

EXSM 3933

Design for Developers



Introduction

Design for Developers



What is this course about?

Hall of Fame!
The Hunley Store
Ranger Boats
Diet Blends
Sunstone Winery
Stemmies
Plankfish
Palos Sports
Abe's of Maine
CanAm Shopping

Featured Stores:

Java John's
Shaman Shop
Patio World
Player's Tennis
Drug War
Kalyx
Sand Tools
Chin Deep
Crestliner
Wellcraft/Scarab
LesleySpencer
Carver Yachts
AquaSport
Lund Boats
Larson Boats
Glastron
Food Safety Source
Bass Fishing Lures
Nybex
Doll Universe
Teatro Humanidad
Otter Distributors
Body Alive Health
Fancy Fronds
Eaton Street Press
Home Again²
Internet Fabrik (Sw)
Big Apple Racing
E-Pesewa (Ghana)
Shark Designs
My Pool Pal
ICS America
Canistrum (Brasil)
E Pet Mart
Christian Calling Card
CFBoards
Found It Here
Gordon's Guide



QuickEStore

THE QUICKEST WAY TO E-COMMERCE

As seen on the Cold Fusion(tm) Developer's Exchange & ZD Net.
Open source code.

Find out why Allaire called QuickEStore a "Cool Application"

<<< [Read what our customers have to say!](#)

QuickEStore:
QuickEStore
THE QUICKEST WAY TO E-COMMERCE

"This changes everything..."
[Try the QuickEStore demo](#)

- MS SQL
- 1 Full
- Four "storefronts"
- Quick
- Open
- Just \$

DESIGN

- 1 License, UNLIMITED STOREFRONTS!
- Easily add & edit products
- Multiple state sales tax capability
- Fully customizable shipping
- "Easy upload" product picture feature
- Easily integrates with CyberCash(TM)
- Installs in minutes! Requires Cold Fusion(tm) 3.1 or later

[\[Customer Comments\]](#) - [\[Press\]](#) - [\[License\]](#) - [\[Readme.doc\]](#)



QuickEStore

THE QUICKEST WAY TO E-COMMERCE



Support Demo Store Purchase Contact Us

ACCEPT JESUS FOREVER FORGIVEN

Behold, now is the accepted time; behold, now is the day of salvation. - 2 Cor. 6:2

**For the wages of sin is death;
but the gift of God is eternal life
through Jesus Christ our Lord.**

-Romans 6:23

**MAVERICK CHRISTIANS
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[RADEP - Reckless Aggressive Driver Education Program](#)



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Driver Improvement Schedule](#)



[Click Here To Register For
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Improvement Course](#)



[Click Here To Email
Program Administrator](#)



[Click Here For
RADEP - Reckless
Aggressive Driver
Education Program](#)

Our Virginia DMV Driver Improvement Clinic Can And Will Help You With All Your Defensive Driving School Needs.
Our Virginia DMV Approved Driver Improvement Defensive Driving Traffic School Course Uses Video & Interactive Exercises To Make Your Traffic School Learning Experience More Enjoyable.





What is this course about?

This course will NOT turn you into a designer. (Just like taking a day-long workshop on JavaScript will not turn you into a developer.) But it will help you understand some basics about design.

This course is meant to:

- Make you think about design
- Give you some common ground with designers
- Introduce you to some rules, conventions, and frameworks in design that can make you a better collaborator
- Help you improve the design of your own projects

What is this course about?

We will be covering five topics in this course:

- Heuristics, Conventions, & CRAP Design Principle
- Layout
- Colour Theory
- Typography
- Images

Why Design for Developers?

Why Design for Developers

- Design is not for special creative people only, there are rules for design just like there are for development
- Most developers work with designers in some capacity and it's nice to have a common language and understand some of the basics
- Do you have side projects? Would you like people to pay attention to them? Good design can help you gain people's attention for your code. Nobody likes to look at an ugly website or application that is hard to use
- Good design is everywhere and you'll be able to identify it and have an idea of why it's appealing

What is Design and What Does it Do?

What is Design and What Does it Do?

Design solves problems.

Same as development.

Common Misconceptions About Design

- Design is about making things pretty
- Design is easy
- Design is not important
- The design process is chaotic
- Design is done by Photoshop
- All designers studied the same thing, 'design'
- Design is optional

What design actually is

- About profitability, feasibility, and usability
- Manageable and measurable
- About the effects on the users on the business
- Solving visual and contextual problems
- Invisible if done well

Learn more about design by reading about it

<https://blog.prototypr.io/>

<https://medium.com/@101>

<https://uxdesign.cc/>

Heuristics

Heuristics

*“A heuristic is a mental shortcut that allows people to solve problems and make judgments quickly and efficiently. These rule-of-thumb strategies shorten decision-making time and allow people to function without constantly stopping to think about their next course of action. Heuristics are helpful in many situations, but they can also lead to **cognitive biases**.”*

Source: [Heuristics and Cognitive Bias](#)

Heuristics

“A cognitive bias is a systematic error in thinking that occurs when people are processing and interpreting information in the world around them and affects the decisions and judgments that they make.”

“People sometimes confuse cognitive biases with logical fallacies, but the two are not the same. A logical fallacy stems from an error in a logical argument, while a cognitive bias is rooted in thought processing errors often arising from problems with memory, attention, attribution, and other mental mistakes.”

Source: [What is Cognitive Bias?](#)

Heuristics

How to overcome cognitive bias:

- **Be aware of bias** ([List of cognitive biases on Wikipedia.](#))
- **Consider the factors that influence your decisions**
- **Challenge your biases** - look for ways to introduce objectivity into your decision making and give yourself enough time to make a decision

Heuristics

Heuristics aren't just for design, they're everywhere and are a big part of how we, as human beings, make decisions.

An example of a heuristic is the *availability heuristic*; where you make a decision based on how easy it is to bring something to mind.

An example might be your yearly review. Only the most recent projects/activities are easy to bring to mind so you are more likely to be judged on those than ones that occurred earlier in the year.

[Read more about Heuristics on Wikipedia](#)

Heuristics

Why am I talking about heuristics and biases? Because we are learning a new way of thinking, design thinking, and if you're a developer chances are you already have ideas in your head about design.

By being aware we may have biases and heuristics about design already in our heads, we can challenge what we think we know about design and look to real examples of design to figure out what we should do.

Web Design Conventions

Web Design Conventions



See definitions in:

All

Politics

Bridge

noun

1. a way in which something is usually done, especially within a particular area or activity.
"the woman who overturned so many conventions of children's literature"

A web convention is a way in which something is commonly done on the web. Generally speaking, you want to do what the majority of other designers do. Why? I'll let Jakob Nielsen explain.

NN/g

Jakob's Law of Internet UX



Jakob's Law of Internet User Experience

Users spend most of their time on other sites. This means that users prefer your site to work the same way as all the other sites they already know. Design for patterns for which users are accustomed.

You don't have to be original

You don't have to be original with your design! If you can identify what other people are doing and emulate them, you'll have a decent looking website design.

The trick is figuring out what are the conventions for design for what you're trying to make.

For example, if you want to build a chair, a convention is that there is a relatively flat area to sit on. There's a range for the height of the seat that you should probably stick to. And, usually, a chair is meant for a single person to use.

Web Design Conventions

An example of a web design convention is putting the logo for a website in the upper left-hand corner of a website.

Another convention may be that the logo is also a link to the home page.

There are also conventions for components, for example hamburger menu usually has three lines.

We see conventions everywhere and they are often not a best practice. A best practice is something we strive for. A convention is something we see commonly done.

Web Design Conventions

In-Class Exercise

What are some web design conventions you know about already? Are those conventions for desktop or mobile devices? Can you think of conventions that apply to both desktop and mobile devices?

Write down as many as you can think of and be prepared to discuss them as a class.

Web Design Conventions

Desktop

- Company logo in the upper left
- The company logo is also a link to the home page
- Social Media Icons in the footer
- Contact information found in the footer

Mobile

- Larger hit area for buttons
- Single column for content until you get to tablet size
- Hidden main nav (Hamburger)
- Main navigation is in the header

Web Design Conventions

How do you discover or learn about web conventions?

1. Google for web conventions. People love writing lists of web conventions you should follow or avoid. “Web standards” and “web best practices” are also phrases to search for. Check the dates on articles. Articles older than a couple of years might already be out of date!
2. Do your own research and visit many websites with a critical eye; look for the commonalities between components on different sites
3. Look at common design patterns. A design pattern is a general repeatable solution to a commonly occurring problem.

Web Design Conventions – Patterns

Just like in development there are established patterns you can use for your designs. Here are some example resources; there are many more.

<http://uipatterns.io/>

<https://www.smashingmagazine.com/2009/06/10-ui-design-patterns-you-should-be-paying-attention-to/>

<https://mobile-patterns.com/>

Shneiderman's Eight Golden Rules of Interface Design

1. Strive for Consistency
2. Seek Universal Usability
3. Offer informative feedback
4. Design dialogue 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 Eight Golden Rules of Interface Design

1. **Strive for Consistency** - by using familiar icons, colours, menu hierarchy, call-to-actions, and user flows when designing similar situations and sequence of actions.
2. **Seek Universal Usability** - Recognize the needs of diverse users; novice to expert, age, disabilities, international variations, and tech diversity.
3. **Offer informative feedback** - A user should know at all times where they are at and what is going on. Every action should have human-readable feedback within a reasonable amount of time. E.g. Error messages should be in human readable language and not just a code or a raw exception message.

Shneiderman's Eight Golden Rules of Interface Design

4. **Design dialogue to yield closure** - Make sure you tell your users what their actions have led them to. An example would be a thank you message after submitting a form or the order confirmation screen at the end of checkout.
5. **Prevent Errors** - Making a mistake sucks but making a mistake and getting an error message you don't understand sucks more. Provide intuitive steps to fix an issue (if possible) such as indicating which fields in a form were filled out incorrectly and how to properly fill them out.
6. **Permit easy reversal of actions** - Can a user undo something they did? Being able to go back and fix an error can relieve a lot of anxiety in a user. An example might be a multi-page form with a back button so you can edit input.

Shneiderman's Eight Golden Rules of Interface Design

7. **Keep users in control** - The user should feel in control of what they're doing and what is happening.
8. **Reduce short-term memory load** - There is only so much the human brain can keep in short-term memory at one time. Instead of making users remember something, have them recognize something. Think multiple choice question vs a short-answer question. Think familiar icons and patterns instead of something unique to your design.

10 Usability Heuristics for User Interface Design

[Jakob Nielsen's 10 general principles for interaction design](#). They are called "heuristics" because they are broad rules of thumb and not specific usability guidelines.

1. **Visibility of System Status** - The system should always keep users informed about what is going on, through appropriate feedback within reasonable time
2. **Match between system and the real world** - The system should speak the users' language, with words and phrases familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

10 Usability Heuristics for User Interface Design

3. **User control and freedom** - Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.
4. **Consistency and standards** - Users should not have to wonder whether different words, situations, or actions mean the same thing.
5. **Error prevention** - Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

10 Usability Heuristics for User Interface Design

6. **Recognition rather than recall** - Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.
7. **Flexibility and efficiency of use** - Accelerators (UI features that speed up an interaction or process) — unseen by the novice user — may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

10 Usability Heuristics for User Interface Design

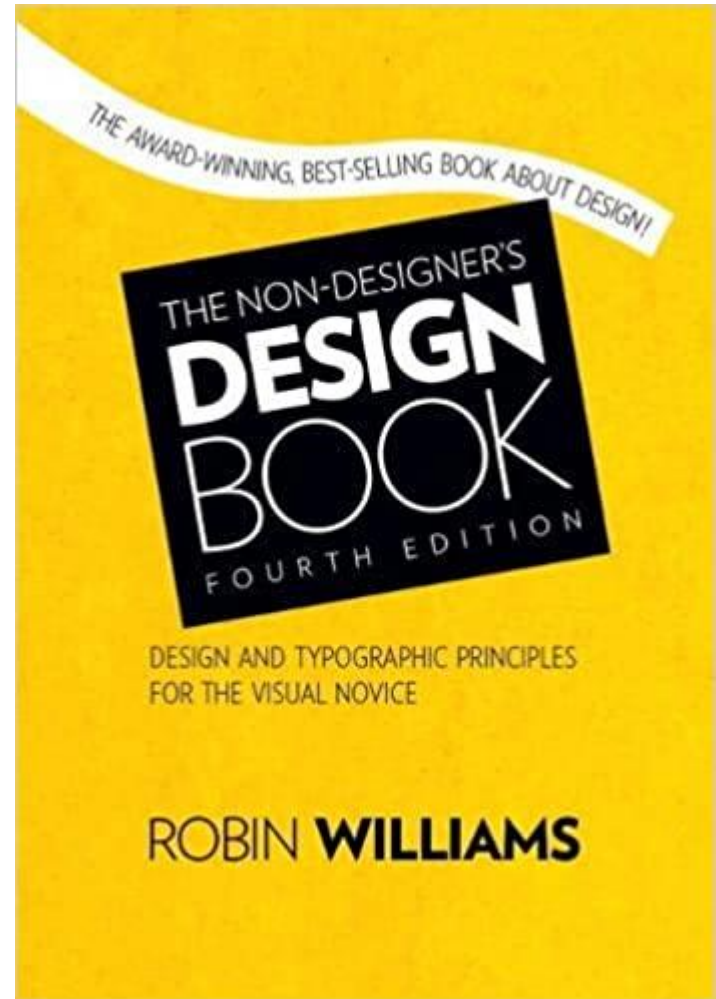
8. **Aesthetic and minimalist design** - Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.
9. **Help users recognize, diagnose, and recover from errors** - Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.
10. **Help and documentation** - Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation.

CRAP Design Principles

Where does CRAP come from?

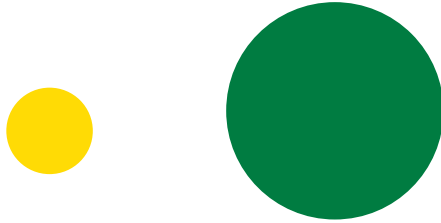
Coined by *Robin Patricia
Williams*

The Non-Designers Design Book



What is CRAP?

Contrast



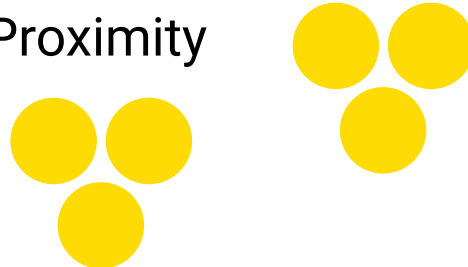
Repetition



Alignment



Proximity

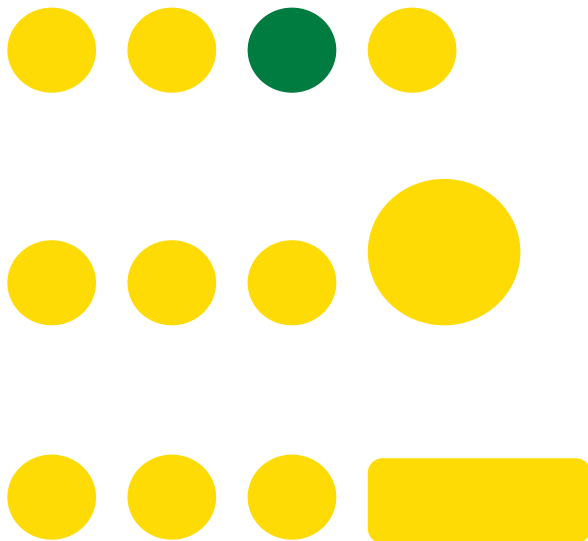


What is CRAP?

Contrast is about making elements stand out and attract attention.

Contrast uses:

- Colour
- Size
- Shape



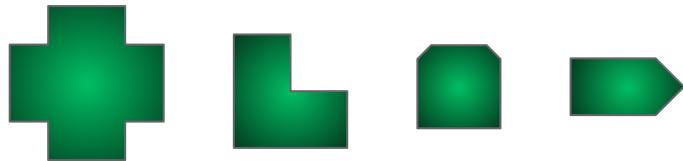
What is CRAP?

Repetition is how you achieve consistency in a design.

Repetition uses

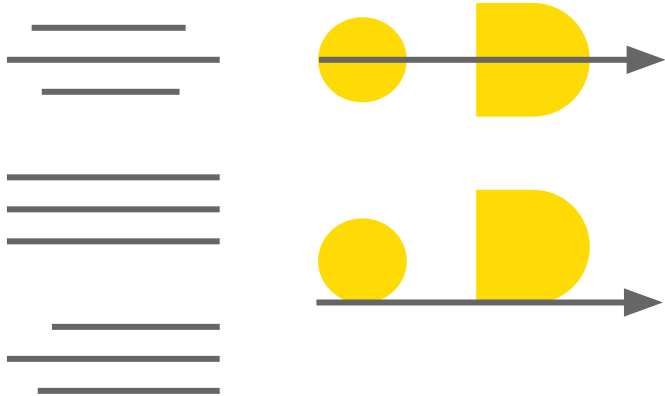
- Colour
- Shape
- Size
- Spacing
- Texture

etc to achieve consistency.



What is CRAP?

Alignment connects elements together and advocates organizing information to create order.



Navigation

[Nulla neque habitant morbi](#)
[Nullam laoreet commodo](#)
[Sed vitae nisi lacus enim](#)
[Curabitur cursus faucibus](#)
[Proin quis metus erat volutpat](#)
[auctor mauris tincidunt quis](#)

[Quisque sit amet est et](#)
[ullamcorper placerat eleifend](#)
[vehicula elit feugiat vitae](#)

Cras aliquam. Aliquam ultrices dignissim enim. Donec hendrerit magna in libero. Suspendisse accumsan. In sed sapien non lorem lobortis egestas. Fusce in libero id lacus auctor dignissim. Sed et arcu. Nunc felis enim, dapibus ac, tincidunt nec, feugiat et, dolor. Donec gravida ligula. Nulla a augue.

Fusce porta suscipit eros

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Donec hendrerit magna

- Nulla sed tortor id neque consectetur auctor.
- Nullam laoreet erat eget nibh.
- Sed vitae nisi non enim semper rhoncus.
- Curabitur ac magna eu elit rhoncus ultrices.
- Proin quis metus nec mauris dictum convallis.
- In auctor mauris quis neque.

Vivamus sodales

- Nulla sed tortor id neque consectetur auctor.
- Nullam laoreet erat eget nibh.
- Sed vitae nisi non enim semper rhoncus.
- Curabitur ac magna eu elit rhoncus ultrices.
- Proin quis metus nec mauris dictum convallis.
- In auctor mauris quis neque.

Navigation

[Nulla neque habitant morbi](#)
[Nullam laoreet commodo](#)
[Sed vitae nisi lacus enim](#)
[Curabitur cursus faucibus](#)
[Proin quis metus erat volutpat](#)
[auctor mauris tincidunt quis](#)

[Quisque sit amet est et](#)
[ullamcorper placerat eleifend](#)
[vehicula elit feugiat vitae](#)

Cras aliquam. Aliquam ultrices dignissim enim. Donec hendrerit magna in libero. Suspendisse accumsan. In sed sapien non lorem lobortis egestas.

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Fusce porta suscipit eros

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Fusce non ligula

Phasellus sit amet leo. Proin fermentum congue purus. Fusce non ligula. Donec a erat. Curabitur mollis ultricies elit. Ut ut tortor nec metus commodo tristique. In hac habitasse platea dictumst. Donec bibendum, neque non dignissim accumsan, urna felis commodo libero, euismod imperdiet arcu felis tincidunt velit. Duis mollis interdum sem. Nunc volutpat dictum justo.

Donec hendrerit magna

- Nulla sed tortor id neque consectetur auctor.
- Nullam laoreet erat eget nibh.
- Sed vitae nisi non enim semper rhoncus.
- Curabitur ac magna eu elit rhoncus ultrices.
- Proin quis metus nec mauris dictum convallis.
- In auctor mauris quis neque.

Vivamus sodales

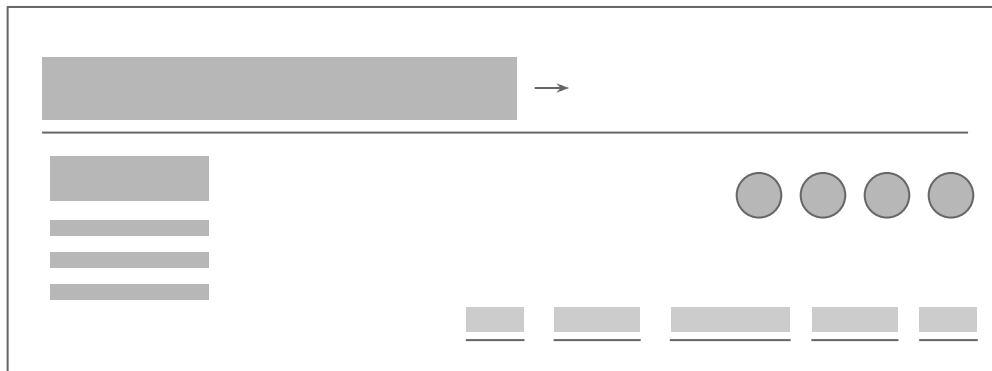
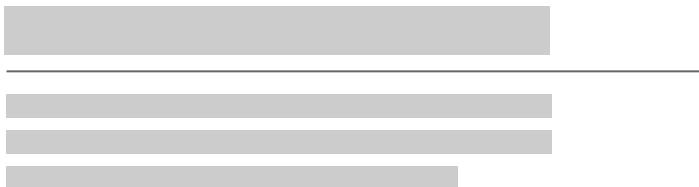
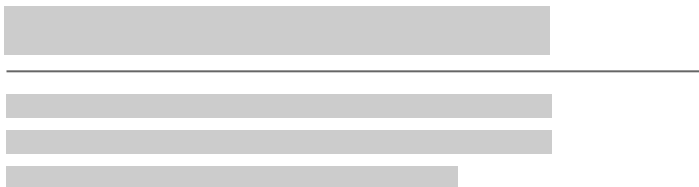
- Nulla sed tortor id neque consectetur auctor.
- Nullam laoreet erat eget nibh.
- Sed vitae nisi non enim semper rhoncus.
- Curabitur ac magna eu elit rhoncus ultrices.
- Proin quis metus nec mauris dictum convallis.
- In auctor mauris quis neque.

BEFORE ALIGNMENT

AFTER ALIGNMENT

What is CRAP?

Proximity means elements that are related to each other should be grouped closely and vice versa.



Examples of CRAP

Which design principles apply to these examples of social media icons from the footer of four different websites?



Examples of CRAP

OUR VALUES

ENGAGEMENT

Fuelled by raw passion, we're changemakers who are shaping a digital revolution.

LEVEL UP

The urge to explore is in our DNA. Every day, we seek the edge, so we can uncover untapped digital potential.

ACCOUNTABILITY

We take ownership of everything we do, because we live to deliver remarkable results.

TEAMWORK

Beyond all the tech and data, we're here to connect real people, with honesty and true collaboration.



Examples of CRAP

Menu ×

Home
What We Do
Our Work
Insights

About Us

Careers [↗](#)

Contact

10217 106 St #200

Edmonton, AB

T5J 1H5

9 - 5 pm Monday - Friday

info@paper-leaf.com

780-633-0415



Examples of CRAP

Do you want to be an Exceptional Client™?

Be honest. Share your ambitions and frustrations with us. Hold nothing back.

See value. Trust that we are experts sharing our expertise and significant experience with you.

Step back. Don't forget to put yourself in the shoes of your clients and customers. Often what we build together is not being built for you.

Don't rush. Things that seem simple can be difficult to build. Measure twice, cut once!

Examples of CRAP



Application Discovery

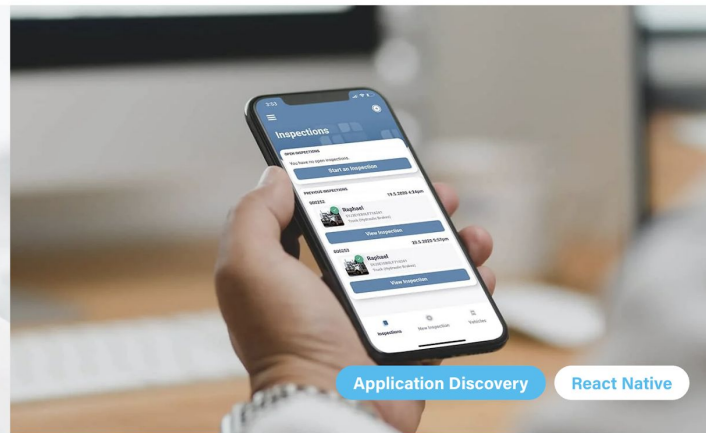
React Native

FireSmart Mobile App

Preventing wildfire damage with a home assessment app

Result: 450+ Properties Assessed

[VIEW PROJECT >](#)



Application Discovery

React Native

ComplianceBox SaaS Application

A SaaS product to manage transport industry compliance

Result: 765+ Driver Sign-Ups

[VIEW PROJECT >](#)

Examples of CRAP

Services

About Us

Contact Us

Blog

Request a Demo

Examples of CRAP



Home Service Economic Report Shows Steady Revenue Growth

Jobber's Latest report reveals full quarter of positive year-over-year revenue growth for Cleaning, Contracting, and Green segments. Year-to-date, the Home Service category has shown overall positive year-over-year revenue growth, demonstrating resilience to the ongoing pandemic.



Jobber's Home Service Economic Report Shows Steady Revenue Growth

Jobber today released The Home Service Economic Report: Summer Edition, which showcases market trends and insights pertaining to Home Service businesses in the first three quarters of 2020. Year-to-date, the Home Service category has shown overall positive year-over-year revenue growth.



Today in Hires: Fluent.ai, Bridgit, Jobber, Uberflip, Clearpath Robotics

Home service management software startup Jobber has promoted Sara Cooper to chief people officer. Cooper originally joined the Edmonton-founded startup as its vice president of people in July 2019.

CRAP Design Principles

In-Class Exercise

Find and screenshot 3 examples of CRAP design principles like I did in our examples.

Be ready to talk about your screenshots!

Assignment

Assignment

Part 1

Identify web conventions around two different, common, components on a web page. This could be a header, footer, login form, hamburger menu, shopping cart, whatever you like. Include screenshots to support your findings.

Part 2

Find and screenshot examples of at least three of the ten Usability Heuristics as outlined in Jakob Nielsen's, *10 Usability Heuristics for User Interface Design*.

Resources

[The Meaning of Design: What is Design and Why it's Important?](#)

[Shneiderman's Eight Golden Rules Will Help You Design Better Interfaces](#)

[The Eight Golden Rules of Interface Design](#)

[10 Usability Heuristics for User Interface Design](#)

[How to Use C.R.A.P. Design Principles For Better UX?](#)