

React 1 β (3 Points)

Reimagining Layout, Structure, & Navigation

In this assignment, you will explore the concepts we learned in the lecture, titled “*Interaction Design: Structure, Layout, & Navigation.*”

Part 1—Analysis: In this part, you will analyze your current solution for the *React 1 α* Assignment in terms of its structural, layout, and navigational elements.

Part 2—Redesign: This part will involve using the principles and components covered in class to redesign your solution and describe your design choices.

Part 3—Implementation: In this part, you will implement your new design by extending your implementation for the *React 1 α* Assignment using additional React and/or Bootstrap components.

Submission Details

[GitHub Classroom Starter Code](#)

React 1 β will build on your implementation of React 1 α . You should copy your code from your React 1 α project to the React 1 β repository linked above, as that will be your starter code. When you commit and push, ensure that you are committing and pushing to the react1-beta repository, not react1-alpha.

To complete the assignment, you will need to submit a completed version of this document as PDF to Canvas. In addition, you will submit your repository name and latest commit hash from GitHub Classroom, e.g. react1-beta-ctnelson1997, 2b0ef83.

Part 1: Analysis (0.6 Points)

(0.2 Points) **Step 1. Analyze Structures.** What kind of structure(s) (e.g., “Show one single thing”) can you identify in your *React 1* *α* implementation? Does it follow a single structure or combine structures? Take a screenshot of your implementation and annotate it to point at the structure(s) you identify, briefly (2-3 sentences) describing them and explaining why parts or all of your implementation follow these structures.

My React1 *α* implementation shows a **list of courses** in both the search and cart tabs, each with buttons that **facilitate the task of adding/removing a course, its sections, or subsections to/from the cart**. Hence, it combines two structures with the purpose of providing the user with a sense of rhythm.

The screenshot shows a user interface for a course search. On the left, there's a sidebar with 'Search and Filter' options: a search bar, a dropdown for 'Subject' set to 'All', and a 'Credits' range selector from 'minimum' to 'maximum'. The main area displays a list of courses with their details and an 'Add Course' button:

- (PSYCH 202) Introduction to Psychology | (3 Credits) Add Course
- (COMP SCI 537) Introduction to Operating Systems | (4 Credits) Add Course
- (COMP SCI 300) Programming 2 | (3 Credits) Add Course
- (CHEM 104) General Chemistry II | (5 Credits) Add Course
- (COMP SCI 200) Programming 1 | (3 Credits) Add Course
- (MATH 114) Algebra and Trigonometry | (5 Credits) Add Course
- (PSYCH 456) Introductory Social Psychology | (4 Credits) Add Course
- (COMP SCI 252) Introduction to Computer Engineering | (2 Credits) Add Course
- (COMP SCI 400) Programming 3 | (3 Credits) Add Course
- (MATH 221) Calculus and Analytical Geometry 1 | (5 Credits) Add Course
- (BIOLOGY 101) Animal Biology | (3 Credits) Add Course

A red curly brace on the right side of the list is labeled "list of courses". Two red arrows point from the "Add Course" buttons in the list to handwritten notes on the right: "buttons facilitate task of adding courses to cart".

The screenshot shows the same user interface, but now in a 'Cart' tab. It displays a list of courses with their details and a 'Remove Course' button:

- (PSYCH 202) Introduction to Psychology | (3 Credits) Remove Course
- (COMP SCI 300) Programming 2 | (3 Credits) Remove Course

A red arrow points from the 'Remove Course' buttons in the list to the handwritten note "buttons facilitate task of adding courses to cart" on the right.

(0.2 Points) **Step 2. Analyze Layout.** Describe the current layout of your *React 1* α implementation, identifying what principles of layout design (e.g., golden proportion, visual hierarchy, visual scan patterns) it currently follows (at least two principles). Use the same (unannotated) screenshot from Step 1 and draw or annotate the principles you identified. Either make additional copies of the screenshots or use different colors for multiple principles.

1. The information provided within each course in my My React1 α implementation is in the form of unordered lists, creating a **visual hierarchy** where there are distinct sections and subsections.
2. The layout follows the **golden proportion** since the search bar occupies a lesser portion of the screen than the main content, which is the list of courses.

The screenshot shows a web application interface for searching and filtering courses. On the left, a sidebar titled "Search and Filter" includes fields for "Search" (with a placeholder "Search"), "Subject" (set to "All"), and "Credits" (with input fields for "minimum" and "maximum" set to 10). Below the sidebar is a list of courses, each with a title and a link to "Add Course". The courses listed are:

- (PSYCH 202) Introduction to Psychology | (3 Credits) [Add Course](#)
- (COMP SCI 537) Introduction to Operating Systems | (4 Credits) [Add Course](#)
- (COMP SCI 300) Programming 2 | (3 Credits) [Add Course](#)
- (CHEM 104) General Chemistry II | (5 Credits) [Add Course](#)
- (COMP SCI 200) Programming 1 | (3 Credits) [Add Course](#)
- (MATH 114) Algebra and Trigonometry | (5 Credits) [Add Course](#)
- (PSYCH 456) Introductory Social Psychology | (4 Credits) [Add Course](#)
- (COMP SCI 252) Introduction to Computer Engineering | (2 Credits) [Add Course](#)
- (COMP SCI 400) Programming 3 | (3 Credits) [Add Course](#)
- (MATH 221) Calculus and Analytical Geometry 1 | (5 Credits) [Add Course](#)
- (BIOLOGY 101) Animal Biology | (3 Credits) [Add Course](#)

Handwritten annotations in red are present at the bottom of the screenshot. A horizontal bracket spans the width of the course list, and the text "golden proportion (asymmetrical view)" is written below it.

Search Cart

Search and Filter

Search

Subject

Credits to

(CHEM 104) General Chemistry II (5 Credits)

Subject: Chemistry
Principles and application of chemical equilibrium, coordination chemistry, oxidation-reduction and electrochemistry, kinetics, nuclear chemistry, introduction to organic chemistry. Lecture, lab, and discussion.

Requisites: (MATH 114) AND (CHEM 103)

Keywords: chemistry

Sections

- LEC_001
 - Instructor: Linda Zelewski
 - Location: B10 Ingraham Hall
 - Meeting Times
 - thursday : 9:30am - 10:45am
 - tuesday : 9:30am - 10:45am

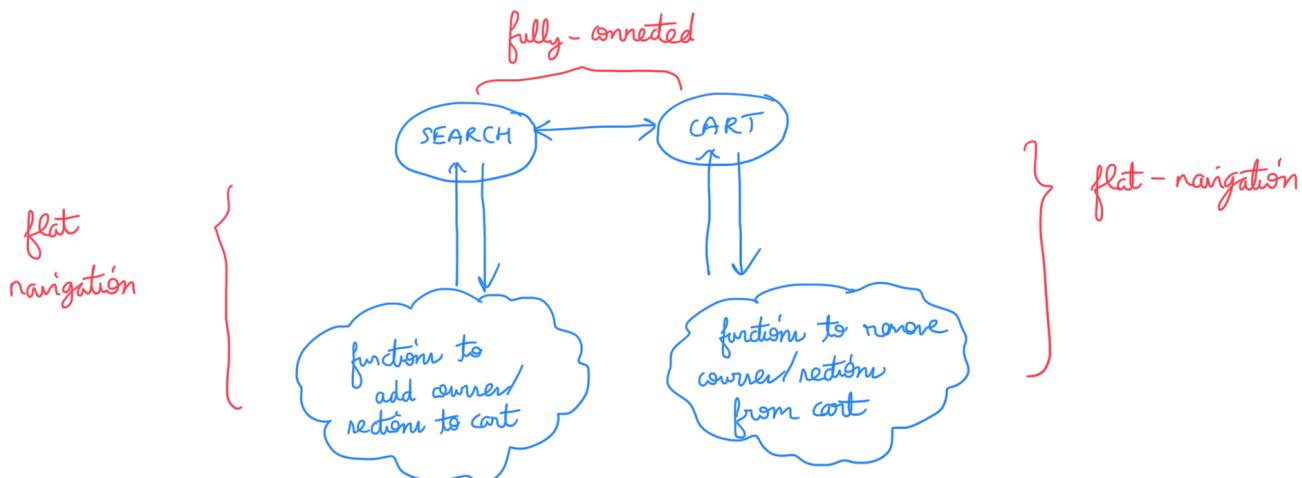
Subsections

- DIS_401
 - 123 Van Hise Hall
 - Meeting Times
 - monday : 2:25pm - 5:25pm
 - thursday : 11:00am - 11:50am
 - tuesday : 11:00am - 11:50am
- DIS_402
 - 123 Van Hise Hall
 - Meeting Times
 - monday : 2:25pm - 5:25pm
 - thursday : 12:05pm - 12:55pm

visual hierarchy

(0.2 Points) **Step 3. Analyze Navigation.** Consider your React 1 α implementation, what navigation model(s) does it use? Below, draw the navigation model that your implementation follows the same way navigation models were described in class.

My React 1 α implementation uses the **flat navigation model within the search/cart page** since it involves a central workspace where users can always see the list of courses and functions to add or remove them to/from the cart without requiring context switches or navigation. However, **between the search and the cart pages, it follows a fully-connected model** since users can easily navigate back and forth between them using the tabs.



Part 2: Redesign (0.8 Points)

(0.4 Points) **Step 1. Conceptual Redesign.** In this step, you will reimagine your *React 1* implementation, such that it uses a different set of structures, navigation models, and/or principles of layout design. Your goal should not be to change your implementation for the sake of changing it, but consider ways in which the structures and layout and navigation principles might improve your implementation. Your conceptual redesign should involve the use of at least one layout principle, make at least one change in the navigation model, and introduce at least one element/aid to improve navigation. The use of additional or a different set of structures is optional. Provide a hand-drawn or digitally created (e.g., in Adobe XD) mock-up of your design below. Annotate your design to describe your design choices, highlighting the specific principles you employed.

Changes:

1. Layout:

My new design exploits the **F visual scanning pattern**. Instead of scrolling through a huge list of courses that have a lot of information associated, I added another pane to the right of the list of courses with its own scroll bar. Users can just click on a course from the list to see the associated information on the right pane. I have also used the **golden proportion** to keep the user's attention to the course information.

2. Navigation model:

Within the search page, users can click on any course from the list to see associated information. On the right pane, users have the option to click on individual sections and subsections within a section and add them to the cart. Hence, this follows a **sequential/step-wise navigation model**. Across the search and cart tabs, the design follows a fully-connected model as it was in my earlier design.

3. Element to improve navigation:

The **red border on the right of a course element** within the course list indicates which course's information is currently being shown on the right and hence serves as an aid to the user.

(0.4 Points) **Step 2. Detailed Redesign.** In this step, you will build on your mock-up to create a detailed design, determining image, color (for background and elements), type, size, icons, and so on (as we also did, to some extent, in the Javascript β Assignment). Provide a digitally created mock-up (e.g., in Adobe XD) that shows your design choices. Annotate your mock-up to describe your design choices.

1. Color

- I made the navigation aid that tells which course is currently being viewed on the rightmost panel to be red since it immediately attracts the user's attention and is a nice contrast against the other colors in the design.
- The rightmost panel is also surrounded by a red border to establish its relationship with the navigation aid added to the course list.

2. Type and Size

- In the course list, I have made the course number in bold and capitalized to provide a visual hierarchy to the user.
- Similarly, the individual section headings within the rightmost panel are in bold font to provide a clear sense of hierarchy.

3. Icons

- I have used font-awesome icons to demonstrate the instructor's name and the class location within the sections accordion of the course information panel. I believe this would catch the user's attention easily.
- Similarly, the section and subsection timings have been displayed in the format of a calendar week, rather than a list, with the days of the class highlighted in green, to provide quick lookup.

- c. The credits for a course have been displayed in the form of a badge since it is a vital piece of information when a student registers for a course.

Search **Cart**

Search and Filter

Search

Subject

Credits

PSYCH 202 **4 Credits**

Introduction to psychology **Add Course**

COMP SCI 300 **4 Credits**

Programming II **Add Course**

MATH 114 **3 Credits**

Algebra and Trigonometry **Add Course**

1.a - navigation aid in red to direct user's attention

1.b

2.a, course no. in bold & caps to create a sense of visual hierarchy

3a, icons to convey information quickly

PSYCH 202

Introduction to psychology

Subject: Psychology

Lore ipsum

Requisites: (lorem OR ipsum)

Keywords: lorem, ipsum

Sections

LECs_001
Jeff Henriques
105 Brogden Psychology Building **Add Section**

LECs_002
Jeff Henriques
105 Brogden Psychology Building **Add Section**

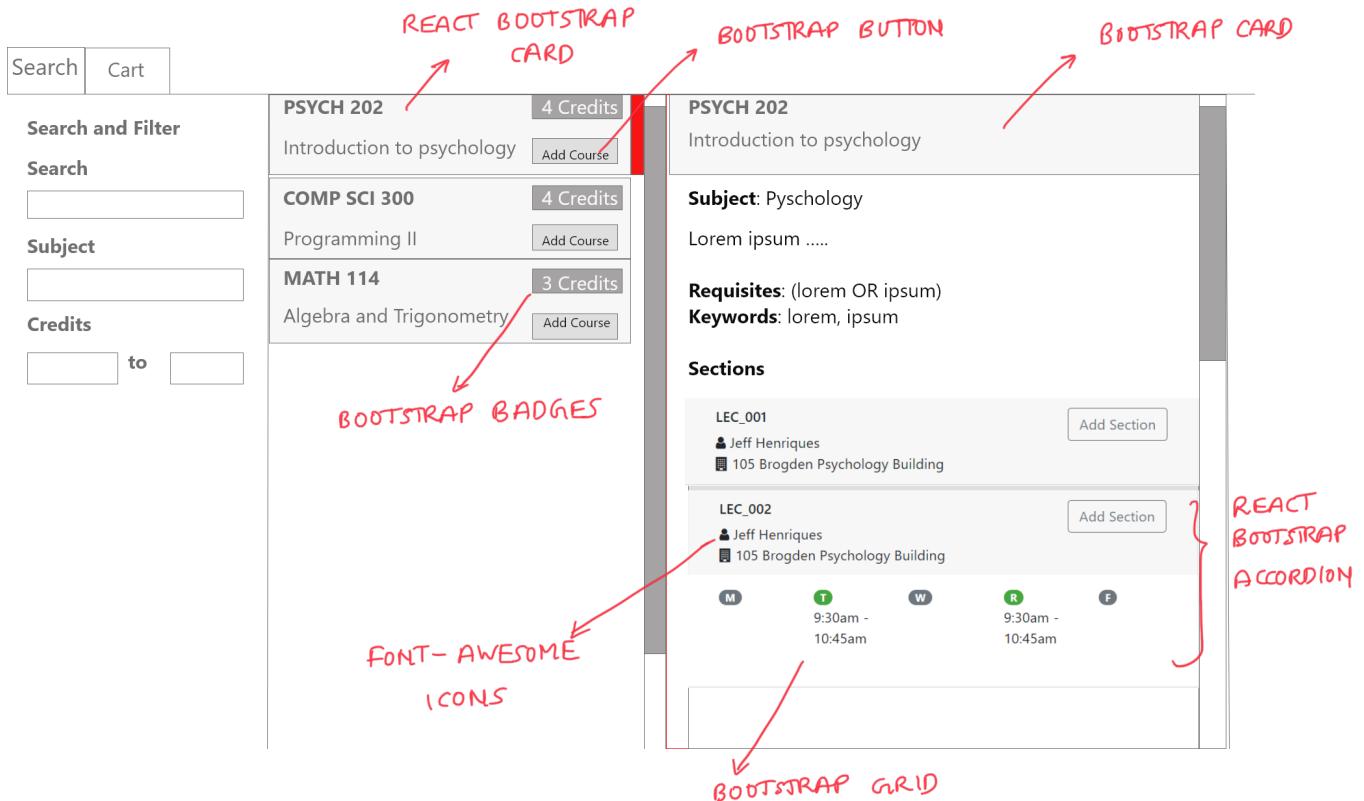
M 9:30am - 10:45am **T** 9:30am - 10:45am **W** 9:30am - 10:45am **R** 9:30am - 10:45am **F**

2b visual hierarchy

3b meeting times in calendar-week format for quick look-up

Part 3: Implementation (1.6 Points)

(0.3 Points) **Step 1. Inspect Library Elements.** In this step, you will inspect the standard React component library, the [Bootstrap](#) component library, and/or an alternative that you are comfortable working with to see how you can realize detailed design you created in the previous part using these components. You are not expected to change the library components to exactly match your design choices, but to identify which component elements might best meet your design goals. Below, copy the design and the choices you generated in Part 2 and annotate them to describe which components from the library you will use to accomplish your design goals.



(1.3 Points) **Step 2. Implement Redesign.** The last step of this part will involve implementing the design improvements you described in Part 2, using the layout and components you described in the previous step. You can use standard React components, Bootstrap components, and/or an alternative library in your implementation. You do not have to implement new *functionality*; focus on implementing your *design*.

Your deliverable will be a completed version of this document, attached to the canvas assignment as a PDF, and the GitHub Classroom repository name and latest commit hash.

- 1. A landing page with the list of courses shown, and the course information panel asking the user to select a course to see more information.**

Search Cart

Search and Filter

Search

Subject All

Credits minimum to maximum

PSYCH 202 Introduction to Psychology	3 Credits	<input type="button" value="Add Course"/>
COMP SCI 537 Introduction to Operating Systems	4 Credits	<input type="button" value="Add Course"/>
COMP SCI 300 Programming 2	3 Credits	<input type="button" value="Add Course"/>
CHEM 104 General Chemistry II	5 Credits	<input type="button" value="Add Course"/>
COMP SCI 200 Programming 1	3 Credits	<input type="button" value="Add Course"/>
MATH 114 Algebra and Trigonometry	5 Credits	<input type="button" value="Add Course"/>
PSYCH 456 Introductory Social Psychology	4 Credits	<input type="button" value="Add Course"/>
COMP SCI 252	2 Credits	

Select a course to display information.

2. Users can view associated course information on the rightmost panel on clicking a course. The selected course is marked in red.

Search Cart

Search and Filter

Search

Subject All

Credits minimum to maximum

PSYCH 202 Introduction to Psychology	3 Credits	<input type="button" value="Add Course"/>
COMP SCI 537 Introduction to Operating Systems	4 Credits	<input type="button" value="Add Course"/>
COMP SCI 300 Programming 2	3 Credits	<input type="button" value="Add Course"/>
CHEM 104 General Chemistry II	5 Credits	<input type="button" value="Add Course"/>
COMP SCI 200 Programming 1	3 Credits	<input type="button" value="Add Course"/>
MATH 114 Algebra and Trigonometry	5 Credits	<input type="button" value="Add Course"/>
PSYCH 456 Introductory Social Psychology	4 Credits	<input type="button" value="Add Course"/>

PSYCH 202
Introduction to Psychology **3 Credits**

Subject: Psychology
Behavior, including its development, motivation, frustrations, emotion, intelligence, learning, forgetting, personality, language, thinking, and social behavior.

Prerequisites:None

Keywords: psychology,behavior,emotion,intelligence,brain

Sections

LEC_001	<input type="button" value="Add Section"/>			
● Jeff Henriques				
105 Brogden Psychology Building				
M	T	W	R	F
9:30am - 10:45am	9:30am - 10:45am		9:30am - 10:45am	

LEC_002	<input type="button" value="Add Section"/>
● Jeff Henriques	
105 Brogden Psychology Building	

LEC_003

3. Users can click on individual sections to see the meeting times for that section and also a list of subsections, if available.

Search Cart

Search and Filter

Search

Subject to

Course ID	Course Name	Credits	Action
PSYCH 202	Introduction to Psychology	3 Credits	<input type="button" value="Add Course"/>
COMP SCI 537	Introduction to Operating Systems	4 Credits	<input type="button" value="Add Course"/>
COMP SCI 300	Programming 2	3 Credits	<input type="button" value="Add Course"/>
CHEM 104	General Chemistry II	5 Credits	<input type="button" value="Add Course"/>
COMP SCI 200	Programming 1	3 Credits	<input type="button" value="Add Course"/>
MATH 114	Algebra and Trigonometry	5 Credits	<input type="button" value="Add Course"/>
PSYCH 456	Introductory Social Psychology	4 Credits	<input type="button" value="Add Course"/>
COMP SCI 252		2 Credits	

Sections

Section ID	Instructor	Location	Action						
LEC_001	Linda Zelewski	B10 Ingraham Hall	<input type="button" value="Add Section"/>						
M	T	W	R	F	9:30am	-	9:30am	-	10:45am

Subsections

Subsection ID	Location	Action
DIS_401	123 Van Hise Hall	<input type="button" value="Add Subsection"/>
DIS_402	123 Van Hise Hall	<input type="button" value="Add Subsection"/>
DIS_403	B387 Chemistry Building	<input type="button" value="Add Subsection"/>
DIS_404	B387 Chemistry Building	<input type="button" value="Add Subsection"/>

4. Cart page after adding two courses. Follows a similar design as the search page.

Search Cart

Course ID	Course Name	Credits	Action
PSYCH 202	Introduction to Psychology	3 Credits	<input type="button" value="Remove Course"/>
COMP SCI 537	Introduction to Operating Systems	4 Credits	<input type="button" value="Remove Course"/>

PSYCH 202 Introduction to Psychology 3 Credits

Subject: Psychology
Behavior, including its development, motivation, frustrations, emotion, intelligence, learning, forgetting, personality, language, thinking, and social behavior.

Requisites:None

Keywords: psychology,behavior,emotion,intelligence,brain

Sections

Section ID	Instructor	Location	Action
LEC_001	Jeff Henriques	105 Brogden Psychology Building	<input type="button" value="Remove Section"/>
LEC_002	Jeff Henriques	105 Brogden Psychology Building	<input type="button" value="Remove Section"/>
LEC_003	C. Shawn Green	105 Brogden Psychology Building	<input type="button" value="Remove Section"/>
LEC_004	Patti Coffey		<input type="button" value="Remove Section"/>