

Interaksi Manusia & Komputer

06. Perancangan Tampilan

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Universitas Trunojoyo Madura

UI, USABILITY & UX



UI, USABILITY & UX

USER INTERFACE

Submit

VS

Submit

“

Function : It **works**

USABILITY

Submit

Cancel

VS

Submit

Cancel

“

Function : It **works well**

USER EXPERIENCE

Yes, complete my order

No, Thanks

Bonus :

Order arrives earlier than promised

“

Function : It **works well**
and **makes me say WOW !**



USABILITY & UX



USABILITY

“

Can the users **accomplish** their goals ?

In the case of our camera shopper, from the perspective of the site's design, she did accomplish the goal, being very satisfied with the result.

VS



USER EXPERIENCE

“

Did the user have as **delightful** an **experience** as possible ?

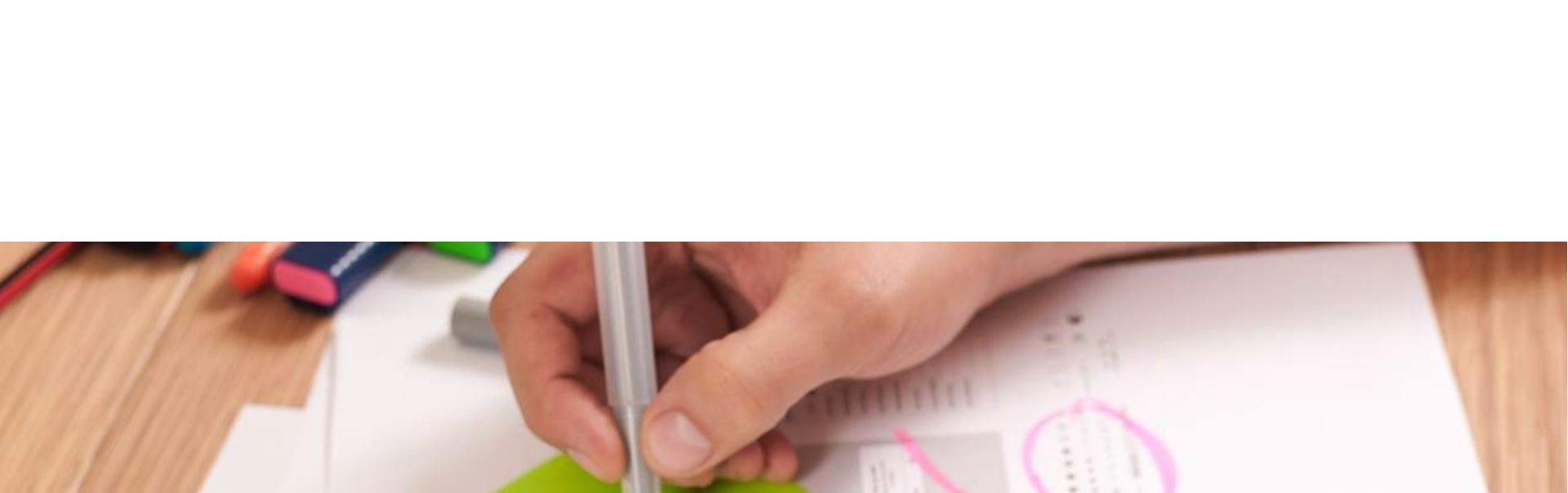
The store portion of the experience canceled out the online portion.

User Centered Vs 'Designer Centered' Design



VS





BAGAIMANA CARA MEMINIMALKAN GAP-NYA ?



SHNEIDERMAN'S REQUIREMENTS

FUNCTIONAL REQUIREMENTS

NON FUNCTIONAL REQUIREMENTS



SHNEIDERMAN'S REQUIREMENTS

FUNCTIONAL REQUIREMENTS

NON FUNCTIONAL REQUIREMENTS

INTERACTION REQUIREMENTS



SHNEIDERMAN'S EIGHT GOLDEN RULES

Prinsip Desain Antarmuka



Consistency



Shortcuts



Informative Feedback



Dialogue to Yield Closure



Simple Error Handling



Easy Reversal



Support Internal Locus of Control



Reduce Short-Term Memory Load

Perancangan Tampilan

- ❑ Salah satu kriteria penting dari sebuah antarmuka adalah tampilan yang menarik
- ❑ Yang harus dimiliki oleh perancang tampilan:
 - ❑ **Jiwa seni yang memadai**
 - ❑ **Mengetahui selera user secara umum**
- ❑ Seorang perancang tampilan **HARUS mendokumentasikan semua pekerjaan** yang telah dia kerjakan selama ini, sebagai bahan evaluasi **pembuatan tampilan** yang **baru** atau **memperbaiki tampilan sebelumnya**

PROGRAM YANG DIBUAT BUKAN UNTUK ANDA, NAMUN UNTUK ORANG LAIN

Cara Pendekatan

Jenis program aplikasi:

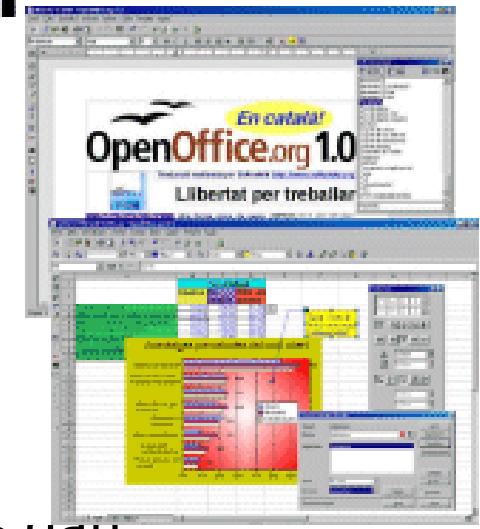
- Special purpose software /Software Pesanan
- General purpose software/Software Generik

Cara Pendekatan

❑ Software Generik

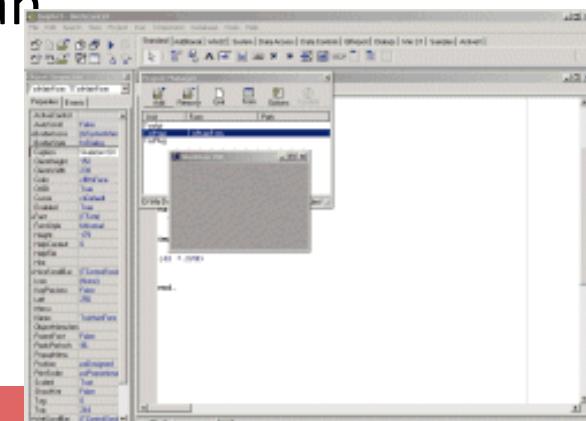
Perangkat lunak standar yang diproduksi pengembang dan **dijual pada pasar terbuka** yang bisa membelinya (*Shrink-wrapped*)

OpenOffice



❑ Software Pesanan

Perangkat lunak yang dikembangkan khusus dan **disesuaikan dengan kebutuhan pelanggan**



(Sommerville, 2015)

Special Purpose Software

- Program aplikasi untuk keperluan khusus dengan user yang khusus pula (*special purpose software*)
- Kelompok user dapat dengan mudah diperkirakan, baik dari segi keahlian maupun ragam antarmuka yang akan digunakan
- Mis: program inventori gudang, pengelolaan data akademis mahasiswa, pelayanan reservasi hotel
- Pendekatan yang digunakan:
 - *User-centered design approach*: perancang dan user bersama-sama membuat tampilan antarmuka yang diinginkan user.
 - *User design approach*: hanya user yang membuat tampilan antarmuka. Tetapi hal ini memberatkan bagi pemrograman (mis. Peranti yang tidak mendukung, dll).

General Purpose Software

- Program aplikasi yang akan **digunakan oleh** berbagai **macam kalangan user**
- Program Aplikasi untuk GPS disebut juga sebagai Public Software.
- **Perancang** dapat melakukan ‘**pemaksaan**’ kepada **user** untuk **menerima tampilan antarmukanya**, walaupun dapat **memberikan dampak program** tersebut **tidak laku**
- Kunci utama perancangan tampilan untuk *general purpose software* adalah dengan melakukan :
 - antarmuka customization
 - pengaturan desktop
 - pemilihan warna desktop oleh user
 - merubah warna dasar, *screensaver*, dll

Komponen Antarmuka Pengguna

1. **Model pengguna**/Model User; memungkinkan user untuk mengembangkan pemahaman yang mendasar tentang apa yang dikerjakan oleh program, bahkan oleh user yang sama sekali tidak mengetahui teknologi komputer
2. **Bahasa perintah**-Command Language; sedapat mungkin menggunakan bahasa alami, dimana user dengan cepat dapat mengoperasikannya
3. **Umpanbalik**; kemampuan sebuah program yang membantu user untuk mengoperasikan program itu sendiri
4. **Tampilan informasi**; digunakan untuk menunjukkan status informasi atau program ketika user melakukan suatu tindakan

Urutan Perancangan

- 1. Pemilihan ragam dialog/perancangan**
- 2. Perancangan struktur dialog/grafis;** melakukan analisis tugas dan menentukan model pengguna dari tugas tersebut
- 3. Perancangan format pesan/teks;** tata letak tampilan, keterangan tektual secara terinci, dan efisiensi inputing data harus mendapat perhatian lebih
- 4. Perancangan penanganan kesalahan**
- 5. Perancangan struktur data/Waktu tanggap**

Penanganan Kesalahan

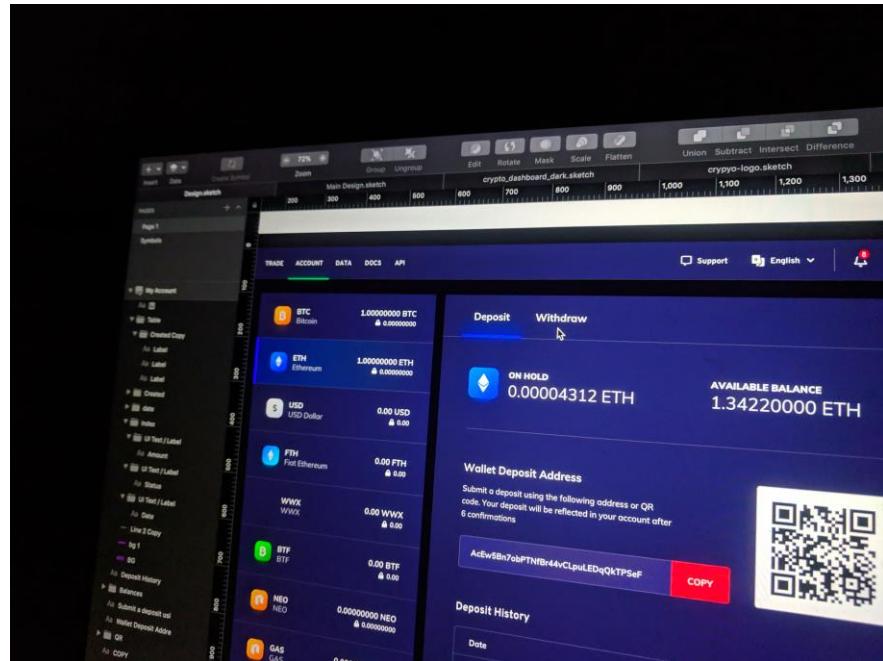
- **Validasi pemasukan data**, mis: jika **user** harus **memasukkan bilangan positif**, namun dia **memasukkan data negatif atau nol**, maka **harus ada mekanisme untuk mengulang pemasukan data tersebut**
- **Proteksi user**; **program memberi peringatan ketika user melakukan suatu tindakan secara tidak sengaja**, mis: penghapusan berkas
- **Pemulihan dari kesalahan**: tersedianya mekanisme untuk **membatalkan tindakan yang baru saja dilakukan**
- **Penampilan pesan salah** yang tepat dan **sesuai dengan kesalahan** yang terjadi pada waktu itu

User Interface

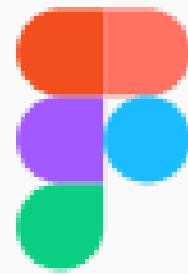


User Interface

Desain antarmuka untuk mesin atau software, seperti peralatan rumah tangga, handphone, atau yang lain, yang memaksimalkan usability dan user experience.



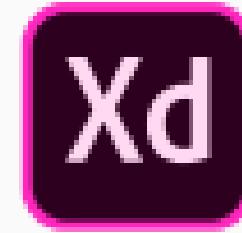
Tools



Figma



Sketch



Adobe XD



Pros

- ✓ Ringan dioperasikan
- ✓ Online cloud
- ✓ Open-sourced plugin
- ✓ Prototyping
- ✓ Multi-platform
- ✓ Handover ke developer

Cons

- ! Connection issue
- ! Server maintenance

UI Design Fundamental



Perlu dikuasai



Typography



Spacing



Coloring



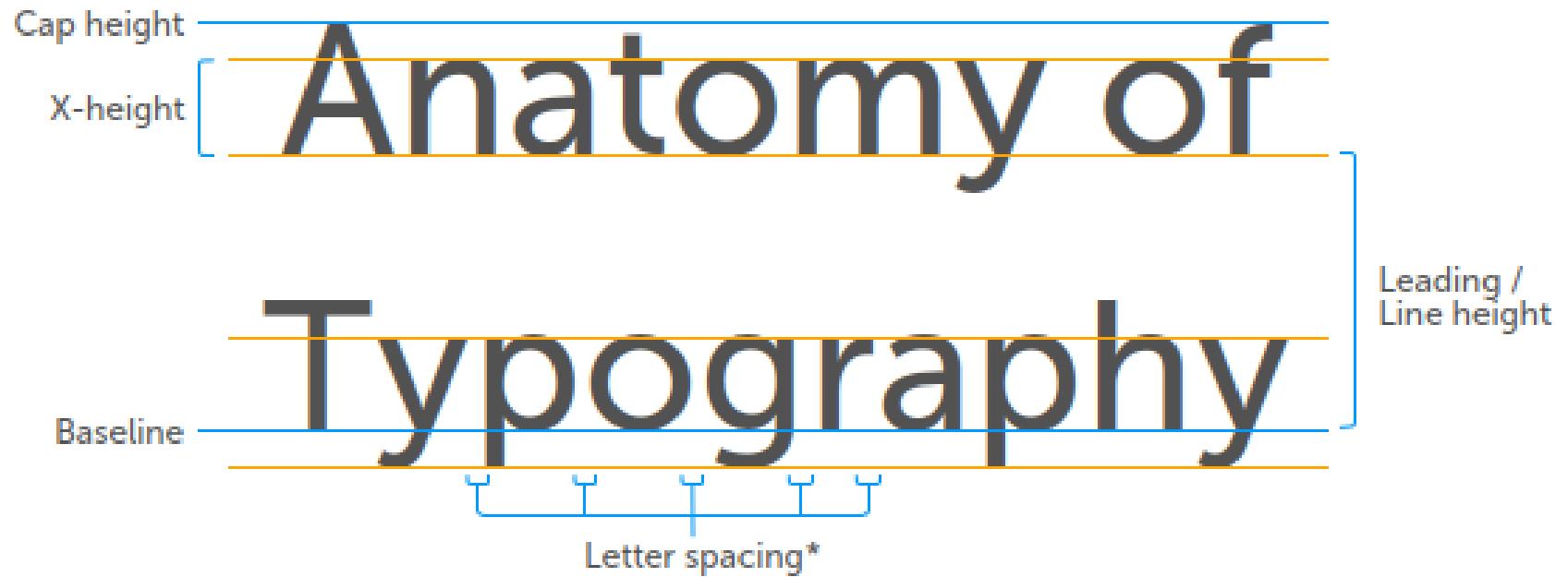
UX Law



Responsive
Design

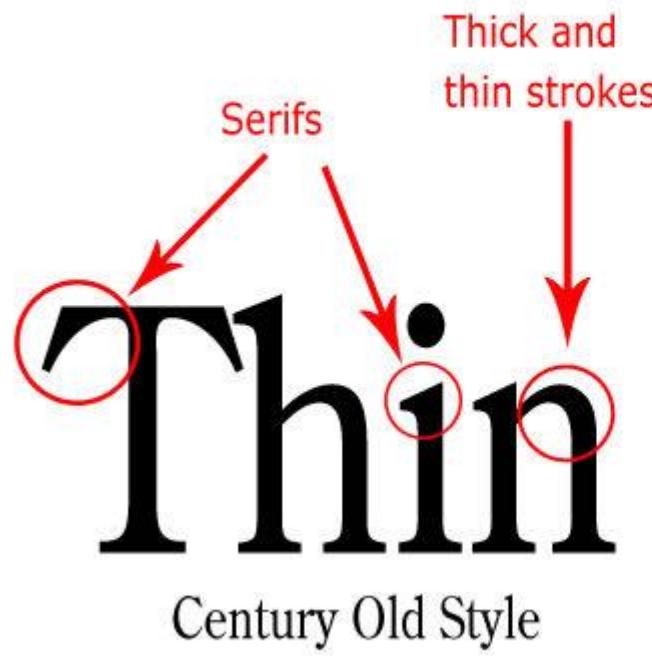
Typography



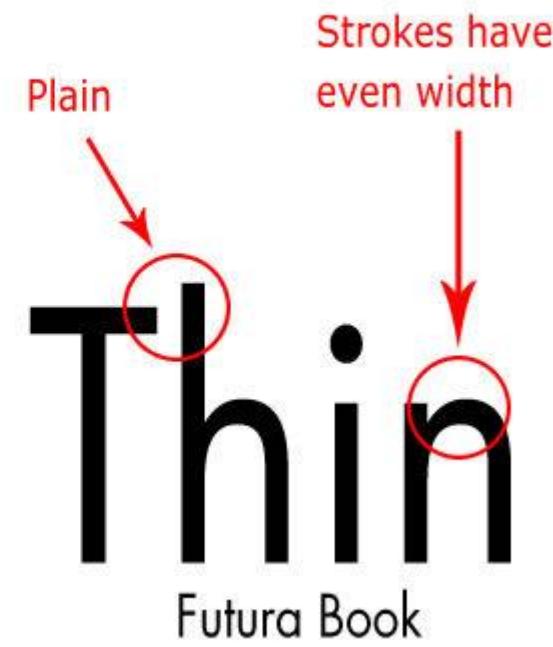


Typeface didalam UI Design

Serif Font



Sans Serif Font



Google

Indonesia

All Maps Images News Videos Shopping

Indonesia
Country in Asia

Indonesia, officially the Republic of Indonesia, is a country in Southeast Asia and Oceania, between the Indian and Pacific oceans. It consists of more than seventeen thousand islands, including Sumatra, Java, Sulawesi, and parts of Borneo and New Guinea. [Wikipedia](#)

Population: 270.6 million (2019) [World Bank](#)

Plan a trip

- Things to do >
- 1 h 5 min flight >
- Art ▾
- Natural resources ▾

✓ Sans Serif

Google

Indonesia

All Maps Images News Videos Shopping

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Serif

Google

Indonesia

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Population: 270.6 million (2019) [World Bank](#)

Plan a trip

- Things to do >
- 1 h 5 min flight >
- Art ▾
- Natural resources ▾

OH MY GOD!

Hierarki ukuran typeface

12px	The quick brown fox jumps over the lazy dog
14px	The quick brown fox jumps over the lazy dog
16px	The quick brown fox jumps over the lazy dog
18px	The quick brown fox jumps over the lazy dog
20px	The quick brown fox jumps over the lazy dog
24px	The quick brown fox jumps over the lazy dog
30px	The quick brown fox jumps over the lazy dog
36px	The quick brown fox jumps over the lazy dog
48px	The quick brown fox jumps over th
60px	The quick brown fox jumps
72px	The quick brown fox ju

Title 1	Inter-Medium; 24pt; letter-space: 0,25
Title 2	Inter-Medium; 20pt; letter-space: 0,5
Title 3	Inter-Medium; 18pt; letter-space: 0,5
Headline	Inter-Semibold; 18pt; letter-space: 0,5
Subheadline	Inter-Semibold; 16pt; letter-space: 0,3
Body Copy	Inter-Regular; 14pt; letter-space: 0,3
Caption 1	Inter-Regular; 12pt; letter-space: 0,2
Caption 2	Inter-Regular; 11pt; letter-space: 0,2
Text Field	Inter-Regular; 18pt; letter-space: 0,5
Button	Inter-Semibold; 16pt; letter-space: 0,5

Inter
**the quick brown fox
jumps over the lazy
dog**

Roboto
**the quick brown fox
jumps over the lazy dog**

SF Pro
**the quick brown fox
jumps over the lazy dog**

Museo
**the quick brown fox
jumps over the lazy dog**

Open Sans
**the quick brown fox
jumps over the lazy
dog**

Circular Std
**the quick brown fox
jumps over the lazy dog**

Untuk membuat UI Design cukup gunakan 1 sampai 2 typeface

Spacing (Jarak)



Spacing (Jarak) sangat penting dalam membuat desain UI

Jarak dapat bermanfaat
dalam membuat desain UI
lebih cantik & clean

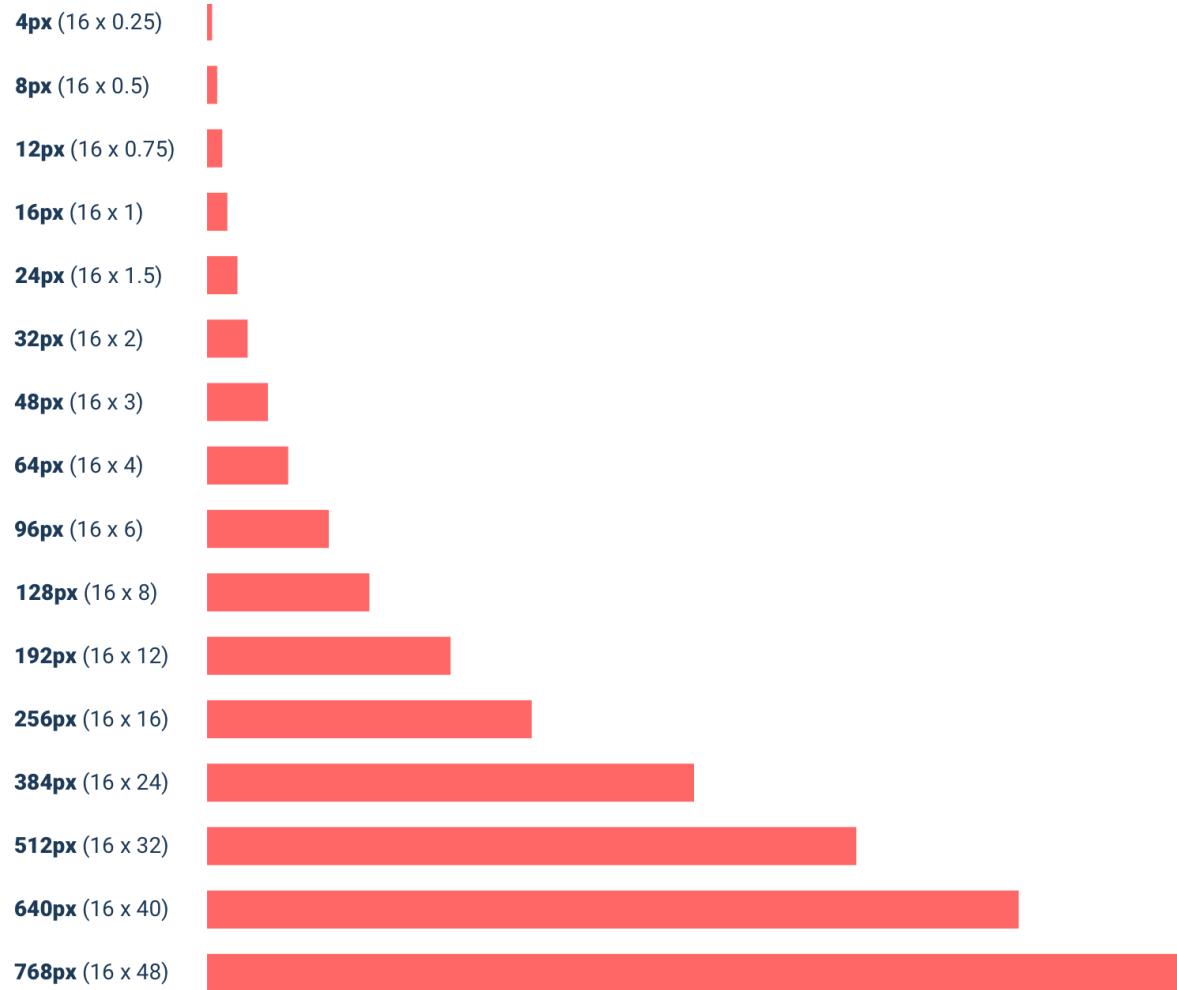
The image displays three distinct user interface snippets arranged vertically, each featuring a red circular icon with a white symbol (X, checkmark, or checkmark with a circle) in its top right corner.

- Top Snippet:** A "Set up Two-Factor Authentication" form titled "STEP 1 OF 3". It includes a descriptive text, a "Setup your phone" section with a "Country" dropdown (set to Canada), a "Phone Number" input field (+1 (555) 555-5555), and a "Next Step" button.
- Middle Snippet:** A "Review this product" section titled "STEP 1 OF 3". It shows a chart titled "50 customer reviews" with the following data:

Star Rating	Percentage
5 star	56%
4 star	20%
3 star	14%
2 star	2%
1 star	8%

A "Write a review" button is present at the bottom.
- Bottom Snippet:** A duplicate "Review this product" section, identical to the middle one, also featuring the same chart and "Write a review" button.

Hierarki ukuran spacing (jarak)





PREMIER SUITE

AVG \$450 USD/NIGHT

[View Rates](#)

HIGHLIGHTS

- Non-smoking luxury hotel
- Newly renovated suite
- Nearby amenities
- Heated indoor pool
- Complimentary wifi internet service
- Electric car charging stations on-site

26px

24px

26px

12px

15px

21px

25px

13px

22px

PREMIER SUITE

AVG \$450 USD/NIGHT

[View Rates](#)

HIGHLIGHTS

- Non-smoking luxury hotel
- Newly renovated suite
- Nearby amenities
- Heated indoor pool
- Complimentary wifi internet service
- Electric car charging stations on-site

24px

24px

12px

12px

24px

24px

12px

24px

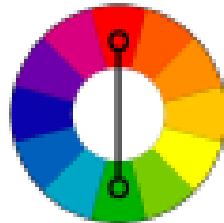
24px

12px

24px

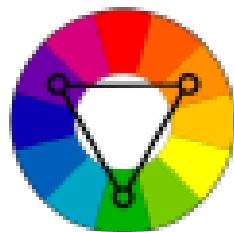
Coloring





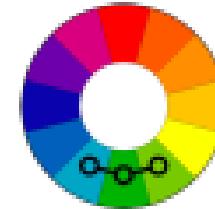
Complementary

Warna yang berseberangan dari color wheel sehingga warna yang dihasilkan sangat kontras



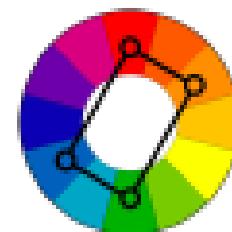
Triad

Kombinasi warna yang membentuk segitiga untuk menghasilkan warna yang lebih vibrant



Analogous

Warna turunan yang diambil bersebelahan dari color wheel



Rectangle (Tetradic)

Kombinasi warna yang mengambil 2 warna yang saling berseberangan & membentuk persegi empat

Semua desain UI yang cantik berawal dari pilihan warna yang apik!



Struktur Warna dalam UI Design

Primary



Neutral



Accents



Website Color Pallette

coolors



coolors.co

Color Hunt



colorhunt.co

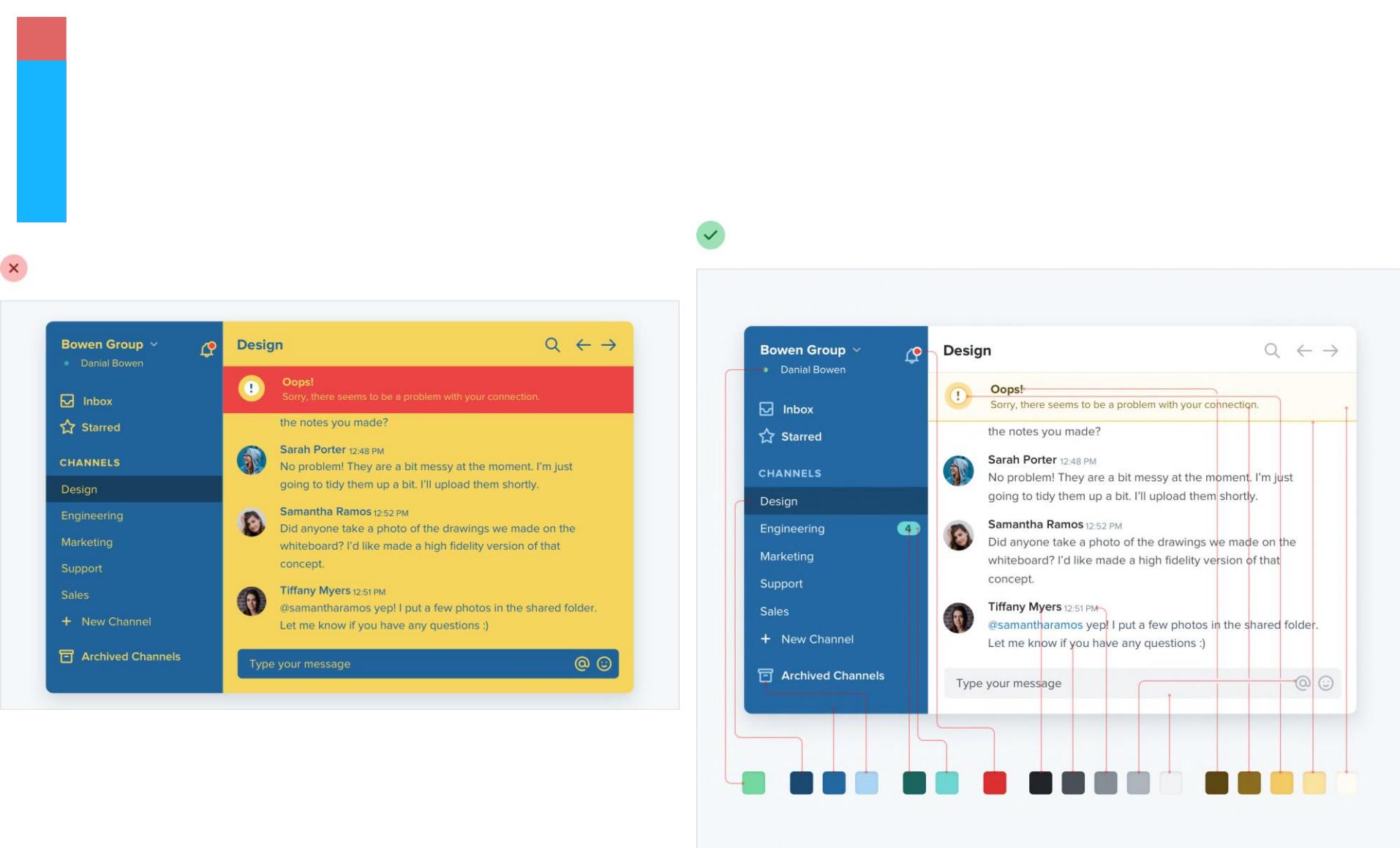
Happy Hues



happyhues.co



colors.eva.design



Accessible Color



**UI terbaik
adalah desain
yang dapat
digunakan
untuk semua
user**
(Buta warna parsial /
buta warna total)

Normal Text

EXAMPLE	COLOR	CONTRAST	GRADE
The five boxing wizards jump quickly.	hsl(0, 0%, 54%)	3.45:1	Fail
The five boxing wizards jump quickly.	hsl(0, 0%, 42%)	5.41:1	AA
The five boxing wizards jump quickly.	hsl(0, 0%, 33%)	7.57:1	AAA

Large Text

EXAMPLE	COLOR	CONTRAST	GRADE
The five boxing wizards jump...	hsl(0, 0%, 59%)	2.96:1	Fail
The five boxing wizards jump...	hsl(0, 0%, 54%)	3.45:1	AA
The five boxing wizards jump...	hsl(0, 0%, 42%)	5.41:1	AAA



NORMAL VISION

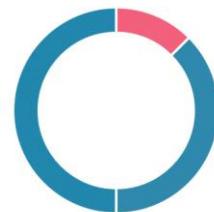
Leads



Sales Associates	50%
Online Channels	37.5%
Direct Mail	12.5%

BLUE-YELLOW COLOR BLINDNESS

Leads



Sales Associates	50%
Online Channels	37.5%
Direct Mail	12.5%

NORMAL VISION

Leads



Sales Associates	50%
Online Channels	37.5%
Direct Mail	12.5%

BLUE-YELLOW COLOR BLINDNESS

Leads



Sales Associates	50%
Online Channels	37.5%
Direct Mail	12.5%



NORMAL VISION

Monthly Revenue
\$103K



Net Revenue
\$103K



RED-GREEN COLOR BLINDNESS

Monthly Revenue
\$103K



Net Revenue
\$103K



Monthly Revenue
\$103K



Net Revenue
\$103K





Website untuk Cek Kontras Warna

Aa 6.78 AA

whocanuse.com

colorable.jxnblk.com

whocanuse.com

UX Law



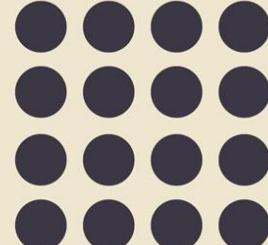
Proximity

Elements that are placed closer together are perceived as being more related than those spaced further apart.

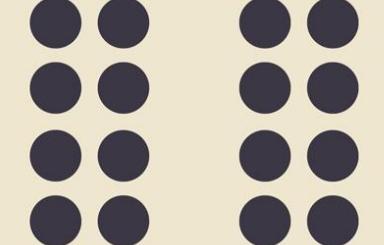
1-Law of Proximity

Objek atau komponen yang sejenis harus dikelompokan secara bersamaan

Before



After



amazon.es  prime

Todos los departamentos - Amazon.es de Carlos Ofertas Cheques regalo Vender Ayuda

REBAJAS Hasta

Hola Carlos Cuenta y listas - Pedidos Mi Prime

Envío en ama

Televisores

Mostrar resultados para

Electrónica Los más vendidos Móviles y telefonía Fotografía y videocámaras Audio y Hi-fi TV, video y Home Cinema Accesorios GPS Informática Instrumentos Musicales

Televisions

Bienvenido a la página de Televisores. Aquí podrás encontrar una amplia gama de: televisores LED, televisores Full HD, smart TVs, televisores 3D, y una gran variedad de accesorios para televisores.

Últimas novedades A

Filtrar por

Tamaño de la pantalla

- Hasta 29" (74 cm)
- 30-39" (76-99 cm)
- 40-49" (102-125 cm)
- 50-59" (127-150 cm)
- 60-69" (152-175 cm)
- 70" (178 cm) más

Formato HD

- 1080p Full HD
- 720p HD Ready

Tecnología de la pantalla

- CRT
- LCD
- LED
- OLED
- Plasma
- QLED

Marca

- TD Systems
- LG
- Philips
- Samsung
- Nevir
- NPG
- Hitachi

Ver más

Precio

Menos de 200 EUR 200 - 400 EUR 400 - 700 EUR 700 - 900 EUR 900 - 1.400 EUR



Samsung UE32M5005 - TV de 32", negro  4 EUR 299,99 EUR 250,00

LG 49UJ651V - TV LED UHD 4K de 49"  40 EUR 949,99 EUR 559,00 

Nevir - 7412 tv 16" led hd uhd dvb...  18 EUR 109,00 EUR 99,99 

TV LED 24" LG 24MT49VW, HD Ready  LG 35 EUR 139,90 EUR 124,30 

Monitor TV LED 28" LG 28MT49-PZ HD Ready  LG 35 EUR 135,90 EUR 124,30 

TELEVISOR NEVIR NV8741820HDN 12v NEGRO  15 EUR 135,90 EUR 124,30 

TV LED 24" - Philips 24PFT4022/12  39 EUR 141,07 EUR 135,90 

Samsung C24F396I Monitor, color...  63 EUR 159,00 EUR 141,07 

1-24 de más de 2.000 resultados para Electrónica : TV, video y home cinema : Televisores

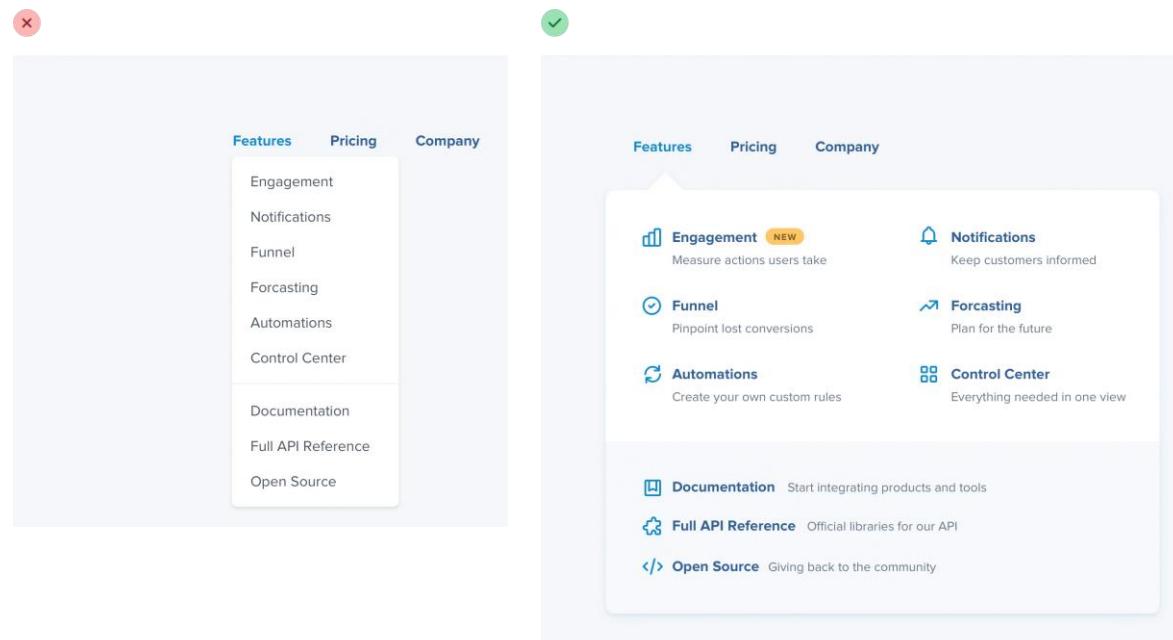
Ordenar por Popularidad

2-Law of Common Region

Objek atau komponen yang sejenis harus dikelompokan dengan pemisah yang jelas

Law of Common Region

Example on the left clearly denotes 3 different metrics while on the right, one could easily be confused

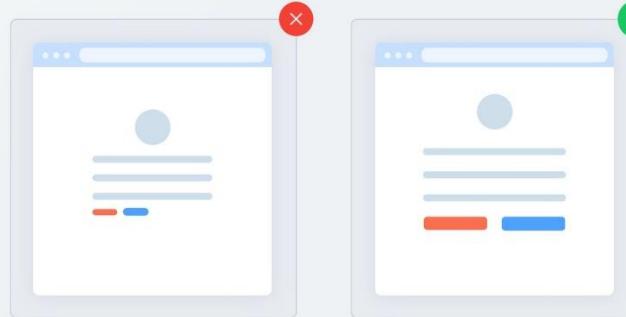


Top UX Laws for Design

Fitts's Law.

The time to acquire a target is a function of the distance to and size of the target.

The smaller your target area is, the longer it takes the user to perform that action based on the distance/size ratio.



✉ Kishoreux

✉ productdesign_ux

Discover Start a project

KICKSTARTER

Search Q Log in

Our Heroes Rock!

A 3D animated family series that explores the Heroes of Black History through Hip-Hop and Science Fiction. (Pilot Episode)

US\$ 95,539 pledged of US\$ 75,000 goal

866 backers

35 days to go

Back this project

Remind me

All or nothing. This project will only be funded if it reaches its goal by Mon, April 12 2021 11:00 AM UTC +07:00.

Project We Love Animation Tampa, FL

4-Miller's Law

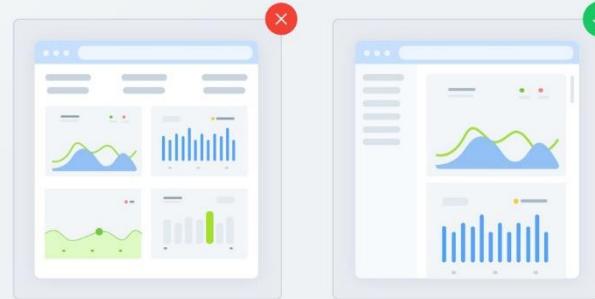
Hukum yang menyatakan bahwa manusia hanya dapat mengingat 5-7 item dalam short-term memory

Top UX Laws for Design

Miller's Law

The average person can only keep 7 (plus or minus 2) items in their working memory.

Display information in chunks, this way it is manageable to users to remember what they consumed.



✉ Kishoreux

✉ productdesign_ux

Responsive Design





Desktop



Tablet



Mobile

UI Design akan semakin bersahabat jika dapat diimplementasikan di semua ukuran device

The image displays four versions of the Dropbox landing page, illustrating responsive design across different screen sizes.

- Mobile View:** Shows a dark-themed mobile interface with a large "Sign up for free" button and a "Dropbox" logo icon.
- Tablet View:** Shows a landscape-oriented tablet interface with a large "Sign up for free" button and a "Dropbox" logo icon.
- Desktop View 1:** Shows a standard desktop view with a large "Sign up for free" button and a "Dropbox" logo icon.
- Desktop View 2:** Shows a second desktop view with a "Sign up" button and a "Sign up with Google" button.

Header Elements: All views include a "Sign In" link and a "Download" link in the top right corner.

Main Headline: "Put your creative energy to work, with Dropbox"

Subtext: "Dropbox is a modern workspace designed to reduce busywork—so you can focus on the things that matter."

Call-to-Action: "Sign up for free" (Mobile, Tablet, Desktop 1) or "Sign up" (Desktop 2)

Image: A large, vibrant photograph of a hand holding a glowing, colorful sphere (resembling a planet or a drop of paint) inside a transparent cube.

Caption: "Illustration by David Revoy" (Mobile), "Photograph by David Revoy" (Tablet, Desktop 1, Desktop 2).

Text Block 1: "Keep everything organized without breaking your flow"

Text Block 2: "Dropbox brings your files together, in one central place. They're easy to find and safely synced across all your devices—so you can access them anytime, anywhere. No more wasting the day tracking down work."

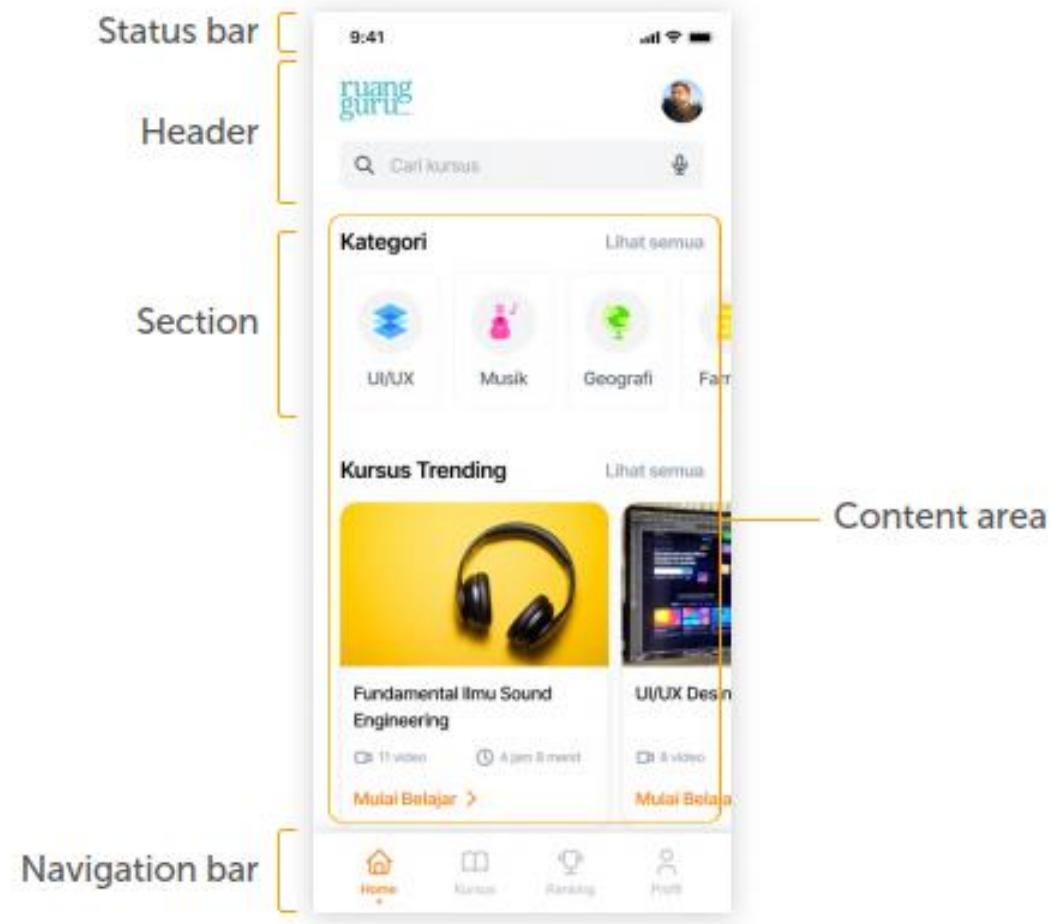
Text Block 3: "Keep everything organized without breaking your flow"

Text Block 4: "Dropbox brings your files together, in one central place. They're easy to find and safely synced across all your devices—so you can access them anytime, anywhere. No more wasting the day tracking down work."

Footer: "Sign up" (Desktop 2), "Sign up with Google" (Desktop 2)

Hal yang diperhatikan dalam UI Responsive Design

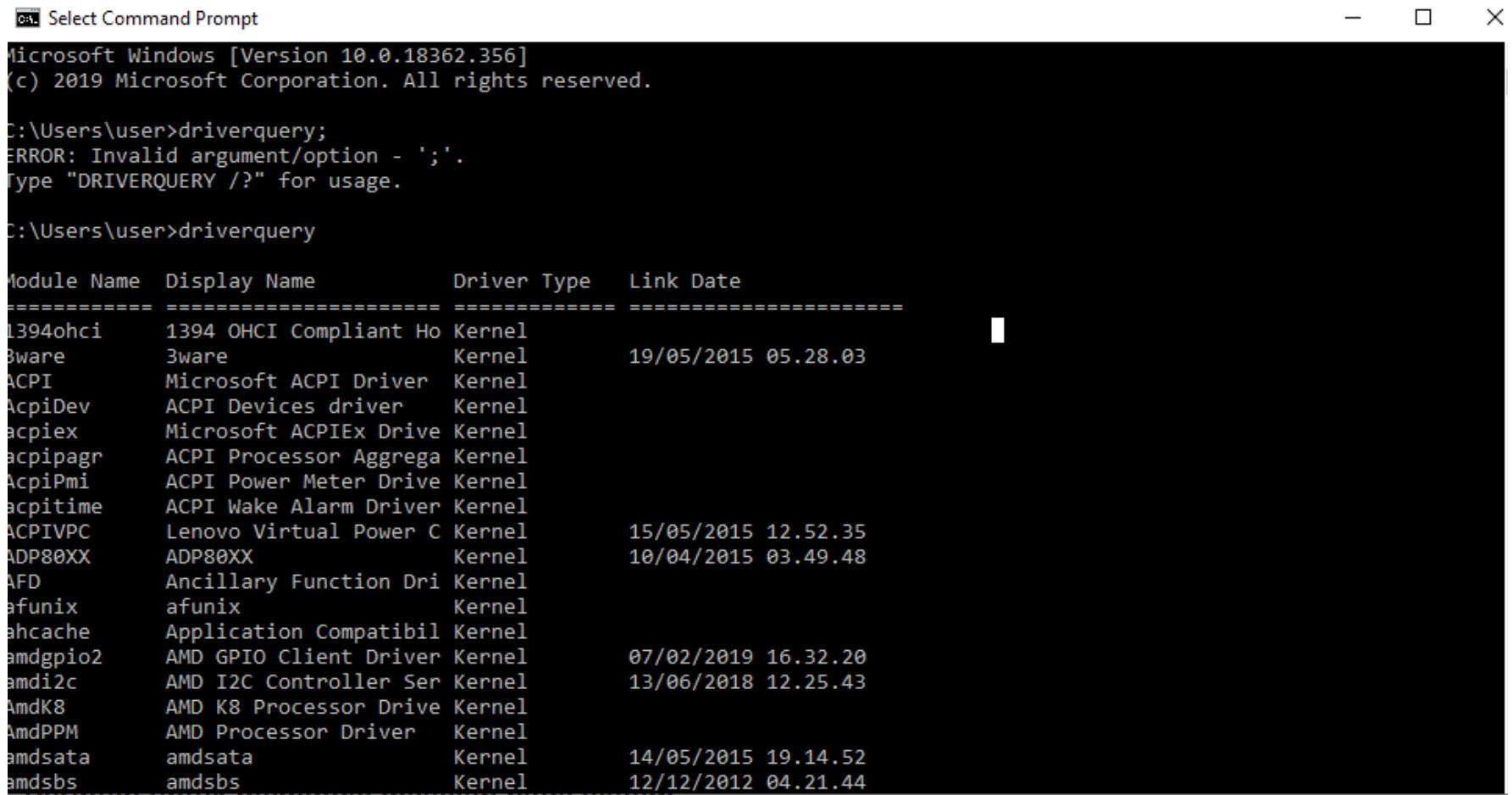
1. Perhatikan perbedaan jarak antara *Desktop* & *Mobile*
2. Perhatikan perbedaan ukuran font antara *Desktop* & *Mobile*
3. Kuasai basic pengetahuan coding
4. Manfaatkan column yang digunakan



Bentuk - Bentuk Antarmuka



1. COMMAND-BASED LINE



Microsoft Windows [Version 10.0.18362.356]
(c) 2019 Microsoft Corporation. All rights reserved.

```
C:\Users\user>driverquery;
ERROR: Invalid argument/options - '-'.
Type "DRIVERQUERY /?" for usage.

C:\Users\user>driverquery

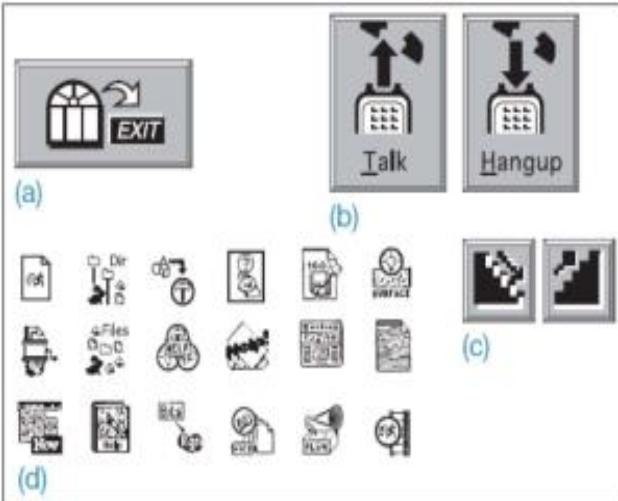
Module Name  Display Name          Driver Type   Link Date
===== ====== ====== ====== =====
1394ohci    1394 OHCI Compliant Ho Kernel
Bware       Bware                  Kernel      19/05/2015 05.28.03
ACPI        Microsoft ACPI Driver Kernel
AcpiDev     ACPI Devices driver  Kernel
acpiex      Microsoft ACPIEx Drive Kernel
acpipagr   ACPI Processor Aggrega Kernel
AcpiPmi     ACPI Power Meter Drive Kernel
acpitime    ACPI Wake Alarm Driver Kernel
ACPIVPC     Lenovo Virtual Power C Kernel  15/05/2015 12.52.35
ADP80XX    ADP80XX                Kernel      10/04/2015 03.49.48
AFD         Ancillary Function Dri Kernel
afunix      afunix                Kernel
ahcache     Application Compatibil Kernel
amdgpio2   AMD GPIO Client Driver Kernel  07/02/2019 16.32.20
amdi2c     AMD I2C Controller Ser Kernel  13/06/2018 12.25.43
AmdK8      AMD K8 Processor Drive Kernel
AmdPPM     AMD Processor Driver   Kernel
amdsata    amdsata                Kernel      14/05/2015 19.14.52
amdsbs    amdsbs                 Kernel      12/12/2012 04.21.44
```

2. GRAPHICAL USER INTERFACE (GUI)



2. GRAPHICAL USER INTERFACE (GUI)

1990an - 2000



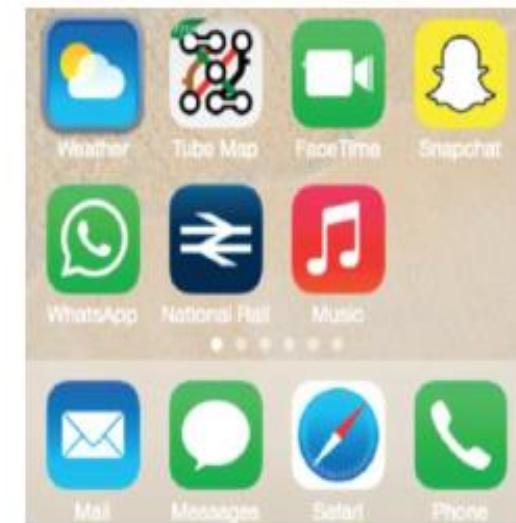
early icons

2000 - 2010



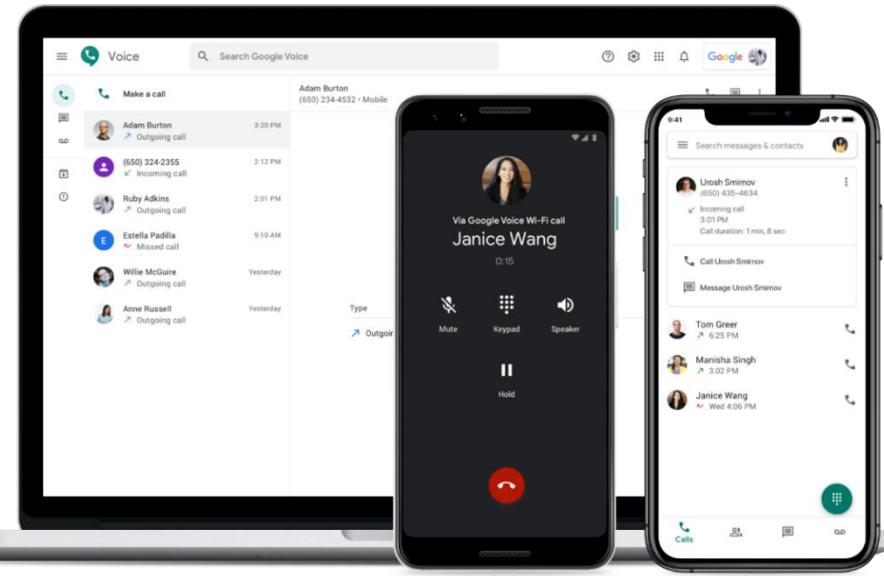
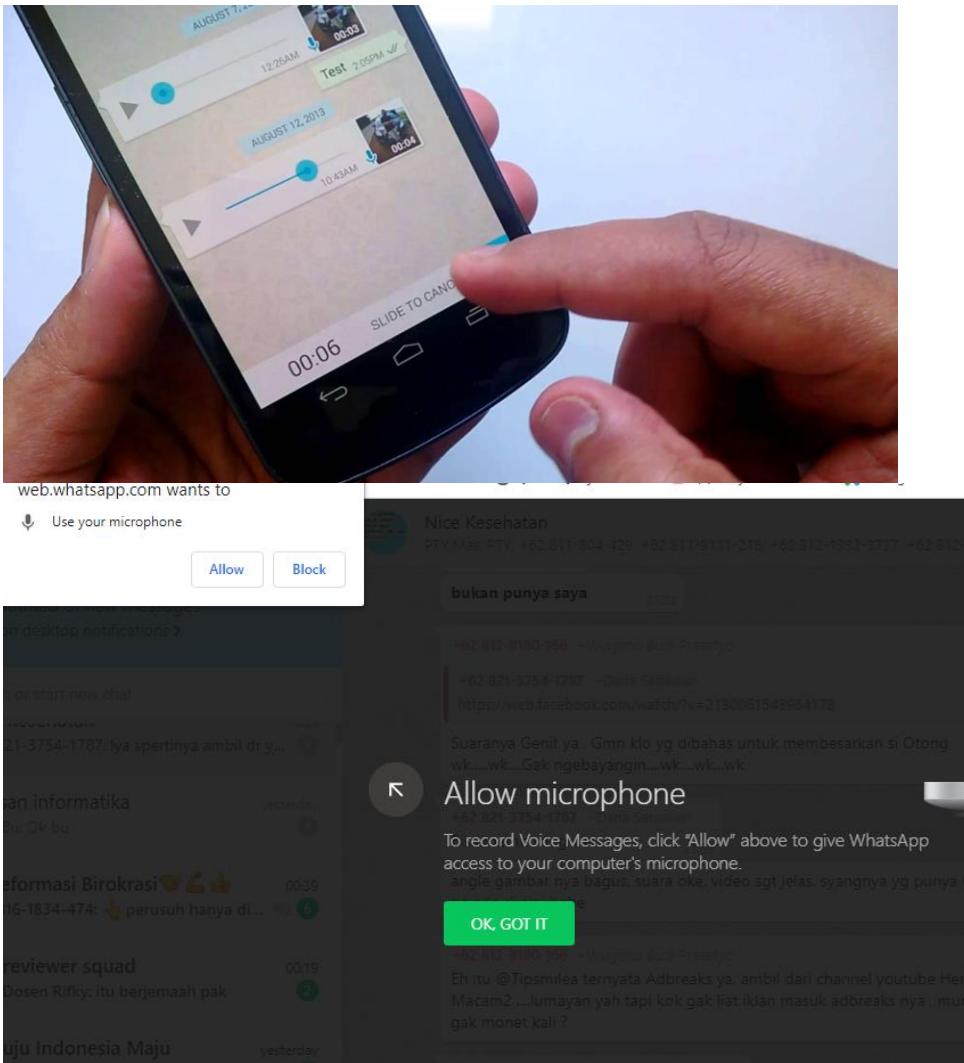
newer (skeuomorphic) icons

2010 - sekarang



modern flat 2D icons

3. SPEECH / VOICE



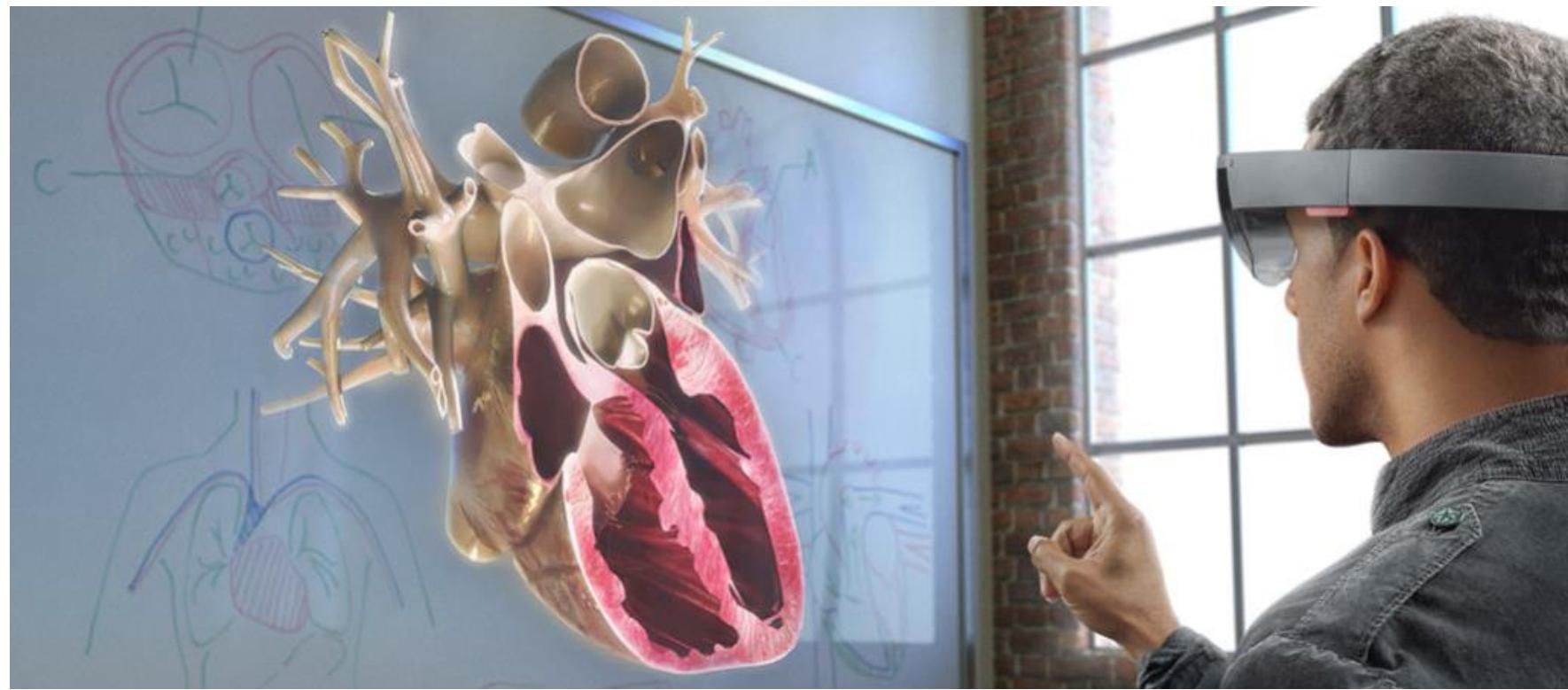
4. HAPTIC FEEDBACK



6. AUGMENTED & MIXED REALITY



7. VIRTUAL REALITY



8. ROBOT & DRONE



9. WEARABLE



10. INFORMATION VISUALIZATION & DASHBOARDS





Figure 6.19 A typical toaster with basic physical controls

... bahkan perabotan rumah kita sehari-hari

Tips





Yang dilakukan sebelum mendesain

1. Buat wireframe terlebih dahulu
2. Cari inspirasi product serupa
3. Cari inspirasi desain
4. Buat pallete warna
5. Buat/cari icon style yang akan digunakan

Website untuk Mencari Inspirasi Desain



Dribbble
dribbble.com



Pinterest
pinterest.com

Bēhance

Behance
behance.net



Mobbin
mobbin.design

Referensi

Referensi

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