-way signs on the road remind drivers that they are heading in the wrong direction.

4 Consistency and Standards

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



Check-in counters are usually located at the front of hotels, which meets expectations.

7 Flexibility and Efficiency of Use

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



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

10 Help and Documentation

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



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

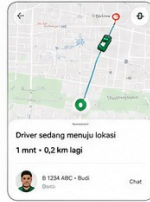


CONTOH EVALUASI GOJEK MENGGUNAKAN HEURISTIC EVALUATION

Menggunakan 10 Prinsip Usability Heuristics – Jakob Nielsen

1 Visibility of System Status

Sistem harus memberi feedback kepada user.



Kelebihan

- Gojek menampilkan status perjalanan secara real-time (driver menuju lokasi, jarak, estimasi waktu).

Kekurangan

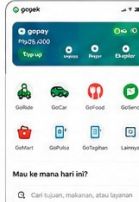
- Saat koneksi buruk, status kadang tidak langsung update.

Rekomendasi

- Tampilkan indikator koneksi atau estimasi refresh data.

2 Match Between System and Real World

Bahasa dan istilah sesuai dunia nyata.



Kelebihan

- Istilah mudah dipahami (GoRide, GoFood, Top up). Ikon sesuai dengan layanan.

Kekurangan

- Beberapa label fitur baru kurang familiar (belum semua user tahu misal: GoTransit).

Rekomendasi

- Gunakan istilah yang lebih umum atau beri penjelasan singkat saat pertama kali muncul.

3 User Control and Freedom

User dapat membatalkan atau kembali dengan mudah.



Kelebihan

- User bisa membatalkan pesanan kapan saja. Ada opsi "kembali" jika salah klik.

Kekurangan

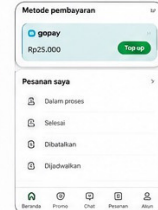
- Tidak ada fitur undo setelah pembatalan.

Rekomendasi

- Sediakan opsi "Undo" dalam beberapa detik setelah batal.

4 Consistency and Standards

Desain konsisten dan mengikuti standar.



Kelebihan

- Pola navigasi konsisten. Letak menu utama selalu di bottom. Ikon standar dan warna konsisten.

Kekurangan

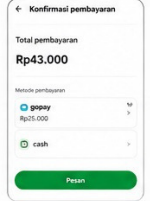
- Beberapa halaman promo memiliki layout berbeda.

Rekomendasi

- Gunakan pola layout yang lebih seragam pada semua halaman.

5 Error Prevention

Mencegah kesalahan sebelum terjadi.



Kelebihan

- Ada konfirmasi sebelum pesanan dibuat. Memastikan metode pembayaran dipilih dengan benar.

Kekurangan

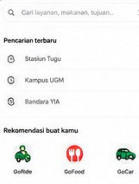
- Tidak ada peringatan jika saldo GoPay kurang saat memilih "Pesan".

Rekomendasi

- Tampilkan peringatan otomatis jika saldo kurang saat memilih GoPay.

6 Recognition Rather Than Recall

User tidak perlu mengingat, sistem membantu mengenali.



Kelebihan

- Ada riwayat pencarian dan rekomendasi layanan. Memudahkan user memilih tanpa mengingat ulang.

Kekurangan

- Riwayat tidak bisa dihapus satu per satu.

Rekomendasi

- Tambahkan opsi hapus riwayat secara individual.

7 Flexibility and Efficiency of Use

Efisien untuk pemula maupun expert.



Kelebihan

- Tersedia akses cepat untuk fitur penting. User expert bisa menggunakan fitur lebih cepat.

Kekurangan

- Shortcut belum bisa dikustomisasi oleh user.

Rekomendasi

- Izinkan user mengatur fitur favorit di beranda.

8 Aesthetic and Minimalist Design

Tampilan sederhana dan fokus pada konten.



Kelebihan

- Tampilan bersih, warna konsisten, informasi penting mudah terlihat.

Kekurangan

- Halaman promo terkadang terlalu ramai dan penuh banner.

Rekomendasi

- Batasi jumlah banner dan prioritaskan informasi paling penting.

9 Help Users Recognize, Diagnose, and Recover from Errors

Pesan error harus jelas dan membantu.



Kelebihan

- Pesan error informatif disertai solusi yang jelas.

Kekurangan

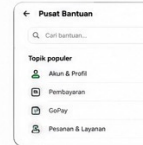
- Tidak semua error konsisten (ada yang masih terlalu teknis).

Rekomendasi

- Gunakan bahasa yang sama pada semua pesan error.

10 Help and Documentation

Sistem menyediakan bantuan yang mudah diakses.



Kelebihan

- Tersedia Pusat Bantuan lengkap dan mudah diakses.
- Ada live chat.

Kekurangan

- Beberapa jawaban artikel kurang spesifik.

Rekomendasi

- Perbaiki konten FAQ agar lebih relevan dan update.

RINGKASAN TEMUAN

KELEBIHAN UTAMA

- Feedback sistem sudah baik (real-time tracking).
- Navigasi konsisten dan mudah dipahami.
- Banyak fitur membantu user menyelesaikan tugas.

AREA YANG PERLU DITINGKATKAN

- Konsistensi pesan error.
- Kustomisasi shortcut fitur.
- Perluanya peringatan otomatis pada pembayaran.



Shneiderman's 8 Golden Rules of Interface Design

1. Strive for consistency

2. Enable frequent users to use shortcuts

3. Offer informative feedback

4. Design dialogs to yield closure

5. Prevent errors

6. Permit easy reversal of actions

7. Keep users in control

8. Reduce short-term memory load

Shneiderman's 8 Golden Rules of Interface Design : Worksheet

The principles	Questions to consider	Mark Complete
1. Strive for consistency	Is the style of this element maintained across your site/app? Is this content placed in the correct location according to the site hierarchy? Does this follow the conventions for your chosen platform? How can you make your designs more consistent?	☐
2. Enable frequent users to use shortcuts	Are there shortcuts available for your more experienced users? Who is this product designed for? Will there be a need to consider experienced users? How can you make it easier and quicker for experienced users?	☐
3. Offer informative feedback	Does the user know where they are at in the process? Does the user know what they have done after performing this action? How are you communicating this feedback to your user?	☐
4. Design dialogue to yield closure	Does the user have to do any guessing here? Is it clear and obvious enough for your intended audience? Are there any next steps for the user? How are you communicating the system status with the user?	☐
5. Offer simple error handling	Have you done everything imaginable to prevent this error from happening on your end? Is this error avoidable in the first place? If the user does make an error, how easy is it for them to fix it?	☐
6. Permit easy reversal of actions	How many steps does the user have to take to reverse their actions? Will the user quickly realize they need to reverse the action in the first place? How can you make your users detect the possibility of reversal?	☐
7. Support internal locus of control	Will the user feel in control at this specific touch point in your app? Will they be surprised in an unpleasant manner? Does the site feel easily navigable? Does the user feel safe and in control? How can you make the user feel more safe and in control?	☐
8. Reduce short-term memory load	Are there enough visual cues here for the user to find the functionality or item? Do they have to remember things to understand what's going on? How can you help the user recall?	☐

Design rationale: dokumentasikan keputusan

Requirement	Alternatif	Keputusan	Alasan & bukti
R1: tahu status terkirim	Email / banner / badge	Banner + badge	Feedback langsung (Nielsen #1); contoh bukti: 6 dari 8 partisipan khawatir (data ilustrasi)
R2: hindari salah file	Tanpa pratinjau / pratinjau	Pratinjau + ganti file	Error prevention; contoh bukti: 5 dari 8 pernah salah unggah (data ilustrasi)

Tulis alasan dan bukti. Keputusan tanpa alasan tidak bisa dievaluasi.

Dari keputusan ke sketsa dan prototype

Sketsa

Cepat, murah, untuk menjelajah banyak ide.



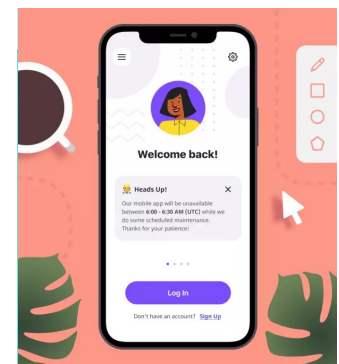
Wireframe

Struktur dan alur layar tanpa visual detail.



Prototype

Dapat diklik untuk diuji dengan user.



Makin cepat diuji, makin mudah memperbaiki keputusan yang salah.

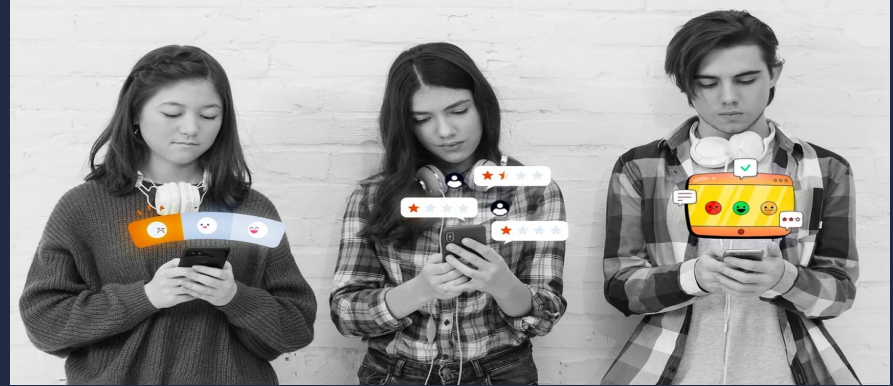


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Requirement tanpa
keputusan = daftar keinginan.
Keputusan tanpa alasan = tebakan.

Requirements → Design Space → Trade-off → Decision → Rationale

Next Week : Prototyping & Evaluasi



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