Iteration Two

CIS 320

Team: Group A

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**UofL Basketball Team Website Project**

**Vision (Small Project)**

**Version 2.0**

**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author** |
| <02/18/2023> | <1.0> | First submission of Vision document. | Noah L, Deven J, Aquazia H, Michelle G, Justin L |
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|  |  |  |  |
|  |  |  |  |

1. **Introduction**

The purpose of this document is to collect, analyze, and define high-level needs and features of the UofL Basketball team Website Project. It focuses on the capabilities needed by the stakeholders and the target users, and why these needs exist. The details of how the website fulfills these needs are detailed in the use-case and supplementary specifications. The document will go in detail about the business problem (business need), stakeholders, users, and the result of the project will be implemented for the UofL Basketball team.

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**Vision (Small Project)**

1. **Positioning**
   1. **Problem Statement**

|  |  |
| --- | --- |
| Effects | Justin Perez, UofL Basketball Staff/Administration |
| The impact of which is | Limited and time-consuming process of compiling Team and player statistics and compiling them into usable data. |
| A successful solution would be | A customized website that allows data entry for Team and player statistics that automatically compiles and converts statistics into usable data. |

**2.2 Product Position Statement**

|  |  |
| --- | --- |
| For | UofL’s Basketball Staff and Administration. |
| Who | Are charting information pertaining to the Players’ performance, health, and nutrition. |
| The (product name) | WordPress |
| That | Eliminates the need to manually gather and compile basketball statistics into one record. |
| Unlike | Synergy |
| Our product | Will be accessible and customized to the specific needs of the staff submitting documentation. |

1. **Stakeholder and User Descriptions**

To effectively produce products and services that meet our stakeholders’ and user’s needs, its necessary to identify and involve all our stakeholders as part of the Requirements Modeling Process. These tables identify the users of the system and ensure that the stakeholder community adequately represents them. With this section, it provides a profile for the stakeholders and users involved in the project, and the key problems that they perceive to be addressed by the proposed solution. However, it does not describe their specific requests or specific requirements as these are captured in a separate stakeholder request artifact. Instead, it provides the background and justification for why the requirements are needed.

* 1. **Stakeholder Summary**

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Responsibilities** |
| Justin Perez | Chief of Staff of the UofL Men’s Basketball Team | One of Justin’s primary roles it to go over and input data he receives from other members of the management team. With some using excel for their data and others writing it down on paper, as well as no one centralized place to keep the data, Justin is interested in a website that can be used to centralize all data, streamline data input, and format its output. |

* 1. **User Summary**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Description** | **Responsibilities** | **Stakeholder** |
| Coaches  Sports Medicine Directors  Strength and Conditioning Coaches  Sports Nutrition Directors | Those who use the data to make decisions about the team. Full access to all data.  Those who record, input, and make decisions based on sports medicine data. Access limited to sports medicine, nutrition, and strength training data.    Those who record, input, and make decision based on strength training data. Access limited to nutrition and strength training data.  Those who record, input, and make decisions based on nutrition data. Access limited to nutrition data. | Input data, format data, and coordinates work.  Input data, format data, analyze data, and produce reports.  Input data, format data, analyze data, and produce reports.  Input data, format data, analyze data, and produce reports. | Justin Perez  Justin Perez  Justin Perez  Justin Perez |

* 1. **User Environment**

Currently, data is compiled using a combination of excel spreadsheets, CSV files, and writing it on paper. Justin receives data from many different sources and inputs the data manually. Inputting, sorting, and formatting are a problem. The goal of this project is to have a website where the basketball management team can each input their data separately and have it all in one place. This makes it easier to input data, as it doesn’t have to be sent to Justin beforehand, and it greatly improves the ability to analyze data through the use of formatting tools.

* 1. **Summary of Key Stakeholder or User Needs**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Need** | **Priority** | **Concerns** | **Current Solution** | **Proposed Solutions** | |
| Data Input Streamlining  Data Output Formatting  Security | High  High  High | There isn’t a place for all of the relevant people to input their data.  It’s difficult to view all relevant data easily.  Player data is vulnerable. | Sending the data to Justin and having him put the data in excel spreadsheets.  Looking at multiple different files at the same time  Have data in files only accessible to the creators. | | Being able to input your relevant data directly into the website where anyone with the right access and view it.  Having all relevant data viewable from a single page, as well as being able to format that data to view only what you need.  Have data secured in the website only available to the basketball management team, as well as having different levels of access within the team. |

* 1. **Alternatives and Competition**

One alternative is to maintain the status quo. This means Justin would continue to receive data through many different mediums and input it all manually himself. This wouldn’t require any additional training as it is the current system, but it is very inefficient.

1. **Product Overview**

Another alternative is to improve the current use of excel. By using excel and access in tandem, it could improve the current system and provide the needed database. It would be cost-effective and relatively simple. However, it wouldn’t have as many formatting tools as the project, and it wouldn’t be as simple to format data for analyzing.

* 1. **Product Perspective**

The website we’re designing is self-contained. It will take the information from the already existing excel sheet and CSV files into the new database and completely replace the existing system.

* 1. **Assumptions and Dependencies**

This product assumes the use of website design and content management systems. We also assume Justin and the management team will be capable of paying any required monetary requirements, as well as utilizing and maintaining the website.

1. **Product Features**

WordPress Business Features

* Open source
* Drag and drop interface customization.
* Automated back-up and restoration
* Plugins and extended functionality
* Hosted by WordPress
* Customer service through live chat and email.

Microsoft Business Premium Access Features

* Large data storage capacity.
* Data templates and entry forms
* Excel spreadsheets can be imported.
* Data can be secured down to record level.

Website Specific Features

* Login button
* Navigation bar
* Player Information and Statistics, Health, Nutrition and Hydration, Strength and Conditioning, Practice, and Data Comparison
* Search bar

1. **Other Product Requirements**

Our product will be the integration of WordPress and Microsoft Access. It will need to be highly customizable to incorporate the existing roster as well as roster changes in the future. It will also need to be extremely intuitive for those viewing information, entering data, and managing the backend of both the website and database. The largest risk is the learning curve of the Access database. Microsoft Access is a powerful tool but can be difficult to use if not trained properly. To mitigate the risk, it would be beneficial to provide both a training session and a step-by-step guide on how to properly input information while also maximizing the use of the tools within Access to create data validation rules and accompanying error messages.

1. **Feasibility Analysis**

**7.1 Narrative**

The University of Basketball Program was established in 1911 and has continued to evolve since. Justin Perez, Chief of Staff, is the main point of contact for any information regarding the data on the players that needs to be analyzed. As the team currently functions data from Devente Frazier (Director of Sports Medicine), Adam Petway (Head Strength and Conditioning Coach), and Tiffany White (Associate Director of Sports Nutrition) provide data through Excel spreadsheet and paper that are given to Justin. From there, Justin combs through data to form information that is understandable to coaches in order to create the best-case scenario to support the player. The current system lacks the ability to house data and information, limit human error and data inconsistencies, and form charts and graphs that allow for easy data analysis and comparisons.

Creating an independent and unique database and website of the University of Louisville (UofL) Men’s Basketball Team will allow all data and information to streamlined and centralized to one secure yet easy to access location. Player information and analytics will be entered into a Microsoft Access Database where each person will have their own specific access point along with restrictions on how data is entered across the board. This data is integrated with the WordPress Database system which will then allow Justin and others with access to manipulate how the data is displayed.

* 1. **Technical Feasibility**

Since the current system's foundation is Excel spreadsheets, the idea is to keep the simplicity and allow spreadsheets to be imported or directly input into the database if the requirements are met. The need to adapt is found with those who provide data using paper and the need to extend the IT Center in to managing both Access and WordPress.

The other new adaptation is the addition of WordPress. WordPress is a content management system (CMS) that allows the client to create a curated website without the need to learn how to code. The system easily allows the client to manipulate the look and content of the website. WordPress in our case is used to display the data in the Access Database in the form of charts, graphs, and easily displayed tabs. Using a new system will always come with its difficulties but designing the Website and Database in a way that is simple, all inclusive, and intuitive will limit the difficulties.

**7.3 Economic Feasibility**

Microsoft 365 Business Premium will run $22.00 per user monthly billed annually $2640.00 for all the users (this number can increase or decrease due to the number of people who need to enter data and the addition of IT members specifically dedicated to Access). WordPress Business Premium is $25.00 per a month billed annually at $300.00 and can be maintained by IT without the additional per user cost.

**7.4 Organizational Feasibility**

As previously stated, the UofL Men’s Basketball Team has the foundations of a system that just needs cleaning for data inconsistencies and a place to be input, stored, and displayed. All applications used in our system are picked for their ease of use and integration into the current one so that risk is limited, and organizational resources are not strained. The system would be quite easy for Justin and the necessary coaches to use and navigate when both inputting, editing, and seeing information displayed. Adding an IT branch specifically for maintaining the WordPress and Access Database to correct errors, do updates, and cater to the questions and concerns the team has will be necessary for the system to run smoothly.

System Requirements

**Functional Requirements**

Home Page Requirements

ID: SR001 – The home page will allow information to be edited.

ID: SR002 – The home page will allow general stats posts to be created.

ID: SR003 – The homepage will allow general stats post to be edited.

ID: SR004 – The homepage will allow general stats to be deleted.

Game Page Requirements

ID: SR005 – The game page will allow information to be edited.

ID: SR006 – The game page will allow game information to be created.

ID: SR007 – The game page will allow game information to be edited.

ID: SR008 – The game page will allow game information to be deleted.

ID: SR009 – The game page will allow game information to be reviewed.

Player Page Requirements

ID: SR010 – The Player page will allow information to be edited.

ID: SR011 – The player page will allow players profiles to be created.

ID: SR012 – The player page will allow players profiles to be edited.

ID: SR013 – The player page will allow players profiles to be deleted.

ID: SR014 – The player page will allow players individual stats to be created

ID: SR015 – The player page will allow players individual stats to be edited.

ID: SR016 – The player page will allow players individual stats to be edited.

ID: SR017 – The player page will allow players portraits to be uploaded.

ID: SR018 – The player page will allow players portraits to be removed.

Team Stats Page Requirements

ID: SR019 – The Team Stats page will allow information to be edited.

ID: SR020 – The Team Stats page will allow team stats to be created.

ID: SR021 – The Team Stats page will allow team stats to be edited.

ID: SR022 – The Team Stats page will allow teams stats to be deleted.

Leaderboards Page Requirements

ID: SR023 – The leaderboards page will allow information to be edited.

ID: SR024 – The leaderboards page will allow players stats to be viewed.

Nutrition Page Requirements

ID: SR025 – The nutrition page will allow information to be edited.

ID: SR026 – The nutrition page will allow players nutrition info to be created.

ID: SR027 – The nutrition page will allow players nutrition info to be edited.

ID: SR028 – The nutrition page will allow players nutrition info to be deleted.

ID: SR029 – The nutrition page will allow players nutrition issues to be edited.

ID: SR030 – The nutrition page will allow players nutrition issues to be deleted.

Health Page Requirements

ID: SR031 – The health page will allow information to be edited.

ID: SR032 – The health page will allow players medical records to be uploaded.

ID: SR033 – The health page will allow players medical records to be edited.

ID: SR034 – The health page will allow players medical records to be deleted.

Practice Page Requirements

ID: SR035 – The practice page will allow information to be edited.

ID: SR036 – The practice page will allow game information to be created.

ID: SR037 – The practice page will allow game information to be edited.

ID: SR038 – The practice page will allow game information to be deleted.

ID: SR039 – The practice page will allow game information to be reviewed.

**Non-functional Requirements**

Performance Requirements

ID: SR040 – The website will load quickly.

ID: SR041 – The website will run with no errors.

ID: SR042 – The website will be updated as needed.

Security Requirements

ID: SR043 – The content management system will backup automatically

ID: SR044 – The content management system will authenticate the web administrator

Availability Requirements

ID: SR045 – The website will be always accessible.

ID: SR046 – The website will be compatible with most web browsers.

ID: SR047 – The website will be compatible with most devices.

ID: SR048 – The website will adhere to W3C web accessibility standards.

Use Cases

**Use Case 1:** Website Info Edit

Primary Actor: Administrator

Description: Website Information provided may be edited if needed.

Risk Level: Low

**Use Case 2:** Create General Stats

Primary Actor: Administrator

Description: The general stats posts can be created

Risk Level: high

**Use Case 3:** Edit General Stats

Primary Actor: Administrator

Description: General stats can be edited.

Risk Level: High

**Use Case 4:** Delete General Stats

Primary Actor: Administrator

Description: General stats can be deleted.

Risk Level: High

**Use Case 5:** Edit Game Stats

Primary Actor: Administrator

Description: Game’s stats can be edited.

Risk Level: High

**Use Case 6:** Create Game Info

Primary Actor: Administrator

Description: Game information can be created.

Risk Level: High

**Use Case 7:** Edit Game Info

Primary Actor: Administrator

Description: Game page information can be edited.

Risk Level: High

**Use Case 8:** Review Game Info

Primary Actor: Administrator

Description: Game information can be reviewed.

Risk Level: High

**Use Case 9:** Delete Game Info

Primary Actor: Administrator

Description: Game information can be deleted.

Risk Level: High

**Use Case 10:** Player Information Edit

Primary Actor: Administrator

Description: Players personal information can be edited.

Risk Level: High

**Use Case 11:** Create Player Profile

Primary Actor: Administrator

Description: Players profiles to display stats/information can be created.

Risk Level: High

**Use Case 12:** Edit Player Profile

Primary Actor: Administrator

Description: Players profiles to display stats/information can be edited.

Risk Level: High

**Use Case 13:** Delete Player Profile

Primary Actor: Administrator

Description: Players profiles to display stats/information can be deleted.

Risk Level: High

**Use Case 14:** Create Player Stats

Primary Actor: Administrator

Description: Players individual stats can be created.

Risk Level: High

**Use Case 15:** Edit Player Stats

Primary Actor: Administrator

Description: Players individual stats can be edited.

Risk Level: High

**Use Case 16:** Delete Player Stats

Primary Actor: Administrator

Description: Players individual stats can be deleted

Risk Level: High

**Use Case 17:** Upload Player Portrait

Primary Actor: Administrator

Description: Players portraits can be uploaded.

Risk Level: High

**Use Case 18:** Remove Player Portrait

Primary Actor: Administrator

Description: Players portraits can be removed.

Risk Level: High

**Use Case 19:** Edit Team Info

Primary Actor: Administrator

Description: Team information can be edited.

Risk Level: High

**Use Case 20:** Create Team Stats

Primary Actor: Administrator

Description: Team stats can be created.

Risk Level: High

**Use Case 21:** Edit Team Stats

Primary Actor: Administrator

Description: Team stats can be edited.

Risk Level: High

**Use Case 22:** Delete Team Stats

Primary Actor: Administrator

Description: Team stats can be deleted.

Risk Level: High

**Use Case 23:** Edit Leaderboards

Primary Actor: Administrator

Description: Leaderboards information can be edited.

Risk Level: High

**Use Case 24:** View Leaderboards

Primary Actor: Administrator

Description: Leaderboards can be viewed.

Risk Level: High

**Use Case 25:** Create Nutrition Info

Primary Actor: Administrator

Description: Nutrition information can be created.

Risk Level: High

**Use Case 26:** Create Players Nutrition

Primary Actor: Administrator

Description: Player’s nutrition information can be created.

Risk Level: High

**Use Case 27:** Edit Players Nutrition

Primary Actor: Administrator

Description: Player’s nutrition information can be edited.

Risk Level: High

**Use Case 28:** Remove Players Nutrition

Primary Actor: Administrator

Description: Player’s nutrition information can be removed.

Risk Level: High

**Use Case 29:** Input Nutrition Issues

Primary Actor: Administrator

Description: Player’s nutrition issues can be input.

Risk Level: High

**Use Case 30:** Remove Nutrition Issues

Primary Actor: Administrator

Description: Player’s nutrition issues can be removed.

Risk Level: High

**Use Case 31:** Create Health Info

Primary Actor: Administrator

Description: Player’s health information can be edited.

Risk Level: High

**Use Case 32:** Upload Medical Records

Primary Actor: Administrator

Description: Players medical records can be uploaded.

Risk Level: High

**Use Case 33:** Update Medical Records

Primary Actor: Administrator

Description: Player’s medical records can be updated.

Risk Level: High

**Use Case 34:** Remove Medical Records

Primary Actor: Administrator

Description: Player’s medical records can be removed.

Risk Level: High

**Use Case 35:** Upload Practice Info

Primary Actor: Administrator

Description: Team’s practice information can be updated.

Risk Level: High

**Use Case 36:** Review Practice Info

Primary Actor: Administrator

Description: Team’s practice information can be reviewed.

Risk Level: High

**Use Case 37:** Remove Practice Info

Primary Actor: Administrator

Description: Team’s practice information can be removed.

Risk Level: High

Initial Architecture Considerations

The design viewpoint shows how the users will be able to access the new system, provides a basic understanding of what the system will display and what IT or someone with full access can manipulate. The next structure is the realistic viewpoint goes into more detail by adding the information on the Content Management System (CMS) we choose to use, which is WordPress and Microsoft Access. Access will be used to organize, input, backup, and validate data while WordPress and WordPress’s database integration will be used to display data for easier analyzing.

DESIGN VIEWPOINT

Diagram

Description automatically generated

REALISTIC VIEWPOINTChart, box and whisker chart

Description automatically generated

**Risk Analysis**

We based our risk analysis on how much modification is associated with each use case. The use cases that involve constant modification such as creating, editing, and/or deleting are higher risk due to the importance of the functionality and the technical knowledge required, as well as the possibility of human error. To help mitigate these risks, we plan on having a training manual for the product, and WordPress offers help for any issues with their CMS.

**High Risk Cases**

* Creating Player Information
* Uploading Player Information
* Editing Player Information
* Deleting Player Information

**Low Risk Cases**

* Editing Website Information

Gantt Chart

[Link to Excel](file:///C:/Users/aquaz/OneDrive/Documents/I2%20Gannt_NPV_Trace%20Matrix.xlsx)

Table

Description automatically generated with medium confidence

Inception Phase Prototype

Graphical user interface

Description automatically generated  
Inception Phase Prototype

Graphical user interface

Description automatically generated with low confidence

Inception Phase Prototype

Graphical user interface, text, application, chat or text message

Description automatically generated  
Inception Phase Prototype

Graphical user interface, application

Description automatically generated

Inception Phase Protype

Graphical user interface, application

Description automatically generated

**NPV Analysis**

[Link to Excel](file:///C:/Users/aquaz/OneDrive/Documents/I2%20Gannt_NPV_Trace%20Matrix.xlsx)

To start the NPV analysis, we needed to determine the basketball team’s projected revenue. Since the client did not give us any information, we found an article by the Courier-Journal that gave a breakdown of the Men’s basketball team’s revenue for the 2020-2021 season. That year, they made $40.9 million between sponsorships, tickets, etc. Within that same article, they mentioned that the basketball team’s expected revenue for the 2022-2023 season is $34.3 million. We then used the revenue breakdown provided to determine the revenue for each section. For example, contributions and guarantees constituted approximately 59% of revenue in 2020. To determine the amount for 2022-2023, we multiplied 59% by the projected 2022-2023 revenue of $34.3 million. We repeated this for all line items. To project the income for the next five years, we agreed on a 2% increase since the newly implemented database will take a year or two to start seeing results. After year 3, we decided on a 5% increase since the team’s performance would increase due to the effectiveness of the database. The team’s performance and revenue go hand in hand.

That same article provided the budget operating expenses for the 2022-2023 season, which is $5.7 million. Since this expense is variable, we used the same logic for the revenue when projecting the next five years. The additional expenses are fixed. These include WordPress subscription and database training/maintenance. We agreed that the team could employ interns to train and manage the database since students are the ones planning and creating the database. The cost is based on the current pay of UofL athletics interns—tuition reimbursement plus a $500 monthly stipend. This is approximately $18,000.  The team could use just one intern since the database will start slow while everyone gets used to it and information is uploaded. Stirring in year 3, the team could add interns since the database will have a substantial amount of data to be managed.

To determine the project’s net present value, we used 5.58% for our discount rate. This is the current rate for a 10-year Treasury Bill. We then found the present value of both revenue and expenses for each year. To do this, we divide the cost or revenue by one plus the discount rate raised by the year. This accounts for the time value of money. Next, we added the discounted payment together, the same for expenses, and subtracted them from each other. This gave us an NPV of $196,645,717. We also calculated the rate of investment (ROI), which resulted in 6.15. This translates to every dollar invested, you will receive a $6.15 return. Lastly, the breakeven point is how long it will take for the returns from the project will equal how much was invested (breakeven). Based on our calculation, you will start to experience positive returns in 1.91 years.

