# Design Thinking and Advanced Prototyping

ELEC-C9821 –Visual Design



Salu Ylirisku 22.3.2023

## Today's agenda

### 09:15 - 10 Lecture

- 1. Visual design for a design concept poster
- 2. Visual design for the web app

### 10:15 - 12 Workshop

3. Project work



## Design concept poster



# What is the purpose of a design concept poster?

- 1. To catch attention "What is that?!"
- 2. To communicate the key value "Aha! It does that for us."
- 3. The highlight technical advances "Wow! So smart."
- 4. To make an impact "Oh, these are the guys to contact."



## What the poster is not

- A poster is not a complete explanation of your design concept
- A poster is not a reading exercise for the visitor



## How to catch attention?

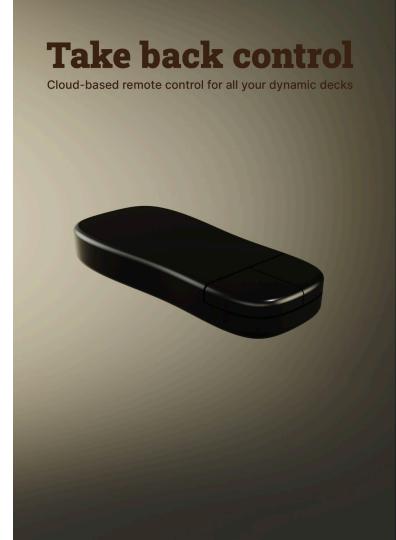
- 1. Be big
- 2. Be visual
- 3. Stand out





# How to communicate the key value?

- 1. Show, rather than tell
- 2. Less is more one point instead of many
- 3. Avoid jargon





## How to highlight technical advances?

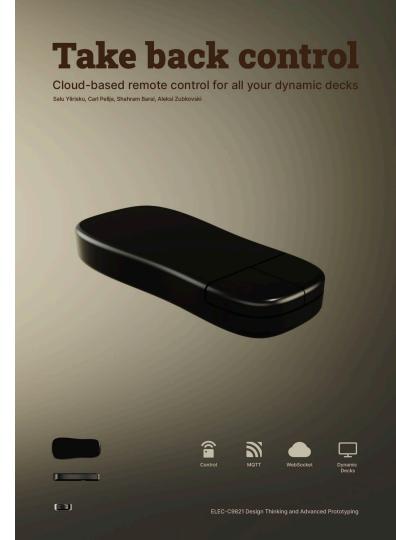
- 1. Use symbols
- 2. Use charts
- 3. Use diagrams





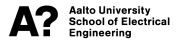
# How to make an impact?

- 1. Get all the above right
- 2. Listen for feedback
- 3. Provide a next step



## Poster grading

- 1. The name and the main purpose of the design concept are shown, +1pt
- 2. The unique quality/value of the design is communicated, + 1pt
- 3. An image of the 'loT product concept' is shown, +1pt
- 4. An image of the overall product architecture is shown (e.g. in Cloud, App, Physical, Embedded style), +1pt
- 5. The poster follows (i.e. does not conflict) with the visual design principles given in the 'visual design' lecture, +1pt



# Web App Graphical User Interface (GUI) design



## What is the purpose of a GUI?

- 1. Enable users to get their things done
  - 1. Useful design / utilitarian goodness
- 2. Enable users to get their things done in an optimized manner
  - 1. Usable design / instrumental goodness
- 3. Enable users to enjoy what they are doing with your app
  - 1. Enjoyable design / hedonic goodness



## Enable users to get their things done

- 1. Know what your users want to do
- 2. Provide means to get it done



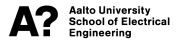
# Enable users to get their things done in an optimized manner

- 1. Know what your users want to do
  - 1. Prioritise the important goals over the less important ones
- 2. Provide means to get it done
  - 1. Make the more important tasks clearer, easier, less effortful, and quick
- 3. Prevent confusion, errors, extra steps and burden



# Enable users to enjoy what they are doing with your app

- Make it usable
- 1. Beauty and harmony
- 2. Style and identity
- 3. Playfulness and control



## **Beauty and harmony**

- Sizing and proportions
- Colours and contrast
- Alignment and flow



## **Sizing and Proportions**

- Text
- Layout



### Text sizes

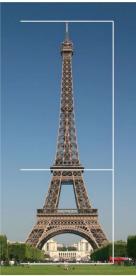
- How many text sizes should you need for an app?
- Challenging as display sizes vary a lot
- A systematic approach is needed

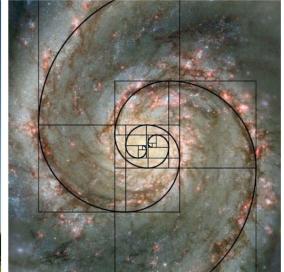


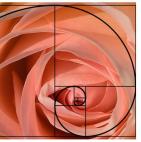
## Text sizes - Systematic approach

- Golden ratio ~1.61803
- Challenging for web app design
  - You end up with fractional values.
  - Using a 16px base and golden ratio, your scale will end up with lots of sizes that don't land right on the pixel, like 31.25px, 39.063px, 48.828px, etc.
  - How to define your size set?

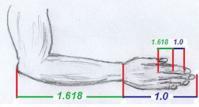












## Just make a list

Here is one proposed by the creators of the **TailwindUI** 

Use either px or rem values to keep the whole system functionable!

The quick brown fox jumps over the lazy

The quick brown fox jumps over the

The quick brown fox jumps over the lazy dog

18px

12px

**14px** 

**16px** 

The quick brown fox jumps over The quick brown fox jumps of

**20px** 

**24px** 

30px

The quick brown fox jun

The quick brown for

The quick brown

The quick b

The quick



Watham, A., & Schoger, S. (2022). Refactoring UI. TailwindUI.

The qui

## **Example**



#### Vilho Was My Guru

Inspired by the old man, I joined the hipsters

TEXT: AUKTOR AUKTORIUS

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do elusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamoc laboris nisi ut aliquip ex ea commodo consequat. Duis autei rure dolor in reprehenderit in voluptate velit esse elitum dolore e ufugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culoa oui officia deserunt moliit animi de sta labora.

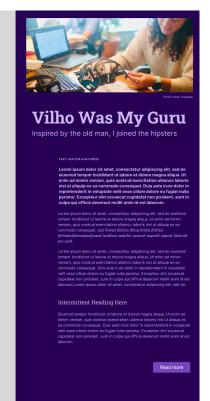
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#### Intermittent Heading Here

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Read more





### **Typography - SM**

Title / Header 1	Family: Roboto Slab Weight: 700 Size: 72px / TW-7xl Letter-spacing: -1%	Title H1
Header 2	Family: Roboto Slab Weight: 700 Size: 48px / TW-5xl	Title H2
Header 3	Family: Roboto Slab Weight: Normal Size: 24px	Title H3
Subtitle	Family: Inter Weight: normal Size: 30px	Subtitle
Lead paragraph	Family: Inter Weight: bold Size: 18px Line height: 24px	Body
Body	Family: Inter Weight: normal Size: 16px Letter-spacing: 1% Line height: 24px	Body
Author	Family: Inter Weight: normal Size: 12px Letter-spacing: 5% Text-transform: uppercase	AUTHOR
Button text	Family: Inter Weight: normal Size: 14px	Next Article
Photo credits	Family: Inter Weight: normal Size: 12px	Photo credit

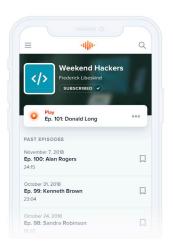
Color 1: Aalto Grey 500 (light mode)

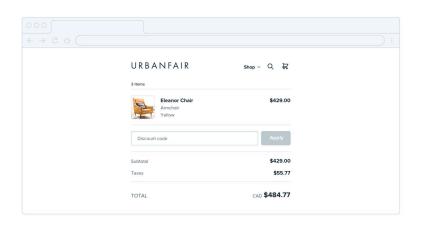
Color 2: Aalto Purple 200 (dark mode)

## Size and Layout

### Start with too much white space!

### **Mobile first**







## **Colours and contrast**

**Primary** 

Secondary

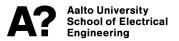
**Neutral** 

**Supporting** 



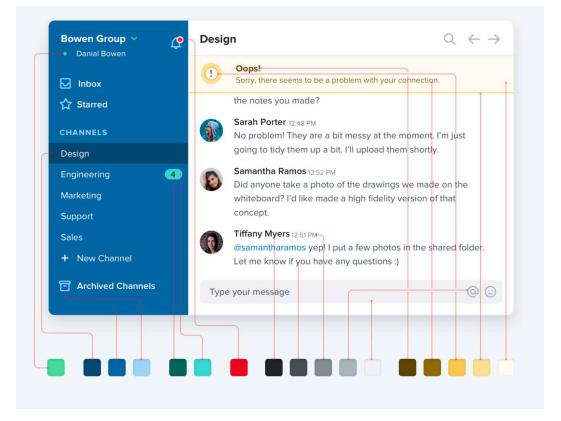
Sähkötekniikan korkeakoulu

Pantone 266



## **Colours and contrast**

Primary
Secondary
Neutral
Supporting





Watham, A., & Schoger, S. (2022). Refactoring UI. TailwindUI.

## **Colours and contrast**

Primary
Secondary
Neutral
Supporting



hsl(172, 98%, 20%)

hsl(172, 94%, 26%)

hsl(170, 91%, 32%)

hsl(168, 78%, 41%)

#17R897

#5FE3CO

#8EEDD1

#C6F7E9

#FOFCF9

hsl(164, 70%, 63%)

hsl(162, 73%, 74%)

hsl(163, 75%, 87%)

hsl(165, 67%, 96%)

#B44D12

#CB6E17

#DE911D

#F0B429

hsl(22, 82%, 39%)

hsl(36, 77%, 49%)

hsl(42, 87%, 55%)

#FADR5F

#FCE588

#FFF3C4

#FFFBEA

hsl(48, 94%, 68%)

hsl(48, 95%, 76%)

hsl(48, 100%, 88%)

hsl(49, 100%, 96%)



## **Generate a palette**

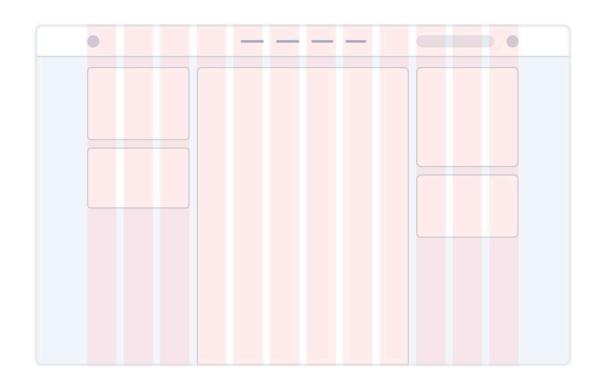
### Search online for web palette





## Alignment and flow

**Grids help in alignment** 





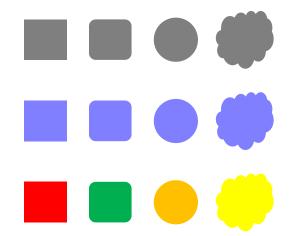
## Style and Identity

- Personality
- Associations



## **Personality**

- Secure and professional
- Calm and easy
- Playful and curious
- Luxurious and exclusive





## **Associations**

- Specific brand
- Nature
- Sci-fi
- Cartoons
- Tradition
- 1980s



## Prototype V2 goals and requirements

- The assignment deadline had a mistake in MyCourses although most teams delivered it.
- The rest, please, submit the V2 document by Friday night



## -- Presence Check --



## **Project work**



## Prototype V2 Learning Goals and Requirements

**Due this Friday!** 



## **Circuit Shop Schedule**

We have a scheduler on MyCourses to help you to distribute across the week so that the small space does not get too full.

Circuit Shop (piiripaja) is located in front of the Electronics Workshop (Sähköpaja).

Available times are during the regular exercise times (may be adjusted if needed)



### This week

- Project: Build your Proto V2
- Keep writing your diary
- Exercises (mini project) (Fri 14-16, Mon 14-16, Tue 10-12)
  - VOLUNTARY!

