



Week 9: Design Patterns

Monday lecture
Uta Hinrichs & Tara Capel

today

- Notes on Assignment 2
 - Example from last year
 - Useful Figma resources
 - Writing your study design section
 - Writing your report
- Re-cap: Design Patterns
- Re-cap: Gestalt Principles

Notes on Assignment 2

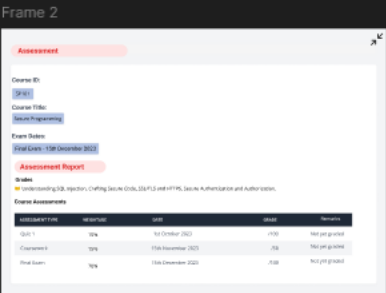
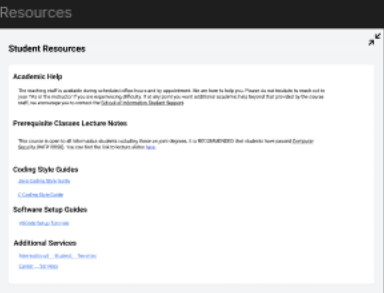
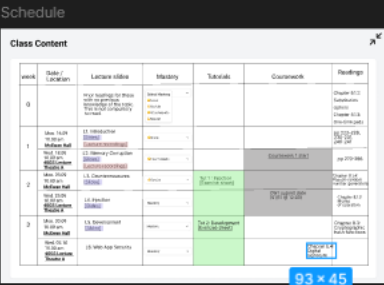
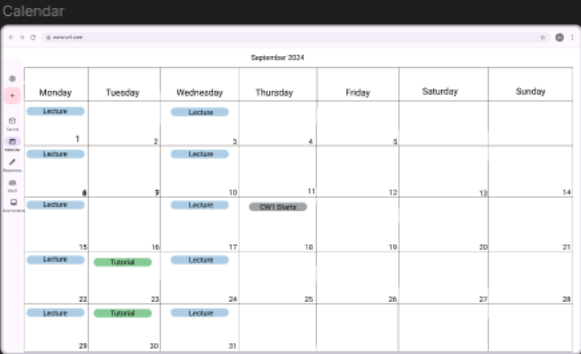
some examples

poor example from last year

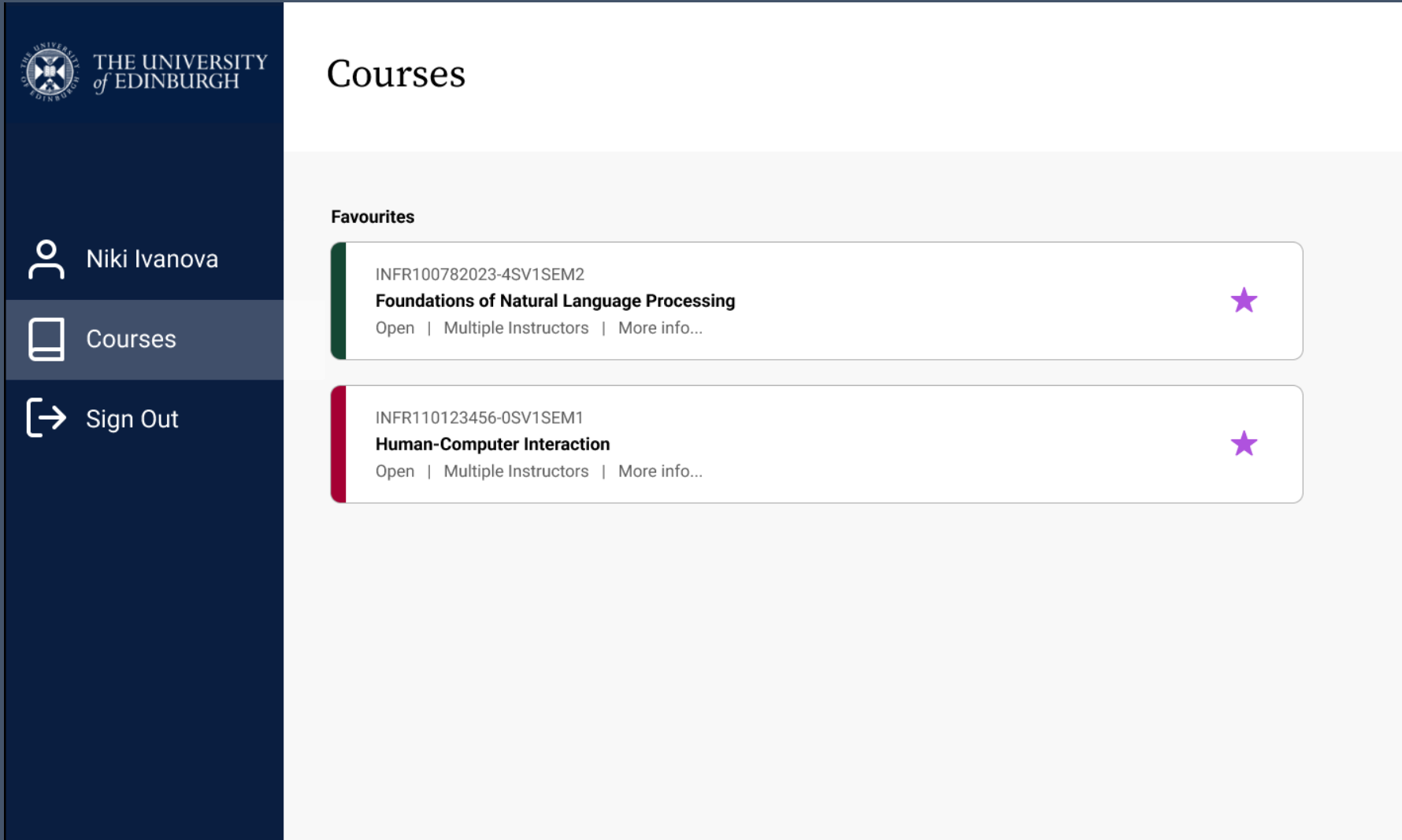
September 2024

⚙️ + ✉️ Course 📅 Calendar ✍️ Resources 👥 Staff 📋 Assessment	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Lecture 1	2	Lecture 3	4	5		
	Lecture 6	7	Lecture 10	11	12	13	14
	Lecture 15	16	Lecture 17	CW1 Starts 18	19	20	21
	Lecture	Tutorial	Lecture				

poor example from last year



good example from last year



<https://www.figma.com/proto/MG2rv0wGo9TYO5IYGcCp8T/CW3---Design?node-id=47-1101&starting-point-node-id=47%3A1101&t=Md4y53UiAM6yYsrh-1>

CW3 - Design

Locked

Pages

Enes

Isa

Layers

textExpansion

courseworks text

using paul tol colour scheme https://d

using ibm design colour palette

Home button

Checkbox

Rectangle 55

Rectangle 54

Line 32

Done?

Due Date

Release Date

Type

Rectangle 53

Check Square Contained

Line 29

Line 28

Line 27

Quiz 1

27 Feb

12 Feb

U

Share

Comments

Properties

13%

Get coding, faster

16

Border

16

Padding 16

8

344x100

8

16

1

16

Dev Mode simplifies handoff, speeds up inspection, and integrates with tools like VS Code and Storybook.

Request access

Flows

Learn Home

Task 1 Start Point

Export

<https://www.figma.com/proto/MG2rv0wGo9TYO5lYGcCp8T/CW3---Design?node-id=47-1101&starting-point-node-id=47%3A1101&t=Md4y53UiAM6yYsrh-1>

useful Figma resources

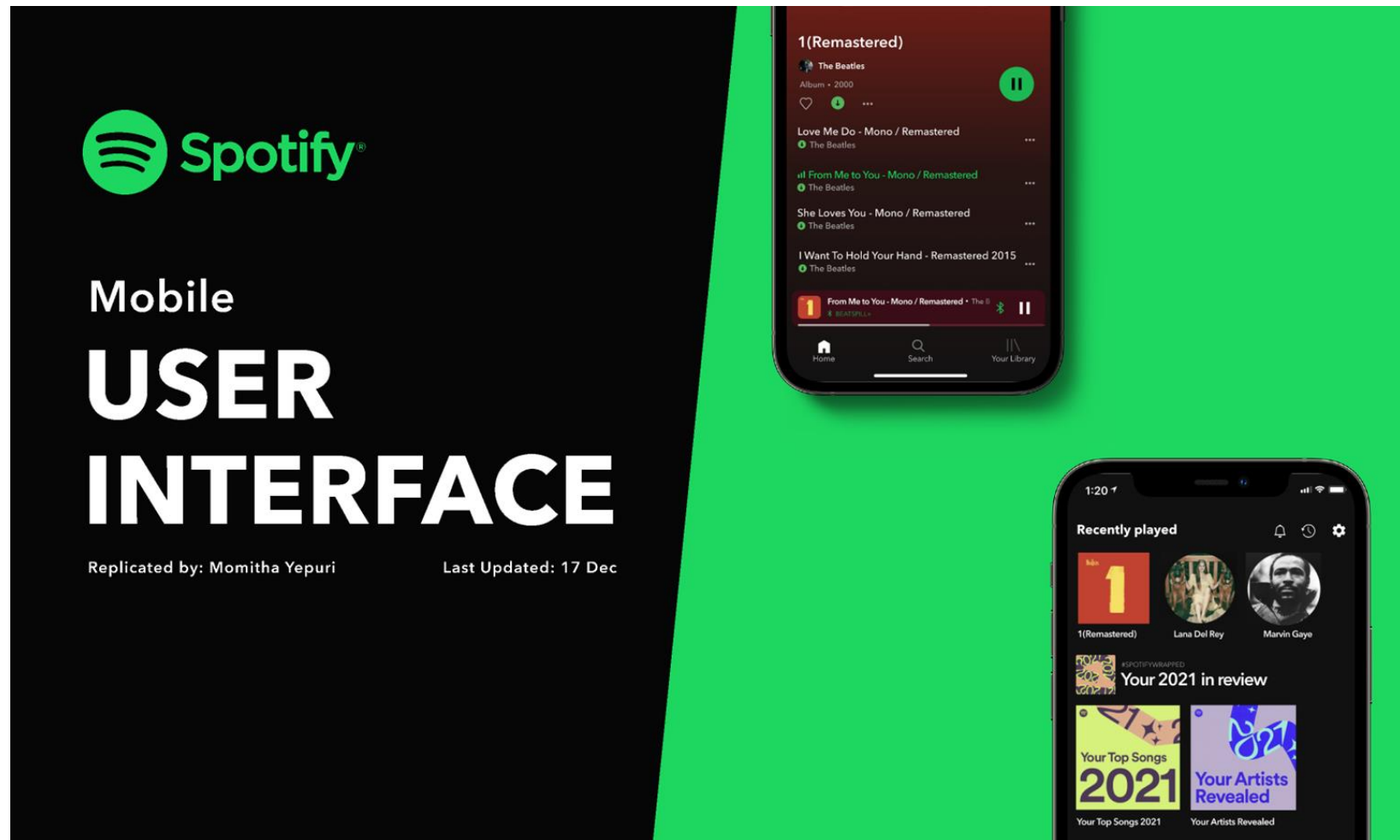
by Jenny Long

Convert website to editable Figma canvas



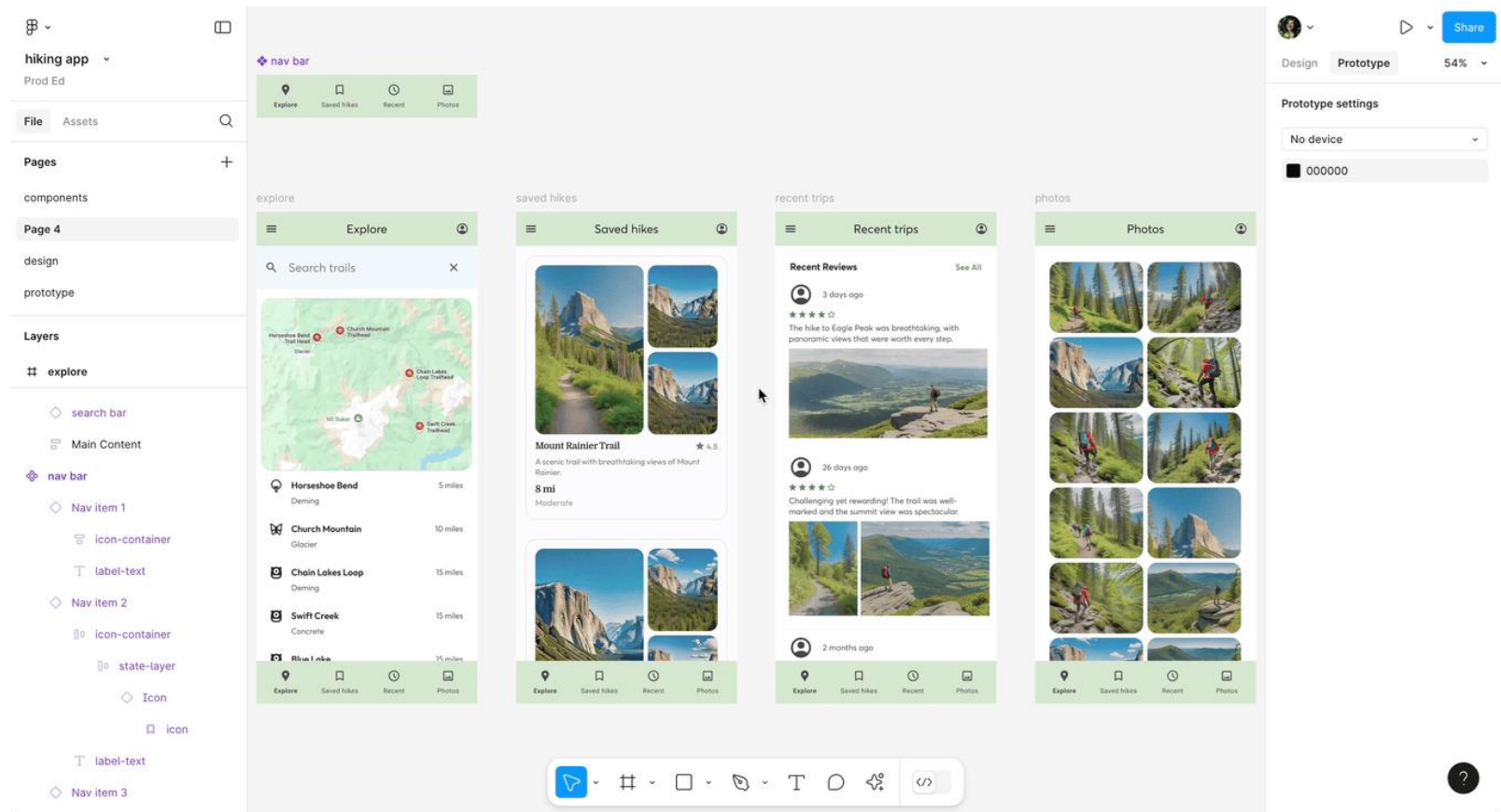
- Convert website to editable Figma canvas:
<https://html.to.design/home/>
- Import via Chrome extension:
https://chromewebstore.google.com/detail/Idnheaepmnmbjjjahokphckbpgciaed?utm_source=item-share-cb

Free Spotify UI kit (Mobile ONLY)



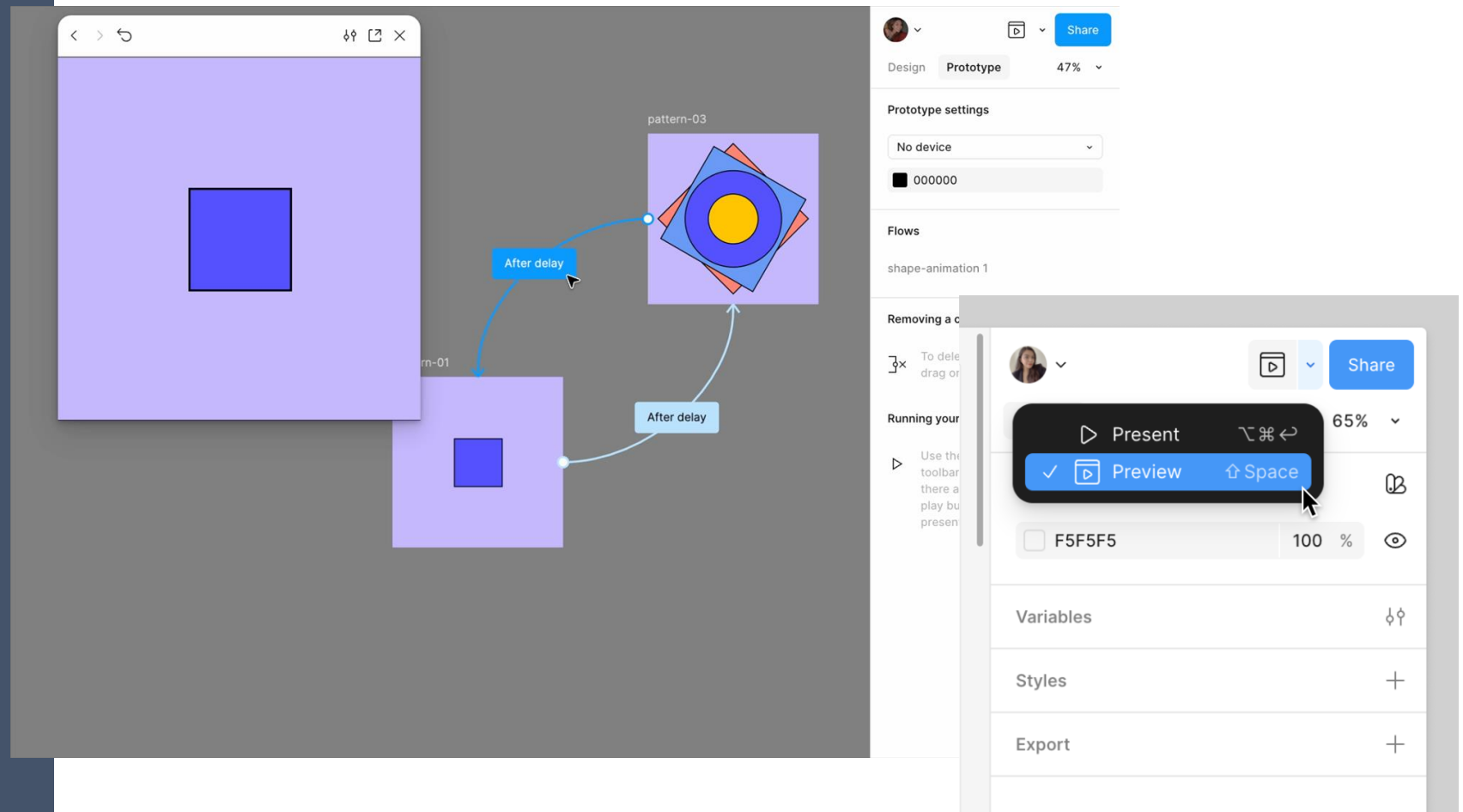
- Free Spotify UI kit (Mobile ONLY):
<https://www.figma.com/community/file/1052832340031141040>
- For websites, please use html.to.design.

Create prototypes



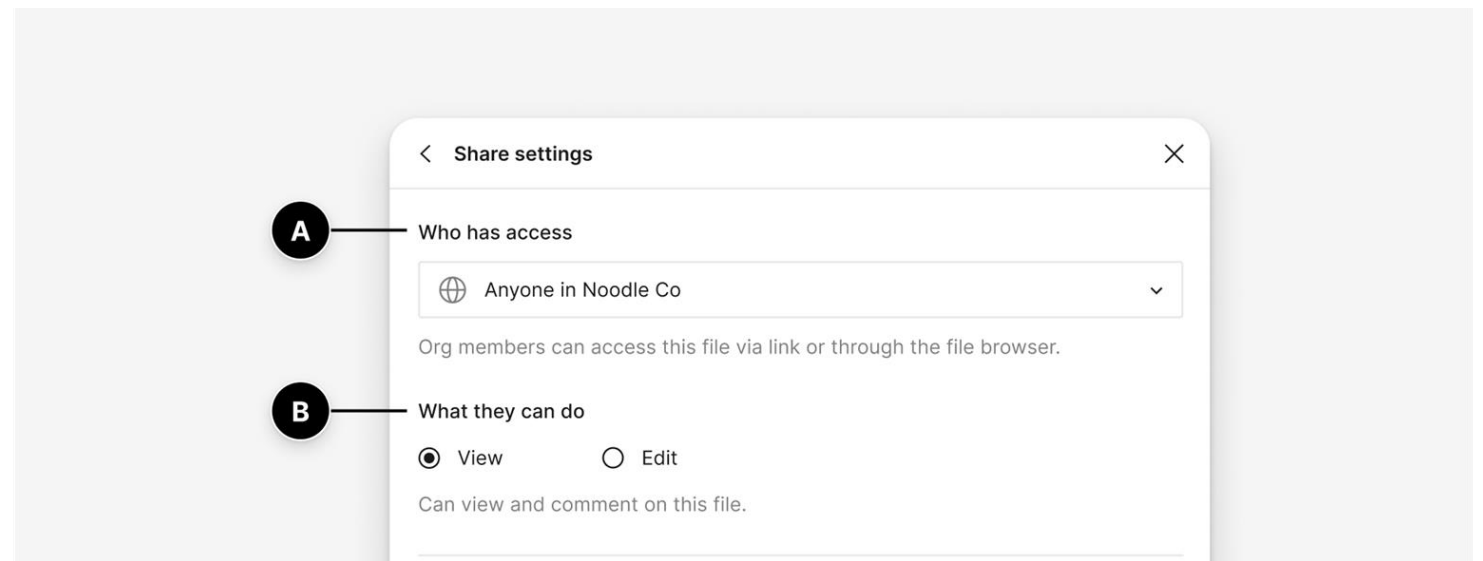
- Add prototype connections from main components:
<https://help.figma.com/hc/en-us/articles/4404380377367-Add-prototype-connections-from-main-components>
- Connect your prototype:
<https://help.figma.com/hc/en-us/articles/360040315773-Connect-your-prototype>

Play your prototypes



- Prepare prototypes for play:
<https://help.figma.com/hc/en-us/articles/360040318013-Play-your-prototypes>
 1. Preview responsiveness
 2. Present - **For assignment share the present link**

Share files and prototypes



- How to make your Figma prototype link live:
<https://help.figma.com/hc/en-us/articles/360040531773-Share-files-and-prototypes>
 1. Click Share in the top right
 2. Change permission to “Anyone with the link → Can view” Click Copy link
 3. Paste the link in your submission

writing the study section

study section

- Study question(s)
- Study method
- Study participants
- Example study tasks
- Data collection
- Data analysis
- Potential limitations

study method

- General study approach
 - Lab study, in-the-wild, online
 - Qualitative/quantitative
 - Within/between subject (if comparative study)
- Specific study methods
 - Interview, questionnaire/survey
 - A/B testing
 - Observation
 - Interaction logging
 - Think aloud
 - ...

example

PUBLIC LIBRARY STUDY

Our study follows a within subject design where recruited participants conducted searches based on given open-ended search tasks using the CollectionDiver and the Online Catalog, which runs on terminals throughout the library (see Fig. 2). Favoring this semi-controlled setup over an in-the-wild study ensured that participants worked on comparable search tasks and provided similar attention to both systems.

Participants

We recruited 33 study participants (11 male, 22 female; 12 individuals, 9 dyad, 1 triplet). Our study was widely advertised through the library's website and bulletin boards across the city. The recruitment of participant groups (group members knew each other prior to the study) in addition to individuals allowed us to gain insights into *shared* search approaches with the two systems. The triplet was formed by one dyad who spontaneously brought their four year old daughter. She participated in the search tasks but not in the interviews.

We deliberately recruited participants from different age groups and professional backgrounds. Our adult participants span five age bands: 18–21 (three people); 22–34 (13 people); 35–44 (three people); 45–54 (eight people); and 55–64 (three people). In addition, the four-year-old and two 13 year old girls participated each with a parent. Participants' professional backgrounds (excluding the 4-year-old) ranged from

high-school (4) and university students (4), artists, photographers, social workers, academics, technicians, managers, retired, and currently unemployed people. This diversity in age and background is typical for the audience of large public libraries. Four participants were first-time library visitors and two visit the library everyday. The majority come to the library at least once a week (14 participants) or once a month (four participants). Eight participants visit “occasionally”. Six participants stated to not use the Online Catalog; three of those were first-time users. 12 participants stated to use the Online Catalog both at home and at the library, while eight/six use it from home/at the library exclusively. Only three participants had noticed the CollectionDiver prior to the study and only one had very briefly tried it once in passing.

Study Setup & Procedure

To mimic a realistic library search scenario as closely as possible, our study took place during the library's opening hours on the floor where the CollectionDiver is permanently installed. This floor hosts mostly non-fiction text books, study spaces, and terminals featuring the Online Catalog. Participants therefore interacted in a realistic setting alongside other library visitors who looked for books themselves.

Participants filled out a questionnaire about their age, background, frequency of their library visits and use of the Online Catalog. Participants were then given six search scenarios from which they chose two. The scenarios described open-ended search tasks focusing on a different topic each (Art & Culture, Health & Sport, Travel, Literature, Children's books, and Technology). For example, the Health & Sport scenario puts participants into the role of someone who has recently acquired an interest in running and is now looking for media about training methods and nutrition advice. Participants were encouraged to interpret the task based on their own interests and to find suitable media given the scenario, rather than going for quantity. In order to avoid learning effects, each participant/group worked on two different tasks, one using the Online Catalog and another using the CollectionDiver. Participants picked the first scenario themselves, before knowing which system they would start with. The or-

der in which participants used the two systems was counter-balanced. Participants received a 2 min. introduction to the search system in focus, regardless of their prior experience with it. They were then given a maximum of 15 min. for their search tasks, but could finish earlier. Group participants worked together on the tasks, sharing each search system.

We conducted an interview with participants after each search task, asking them about their general approach, any problems they had encountered using the search system, and their satisfaction regarding the supported search process and the found media. At the end of the study we conducted a final interview, asking participants to characterize the two systems in comparison, for example, regarding supported search features, interface design and interaction mechanisms, and personal experience. Dyads were also asked to reflect on their shared approaches using both systems. Each participant was compensated with 15 Euros for their time.

Data Collection & Analysis

Two researchers were present throughout the study to observe and take written notes of participants' interactions with the two search systems. All interactions were video recorded using a single camera for the Online Catalog and two cameras for the CollectionDiver, to capture interactions with both the tabletop and the vertical display.

All interviews were fully transcribed and qualitatively coded following a thematic analysis approach [5]. We iteratively coded for statements describing search processes, utilized system features, and experienced advantages and disadvantages of the two search systems. A qualitative video analysis was conducted following [17], which focused on the sequential use of search features in the two systems and included counting the use of features and criteria adjustments. Group search processes were analyzed for shared interactions.

Our findings, as described below, are based on this qualitative analysis of participants' interviews and interactions with the two search systems. We illustrate our results with direct participant quotes which are tagged with their individual ids (“i” for individual and “g” for group participant). All participant quotes were directly translated from German into English.

Uta Hinrichs, Simon Butscher, Jens Müller and Harald Reiterer. **Diving in at the Deep End: The Value of Alternative In-Situ Approaches for Systematic Library Search.** In *Proceedings of the ACM SIGCHI Conference Conference on Human Factors in Computing Systems (CHI'16)*, pages 4634-4646, 2016.

writing your report

some notes

- The report represents what you have done – it is important!
- Good writing, good structure, good illustrations are important!
- The report should stand on its own – don't expect the reader to have
 - Knowledge of the system in focus
 - Knowledge of the issues you found in CW1
 - Tried out your Figma prototype
- Make sure your brilliant prototype is matched by a brilliant report!

word count — one possible split, other

- 30%
 - Intro, design goals and design process
- 25%
 - Description & illustration of your re-design
- 30%
 - Study design
- 15%
 - Reflection

Recap Design Patterns

User interface (UI) design patterns are reusable/recurring components which designers use to solve common problems in user interface design.

- Interaction Design Foundation**

Design Patterns

- Using established design patterns improves usability and consistency across products.
 - Reduce cognitive load on users through **recognisable and predictable** structures and actions
 - Re-use better than re-Invent
- Like a blueprint in architecture - use patterns as “blueprints” for interface structure as well as elements.

User Interface Design Patterns

Getting input

Forms

Structured Format
Keyboard Shortcuts
Rule Builder
Captcha
Drag and drop
Inplace Editor
Morphing Controls
Fill in the Blanks
Password Strength Meter
Input Feedback
WYSIWYG
Calendar Picker
Autosave
Preview
Expandable Input
Settings
Forgiving Format
Undo
Input Prompt
Good Defaults

Explaining the process

Wizard
Inline Help Box
Completeness meter
Steps Left

Community driven

Rate Content
Pay To Promote
Vote To Promote
Wiki
Flagging & Reporting

Navigation

Tabs

Navigation Tabs
Module Tabs

Jumping in hierarchy

Breadcrumbs
Shortcut Dropdown
Fat Footer
Notifications
Modal
Home Link

Menus

Vertical Dropdown Menu
Accordion Menu
Horizontal Dropdown Menu

Content

Adaptable View
Article List
Pagination
Tagging
Categorization
Cards
Carousel
Progressive Disclosure
Continuous Scrolling
Tag Cloud
Event Calendar
Archive
Thumbnail
Favorites

Gestures
Pull to refresh

Dealing with data

Tables

Table Filter
Sort By Column
Alternating Row Colors

Formatting data

Frequently Asked Questions (FAQ)
Dashboard
Copy Box

Images

Gallery
Slideshow
Image Zoom

Search

Autocomplete
Search Filters

Onboarding

Guidance

Coachmarks
Playthrough
Inline Hints
Walkthrough
Blank Slate
Guided Tour

Registration

Lazy Registration
Paywall
Account Registration

Social

Reputation

Testimonials
Leaderboard
Collectible Achievements

Social interactions

Activity Stream
Auto-sharing Mini
Chat
Friend list Mini
Invite friends
Friend
Follow
Reaction

Miscellaneous

Shopping

Coupon
Pricing table
Product page
Shopping Cart

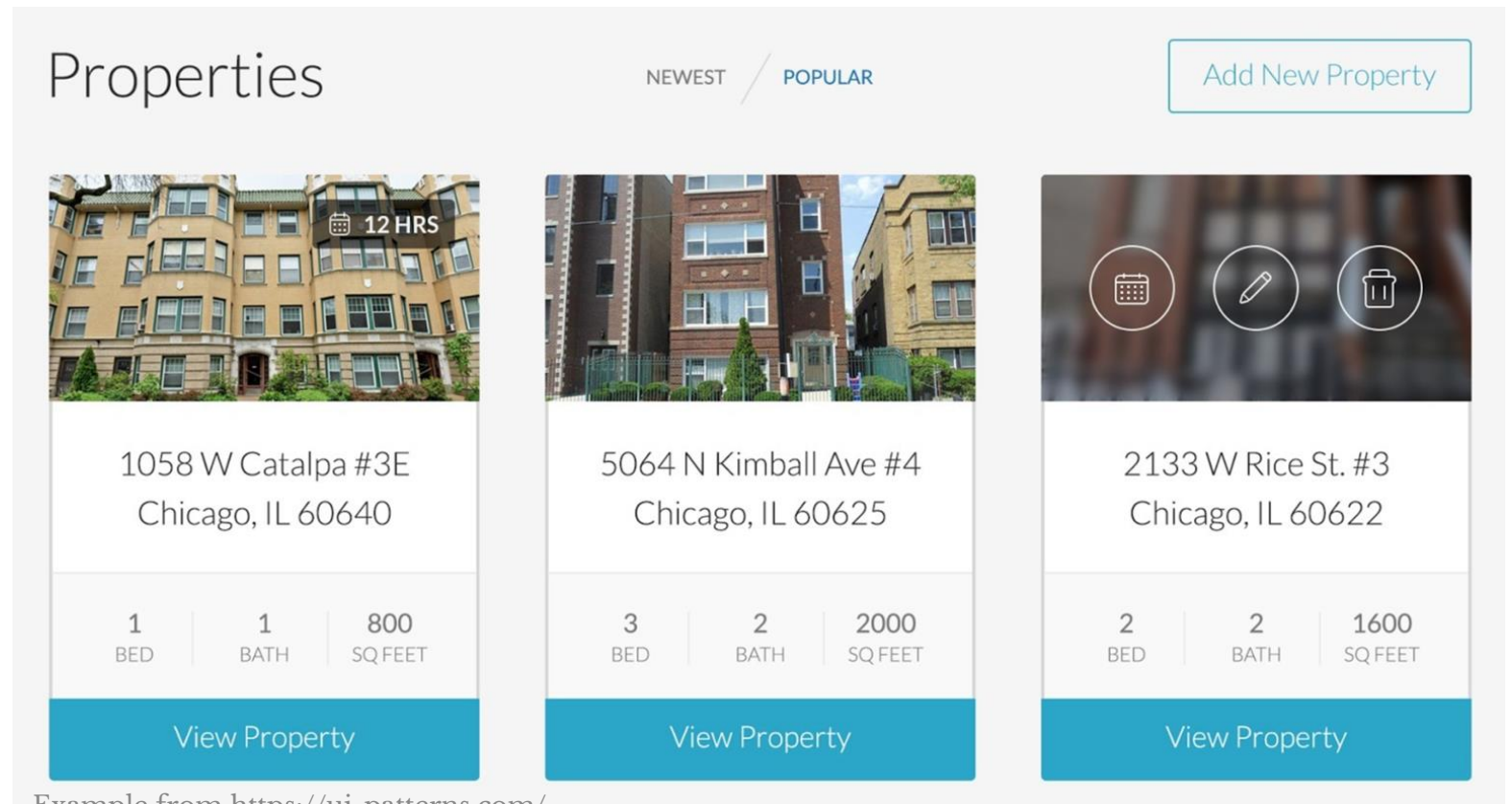
Increasing frequency

Tip A Friend

Design Pattern: Cards

Cards are containers for content

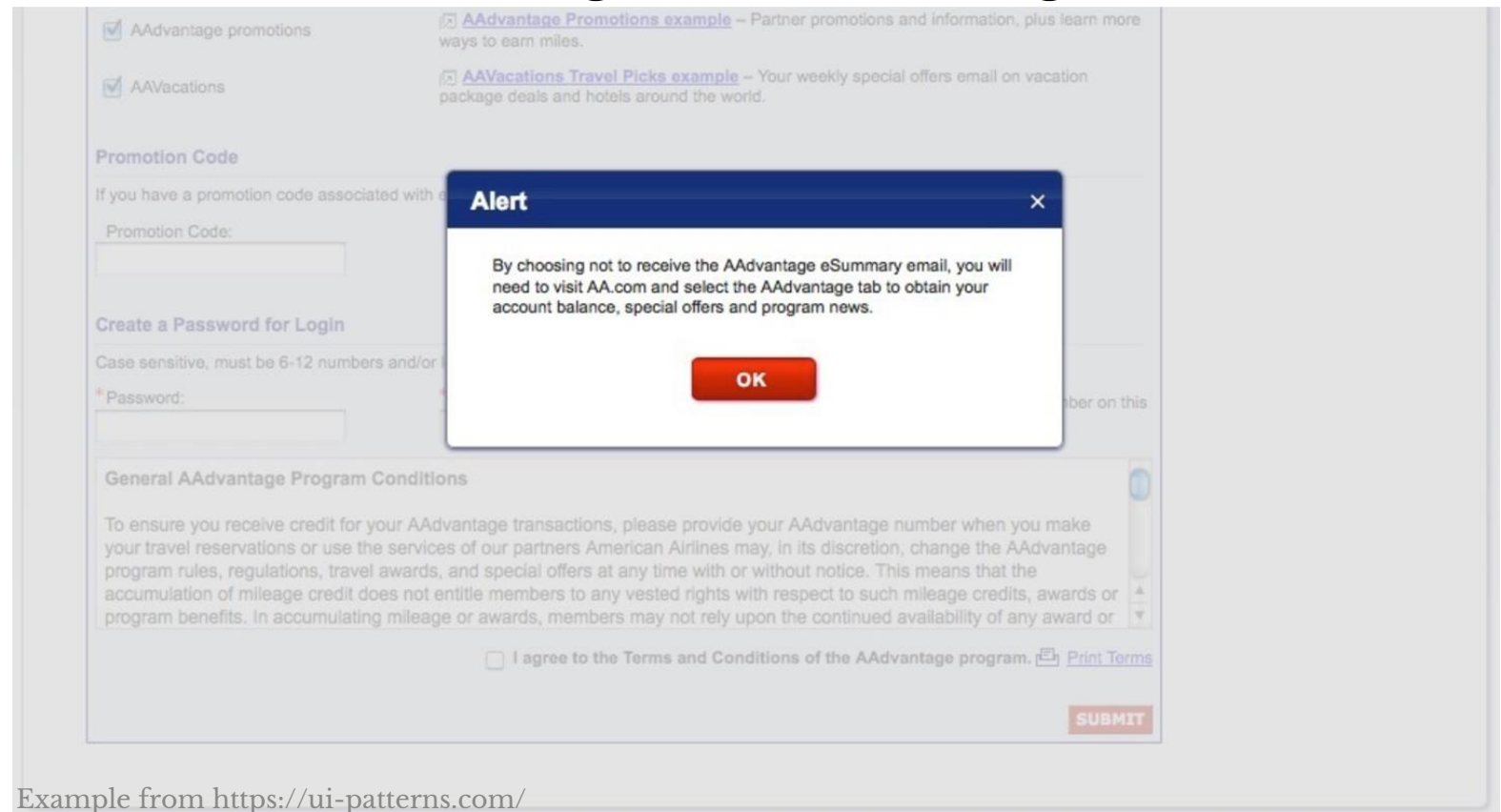
- allow users to digest information at a glance through clear hierarchy
- versatile e.g. for images, text, and actions



Design Pattern: Modals

Modals are dialog boxes that appear on top of the main content.

- Grab users' attention immediately
- Prompt actions without navigating away from the current page
- Limit background distractions
- Often used for login or confirming actions

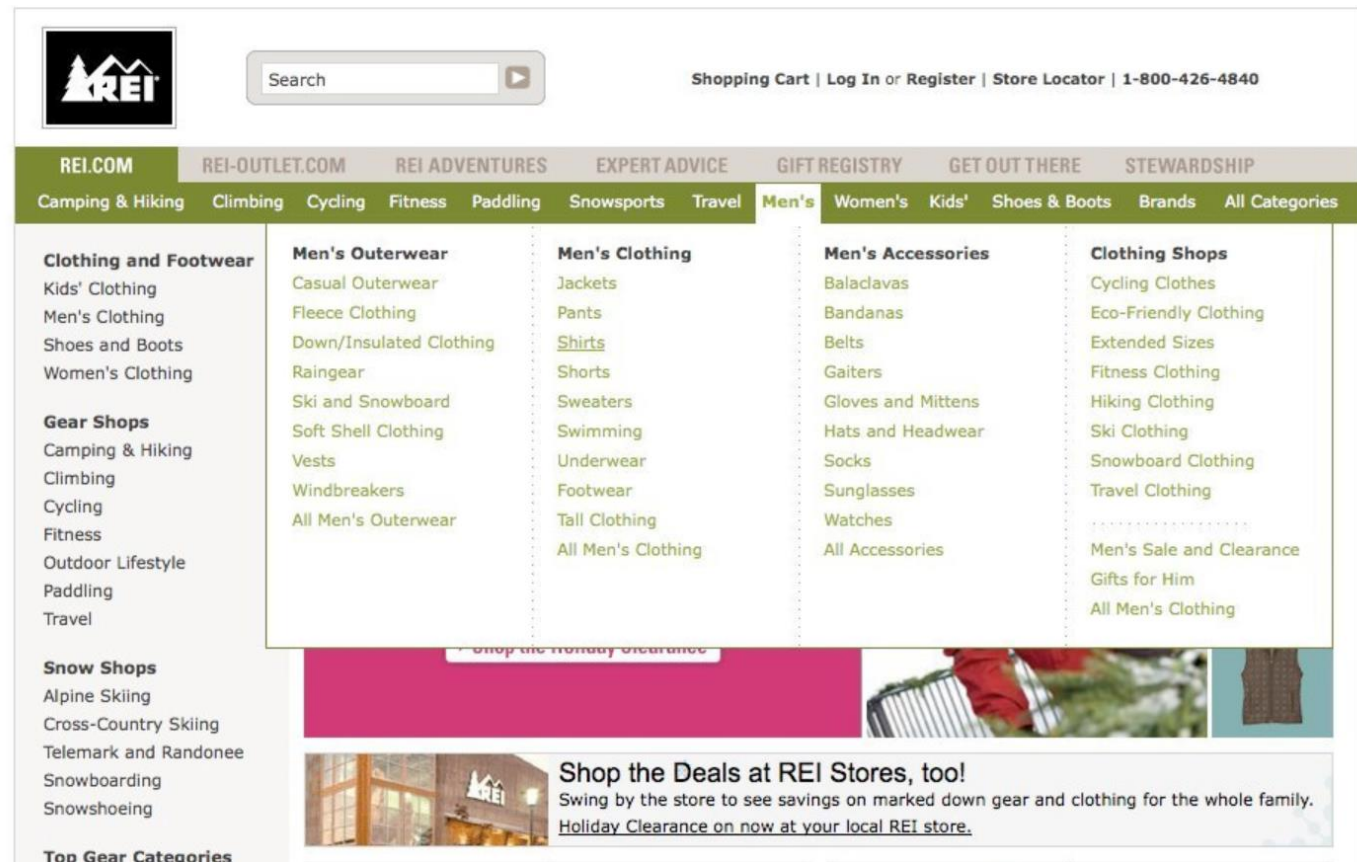


Example from <https://ui-patterns.com/>

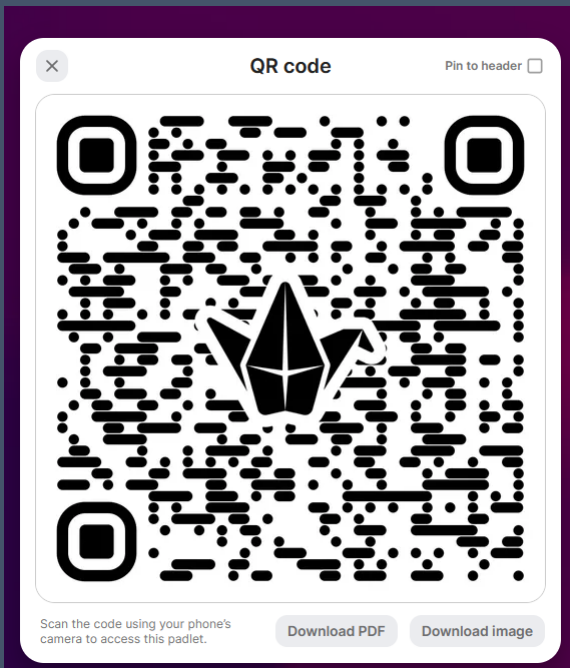
Design Pattern: Navigation Tabs

Navigation guides users through an application

- Can be horizontal or vertical
- often includes dropdowns or icons
- Easy access to different sections of the site



Activity



- Pair up and open an app or website of your choice
- Look for examples of at least three design patterns
- Discuss patterns
- Take a screenshot & share with class
- <https://padlet.com/uhinrich/hci-design-patterns-fv5d9skwhsvorql6>

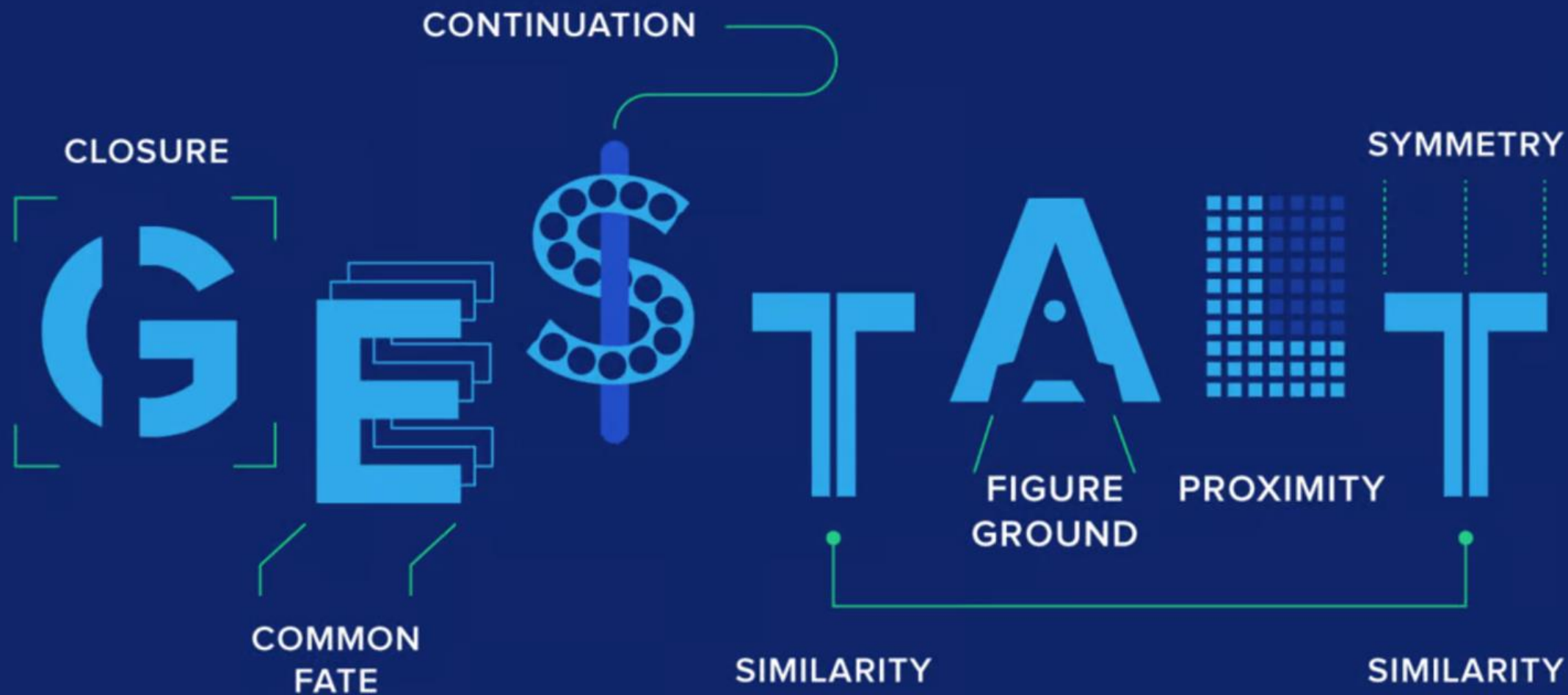
Recap Gestalt Principles

Gestalt Principles

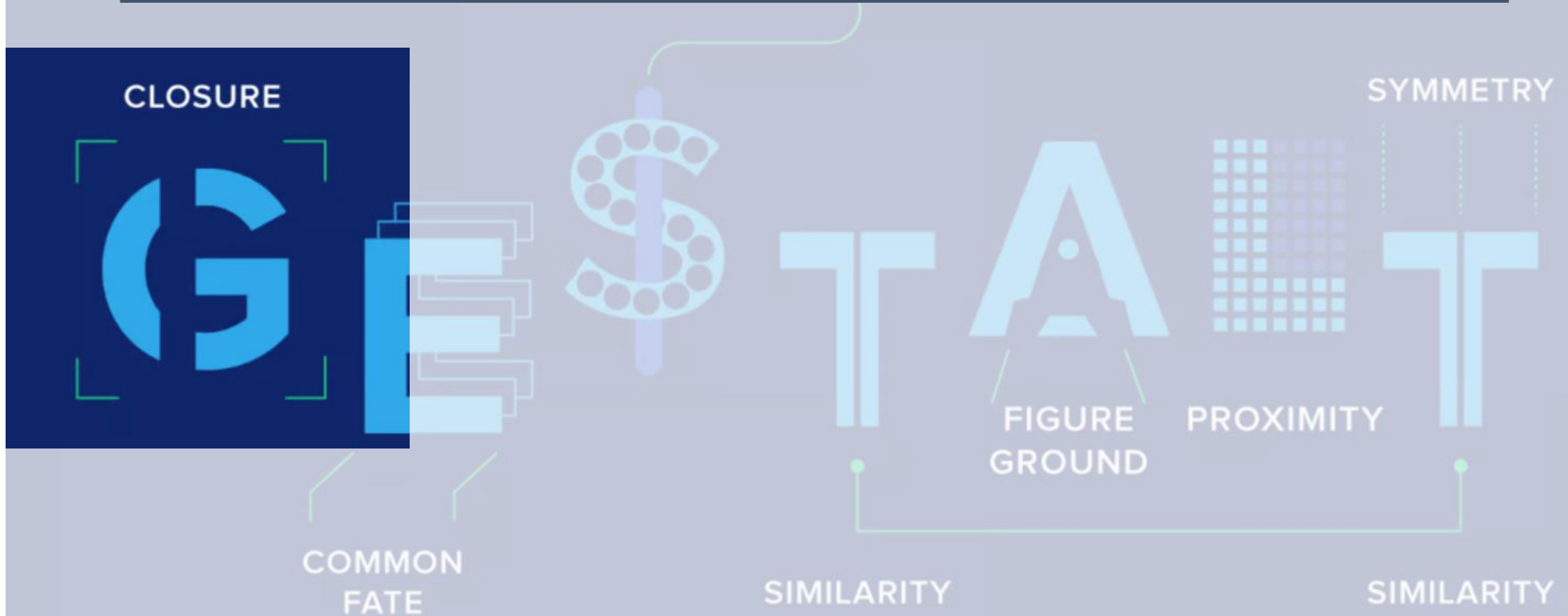
Based on psychology of how humans **perceive patterns** and **organize visual elements**

Create designs that are:

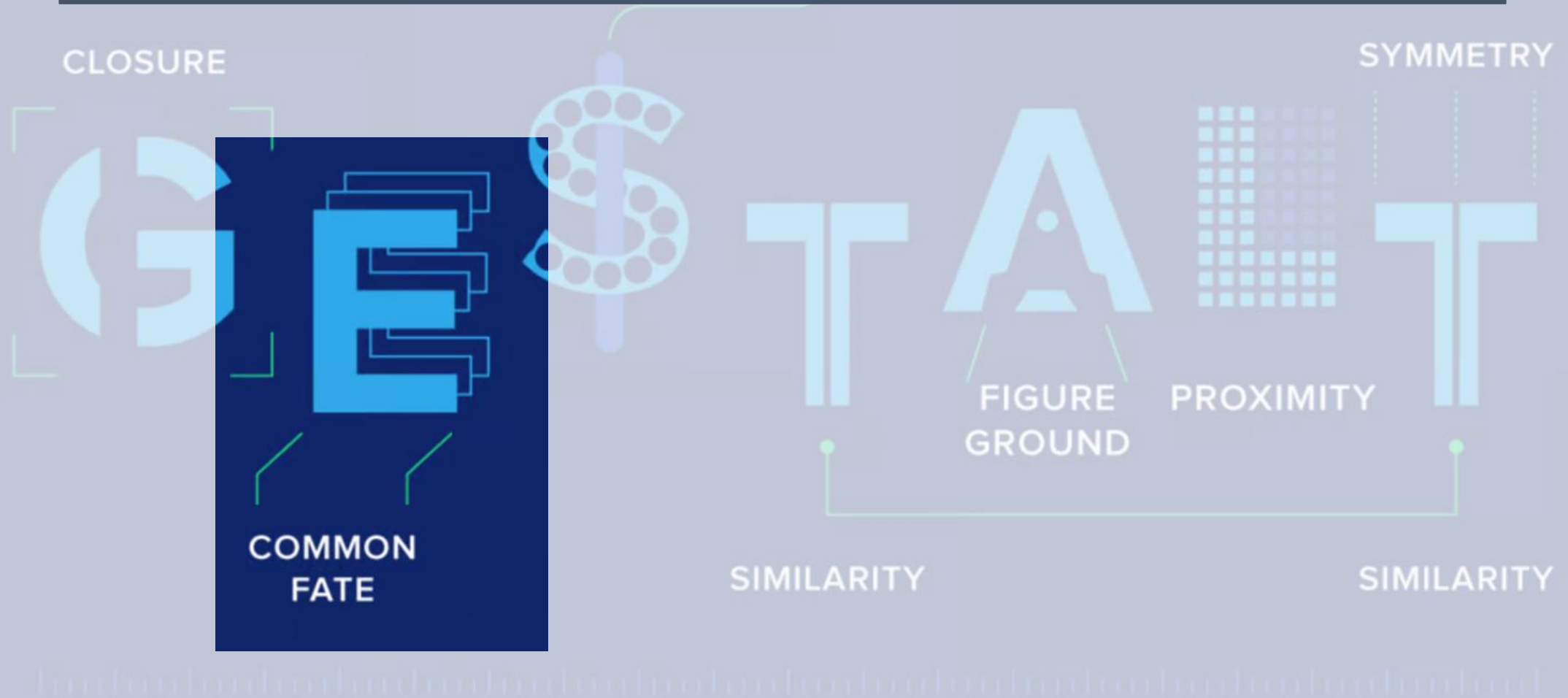
- more intuitive
- visually pleasing and organised
- guide users focus
- easy to navigate

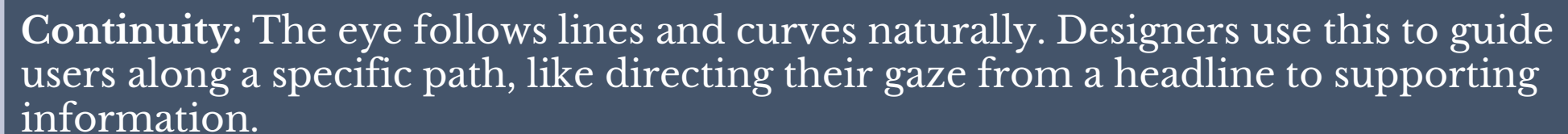


Closure: Our minds tend to complete shapes even when parts are missing, which is often used in logos and icons to suggest forms without fully defining them.



Common Fate: Elements moving in the same direction are perceived as related. This principle can apply to animations or grouped elements with similar directional cues, helping users understand which items belong together.





Similarity: Similar objects—by color, shape, or size—are perceived as a group. This is useful for establishing consistency and visual relationships in a design.

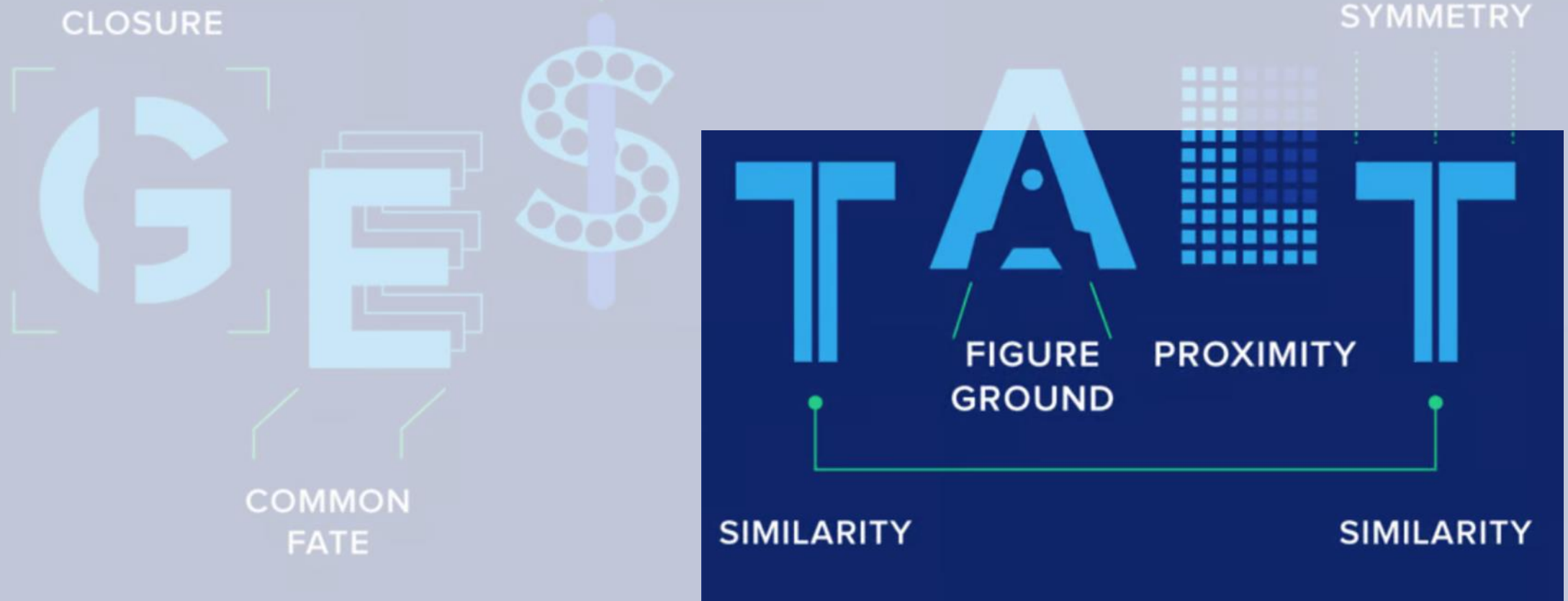
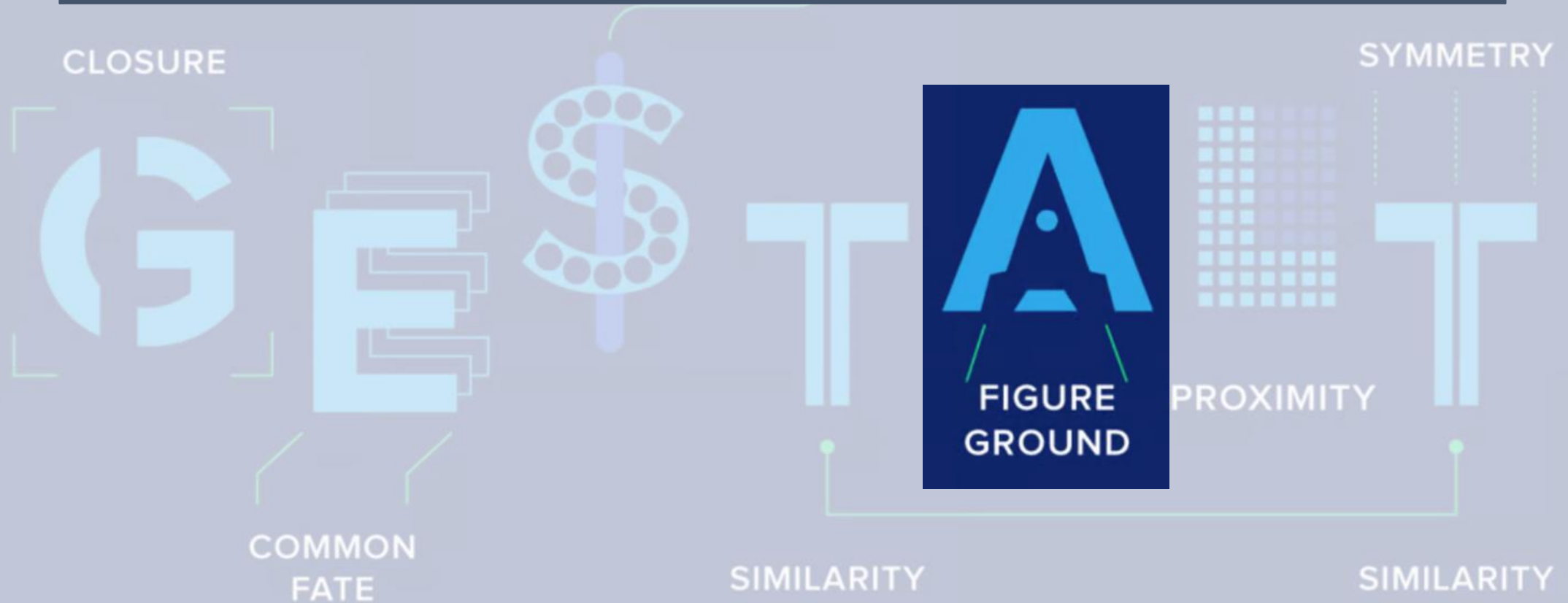
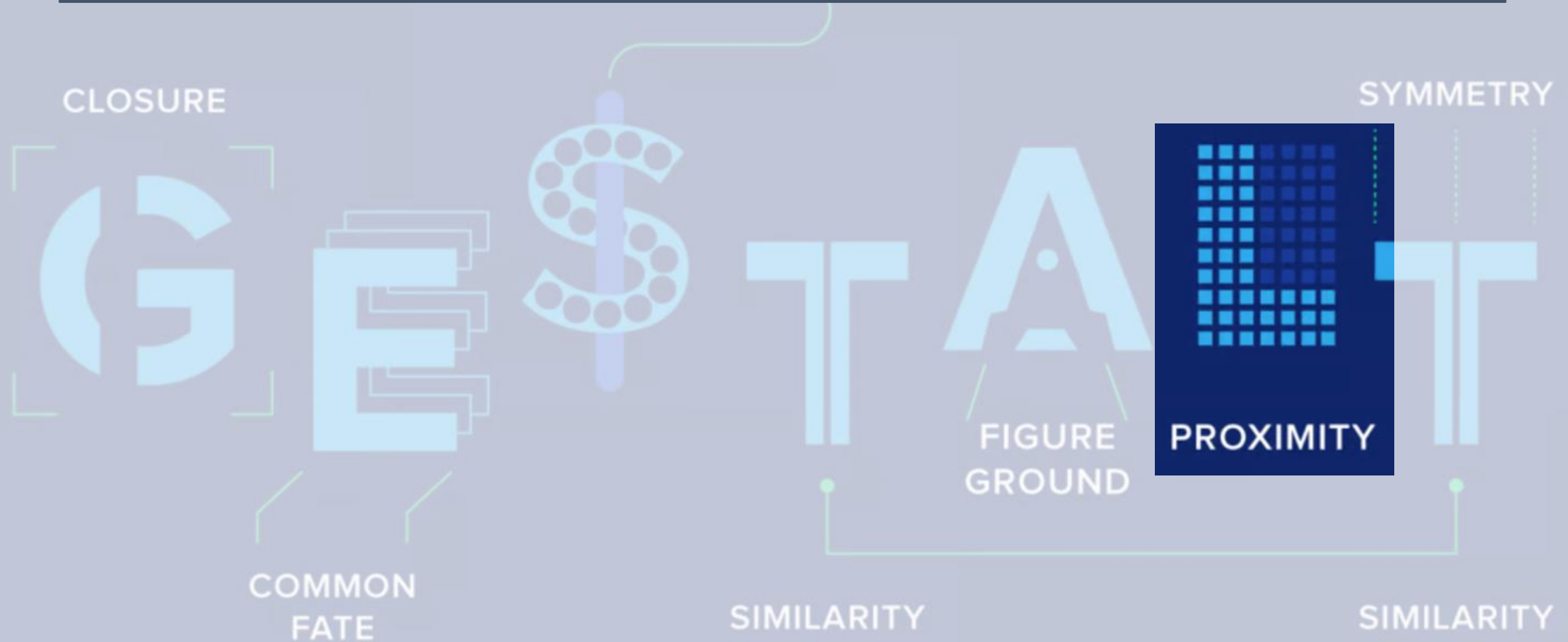


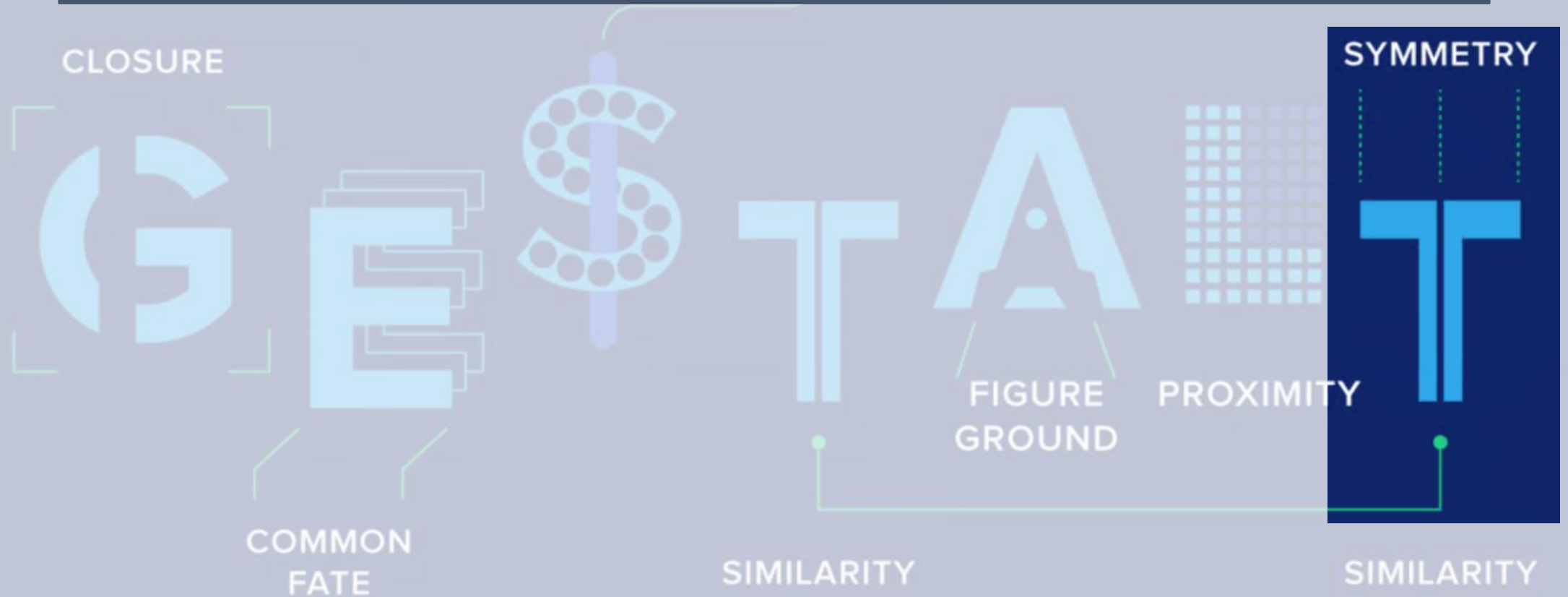
Figure-Ground: This principle refers to distinguishing an object from its background. It's essential in creating focus areas, like in imagery where either the figure or ground can take precedence.

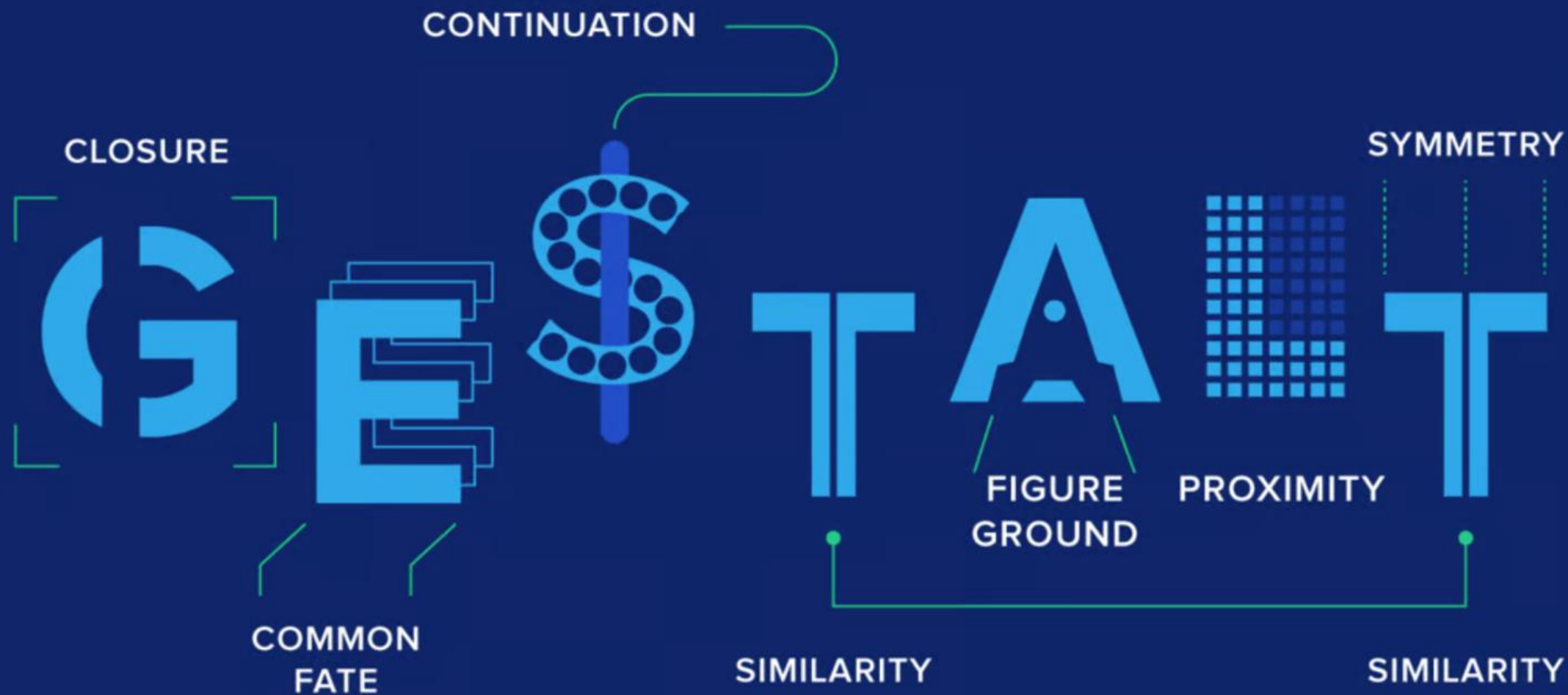


Proximity: Elements that are close together are perceived as related or grouped. Designers use this to organize information, like grouping menu items together.



Symmetry: Symmetrical elements are seen as part of the same group or whole, providing a sense of balance and harmony. Symmetry in layouts often feels stable and visually pleasing, while asymmetry can add a sense of dynamism.





**It's not just about making things look nice.
How can Gestalt Principles help with layout?**

Applying Gestalt Principles to Layout

- Hierarchy
- Alignment and Grids
- Whitespace (Negative Space)
- Balance (Symmetry and Asymmetry)
- Consistency and Repetition
- Use of Visual Flow and Continuity

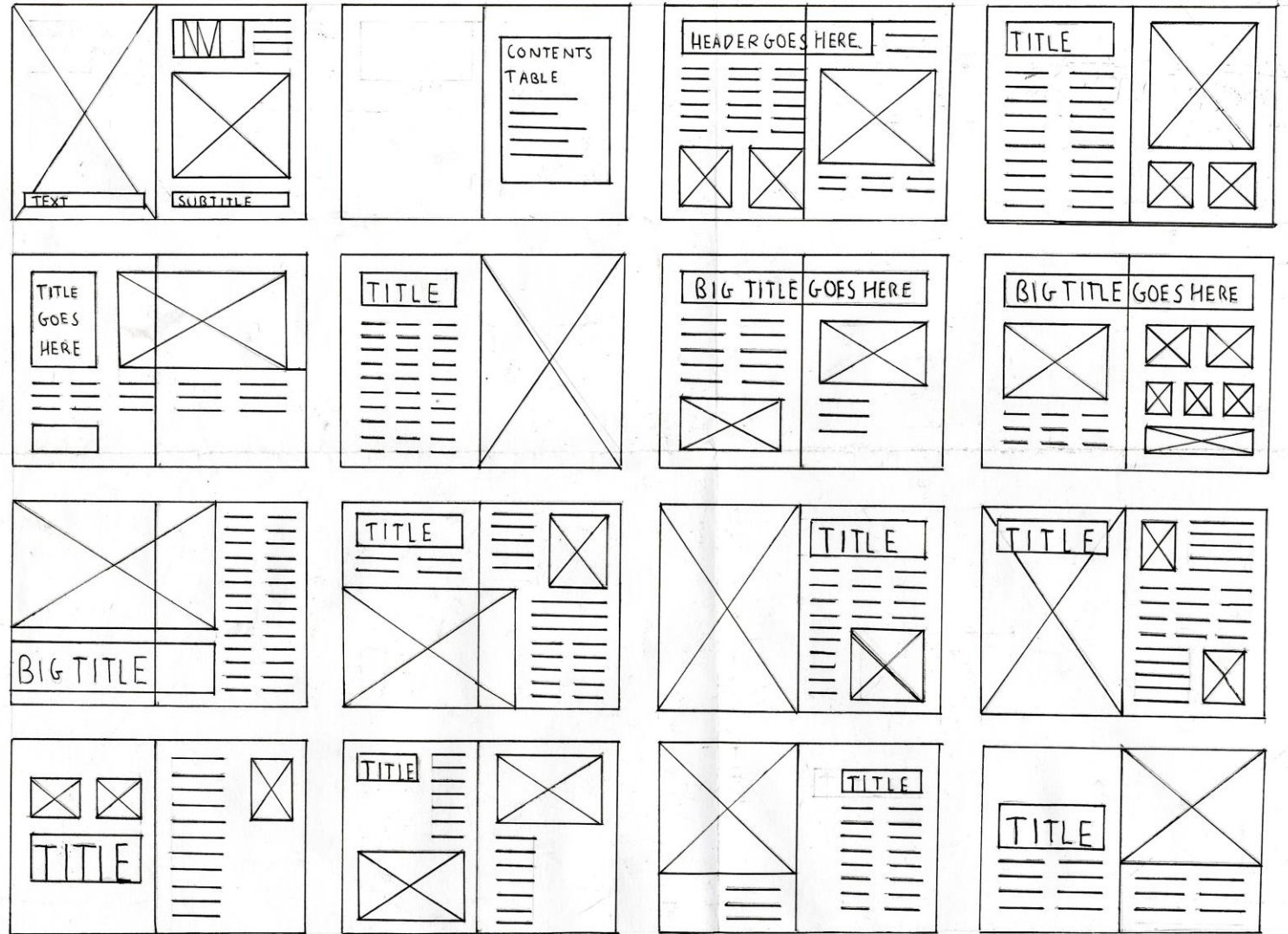
hierarchy

- Communicate order of importance
- Achieved by
 - Size
 - Placement
 - Contrast
- Gestalt principle
 - Continuity
 - Similarity
- Example: highest level
 - Second level
 - Third level

alignment & grids

- Alignment of elements can provide structure
 - Makes information easier to scan
 - Can make elements feel organized and balanced
- Grids provide a structured layout through invisible lines which help with alignment
- Gestalt
 - Grouping elements through proximity
 - Using symmetry within columns and rows creates a sense of order

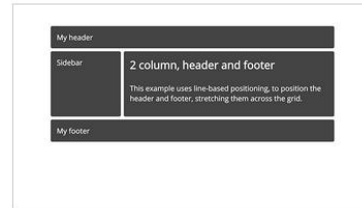
alignment & grids



alignment & grids

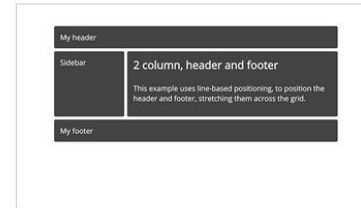
Grab & Go Patterns

A collection of built patterns to use as starting points, complete with fallbacks. Remember that you do not need to use these for full page layout, they could as easily be a small component in a design.



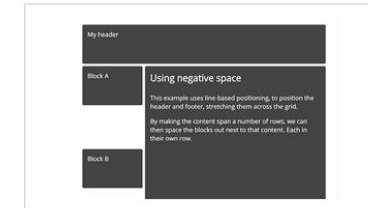
Header, 2 col, footer

A flexible, two column layout with a header and footer.



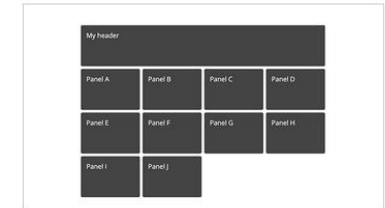
Header, 2 col, footer

A responsive, two column layout with a header and footer.



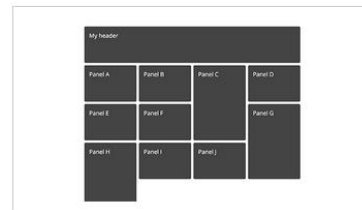
Header, 2 col, footer

A responsive, two column layout with a header and footer. Using rows to create space



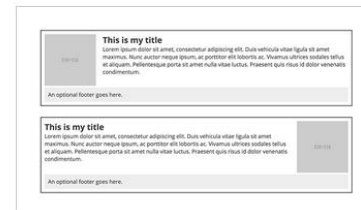
As many as fit

This layout has a centre panel into which we want to display as many boxes as will fit before moving to the next row.



As many as fit some tall

This layout has a centre panel into which we want to display as many boxes as will fit before moving to the next row.



Media Objects

A standard media object with the ability to be nested and floated.

<https://gridbyexample.com/examples/>

next steps

- Wednesday – 14:00 – 15:00 more layout
- Wednesday – 15:15 – 16:00
 - Online drop-in session