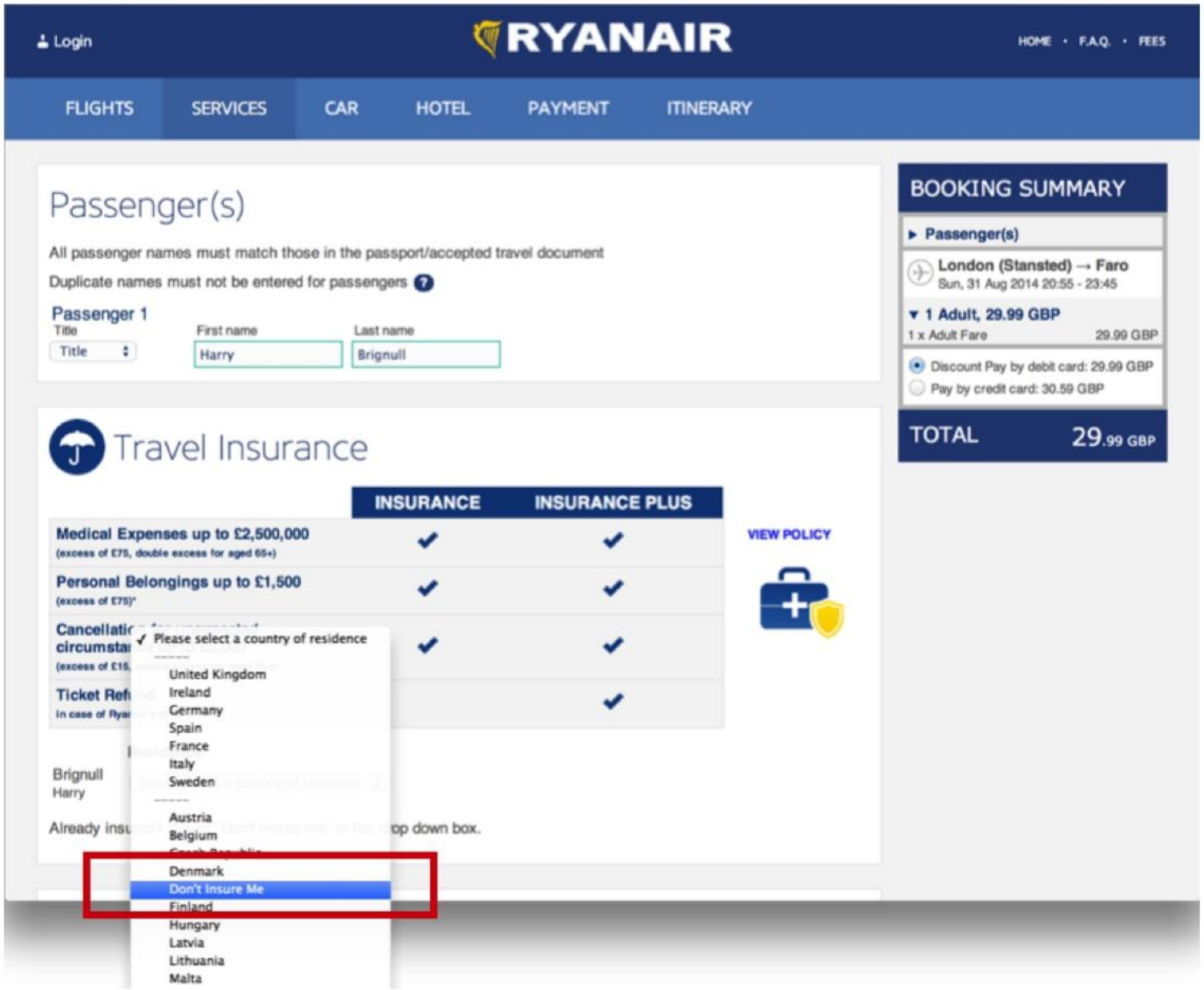
6. UI Design

UI Design

- Good UI Design will…
  - Save the user's time (3-click rule?)
  - Enable user to learn functionality
  - Decrease frustration, create good impression
- Part of UX Design
  - UX Design covers all user experience
  - e.g. UX Design for a website includes site hierarchy

Usability Heuristics (Nielsen Norman Group)

- Communicate state clearly
  - Logged in; error, try again; loading…
- Give the user control
- Consistency
- Recognition > Recall
- Help the user


Login
RYANAIR
HOME • F.A.Q. • FEES
FLIGHTS
SERVICES
CAR
HOTEL
PAYMENT
ITINERARY
Passenger(s)
All passenger names must match those in the passport/accepted travel document
Duplicate names must not be entered for passengers
Passenger 1
Title
First name
Last name
Harry
Brignull
BOOKING SUMMARY
Passenger(s)
London (Stansted) → Faro
Sun, 31 Aug 2014 20:55 - 23:45
1 Adult, 29.99 GBP
1 x Adult Fare 29.99 GBP
Discount Pay by debit card: 29.99 GBP
Pay by credit card: 30.59 GBP
TOTAL 29.99 GBP
Travel Insurance
INSURANCE
INSURANCE PLUS
Medical Expenses up to £2,500,000
(excess of £75, double excess for aged 65+)
Personal Belongings up to £1,500
(excess of £75)*
VIEW POLICY
Please select a country of residence
United Kingdom
Ireland
Germany
Spain
France
Italy
Sweden
Austria
Belgium
Denmark
Don't Insure Me
Finland
Hungary
Latvia
Lithuania
Malta
Brignull
Harry

Recognition vs Recall

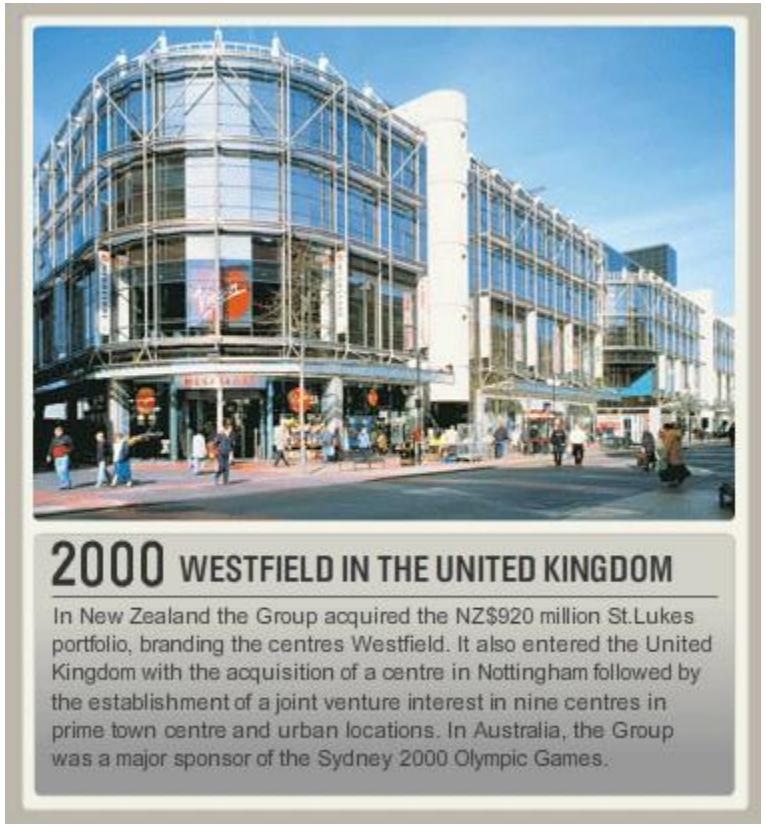
- It is easier to recognize than to remember
  - “What is the capital of Norway?”
- Examples of recognition vs recall
  - Font selection
  - Passwords
  - Searching
  - Typing commands

Psychology concepts

- Cognitive Load: how much effort it takes to learn to use your product
  - What are some ways to minimize cognitive load?
- Focus/attention
  - F-shaped model
- Mental models: how the user understands the UI
  - New technology can be communicated with new UI; old technology should not
  - Gestalt design principles: how the mind creates structure out of components

Focus/attention

- Example (NN Group): “When did Westfield enter the UK?”



Gestalt Principles

ux hints.com

Good Figure

Objects groupped together tend to be perceived as a single figure. Tendency to simplify.

Proximity

Objects tend to be grouped together if they are close to each other.

Similarity

Objects tend to be grouped together if they are similar.

Continuation

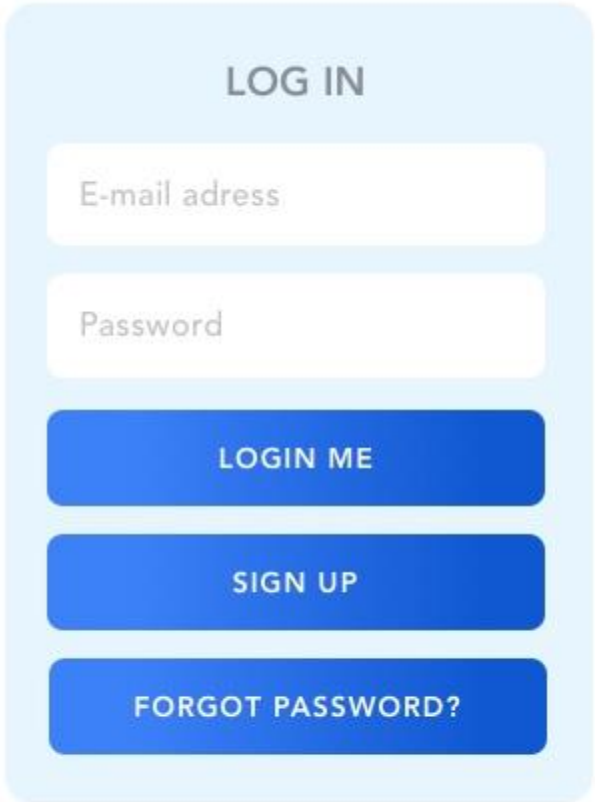
When there is an intersection between two or more objects, people tend to perceive each object as a single uninterrupted object.

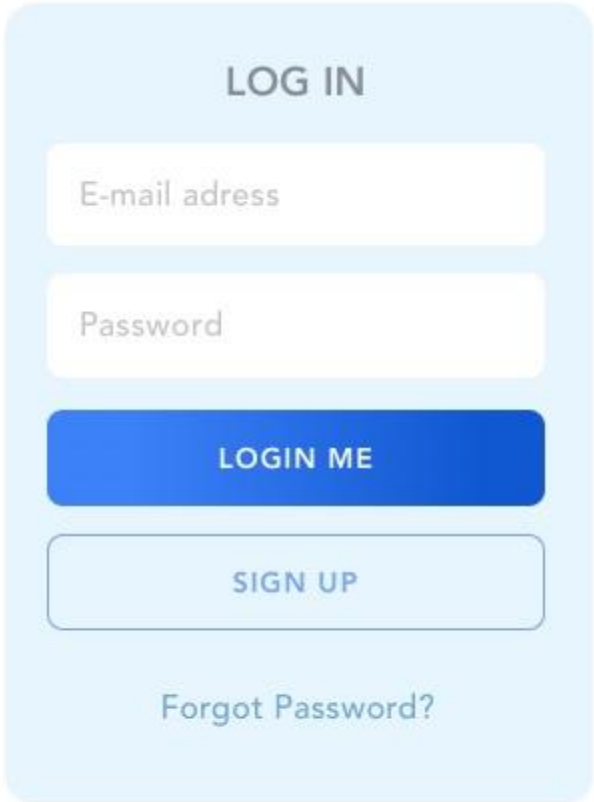
Closure

Visual connection or continuity between sets of elements which do not actually touch each other in a composition.

Symmetry

The object tend to be perceived as symmetrical shapes that form around their center.





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MM DD YY Date first date of operation in WA. (Required. If unknown, please estimate.)

c. _____ Is this location inside city limits? ☐ Yes ☐ No

*Primary Business Name/Trade Name

d. _____ _____

*Business Mailing Address (Street or PO Box, Suite No. do not use building name) *Business Street Address (If different than mailing) Do not use PO Box or PMB

City State Zip code City State Zip code

e. ( ) _____ ( ) _____ _____

Business Telephone Number Fax Number E-Mail Address

f. ***List all owners & spouses:*** *Sole proprietor, partners, officers, or LLC members. (Attach additional pages if needed.)*

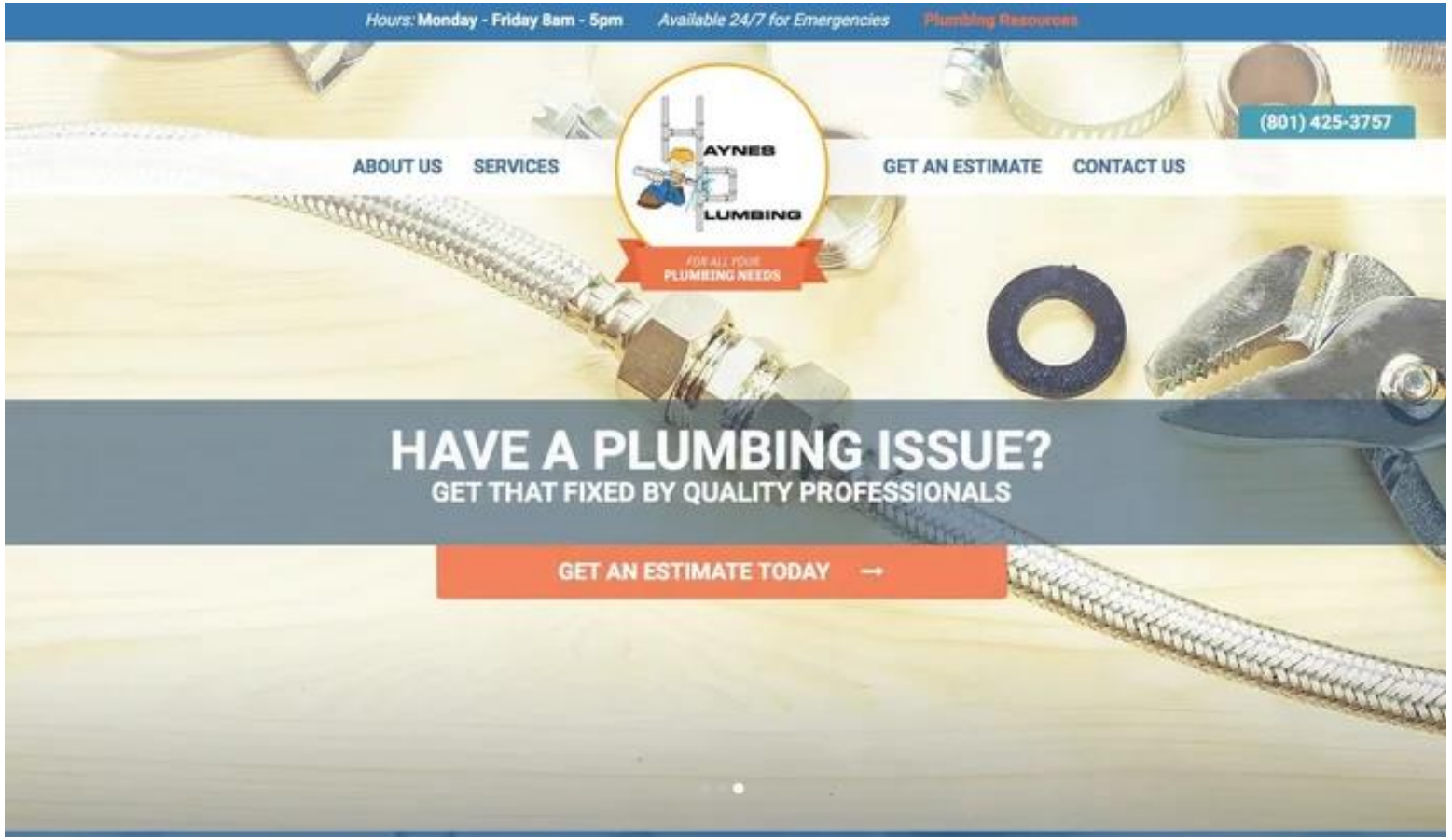
_____ _____ / / _____

chameleon.io

Color theory

- Colors have meaning and give context
- Contrasting colors: ~3 steps away
  - Can be used to highlight action, work well with each other
- Complementary colors: opposite
  - Increases each other's impact; good for text
- Use softer colors for non-interactables, bolder colors for interactables
- Choose a set of colors for your UI:
  - Analogous: Three in a row
  - Triadic

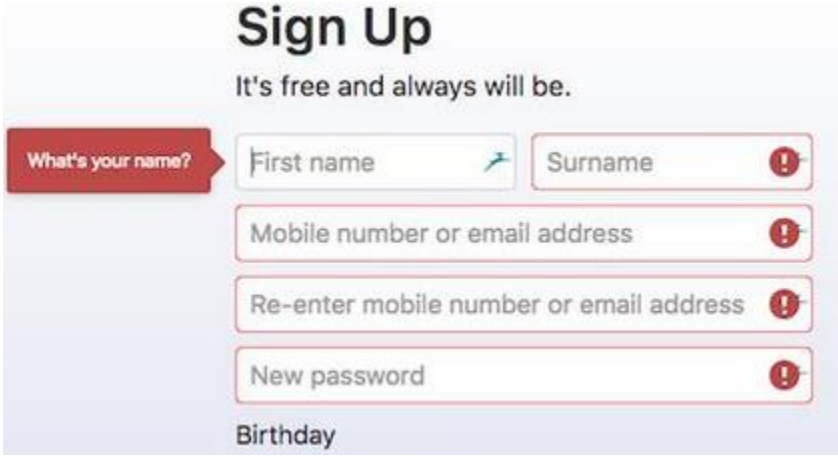
Color theory



bluleadz.com

Color theory

- Color blindness accessibility
  - Use colors, textures and symbols together
  - Use intensity
  - Especially avoid: red-green, blue-yellow
- Avoid rapidly changing colors
- Other considerations?



facebook.com

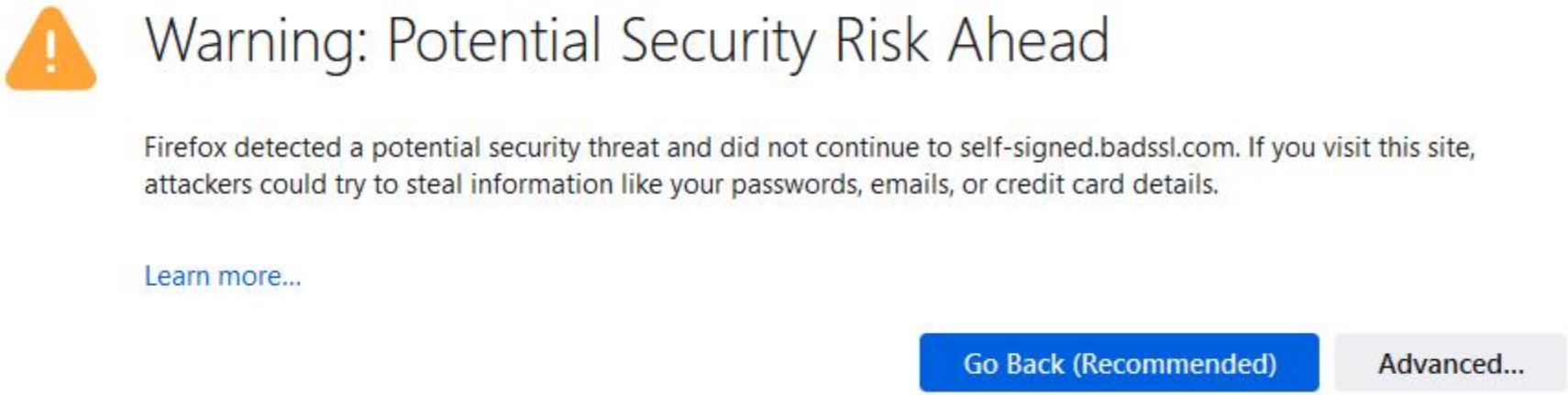
Font

- **Font** weight: heavier for emphasis
- Font `width`: wider fonts, monospace fonts…
- Large or **small** contrast: Large contrast conveys art/beauty
- With or without Serif
- Font choice should be consistent and UNINTRUSIVE
- Size is important too
- Famously recognizable fonts?

Learning

- The UI should also teach the user to use your product:
  - Guided tutorial
  - Tooltips, nested tooltips
  - Instructions
  - Error messages
  - Visuals
  - Helpfile/encyclopedia
- How to create a good learning curve?
  - Menu hiding/context hiding
  - Segmenting/pre-training
  - Understanding cognitive processes: memory, repetition, etc.

Learning


Warning: Potential Security Risk Ahead
Firefox detected a potential security threat and did not continue to self-signed.badssl.com. If you visit this site, attackers could try to steal information like your passwords, emails, or credit card details.
Learn more...
Go Back (Recommended)
Advanced...

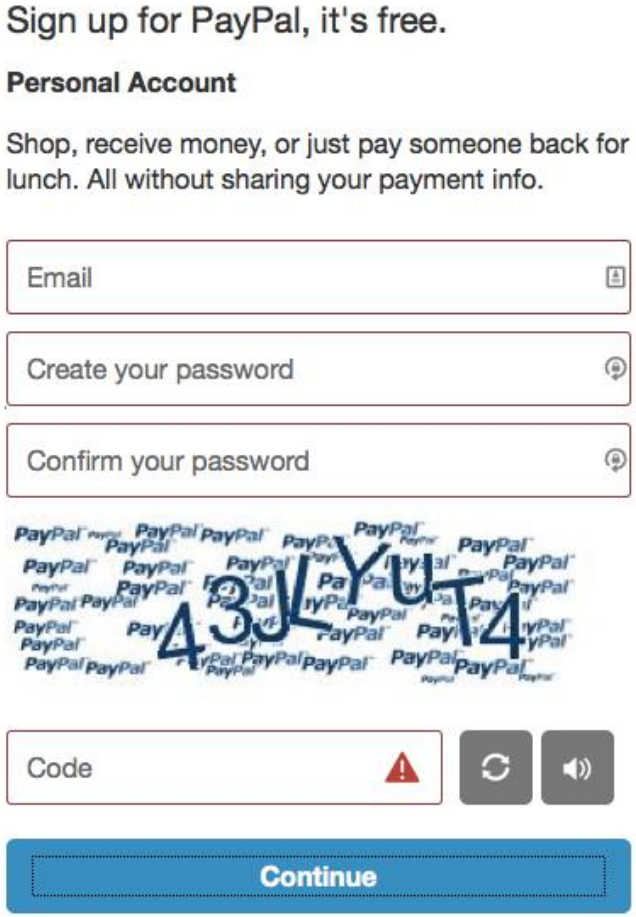
Customization

- Usability Heuristic: “Give the user control”
- Programming for high customization is difficult
- What should (or shouldn’t) be customizable:
  - UI size, text size
  - Method of interaction – input, output
  - Content
  - Button location, feature hiding

Accessibility

- Color must not be critical
- Design for screen magnifiers
- Design for screen readers (esp. websites)
  - Some types of UIs, e.g. calendars cannot interact with screen readers
  - Screen readers rely on HTML
  - Accessibility text/Alt text
  - Avoid background music
- Contrast ratio of 4.5:1

Accessibility

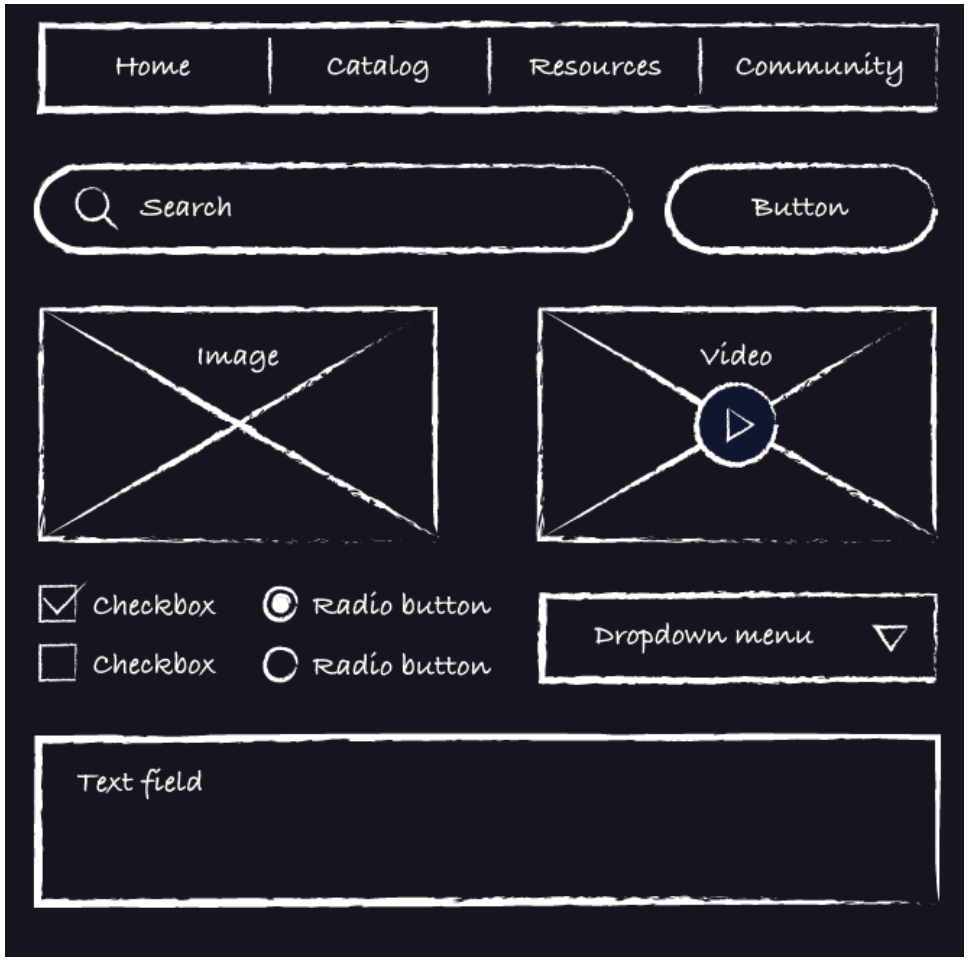


Prototyping

- Often done together with user research and negotiation
- Shows layout, arrangement, content, logic, …
- Several prototypes may be needed
- Fidelity: how specific the prototype is, how closely it would be followed
  - Low-fidelity: representation through sketches
  - High-fidelity: usable app, “alpha”

Prototyping: Wireframes

- Wireframes are low-fidelity sketches with some general rules
- Rectangles for interface
- Rounded rectangles for buttons
- Rectangle with a cross for image, and a play button for video
- Rectangle with downward triangle for dropdown menu



codecademy.com

Prototyping: Paper Prototyping

- Often uses wireframes
- Can show real size of objects, enable real comparison
- Can have multiple prototypes for different screen sizes
- Cheap to create

IGN

UX testing

- Not the same as focus groups
- Get representative users, perform representative tasks
  - One big study or many small studies?
- Be wary of the Hawthorne Effect (observer bias)
- Techniques in observing and listening to users
  - Let the user guide the conversation
- Competitive testing: test other products to find strengths and weaknesses

UX testing

- Qualitative vs Quantitative testing
- Behavioral vs Attitudinal testing
- Which type do the following belong to:
  - A/B testing
  - Surveys
  - Interviews
  - Usability Testing
  - Card sorting