COS 397: Computer Science Capstone I

User Interface Design Document

UMaine Athletic Department Inventory Management System

Version 0.2

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1. Introduction

The purpose of the product is to fulfill the customer needs of an inventory management solution. Our system will replace the customer's previous solutions for managing their equipment. The customer previously used Front Rush and currently uses a combination of Excel spreadsheets and word of mouth to track inventory. Our product will allow the customer to organize their inventory by associating equipment with teams and players. The system will be designed with simplicity in mind so that they do not need experienced developers to maintain their product following the delivery date. Equipment, player accounts, and teams will be able to be made on demand to allow the system to scale to the customer's needs. Our customer is the University of Maine Athletic Department, and specifically Jude Killy, Nick Fox, and Kevin Ritz.

1.1 Purpose of This Document

The purpose of this document is to illustrate the design choices and standards the team will use when developing the user interface for our product. The team will outline the accessibility and inclusion design choices to ensure we develop a fair and non-discriminatory product. This document will walk the reader through our user interface concept and display the webpages we are planning on building. The team will also document how we validate the data that users will input into the system. Finally, we document how the user can print an inventory report, and what that will look like.

1.2 References

1. Google Sheets. *Athletic Inventory*. University of Maine Athletic Department, (non-acessable to public), 15 Nov. 2023

2. IMSG. “System Requirements Specification” November 1 2023, https://docs.google.com/document/d/1LnOj2DEyu8DPbKXBTDBm2y6UbePr_AXC/edit

3. IMSG. “System Design Document” November 15 2023, https://docs.google.com/document/d/1_dkbb3zXQzOxVbdIr3nbizQc0r-f6yC2/edit?usp=sharing&ouid=105664753662702248466&rtpof=true&sd=true

2. User Interface Standards

This section will go into the User Interface Standards, which are the guidelines and principles used in the inventory system to establish a consistent and accessible user experience throughout the system. It shall serve as a reference for developers should there be a need for modification or additions to the inventory system.

2.1 Design Standards

The design standards are consistent elements used in the user interface that will be present on most if not all pages of the system. It describes the general layout of each page of the inventory and general navigation and components.

At the top of every page will be a blue navigation bar. It will include the name of the page the user is currently viewing, which will generally state what the current page's functionality is. This name will be the only item on the navigation bar before the user is logged in, as shown below:

Figure 2.1

Once the user is logged in, there will be three more buttons on the navigation bar. The first will be a home button at the top left which will take the user to the home page shown below:

Figure 2.2

The second button is a logout function that will take the user to a screen confirming if they want to log out of their account. Clicking confirm will log out the user and take them back to the login page. The third button is a gear cog logo that will bring the user to the customizable settings page.

Once the user is on a page other than the login or home screen, an arrow will appear on the top right corner of the screen below the navigation bar. If clicked, this arrow will take the user to the page they were previously on. For example, if a user first clicks on the teams button on the home page, then clicks on a specific team to go to that team's page, if they then click the arrow in the top right the system will bring the user back to the page listing every team. The arrow can be seen below on the teams page mock up:

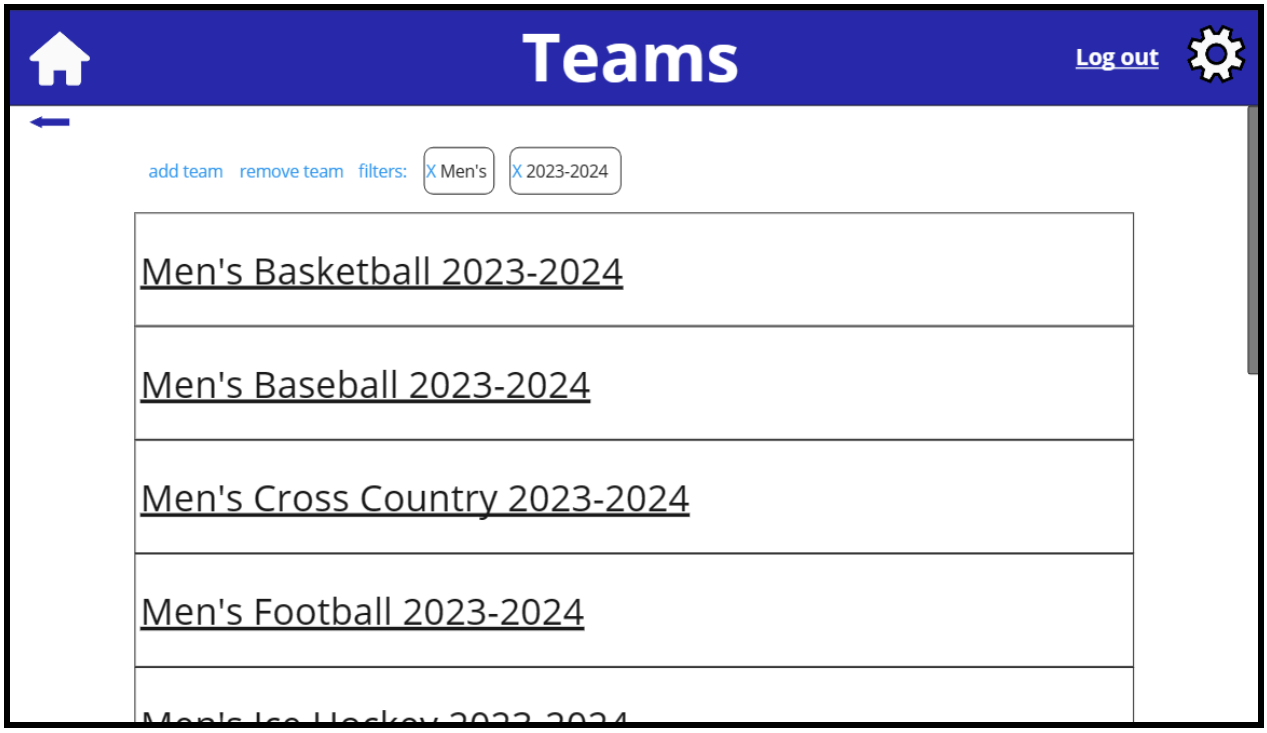

Figure 2.3

2.2 Accessibility and Inclusive Design Elements

Developing an inclusive and accessible product is a focus for the team so that we can create a usable product that encourages our stakeholders and end users to use the platform. To increase the accessibility of our product, we will ensure that we use high-contrast color schemes to increase visibility, include alt-text in all images for users with screen readers, allow the website to be navigated using arrow keys for users who can not use a mouse, and include captions in any videos we may implement. We will ensure that we do not convey information through color alone to increase the understanding for users with screen readers and color blindness. To increase the inclusivity of our system, we will allow user profiles to enter whichever pronouns they feel comfortable with. We will aim to use racially neutral icons that don't discriminate against any particular identity. Our aim is to design a product that is both welcoming and usable for all communities.

Case	Design Element
Visual Impairment	- High Contrast Color Scheme - Support for Screen Readers - Convey information using multiple mediums (symbols, text, and color)
Physical Impairment	- Utilize arrow keys for movement

	around the screen
Diversity and Inclusion	- Utilize gender and racially neutral icons - Pronoun support

Figure 2.4. Inclusive Design Elements

3. User Interface Walkthrough

The User Interface Walkthrough will describe how a user will navigate to and from each screen of the system. Any components discussed in Section 2.1 will be ignored in the walkthrough and the following explanation. Below is a navigation diagram of the inventory system site:

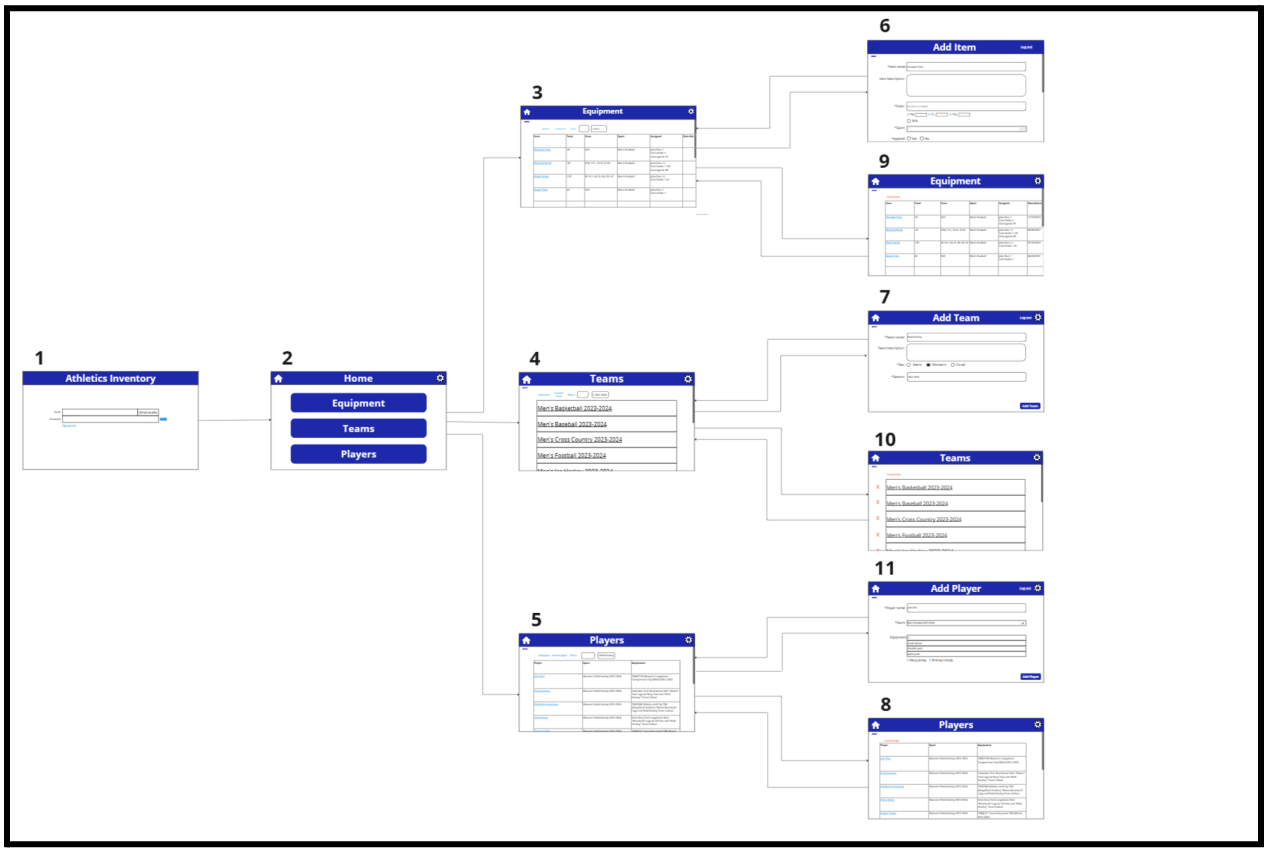

Figure 3. Navigation of Inventory System

The user will begin on Figure 3.1, the login screen:

Figure 3.1. Login Screen

The user will enter their maine.edu email and password used for their University of Maine portal account. They will then hit enter or click the blue arrow to continue to the rest of the site. If they are not signed up, they can click “sign up here” and enter their maine.edu email and password to request access to the inventory from an administrator. Once logged in, the user will be presented with Figure 3.2:

Figure 3.2. Home Screen

On this screen, the user can click on the equipment, team, player button to navigate to the given type of object's view screen. These are Figures 3.3, 3.4, and 3.5:

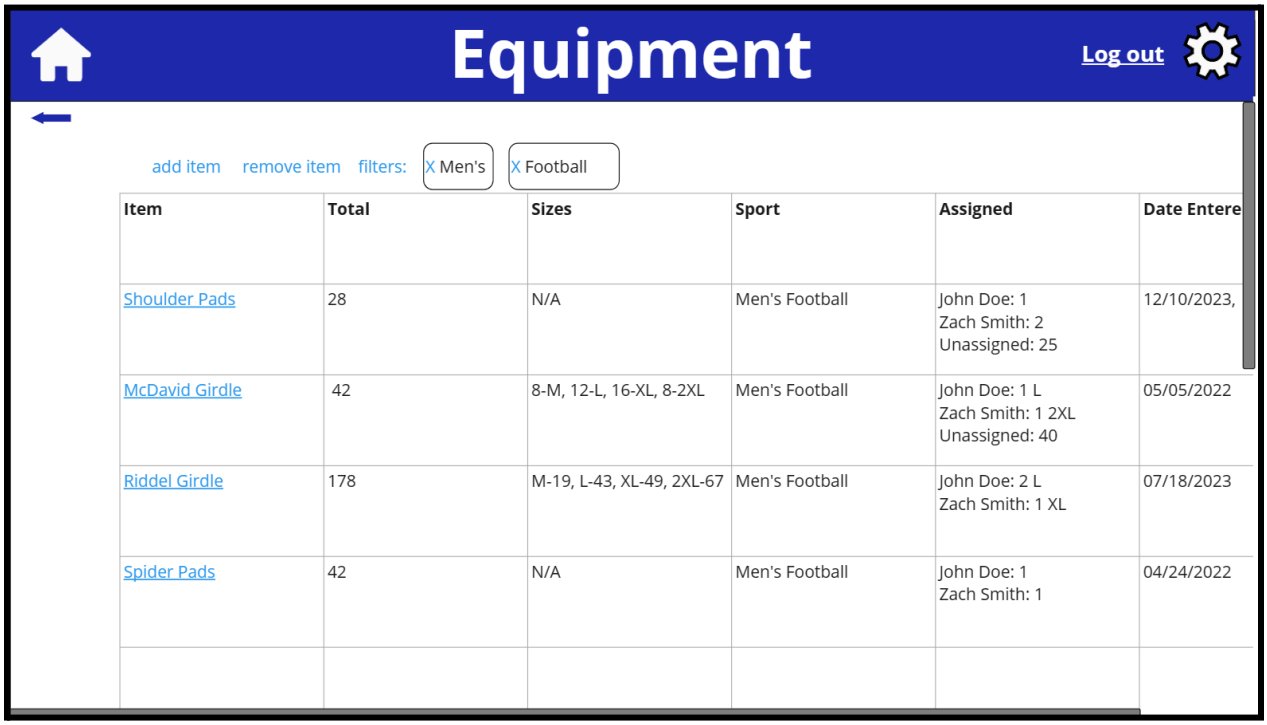

Figure 3.3. Equipment View Screen

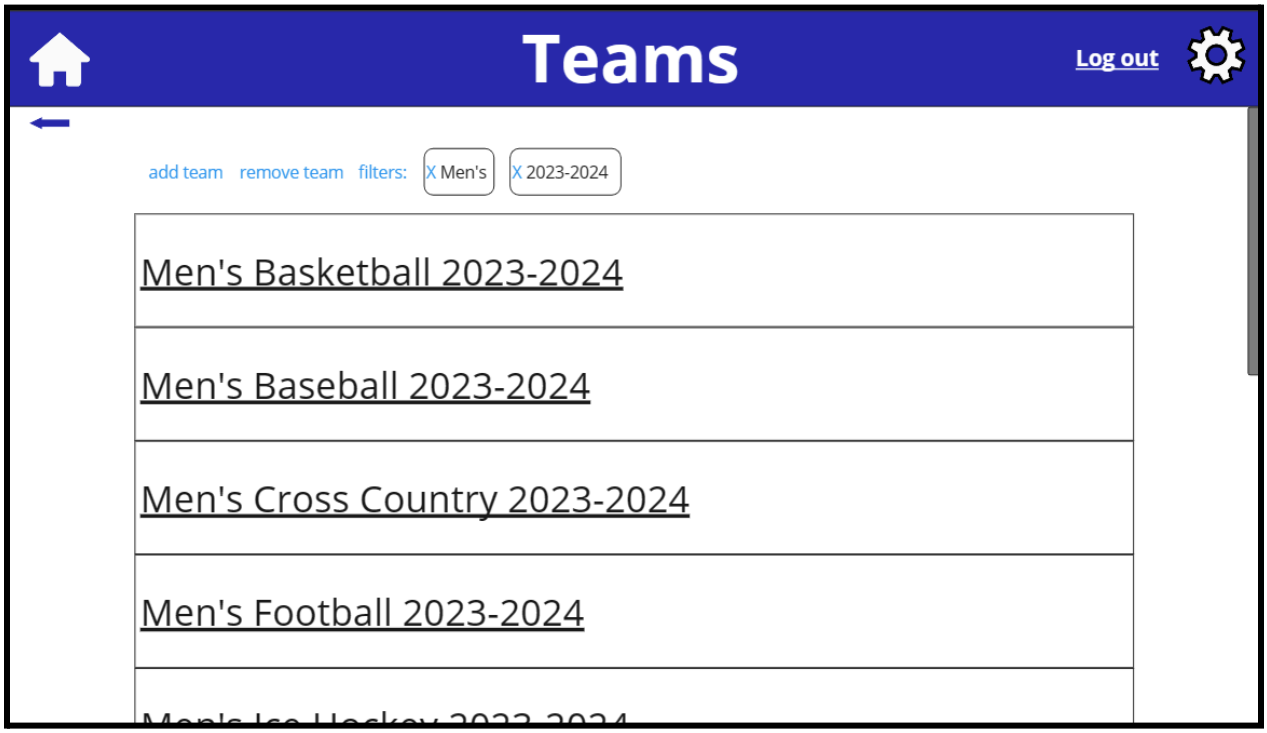

Figure 3.4. Team View Screen

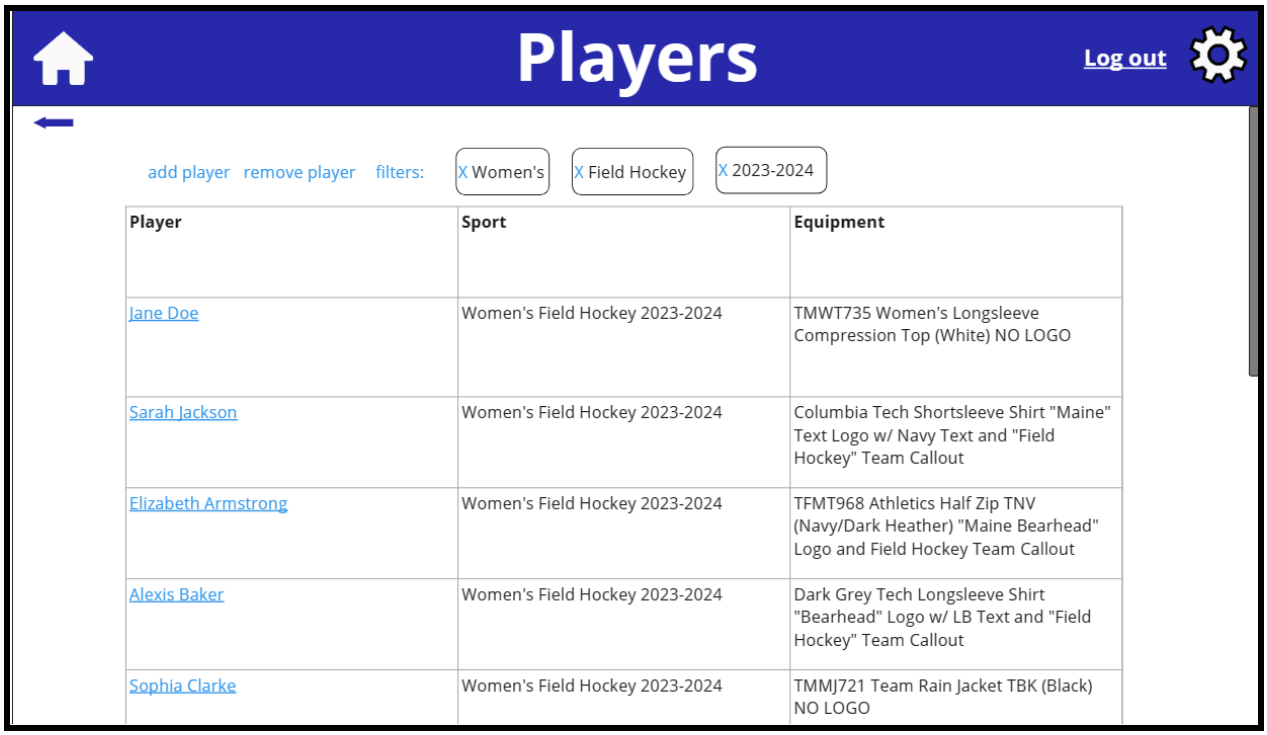

Figure 3.5. Player View Screen

Clicking “add item”, “add team”, or “add player” will bring the user to a screen where they can add an item, team, or player respectively. Clicking on the name of an item, team, or player will bring the user to a page where they can edit the given item, team, or player; these pages will be similar to their “add item”, “add team”, and “add player” counterparts. Clicking “filters” will reveal a pop-up where the user can add features for the system to filter objects in the database for. Hitting the “X” next to any of the filters will remove that filter from the search. When the user clicks either “remove item”, “remove team”, or “remove player” the user will be taken to a page similar to screenshots Figures 3.3, 3.4, and 3.5 where they can remove a given item, team, or player from the database entirely. See figures 3.9, 3.10, 3.11 below. The screenshots below are the pages where users can add equipment, teams, and players to the database:

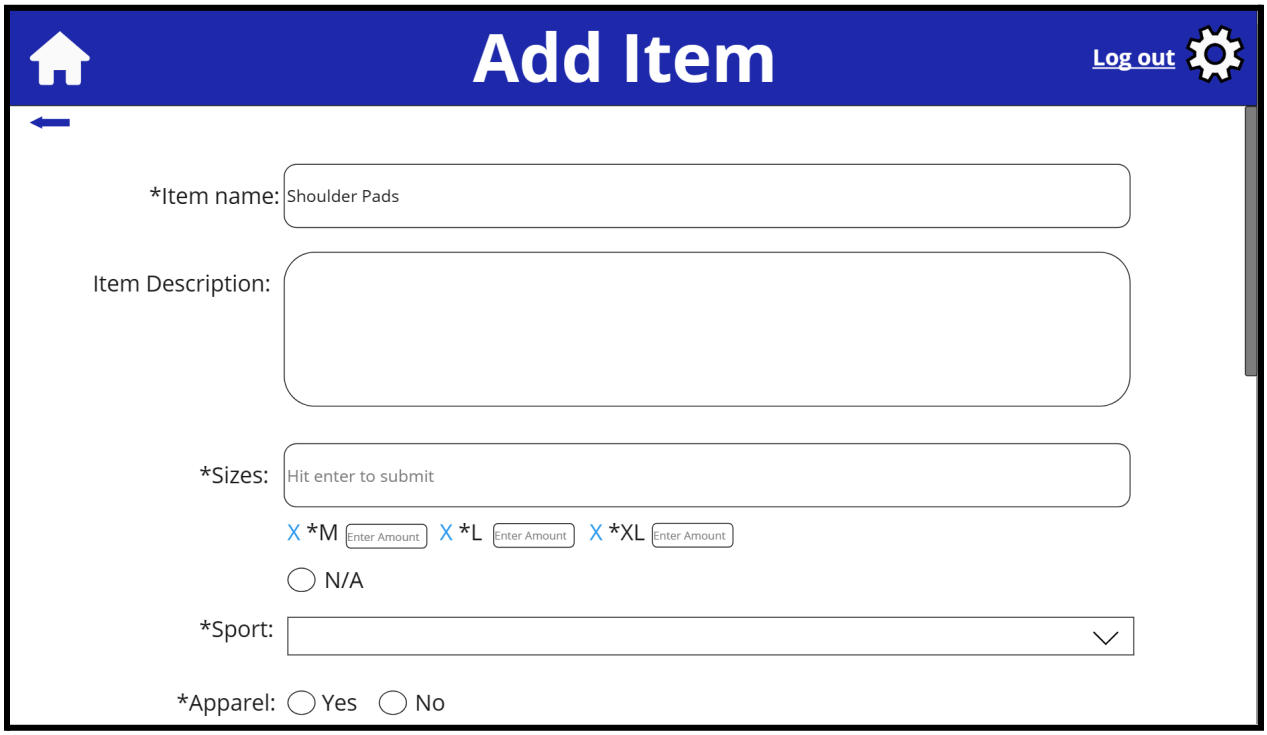

Figure 3.6. Add Equipment Screen

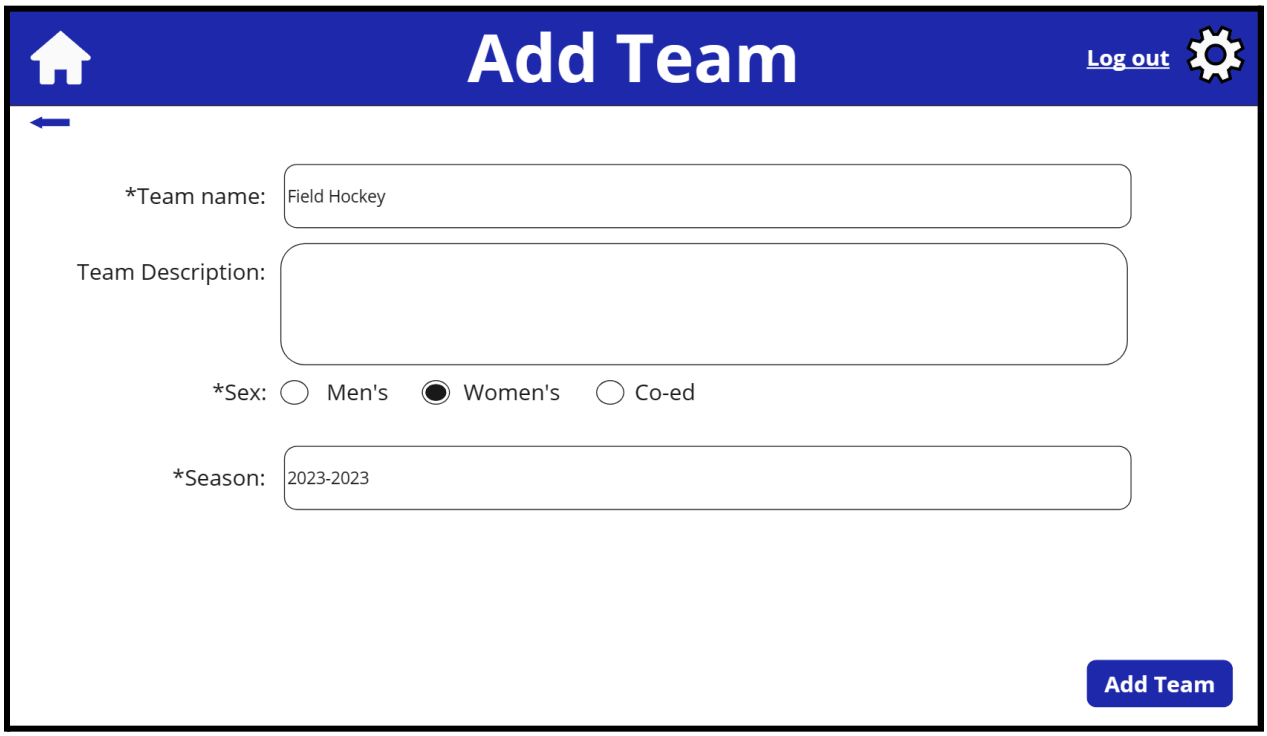

Figure 3.7. Add Team Screen

Figure 3.8. Add Player Screen

On the pages depicted by Figures 3.6, 3.7, and 3.8 users will fill out fields for the given object they wish to enter into the database. A "*" next to a field's name means it's a required field. For a type of equipment, the user must enter the item's name, the sizes if there are multiple of them(if not N/A), the sport the equipment is associated with, and the total quantity and quantity of each size. An item description is optional. When adding a team, the user must add a team name, the sex of the team, and the season for the given team. When adding a player, the user must add a name for the player, the sport the player is participating in, and the equipment assigned to the player if there is any. The user can remove assigned equipment from the player by clicking the blue "X" next to it. Once the user is done filling out the field for the given object, they will click the blue "Add" button at the bottom right of the page. The user will then be redirected to the viewing screens in Figures 3.3, 3.4, and 3.5 with the new object added to the database. The screenshots below show the pages the user is directed to when they select either, "remove item", "remove team", and "remove player":

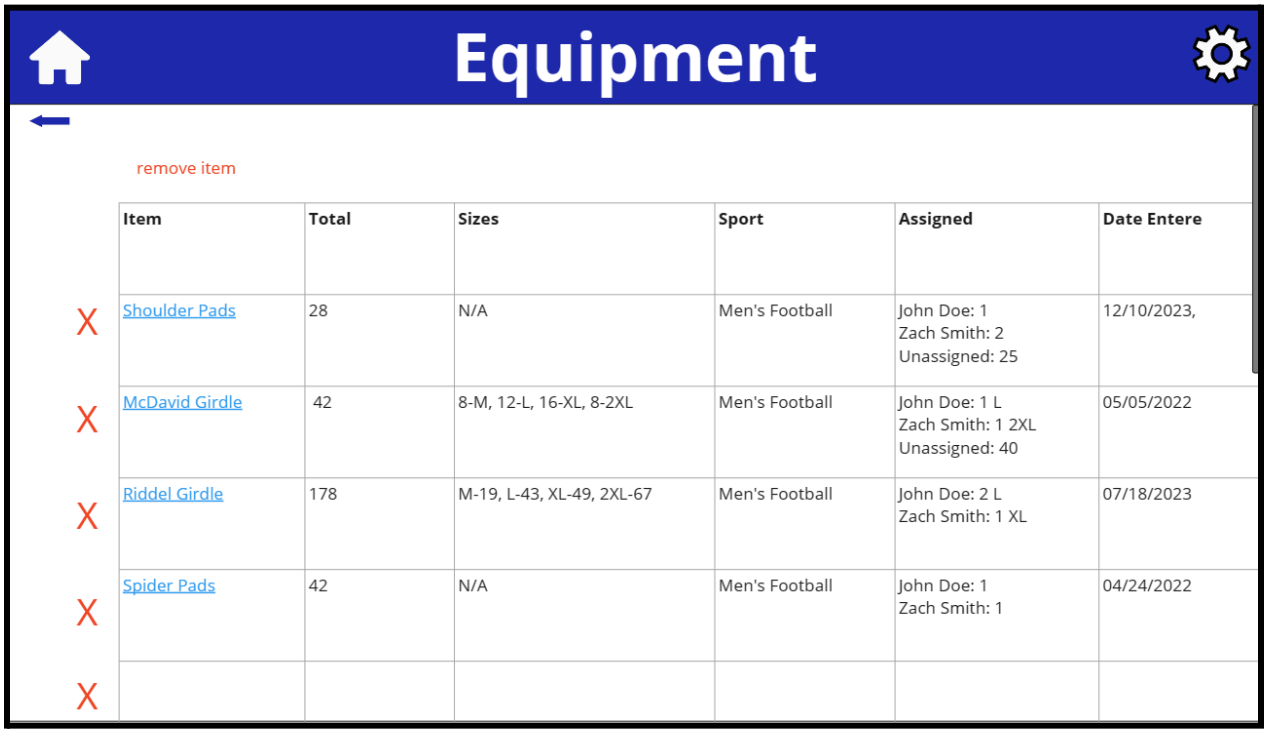

Figure 3.9. Remove Equipment Screen

Figure 3.10. Remove Team Screen

Figure 3.11. Remove Player Screen

On the pages depicted by Figures 3.9, 3.10, and 3.11, the user will decide what object to remove from the database by clicking on the red "X" next to its name. The system will then provide a pop up window that will ask the user to confirm they want to delete the selected object. Once

they hit confirm, the user will be redirected to the viewing screen with the selected item removed. If the user decides they don't want to remove anything, they can click the red "remove" button to be redirected back to the viewing screen. They could also click the arrow in the top left corner, as described in section 2.1. If an equipment item is removed, any player it is assigned to will be removed from that player. If a team is removed, any players and equipment associated with that team will be removed. If a player is removed, any equipment assigned to that player will be unassigned.

4. Data Validation

This section outlines Data Validation, a crucial step in maintaining an accurate and functioning system. It clearly defines user-input data items, including data types, limits, and allowed formats. The information is presented in a tabular format for easy comprehension and accessibility.

Screen Name	**Data Type**	**Description**	**Limits**	**Format**
Equipment Name	string	The equipment's name	N/A	N/A
Size totals	Object array	array of objects where each object has a string "size" and an integer "quantity" stating the amount in that size	N/A	N/A
Quantity total	integer	The quantity being added to inventory(sum of size quantities)	Number	N/A
Sport Name	string	The name of the sport associated with the equipment	N/A	N/A
Apparel?	boolean	Whether the equipment is apparel. User will also enter size information if equipment is marked as apparel.	N/A	N/A
Today's Date	date	The date of the entry	N/A	mm/dd/yyyy

Figure 4.1 - Input of new equipment item

Screen Name	Data Type	Description	Limits	Format
Quantity Small	integer	The number of small items	N/A	N/A
Quantity Medium	integer	The number of medium items	N/A	N/A
Quantity Large	integer	The number of large items	N/A	N/A
Quantity XL	integer	The number of XL items	N/A	N/A
Quantity 2X	integer	The number of 2X items	N/A	N/A

Figure 4.2 - Input of size information

Screen Name	Data Type	Description	Limits	Format
Team Name	string	The team associated with the player.	N/A	N/A
Age	integer	The players age.	Number	XX
Name	string	The players name.	Characters	N/A
Class	string	The players class in school.	Characters	N/A
Shirt Size	string	The players recommended shirt size.	Characters	N/A
Coach	boolean	Is this person a coach?	N/A	N/A

Figure 4.3 - Input of new player

Screen Name	Data Type	Description	Limits	Format

Sport Name	string	The sport associated with the team	N/A	N/A
Team Name	string	The name of the team.	Characters	N/A
Team Description	string	A description of the team.	Characters	N/A
Gender	char	Team gender.	Characters	M/F
Year	integer	The year of the current season.	Number	XXXX

Figure 4.4 - Input of new team

Screen Name	**Data Type**	**Description**	**Limits**	**Format**
Sport Name	string	The name of the sport	N/A	N/A

Figure 4.5 - Input of new sport

5. Report Formats

This section displays rudimentary implementations of how our report system is going to look like. The information and data will be very different for each item, as some items are in much larger quantities or see much more “in and out” usage.

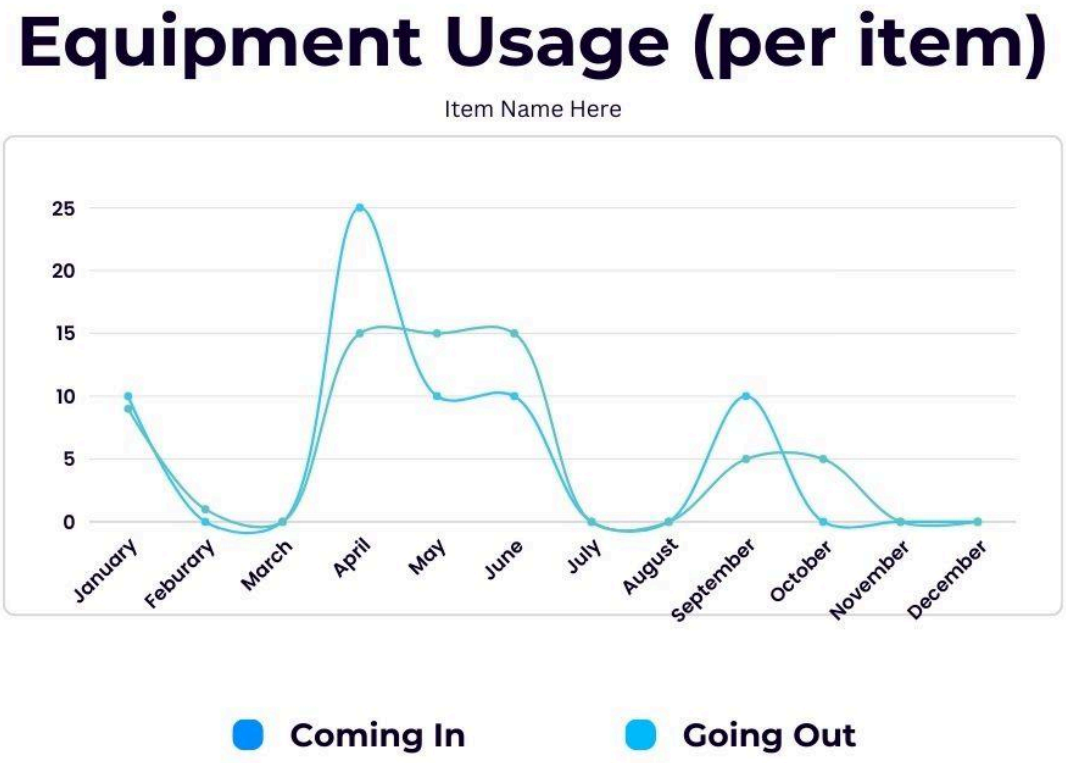

Figure 5.1

In Figure 5.1, this is a general representation of how data will be displayed on a per-item basis. Users can request that data, from any time frame, the example here is monthly for a year, and the program will then generate an “in and out” line chart showing the amount of the item is coming in and going out for use.

Appendix A – Agreement Between Customer and Contractor

Agreement Between Customer and Contractor

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1. Parties: This agreement made on "11/22/2023" is by and between

Client: University of Maine Athletic Department

AND

Contractor: Inventory Management Software Group

2. Term: The terms of this agreement shall commence on November 5th, 2023, and conclude on May, 2024.

3. Services: The Contractor agrees to provide the following services for the betterment of the Customer: The Contractor will create an inventory management system that allows the Customer to visualize and manage their inventory through an online webpage. Further details are presented in the System Design Document.

4. Expenses: There are no initial expenses. When expenses are incurred, the Contractor will communicate and get approval from the Customer to use funds allotted to them if available.

5. Agreement:
By signing this document, all parties agree to the requirements presented in this document. All parties also agree that the deadlines presented are tentative, and are subject to change as the program is developed.

Customer Signature:

	Date:	Printed:
X: *Kevin RITZ*	12/4/2023	
Contractor Signature:	Date:	Printed:
X: *Collin Rodrigue*	11/22/2023	Collin Rodrigue
X: *Gabriel A. Poulin*	11/22/2023	Gabriel A. Poulin
X: *Brennan Poitras*	11/22/2023	Brennan Poitras
X: *Sean Radel*	11/22/2023	Sean Radel
X:*Graham Bridges*	11/22/2023	Graham Bridges

Appendix B – Team Review Sign-off

Team Agreement Sign Off

Team IMSG has thoroughly reviewed the UIDD for the Athletic Inventory System and has agreed that the following information is accurate and achievable. Collectively we have no major contentions in the information stated in the document. By signing this agreement, one acknowledges all the terms and conditions outlined in the document and understands the importance of effective team collaboration, communication, and shared accountability when achieving the goals of the project. By signing below, we pledge our dedication to the success of the team and the project we plan to undertake. We agree to work collaboratively, and support each other to uphold the guidelines and expectations set forth in the agreement.

Signature:	Date:	Printed:
X: *Collin Rodrigue*	11/22/2023	Collin Rodrigue
X: *Gabriel A. Poulin*	11/22/2023	Gabriel A. Poulin
X: *Brennan Poitras*	11/22/2023	Brennan Poitras
X: *Sean Radel*	11/22/2023	Sean Radel
X:*Graham Bridges*	11/22/2023	Graham Bridges

Appendix C – Document Contributions

Name	Date	Contribution	Version
Sean Radel	11/23/23	Formatting, introduction, delegation	0.1
Brennan Poitras	11/25/23	Data validation tables	0.1
Graham Bridges	11/26/23	Design Standards and User Interface Walkthrough	0.1
Collin Rodrigue	11/27/23	Data validation tables	0.1
Sean Radel	11/27/23	Accessibility and Inclusion	0.1
Gabriel Poulin	11/27/23	Report Example	0.1
Sean Radel	12/4/23	Peer review Revisions	0.2