Detailed Design Documentation

ARGO UX Master Component Library

ABSTRACT

This document outlines the detailed design of the UX Master Component Library. The document includes three interface mockups, static models with class diagrams for UI components, and a dynamic model with a sequence diagram illustrating the interactions between the user, interface, and the UI library. The rationale for the design is also discussed, along with traceability from requirements. This document serves as a comprehensive guide for the development of the UX Master Component Library, ensuring that the final product is well-structured, visually appealing, and easy to use.

Contributors

Kevin Roa, Aliah De Guzman, Saud Baig,

Noah Turrin, Te’a Washington, Samuel Anozie,

Mark Bentsen

Has every member of your group contributed to this document and participated in the project meetings?
Yes

Version 1.0

TABLE OF CONTENTS

LIST OF FIGURES

List Of Images

LIST OF TABLES

List Of Tables

INTRODUCTION

This document provides a comprehensive overview of the GUI design for three interfaces that will employ the Master Component Library, along with a static model, dynamic model, rationale for design decisions, and traceability from requirements. To provide a visual representation of the interfaces, a set of mockups were created for each one. These mockups serve as a blueprint for the final product. Each mockup includes a detailed representation of the layout, including the placement of buttons, text, images, and other elements.

The static model illustrates the class diagrams that represent UI components. These diagrams provide a detailed overview of the various components that make up the interface and how they are related to each other. The dynamic model illustrates the flow of interactions between the user, an interface, and the Master Component Library.

The design decisions made for each interface were based on a set of design principles that prioritize user needs, usability, and aesthetics. The rationale for these decisions is explained in the rationale section of this document. Finally, a traceability matrix is included in this document that maps each requirement to the specific design element or feature that addresses it. This ensures that all requirements are fulfilled and that the interfaces meet the needs of users.

GUI DESIGN

Stocks Analysis

Description

The stock page is designed to give users a dashboard that they can utilize to make stock trading decisions. The primary objective of this application is to aid users in making informed decisions on which stocks to trade or invest in. There is support for technical indicators and multiple stocks can be graphed on the chart at a single time. The user can choose which stocks to follow through the use of a watchlist. The user is also able to see their current positions and how much diversity is present in their portfolio.

(This is the theoretical scenario for what the UI is used for, however, implementing actual functionality may not be present in the final product; the goal is to have the overall layout)

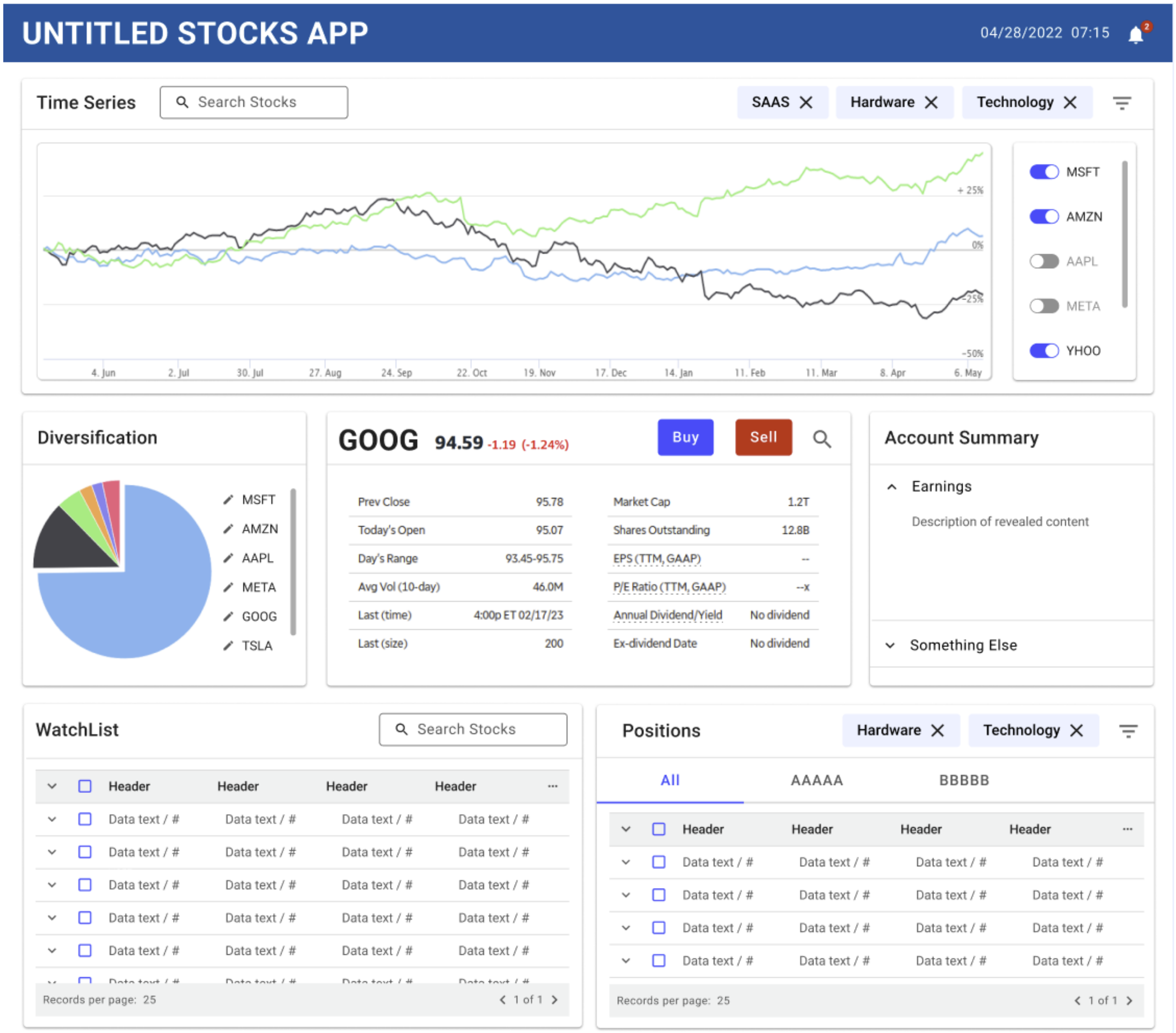
Libraries

- Highcharts
- Flex Layout React
- Material React Table
- Kaggle stocks dataset

Components

- Button
- List
- Search
- Tooltip
- Card
- Header
- Tabs
- Data Table
- Accordion

Mockup



Prev Close	95.78
Today's Open	95.07
Day's Range	93.45-95.75
Avg Vol (10-day)	46.0M
Last (time)	4:00p ET 02/17/23
Last (size)	200

Market Cap	1.2T
Shares Outstanding	12.8B
EPS (TTM, GAAP)	--
P/E Ratio (TTM, GAAP)	--x
Annual Dividend/Yield	No dividend
Ex-dividend Date	No dividend

WatchList

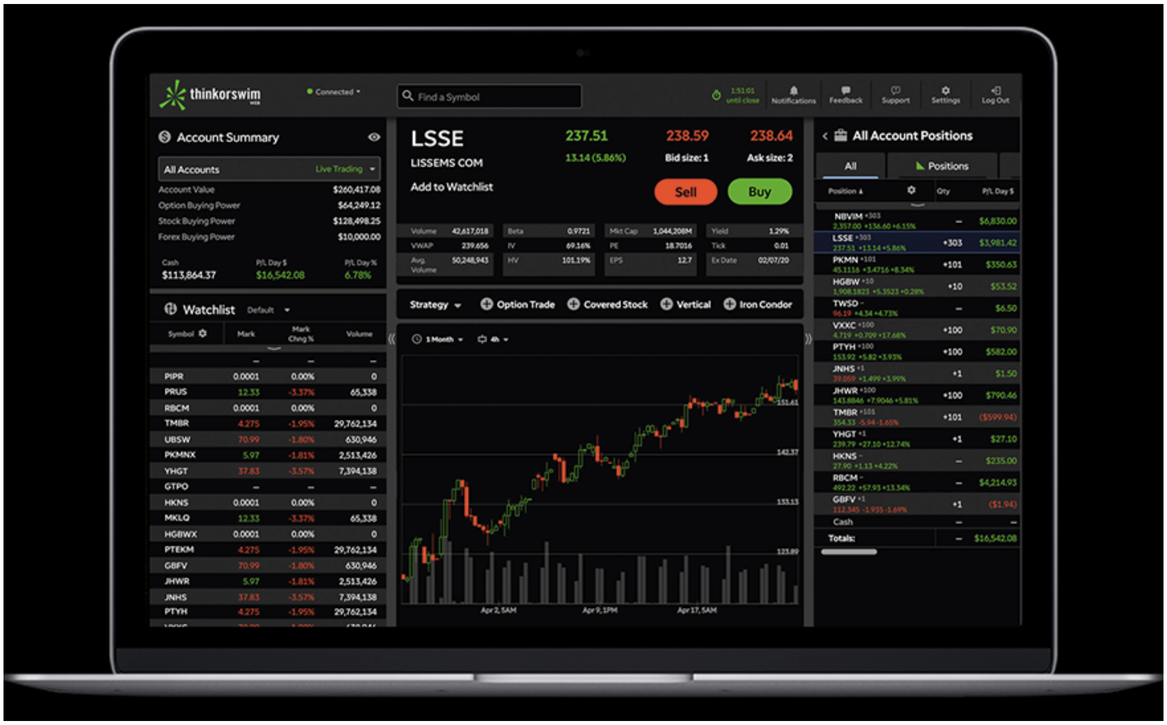
Header	Header	Header	Header
Data text / #	Data text / #	Data text / #	Data text / #
Data text / #	Data text / #	Data text / #	Data text / #
Data text / #	Data text / #	Data text / #	Data text / #
Data text / #	Data text / #	Data text / #	Data text / #
Data text / #	Data text / #	Data text / #	Data text / #
Data text / #	Data text / #	Data text / #	Data text / #

Positions

Header	Header	Header	Header
Data text / #	Data text / #	Data text / #	Data text / #
Data text / #	Data text / #	Data text / #	Data text / #
Data text / #	Data text / #	Data text / #	Data text / #
Data text / #	Data text / #	Data text / #	Data text / #

Figure 1. Stocks Mockup

References



Account Summary

All Accounts — Live Trading

Account Value	$260,417.08
Option Buying Power	$64,249.12
Stock Buying Power	$128,498.25
Forex Buying Power	$10,000.00

Cash	P/L Day $	P/L Day %
$113,864.37	$16,542.08	6.78%

Watchlist Default

Symbol	Mark	Mark Chng %	Volume
	–	–	–
PIPR	0.0001	0.00%	0
PRUS	12.33	-3.37%	65,338
RBCM	0.0001	0.00%	0
TMBR	4.275	-1.95%	29,762,134
UBSW	70.99	-1.80%	630,946
PKMNX	5.97	-1.81%	2,513,426
YHGT	37.83	-3.57%	7,394,138
GTPO	–	–	–
HKNS	0.0001	0.00%	0
MKLQ	12.33	-3.37%	65,338
HGBWX	0.0001	0.00%	0
PTEKM	4.275	-1.95%	29,762,134
GBFV	70.99	-1.80%	630,946
JHWR	5.97	-1.81%	2,513,426
JNHS	37.83	-3.57%	7,394,138
PTYH	4.275	-1.95%	29,762,134

LSSE
LISSEMS COM
Add to Watchlist

237.51	238.59	238.64
13.14 (5.86%)	Bid size: 1	Ask size: 2

Volume	42,617,018	Beta	0.9721	Mkt Cap	1,044,208M	Yield	1.29%
VWAP	239.656	IV	69.16%	PE	18.7016	Tick	0.01
Avg. Volume	50,248,943	HV	101.19%	EPS	12.7	Ex Date	02/07/20

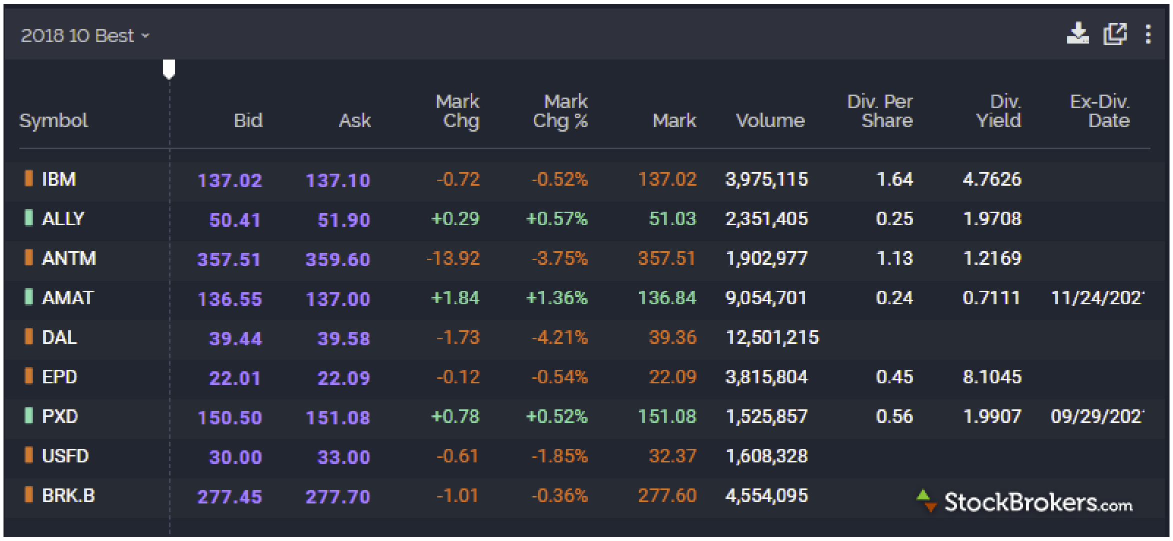
All Account Positions

All | Positions

Position	Qty	P/L Day $
NBVIM +303 2,357.00 +136.60 +6.15%	–	$6,830.00
LSSE +303 237.51 +13.14 +5.86%	+303	$3,981.42
PKMN +101 45.1116 +3.4716 +8.34%	+101	$350.63
HGBW +10 1,908.1823 +5.3523 +0.28%	+10	$53.52
TWSD - 96.19 +4.34 +4.73%	–	$6.50
VXXC +100 4.719 +0.709 +17.68%	+100	$70.90
PTYH +100 153.92 +5.82 +3.93%	+100	$582.00
JNHS +1 39.059 +1.499 +3.99%	+1	$1.50
JHWR +100 143.8846 +7.9046 +5.81%	+100	$790.46
TMBR +101 354.33 -5.94 -1.65%	+101	($599.94)
YHGT +1 239.79 +27.10 +12.74%	+1	$27.10
HKNS - 27.90 +1.13 +4.22%	–	$235.00
RBCM - 492.22 +57.93 +13.34%	–	$4,214.93
GBFV +1 112.345 -1.935 -1.69%	+1	($1.94)
Cash	–	–
Totals:	–	$16,542.08

[2]

Figure 2. Stocks Ref 1



2018 10 Best

Symbol	Bid	Ask	Mark Chg	Mark Chg %	Mark	Volume	Div. Per Share	Div. Yield	Ex-Div. Date
IBM	137.02	137.10	-0.72	-0.52%	137.02	3,975,115	1.64	4.7626	
ALLY	50.41	51.90	+0.29	+0.57%	51.03	2,351,405	0.25	1.9708	
ANTM	357.51	359.60	-13.92	-3.75%	357.51	1,902,977	1.13	1.2169	
AMAT	136.55	137.00	+1.84	+1.36%	136.84	9,054,701	0.24	0.7111	11/24/202
DAL	39.44	39.58	-1.73	-4.21%	39.36	12,501,215			
EPD	22.01	22.09	-0.12	-0.54%	22.09	3,815,804	0.45	8.1045	
PXD	150.50	151.08	+0.78	+0.52%	151.08	1,525,857	0.56	1.9907	09/29/202
USFD	30.00	33.00	-0.61	-1.85%	32.37	1,608,328			
BRK.B	277.45	277.70	-1.01	-0.36%	277.60	4,554,095			

[3]

Figure 3. Stocks Ref 2

Social Media Analytics

Description

The social media analytics page is designed to give users a comprehensive understanding of their social media activity. The primary objective of this application is to assist users in evaluating the impact of their social media content on their audience, identify the type of content that resonates with their followers, and develop a more effective social media strategy. The dashboard provides clear and detailed information on various aspects of the users' online media presence, including the performance of their content. The user may choose what aspects they find most important and organize the UI however they best see fit. It's important to note that the site will utilize simulated data and will not have any actual connection to any real accounts.

(This is the theoretical scenario for what the UI is used for, however, implementing actual functionality may not be present in the final product; the goal is to have the overall layout)

Libraries

- Flex Layout React
    - Various component modules that can be moved around
    - Customize the look of the dashboard
- Highcharts (maybe)
    - Graph module

Components

- Button
- Badge/Alert
- Filter
- List
- Search
- Dropdown
- Accordion
- Card
- Header
- Left Navigation Menu

Mockup

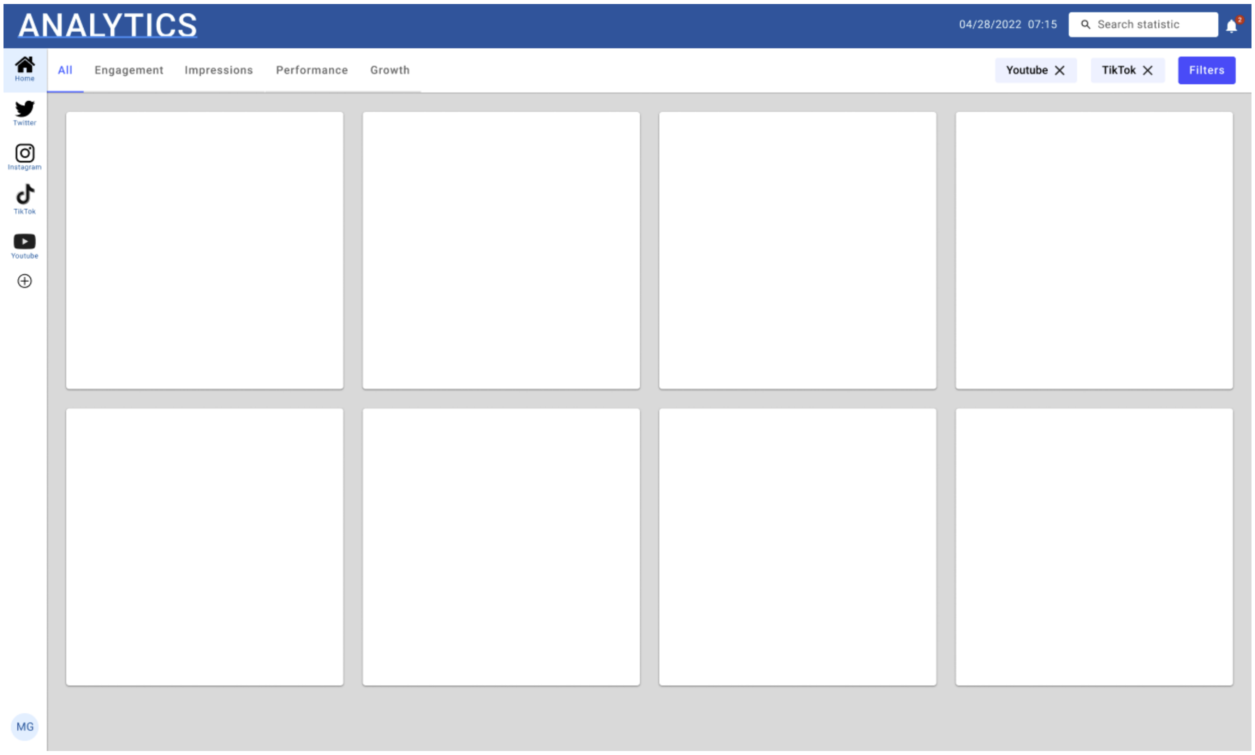
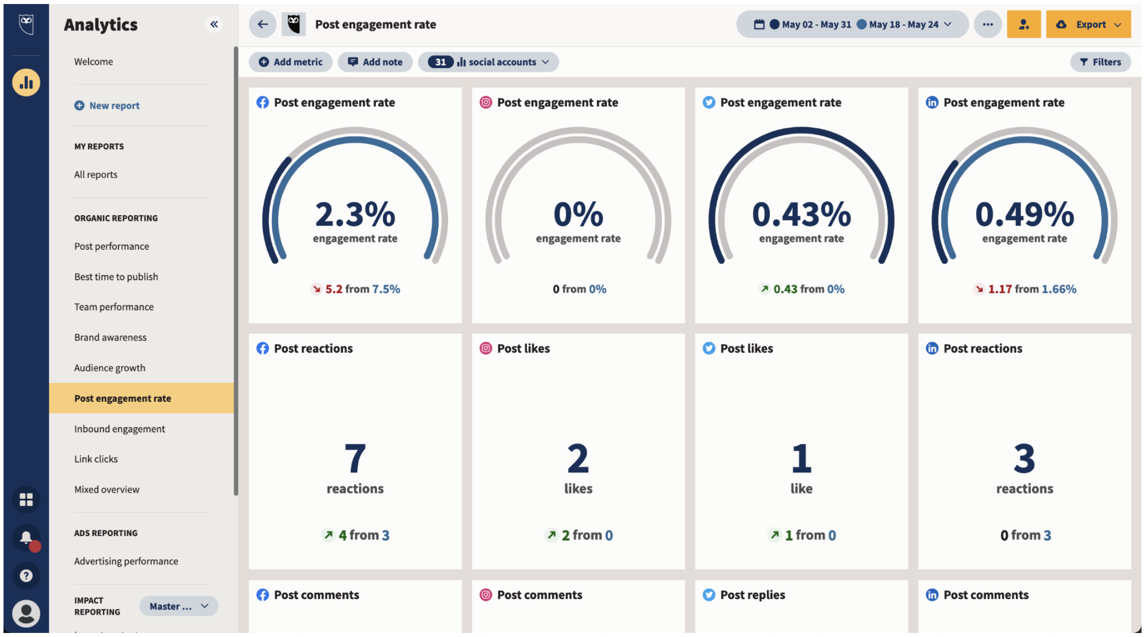


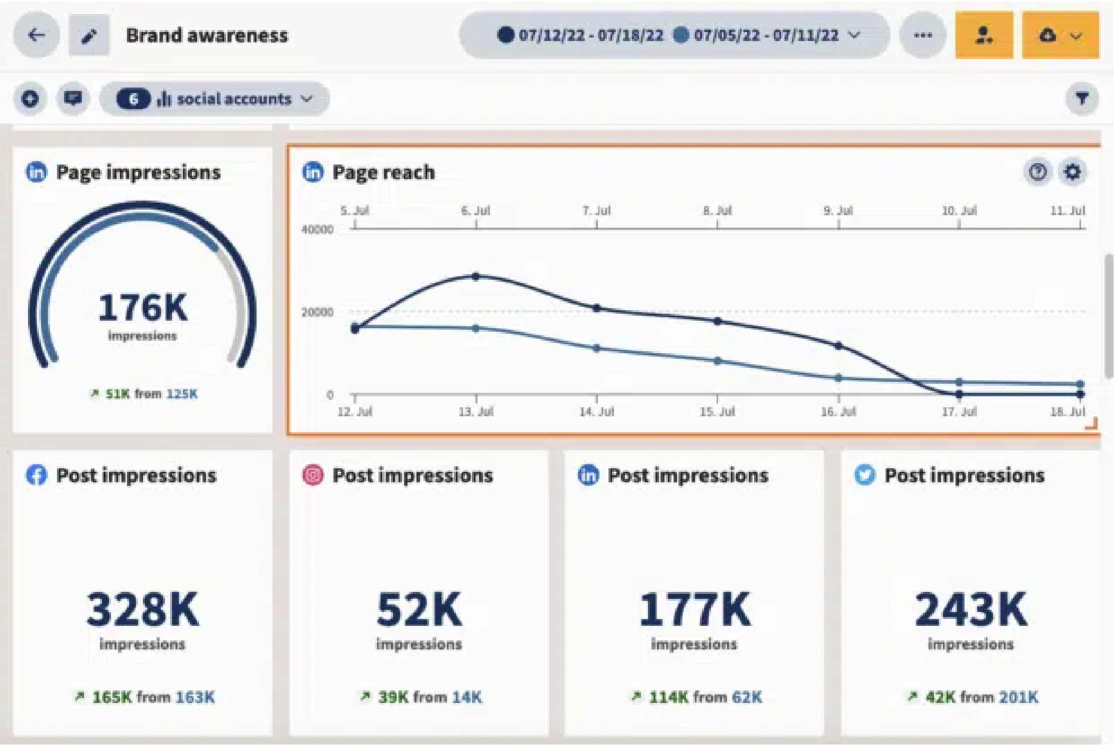
Figure 4. Analytics Mockup

References



[1]

Figure 5. Analytics Ref 1



[1]

Figure 6. Analytics Ref 2

Rotten Tomatoes Clone

Description

The design mockup for the rotten tomato clone is a visually appealing and user-friendly platform for movie enthusiasts. The main focus of the page is a list of the top movies in a particular category, displayed in a neat and organized manner. Each movie is represented by its poster and basic information such as title, release date, description, and rating.

To the right of the movie list, there is a form for users to write their own reviews about a movie of their choice. The form is simple and straightforward, allowing users to rate the movie, write a brief summary of their thoughts, and provide a full review.

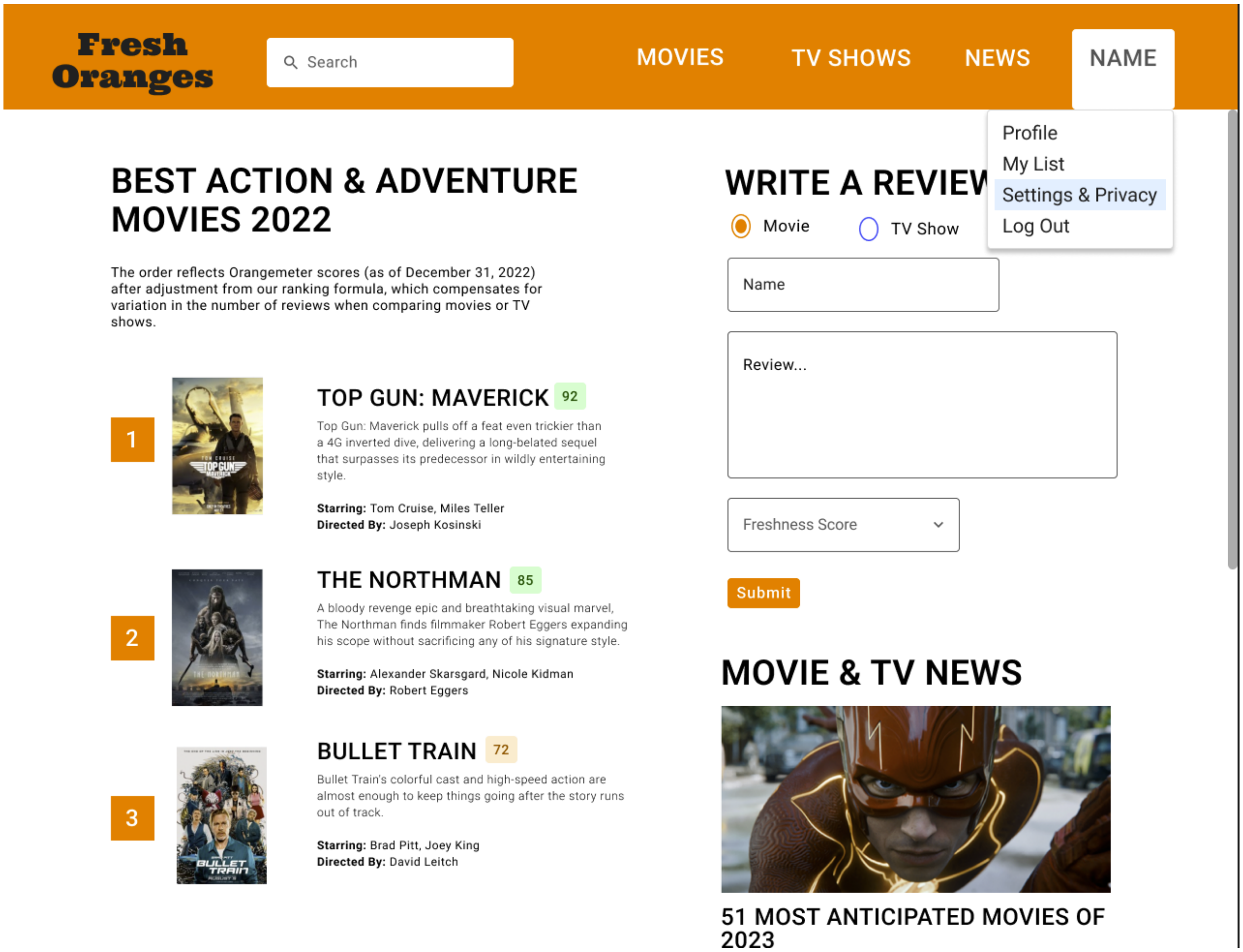
At the bottom of the page, there is a card for recommendations. This section shows movies that are similar to the ones the user has already rated, offering them a personalized experience and helping them discover new and exciting content.

(This is the theoretical scenario for what the UI is used for, however, implementing actual functionality may not be present in the final product; the goal is to have the overall layout)

Components

- Button
- Badge
- Radio
- Search
- Dropdown
- Menu
- Text Field
- Card
- List
- Form
- Header
- Checkbox

Mockup



BEST ACTION & ADVENTURE MOVIES 2022

The order reflects Orangemeter scores (as of December 31, 2022) after adjustment from our ranking formula, which compensates for variation in the number of reviews when comparing movies or TV shows.

TOP GUN: MAVERICK 92

Top Gun: Maverick pulls off a feat even trickier than a 4G inverted dive, delivering a long-belated sequel that surpasses its predecessor in wildly entertaining style.

Starring: Tom Cruise, Miles Teller
Directed By: Joseph Kosinski

THE NORTHMAN 85

A bloody revenge epic and breathtaking visual marvel, The Northman finds filmmaker Robert Eggers expanding his scope without sacrificing any of his signature style.

Starring: Alexander Skarsgard, Nicole Kidman
Directed By: Robert Eggers

BULLET TRAIN 72

Bullet Train's colorful cast and high-speed action are almost enough to keep things going after the story runs out of track.

Starring: Brad Pitt, Joey King
Directed By: David Leitch

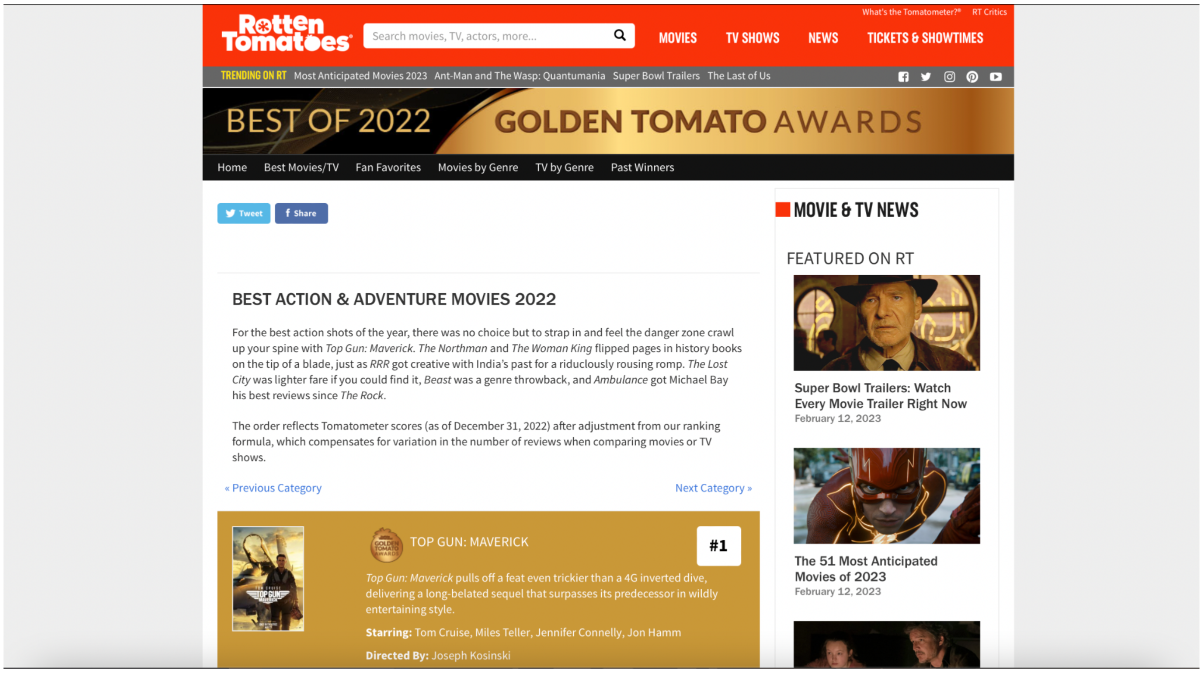
WRITE A REVIEW

MOVIE & TV NEWS

51 MOST ANTICIPATED MOVIES OF 2023

Figure 7. Fresh Oranges Mockup

References



BEST ACTION & ADVENTURE MOVIES 2022

For the best action shots of the year, there was no choice but to strap in and feel the danger zone crawl up your spine with *Top Gun: Maverick*. *The Northman* and *The Woman King* flipped pages in history books on the tip of a blade, just as *RRR* got creative with India's past for a riduclously rousing romp. *The Lost City* was lighter fare if you could find it, *Beast* was a genre throwback, and *Ambulance* got Michael Bay his best reviews since *The Rock*.

The order reflects Tomatometer scores (as of December 31, 2022) after adjustment from our ranking formula, which compensates for variation in the number of reviews when comparing movies or TV shows.

« Previous Category   Next Category »

TOP GUN: MAVERICK   #1

Top Gun: Maverick pulls off a feat even trickier than a 4G inverted dive, delivering a long-belated sequel that surpasses its predecessor in wildly entertaining style.

Starring: Tom Cruise, Miles Teller, Jennifer Connelly, Jon Hamm

Directed By: Joseph Kosinski

MOVIE & TV NEWS

FEATURED ON RT

Super Bowl Trailers: Watch Every Movie Trailer Right Now
February 12, 2023

The 51 Most Anticipated Movies of 2023
February 12, 2023

[4]

Figure 8. Fresh Oranges Ref 1

STATIC MODEL

Component Class Diagram

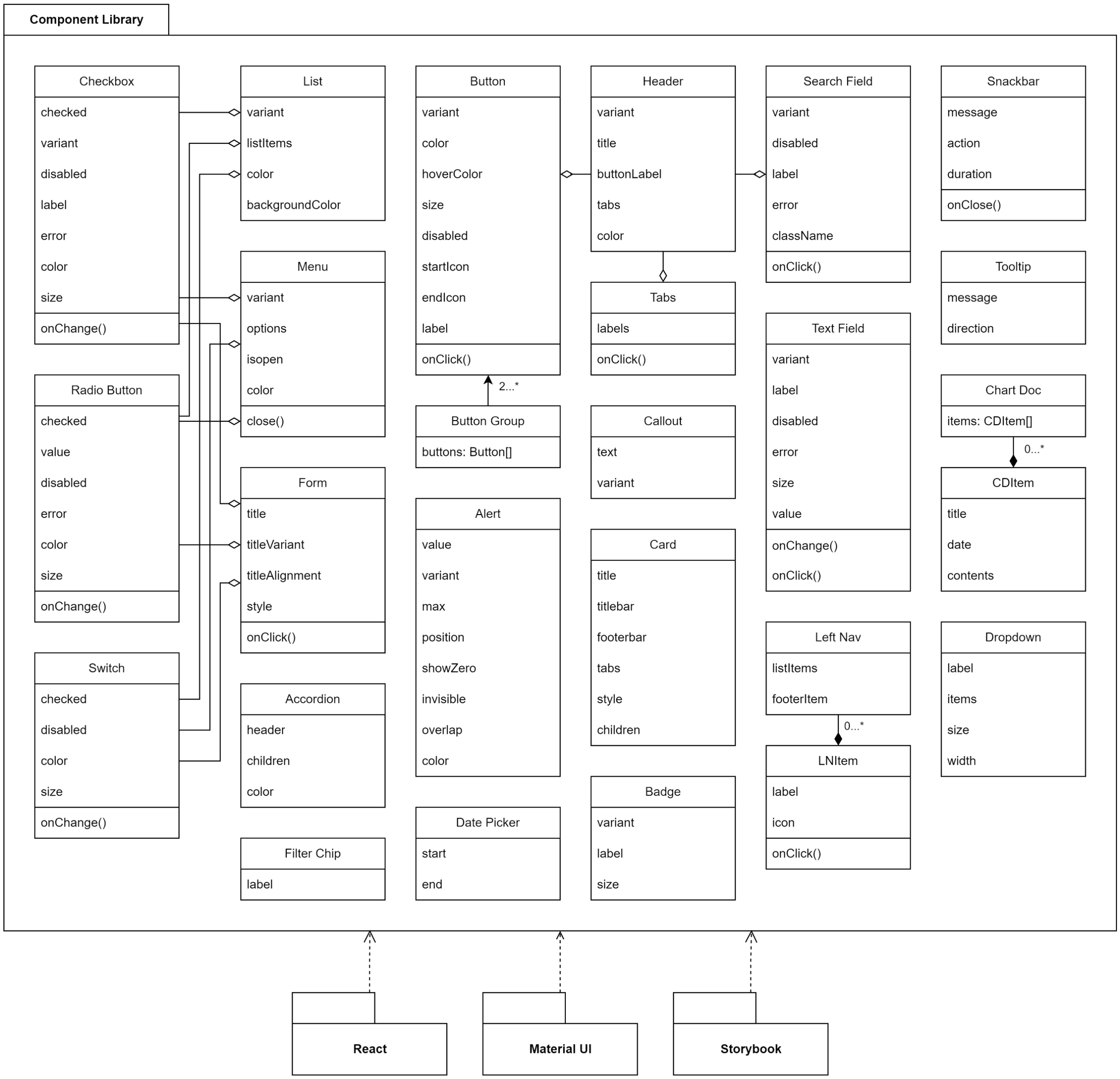


Figure 9. Component Class Diagram

DYNAMIC MODEL

Stock UI Sequence Diagram

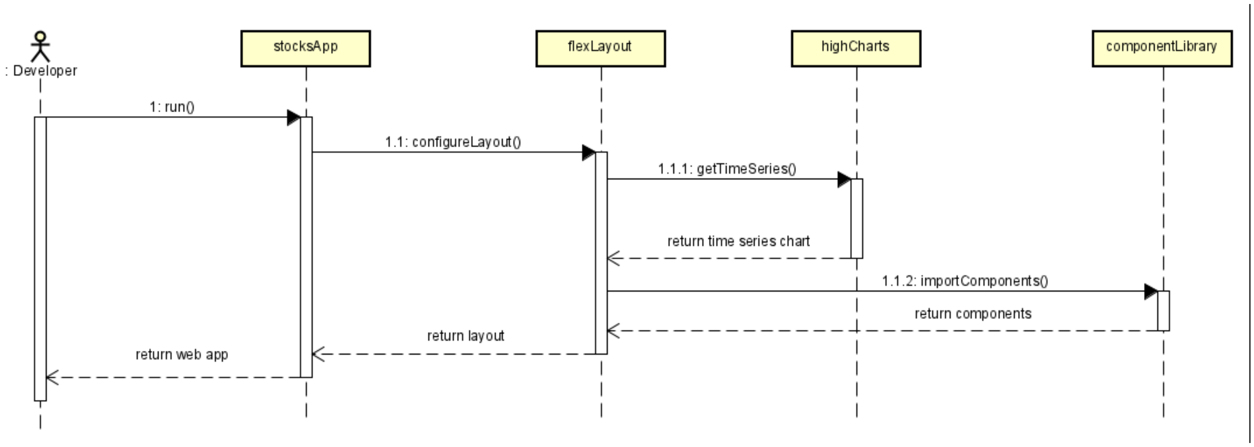


Figure 10. Stocks Sequence Diagram

Rotten Tomatoes Clone Sequence Diagram

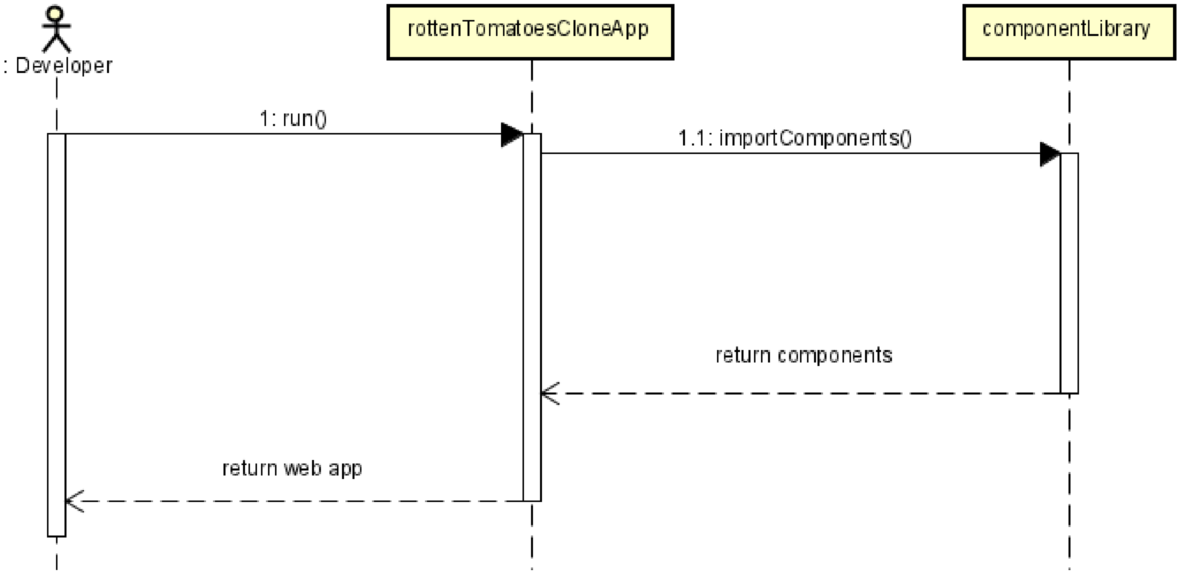


Figure 11. Fresh Oranges Sequence Diagram

Social Media Analytics Sequence Diagram

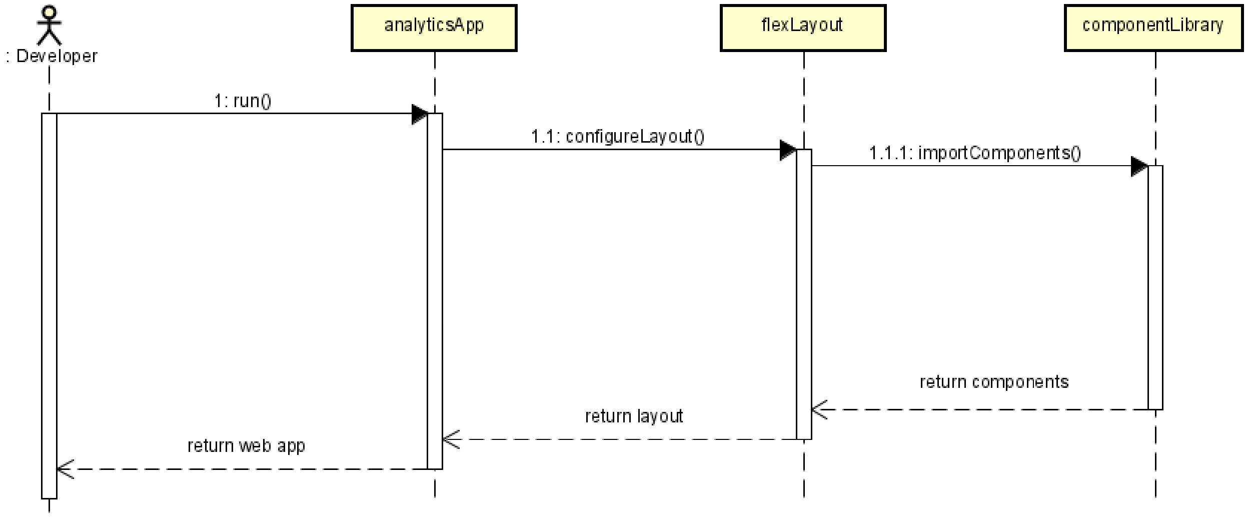


Figure 12. Analytics Sequence Diagram

RATIONALE FOR DETAILED DESIGN MODEL

The detailed design models used are the UML class diagram and sequence diagram. The following provides more information on what these diagrams show about the architecture of the project:

- **What is a UML Class Diagram**? It consists of a set of classes, which represents the objects within the system and the relationship between these objects. A class, visualized in a rectangle shape, contains a set of attributes and methods that define the structure and behavior of that class. Relationships between classes are represented by arrows connecting them. A class diagram is meant to show a *static* view of the system.
- **What is a UML Sequence Diagram**? It shows the interactions between the objects in the system in a sequenced manner. They are often used to model the flow of messages or events between objects in the system. Each object in the system is represented with a vertical line (it's "lifespan") and interactions are labeled on horizontal lines between lifespans. These horizontal lines have a direction, indicating the flow of the message. A sequence diagram is meant to show a *dynamic* view of the system.

The **rationale** to *why* these two models were chosen to design the architecture of the project includes the following:

- **UML Class Diagram:** the component library comprises primarily of objects; each component, like a button for example, has a set of attributes associated with it (label, size, color) as well as a set of methods (onClick()). Therefore, it's important to think of the components in the library as objects. Building a class diagram provides a high-level view of the components to be built and how they are related to each other, making it easier for us to understand and build them. In addition, a high-level view helps in designing with modularity in mind; we can identify common patterns among the components and make them more standardized and modular.
- **UML Sequence Diagram**: a sequence diagram sheds light into events and workflows that may not have been captured by the class diagram. The sequence diagrams provided in this documentation show the interactions between the developer, the specific UI application, the component library, and other necessary libraries used such as HighchartsJS. This is helpful in visualizing how users interact with the system and how the system elements interact with each other in order to fulfill user goals. The diagrams provided focus primarily on high-level interactions rather than low-level because the project's emphasis on the component library and its use within the three UIs do not require substantial workflows relevant to the architecture of the project. Therefore, the diagrams provided are a way to describe at a high-level how the libraries present in the architecture are utilized in the design level.

TRACEABILITY FROM REQUIREMENTS TO DETAILED DESIGN MODEL

1. Usability

a. The system shall provide easy access for creating/viewing/modifying/ deleting components.
   i. The Storybook Class Component provides the services for creating/viewing/modifying/deleting components

b. The system shall provide the ability to easily use its components within other projects.
   i. The React Class Component allows the system to consume components within React applications

c. The system shall have documentation for each component deployed.
   i. The Storybook Class Component provides a framework for providing documentation for each component

2. Maintainability

a. The system shall ensure that components are upgradable in the future.
   i. The Storybook Class Component provides the ability to upgrade components

b. The system shall house all components within the same repository.
   i. The Storybook Class Component houses all components within the same Github repo.

c. The system shall be built using proper design standards.
   i. The Material UI Class Component houses its own peer-tested design standards.

d. The system shall be built using open source libraries.
   i. Open source libraries include the Material UI, React, and Storybook Class Components

e. The system shall automatically deploy new changes to the library.
   i. Each Component Class is deployed via a CI-CD pipeline via the Storybook Class Component repo.

3. Extensibility

a. The system shall be able to accept the creation of new components.
   i. The Storybook Class Component provides the ability to upgrade components

b. The system shall be able to allow the modification of old components.

   i. The Storybook Class Component provides the ability to upgrade components

c. The system shall feature components with easily modifiable parameters.
   i. Each Component Library class houses it’s own parameters which are consumable by users of the component.

d. The system shall propagate changes across component implementations.
   i. The Storybook Component Class handles versioning within its repo.

CONFIGURATION MANAGEMENT

Version In	Version Out	Changes	Reviewed By
0.0	1.0	Initial Document Creation	All Group Members

Table 1. Configuration Management

REFERENCES

[1] Hootsuite, “Social Media Marketing & Management Dashboard,” *Hootsuite*, 2021. https://www.hootsuite.com/.

[2] “Online Trading Platforms & Tools | TD Ameritrade,” www.tdameritrade.com. https://www.tdameritrade.com/tools-and-platforms.html (accessed Feb. 13, 2023).

[3] S. Levine, “7 Best Online Brokers 2020,” *StockBrokers.com*, 2023. https://www.stockbrokers.com/guides/online-stock-brokers

[4] Rotten Tomatoes, “Best Action & Adventure Movies 2022,” Rotten Tomatoes, 2022. https://editorial.rottentomatoes.com/guide/best-action-adventure-movies-2022/