WAREHOUSE OF KFSHRC

Final Report

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[Fall/Spring 2022]

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Dedication

This project is dedicated to our families for their great support even when things were so tough for they constant kept on encouraging us to work extra hard, my friends the members of the project group to get moral support and encouragement for each other during our studies, and also for the warehouse responsible at KFSH&RC Ms. Samar for her cooperation continuous. Finally my colleagues and supervisor for creating an enabling environment to carry out this project.

Acknowledgement

First and foremost, praises and thanks to the God, the Almighty, for His showers of blessings throughout our work to complete the project successfully.

We would like to express our deepest gratitude to our graduation project supervisor Dr. Wafaa Mukadi for her patience and guidance along the semester. In addition, we would like to express our sincere appreciations to our graduation project coordinator Dr. Muna Altherwi for her guidance, continuous encouragement and support during the course. Moreover, it is our duty to thank all the testing committee members for their generous discussions and encourage.

At last, we would like to thank all the people who helped and supported and encouraged us to successfully complete the first phase of the Graduation Project. We would also like to express our appreciation to King Faisal Specialist Hospital and Research Center for providing us with important information and data to build this project. Furthermore, we must show our gratitude to the responsible for the warehouse department at the Research Center, Ms. Samar Al-zaylai for giving us the opportunity to develop their work, and for their confidence in us in creating a system that meets all their needs in the department.

Abstract

This report reviews our first project to build an effective warehouse management web application that allows organizations to control and manage warehouse operations from the time products or materials enter the warehouse until their exit. To build this system, we communicated with the warehouse administrator at KFSHRC and visited them more than once to understand the most important problems they face It consisted in frequent manual dealings with employees and also in entering data manually, and this makes things complicated and error-prone and the difficulty of managing and organizing the purchase of medical requests in terms of storage. We facilitated these processes by creating a system that helps speed up and facilitate the process of organizing data for each request in a more practical way. Transforming manual work into electronic work to become more advanced, productive, and accurate, by making the system allow users to access and exchange data and request materials in a smooth and more flexible way.

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Chapter I :

INTRODUCTION

1.1 Introduction

The system is a warehouse management system that allow organizations to control and administer warehouse operations from the time products or materials enter a warehouse until they move out.

1.2 Problem definition

In King Faisal Hospital and Scientific Research Center, there is a warehouse official that it needs to be solved:

- All transactions between employees in the store and managing orders manually.
- Secondly, the difficulty of managing and organizing the purchase of medical orders in terms of storage and expiry date and informing the supplier of the required materials each time.
- And also, the difficulty of dealing with Excel files between employees and refilling them every time, which led to an increase in the number of unwanted files.
- One of the problems that the store official faces are that there is some information that is specific to her, as there is no security or protection system for her.

1.3 Proposed solution

- Create a system that helps speed up and facilitate the process of organizing data for each request in a more practical way. Converting manual work to electronic work to become more sophisticated and productive, by making the system allow users to access the data.
- Allow control of adding new quantities as they are received from the supplier and decreasing them when they are used automatically.
- link the upcoming materials which are “Procurement” to the project numbers so that only the project manager is allowed to use his own materials and allow users to send their requests to the concerned person and alert him when they need to purchase materials.
- Permissions will be determined according to the type of users in the system, to keep the information private.
- An alert feature will be set for the administrator, to remind him of the medicinal materials that have an expiration date and alert him to purchase the materials that are out of stock and that must be provided.
- Material purchasing sites will be linked in order to facilitate the transition to purchase them and communicate with suppliers.

1.4 Aim and Objectives

Aim:

This research aims to facilitate the process of managing warehouse data and placing it in the appropriate place, and processing requests from suppliers and project owners.

Objectives:

- Developing a way to manage the data system for the warehouse by making it electronic to facilitate the connection process between the employees.
- Create a page for requests for each project with all the information related to the request.
- Granting the director full access to all the powers in the system, hiding some private information from the rest of the department's employees, and determining their powers.
- Organizing product data based on certain conditions and allowing it to be summarized according to months, days, or years to know the most consumed products in that period and analyze them.
- adding notification feature when products are nearing the end of stock, and when a product arrives that an employee has placed an order for it.

1.5 Plan (Gantt chart)

The plan that we are following to achieve and attain the goals of our project that is divided into two semesters, and it's based on agile development process. According to that we are only pertaining the plan that we can perceive the overlap between the different activities in the Gantt chart.

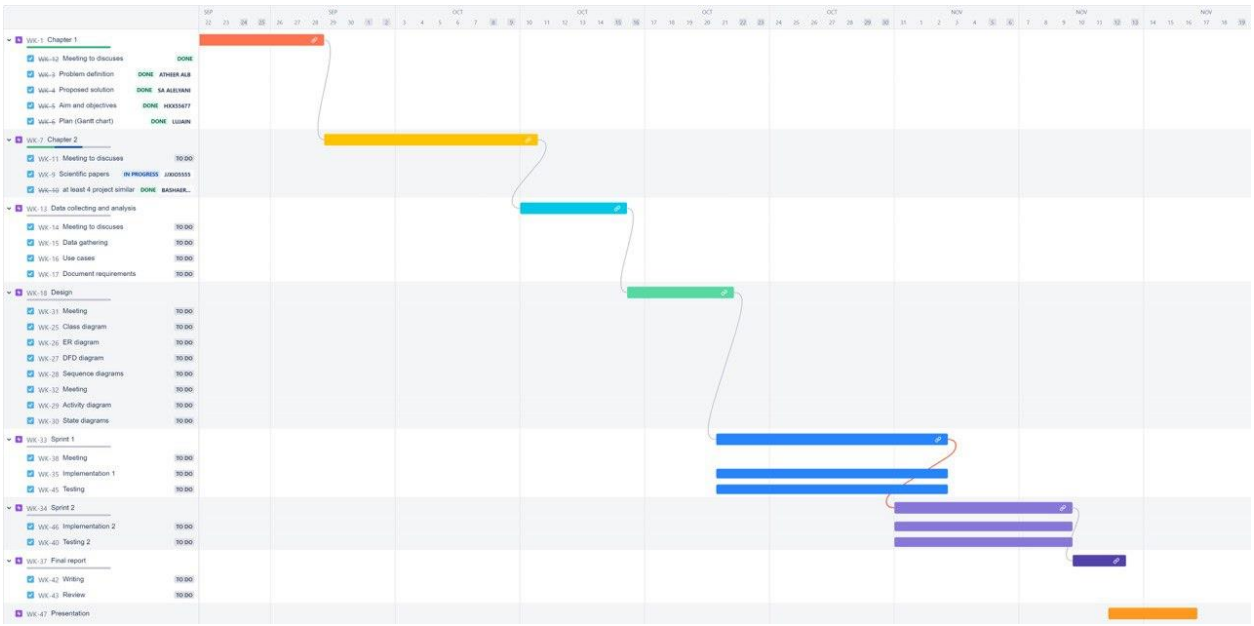

Figure 1- Gantt chart

1.6 Conclusion

In conclusion, this research focuses on presenting the problems they encounter in a warehouse KFSHRC and how we offered solutions to avoid these problems and focused on adding features that fit their requirements, and the plan that we follow was made to achieve the goals of our project step by step.

Chapter II :

LITERATURE REVIEW

Development of infrastructure of a warehouse and ERP

2.1 Abstract

Warehouses are an essential component of any supply chain in any domain. An extensive review on warehouse operation planning presented. The system are classified according to the basic warehouse by creating information system functions, receiving, storage, order picking, and shipping. The purpose is to provide between the supplier and the hospital by ERP.

2.2 Introduction

Modern warehouse and distribution systems constitute highly complex nodes within the value-added supply chain and must meet a variety of requirements, costs and quality. The efficient operation of such systems is a continuous challenge for anyone in charge. Recent developments of advanced computer-based control technologies provide the necessary control and management systems (Warehouse Management Systems, WMS) and (Enterprise Resource Planning, ERP). Nevertheless, due to the high complexity users often find it hard to handle. The design, choice and operation of a WMS requires an extensive know-how and experience because of the large variety of solutions and system requirements.

2.3 Warehouses

Warehouses are an essential component of any supply chain One of their primary functions is to create an integrated and connected information system with systems.

- An itemized list including quantities and pricing, checking the accuracy of warehouse records.
- And the option of instructing the system not to accept the repeat of the name of the items to avoid duplication of entry and item confusion.
- Gives complete details about the product, including the item number, name, part number, description, price, and source.
- And the organizations it belongs to, with the option to provide a photo of the item.
- Using barcodes to identify objects, managing them in inventories, and other movements robotic linking to regulate stock.
- optimization of storage space usage.
- reduction of time for ordering and delivery of goods.
- full control of orders.
- management of warehouse traffic. [1]

It can be a good idea to get some knowledge of common warehouse management terminology before delving into its details. To be clear, the terms inventory management and warehouse management are used frequently, but there are key differences: inventory control Almost everyone efficiently and successfully places orders, makes releases, movements, and selections of resources to produce goods or complete orders. Distribution center organization, planning, labor, arranging,

warehouse control, and reporting are a few more aspects of distribution center operations that may fall under the umbrella term of warehouse management. [2]

2.4 Enterprise Resource Planning systems

Enterprise resource planning (ERP) system is a set of integrated modules that oversee all an organization's fundamental business processes and is used to plan enterprise resources. By seamlessly integrating business operations across organizational functional and technical barriers, the system's main objective is to optimize workflow, standardize business practices, and enable users access to current, real-time data. A database layer, or DBMS, which manages operational and business information for the entire firm, serves as the basis for the ERP system. The core functionalities include production, sales and distribution, accounting, controlling, management of human resources, inventory control, maintenance and service and report generation.

ERP systems are very flexible and tailorable, easily allowing adaptation to specific requirements of different organizations because business functionalities are designed as independent components, which can function separately. Privileges system allows to define user access for individual employees only to resources that are related to their job's responsibilities.

ERP systems are extremely adaptable and enable simple adaptation to the special needs of varied companies when business processes are created as distinct components that can work independently. You can restrict each employee's access to resources that are necessary for their job duties using the privileges system. [3]

2.5 Four similar applications

2.5.1 Odoo application

Odoo application is one of the applications that provides management services in an expanded manner and with strong reliability. They have also proven well-deservedly the effectiveness of warehouse management and organization, and their method of creating them succeeded, and this made us more interested in warehouse management and development, JavaScript and Python were used to write it, and this is like the technology that we will use in our system that we will build. In our opinion, this application helped us to know the importance and effectiveness of systems management and prove to us the success of the technology used. [4]

2.5.2 Score

Score is a collaborative Software-as-a-Service (SaaS) product that enables its users to manage and track projects, keep track of finances, manage the clients base, compile, and send quotes and invoices, and get enterprise-level reports. [5]

2.5.3 NetSuite

NetSuite is a cloud ERP solution, providing a suite of applications, from accounting and financial planning to warehouse management, ecommerce, inventory management and beyond. [5]

2.5.4 SYSPRO

SYSPRO Enterprise Resource Planning (ERP) you gain full view of all business activities, including financial, warehouse and inventory management, across your supply chain and business operations.

Specializing in the Manufacturing and Distribution sectors, SYSPRO ERP provides the solutions, processes, and tools to assist you to manage your data and gain insights into your business. [6]

2.6 What is Odoo

Odoo is a business management software that is open source and fully integrated, sales, project management, manufacturing, inventory management, accounting, human resources management, marketing activities, tools for customer support, and other business applications are all incorporated into a single software package with Odoo.

Odoo is a collection of open-source business apps for businesses of all sizes and budgets in all sectors. There is a business app on Odoo for practically every need of a business. The Odoo ERP is a comprehensive piece of open-source software with numerous applications that can be activated based on business requirements. It is the ideal business management software for any size business, whether small, medium, or large. This Open-Source ERP can be configured to meet all a company's requirements. It is user-friendly and intuitive, in addition to its remarkable adaptability. This business management software has the potential to compete with well-known ERP, CRM, and business management software in general due to its numerous advantages. In fact, businesses can manage their sales department, marketing department, financial department, project management, HR department, production department, operations management, warehouse management, website, and e-commerce site, and more with this software. Open-source business apps can help you run your business more efficiently. [5]

2.7 Conclusion

In conclusion, this research focuses into what we are aiming for and we are willing to do by providing the Warehouse of KFSHRC with similar features and functions that Odoo provides to software companies but in a better most efficient way possible to suits the Warehouse of KFSHRC requirements and needs and facilitate the process of managing warehouse data and placing it in the appropriate place, and processing requests from suppliers and project owners.

Chapter III:

REQUIRMENTS GATHERING AND ANALYSIS

3.1 Introduction

In this report, we have mentioned the user requirements (functional and non-functional) after collecting them by doing the questionnaire and interview with the real customer at the King Faisal Hospital & Research Center, and the use case diagram of our warehouse system that describe the relationships and communication between the entities in the system (User, Admin) and the functionalities, and described each use case in the use case specification.

3.2 Requirements

	Functional requirements	*Priority*
1	The system shall allow the users to log into their account by entering their UserId and password.	**H**
2	The system shall allow users to create an account to register by entering a UserId/Email, first and last name and their password.	**H**
3	The system shall allow the user to request an order.	**H**
4	The system shall allow admin to insert the data of the received products.	**H**
5	The system shall allow to notifying an admin about new request.	**M**
6	The system shall allow to view a report to the administrator to review the requests and presence of the required products.	**M**

7	The system shall allow the user to search for a product.	**H**
8	The system shall allow the admin to notify the user about tracking information	**M**
9	The system shall allow the admin to delete the request.	**H**
10	The system shall allow to sends a notification to admin for the products that will be out of stock from the warehouse.	**H**
11	The system shall allow admin to browse for a product, to be purchased.	**M**
12	The system shall allow users who have projects to place an order and add the project number during the request.	**H**
	Non-Functional Requirements	
1	Usability – Learnability : The interface of the system shall be understandable and easy to use.	**H**
2	Security- Confidentiality: The system shall provide security for the private information of the storekeeper.	**M**
3	Usability – User error protection :The system shall warn users via an error massage when users try to enter wrong inputs.	**H**
4	Usability- User error protection :The system shall show an error message when filling out the application form incorrectly.	**H**

Table 1- Requirements

3.4 Use Case Specification

Number of requirements	*1*	
Name Use case	**Log in**	
Brief description	This use case describes how a user logs into the warehouse System.	
Actor	User, Admin	
Related Use Case	None	
precondition	The user should have a valid account in the system	
Post condition	If the use case was successful, the actor is now logged into the system. If not, the system state is unchanged.	
Flow of Activities	**Actor**	**System**
	1- The actor enters his/her name and password.	2- The system validates the entered name and password and logs the actor into the system.
Alternative Flows	**Invalid Name / Password** **If in the** *Basic Flow* the actor enters an invalid name and/or password, the system displays an error message. The actor can choose to either return to the beginning of the *Basic Flow* or cancel the login, at which point the use case ends.	

Table 2- Use Case Specification 1

Number of requirements	*2*	
Name Use case	**register**	
Brief description	This use case describes how a user registers an account.	
Actor	User, Admin	
Related Use Case	None	
precondition	None	
Post condition	The user's details are stored in the database.	
Flow of Activities	**Actor**	**System**
	1- The use case starts when the user clicks the "Sign Up" 2- The user fills in the required data for registration and clicks on the sign-up button	3- The system displays the signup page that allow users to fill in their UserId/email address, first and last name and their password. 4- The system displays the user's profile page.
Alternative Flows	**Invalid Information Entered-** 1- User clicks submit after entering information system asked for. 2- System displays information with appropriate message to correct invalid information. 3- User re-enters information.	

Table 3- Use Case Specification 2

Number of requirements	*3*	
Name Use case	**Request an order**	
Brief description	This use case describes how a user to place an order for a specific product by filling out the order form and sending it.	
Actor	User, Admin	
Related Use Case	None	
precondition	1. The customer is registered. 2. The customer is logged on to the system. 3. The status of account of the customer is valid to order items without restrictions. 4. The customer find out the item he/she wants to request	
Post condition	The request is sent to the administrator for processing	
Flow of Activities	**Actor**	**System**
	1- The user fills out the application form with all the required data 2- Then click on submit button	3-The system verifies that all data has been filled out. 4- The request is sent to the administrator
Alternative Flows	**Invalid data -** If the actor in the main flow enters invalid data, the system displays an error message stating what to enter. The representative can then modify the data entry, at which point the use case ends. **Submit the request incomplete -** If the user leaves some fields unfilled, the system shows an error message asking him to fill in all the requirements, and not complete the submission process, the user must fill it out completely and then submit	

Table 4- Use Case Specification 3

Number of requirements	*4*	
Name Use case	**Inserting the data of received products**	
Brief description	This use case describes how the system allows the admin to insert the data of the received products	
Actor	Admin, System	
Related Use Case	None	
precondition	Products are received	
Post condition	The system inserts the data of received products into the system	
Flow of Activities	**Actor**	**System**
	1- The admin chooses to add a new product 2- The user fills out all the requirements and clicks the add button	3- The system shows a page to the user that contains product data and requests some input 4- The system displays a message that the process of adding the product was successful

Table 5- Use Case Specification 4

Number of requirements	*5*	
Name Use case	**Notifying new request**	
Brief description	This use case describes how system send notifying to admin about new request from user	
Actor	User, Admin, System	
Related Use Case	Request an order	
precondition	The request is made in the right way.	
Post condition	The administrator knows about new orders	
Flow of Activities	**Actor**	**System**
	1- The user sends a new request to the system.	2- The system takes the request and sends a notification to the admin.
Alternative Flows	**invalid request** If an actor in the main flow enters an invalid request, the system returns an error message, the actor can then modify the request, at which point the use case ends.	

Table 6- Use Case Specification 5

Number of requirements	6	
Name Use case	**View a report**	
Brief description	This use case describes how system view a report to the administrator for review the requests and presence of the required products.	
Actor	Admin, System	
Related Use Case	None	
precondition	There are valid requests	
Post condition	View full report for admin	
Flow of Activities	**Actor**	**System**
	1- The user sends a request to the system.	2- The system takes requests. 3- The system collects these requests into a report. 4-The report displays materials that are not in these requests

Table 7- Use Case Specification 6

Number of requirements	7	
Name Use case	**Search for product**	
Brief description	This use case shows the flow for searching a product in a warehouse	
Actor	User, Admin, System	
Related Use Case	None	
precondition	1. The customer is registered. 2. The customer is logged on to the system. 3- The input matches with the search criteria in the warehouse	
Post condition	View result for a search	

Flow of Activities	Actor	System
	1-The user enter product name in search field 2-Then Click on “search” button	3- The system will display results of search

Table 8- Use Case Specification 7

Number of requirements	8

Name Use case	Notify the user about tracking information
Brief description	This use case describes how the admin notify the user about tracking information for his order
Actor	Admin, User, System
Related Use Case	Request an order
precondition	The user has an order
Post condition	Notify the user about his order tracking information

Flow of Activities	Actor	System
	1- The admin accepts the user order 2- The admin changes the status of request by choose the status from status menu	3- The system sends a notification to the user whenever the status of the request changes

Table 9- Use Case Specification 8

Number of requirements	9

Name Use case	**Delete the request**	
Brief description	This use case describes how the admin delete the request	
Actor	Admin, System	
Related Use Case	Request an order	
precondition	The user sends a request	
Post condition	The request deleted	
Flow of Activities	**Actor**	**System**
	1- When the user receives the request click on “delete” button 2- The user chooses the reason of delete from menu	3- The system will delete the request from requests page 4- The system will send notification to the user about reason of delete the request

Table 10- Use Case Specification 9

Number of requirements	*10*

Name Use case	**Notifying about products out of stock**	
Brief description	This use case describes how system sends a notification to admin for the products that will be out of stock from the warehouse.	
Actor	Admin, System	
Related Use Case	None	
precondition	The notification sent to the admin	
Post condition	The administrator knows about the products that will be out of stock	
Flow of Activities	**Actor**	**System**
	1-the admin checks the notifications that sent by the system	2- The system checks the warehouse shortage of products and sends a notification to the admin.

Table 11- Use Case Specification 10

Number of requirements	11

Name Use case	**Browse for product**	
Brief description	This use case describes how the admin browse for the product by their sites	
Actor	Admin, System	
Related Use Case	None	
precondition	The links of products sites available in the system	
Post condition	The admin browses of products	
Flow of Activities	**Actor**	**System**
	1- The admin clicks on the link of product	2- The system moves the admin to product sites

Table 12- Use Case Specification 11

Number of requirements	12

Name Use case	Placing an order/Add the project number during the request	
Brief description	This use case describes how the system allows users who have projects to place an order and add the project number during the request.	
Actor	Users, System	
Related Use Case	Request an order	
precondition	The users most have a project	
Post condition	The users can place an order and add the project number of a request.	
Flow of Activities	**Actor**	**System**
	1- The users who have a project can place an order 2- the users who have a project can add the project number during request	3- The system allows users who have projects to place an order 4- The system allows users to add the project number during the request.

Table 13- Use Case Specification 12

3.5 Use Case Diagram

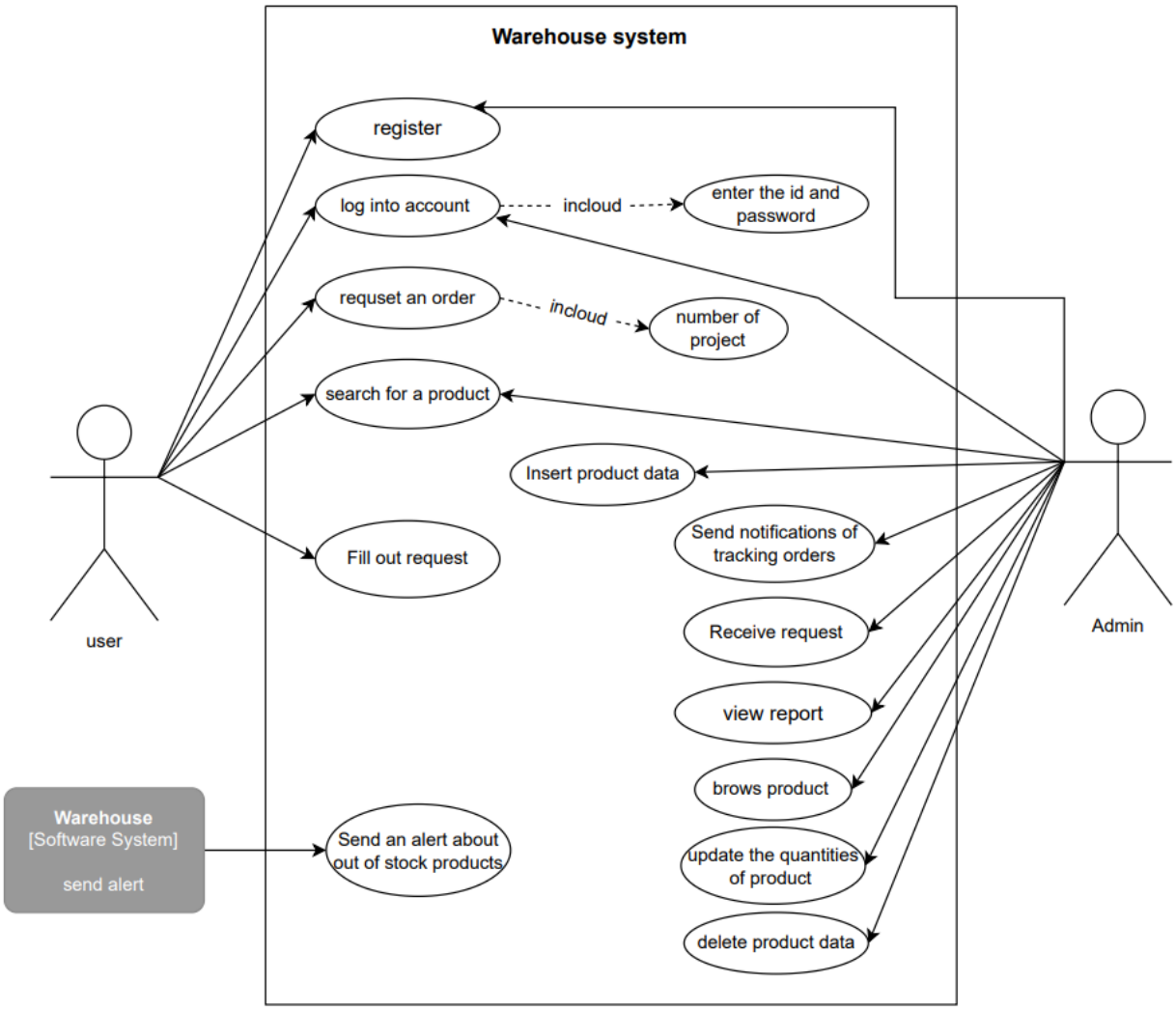

Figure 2 - Use Case Diagram

3.6 Conclusion

In conclusion, we discuss 12 functional and 4 non-functional requirements and their prioritization in the system. Powered by a use case diagram to show relationships in the system and made specifications for each use case for further clarifications about system functionality.

Chapter IIII:

ANALYSIS AND DESIGN

4.1 Introduction

In this report, create class a diagram to describe what must be present in the system being modeled. It has also been created, the sequence diagram to shows process interactions arranged in time sequence in the field of software engineering. It depicts the processes involved and the sequence of messages exchanged between the processes needed to carry out the functionality.

4.2 Class diagram

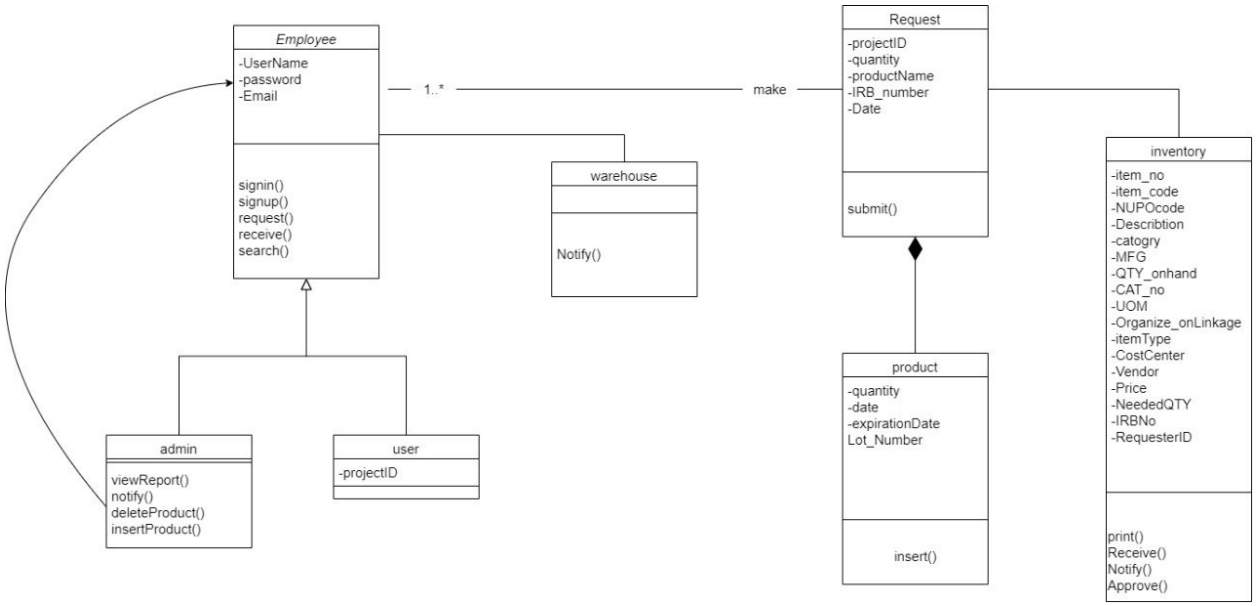

Figure 3 - Class diagram

4.3 Sequence diagram

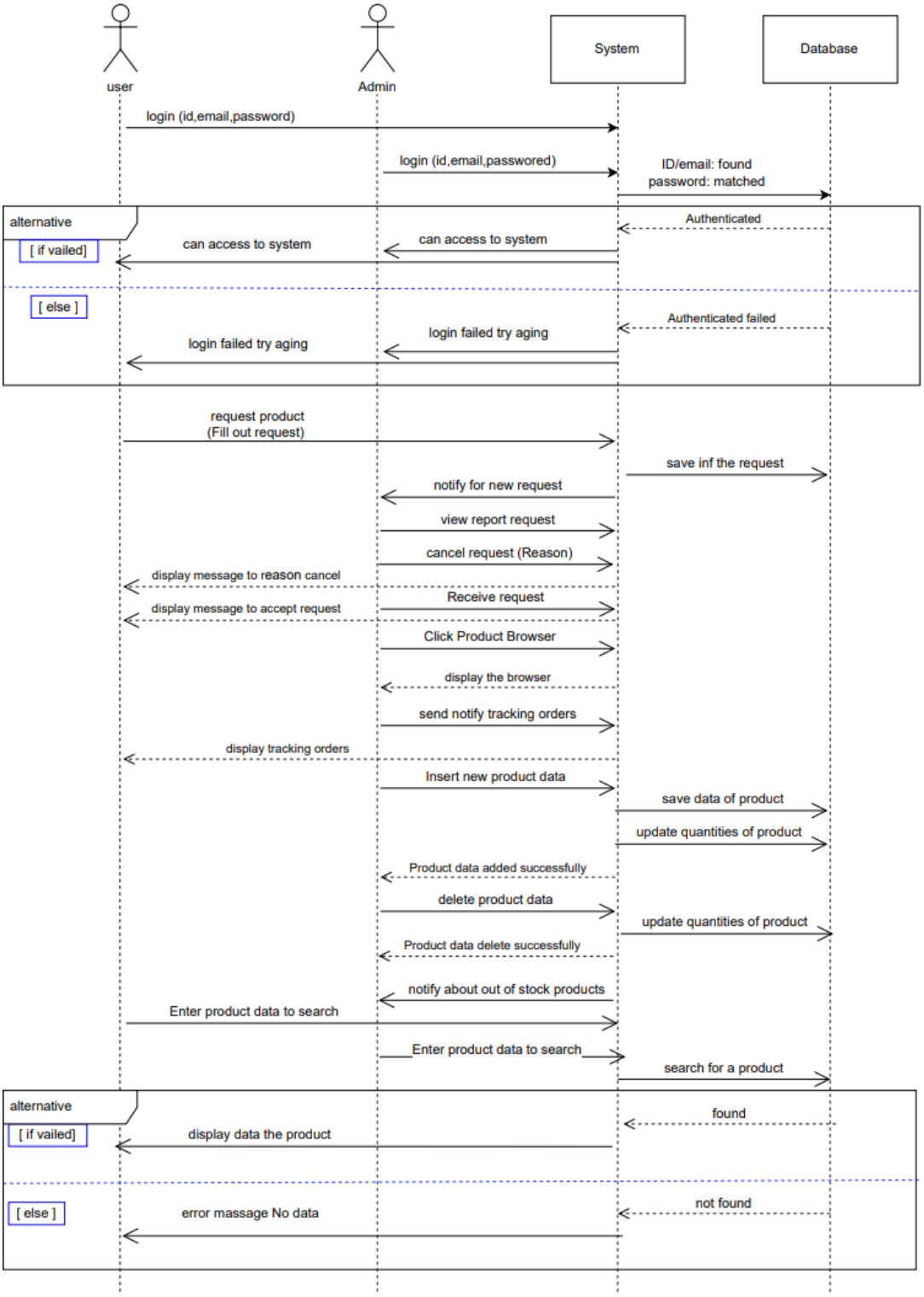

Figure 4 - Sequence diagram

4.4 Conclusion

In conclusion, we discuss the most important system operations and describe the structure of the system. supported by class diagram to display the relationships between the objects, and to describe what those objects do and the services that they provide. The sequence diagram was also used to illustrate how the different parts of a system interact with each other to carry out a function, and the order in which the interactions occur when a particular use case is executed.

SPRINT I

Introduction

In this report, two high-priority project requirements were identified, work tasks were divided using Scrum to plan and organize tasks, and everyone was involved in carrying out the tasks. This report for Sprint 1 contains all the following stages: Requirements Gathering and Analysis, Analysis and Design, Implementation, Testing.

Methodology

Product backlog:

Requirements to be implemented for this sprint:

- The system shall allow the user to request an order.
- The system shall allow the user to search for a product.

Sprint Backlog:

Tasks:

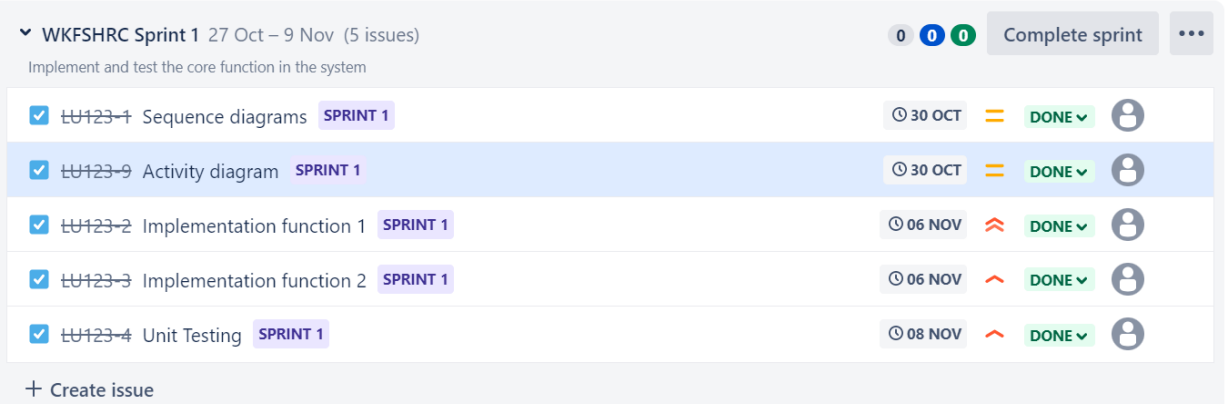

Figure 5- Task done in sprint 1

Tasks and their allocation:

Issue Type	Summary	Assignee	Priority	Status	Resolution	Due date	Actual end	Actual start
Task	Unit Testing	Bashaer/Hala	High	Done	Done	8-Nov	5-Nov	4-Oct
Task	Implementation 1	Lujain/Jumanh	High	Done	Done	6-Nov	4-Oct	31-Oct
Task	Design diagrams	Atheer/Sarah	Medium	Done	Done	30-Oct	29-Oct	28-Oct

Table 14-Task done by student

Sprint Burndown chart:

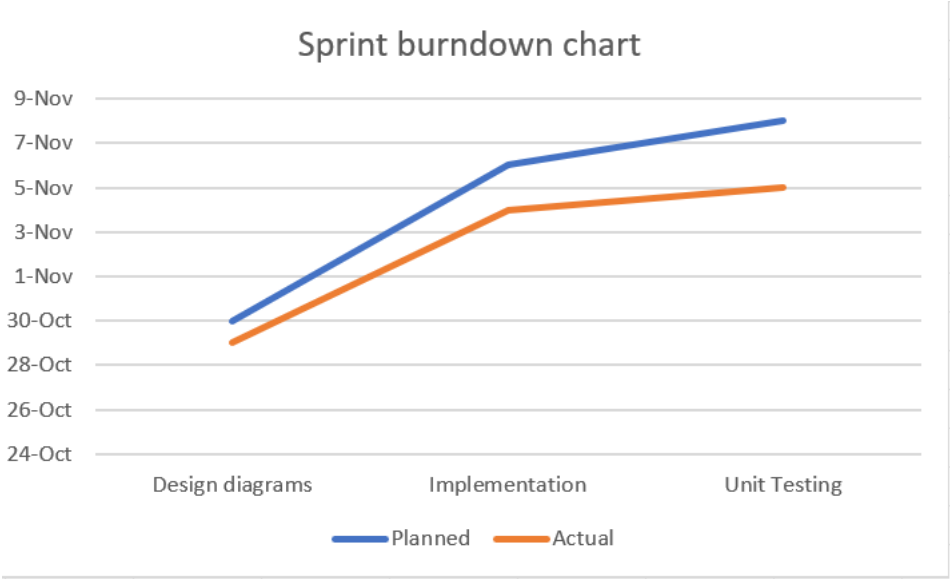

Figure 6 – Sprint burndown chart

Design diagrams:

Sequence Diagram :

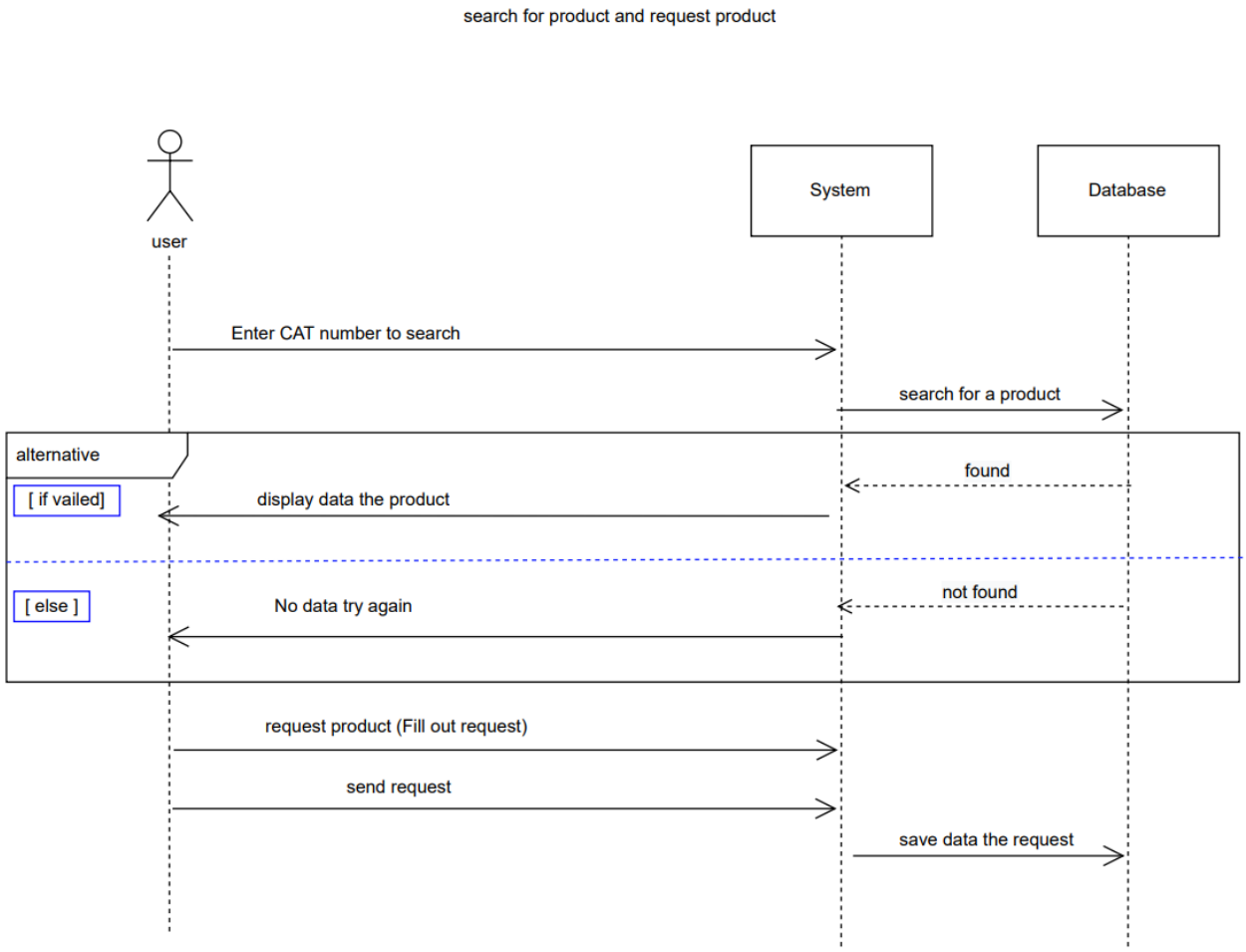

Figure 7 – Sequence diagram for tow implement requirements

Activity Diagram:

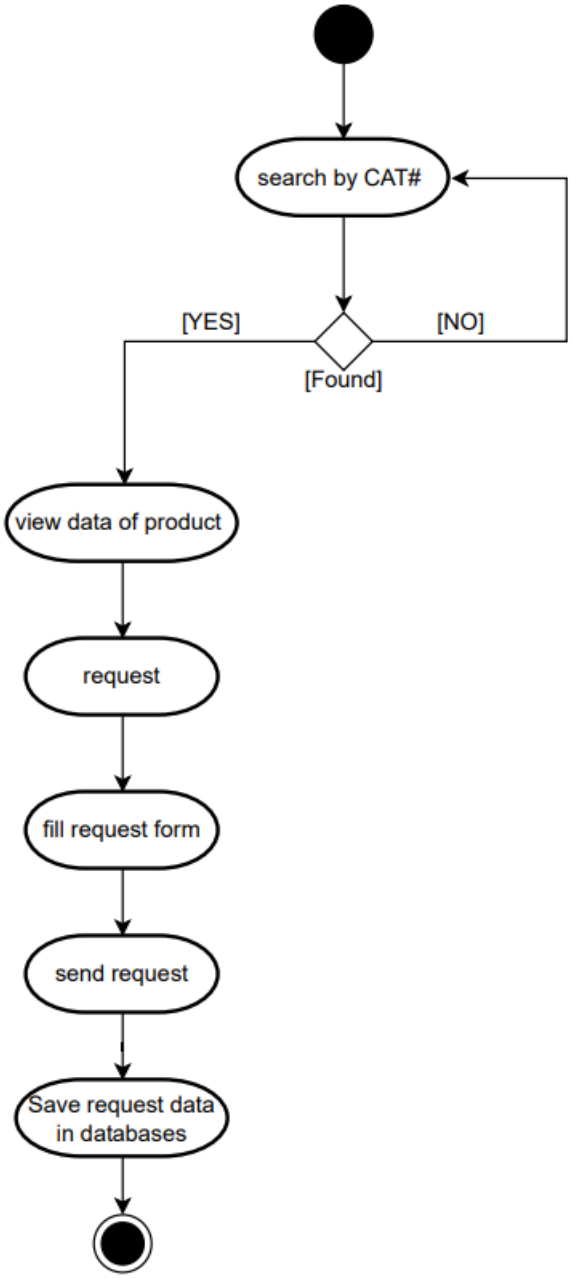

Figure 8 - Activity diagram for tow implement requirements

Implementation

Programming Language and Tools:

This section represents the software and programming languages that we used throughout the implementation this sprint of our website:

1. We used Visual Studio 2019 it is an integrated development environment from Microsoft. It is used to develop computer programs, as well as websites and web applications. [7]
2. For back-end development, we used PHP and MySQL languages and we also used to develop interfaces HTML and CSS.

Core functions implementation:

1. "Create request button" it is in home page which moves the user to products page to enable him to search for and order products.

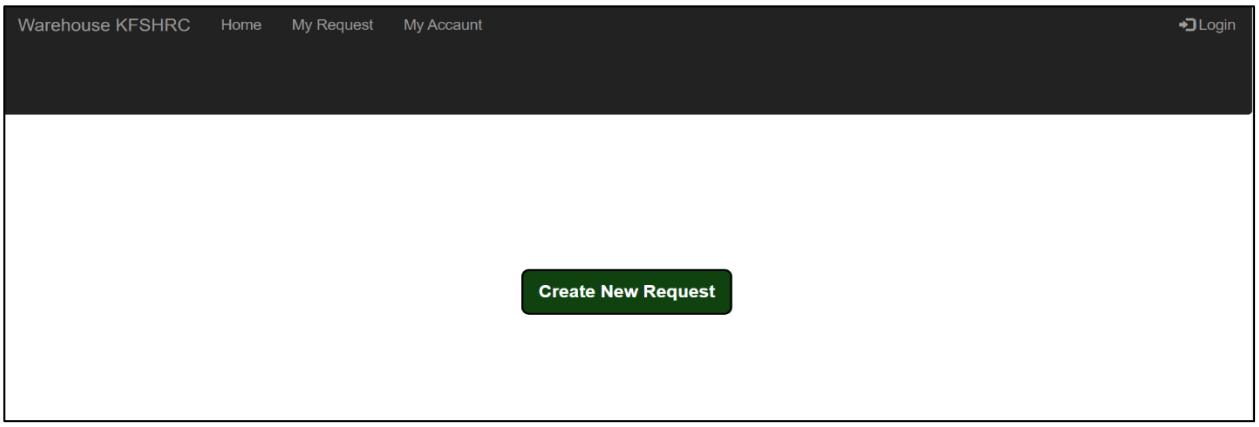

Figure 9- home page

```
<body>
        <div class="container1">
            <button class="button">
                <a href = "http://localhost/project/Products.php"> Create New Request</a>
            </button>

        </div>
</body>
```

Figure 10- home page code

1- Create table of products, Search bar and “Request button”

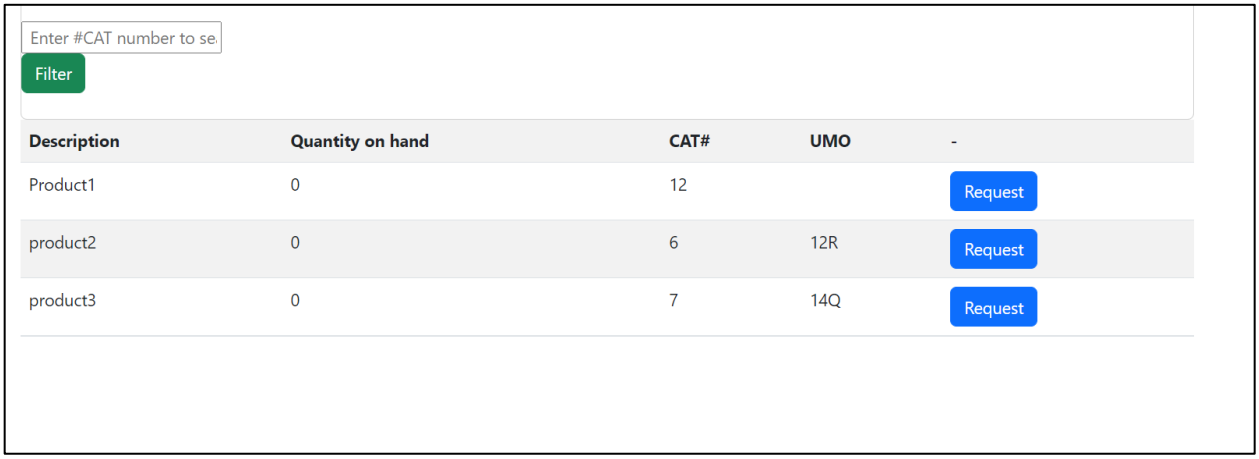

Figure 11- table of products page

- Table and search bar code:

```
<form  class = "container" action="Products.php" method="POST">

    <div class="card">
    <div><br><br><input type="text" name="valueToSearch" placeholder=" Enter #CAT number to search "><br>
    <div><button type="submit" name="search"class="btn btn-outline-success">Filter</button><br><br></div>
    </div>
    <table class="table table-striped table-hover">
        <tr>
            <th> Description</th>
            <th> Quantity on hand </th>
            <th>CAT#</th>
            <th>UMO</th>
            <th> - </th>
        </tr>
```

Figure 12 -Table and search bar code

- "Request button" code:

```
    <td><?php echo $row['UMO'];?></td>
    <td> <button type="button" class="btn btn-primary" data-bs-toggle="modal" data-bs-target="#exampleModal"> Request</button></td>
  </tr>
  <?php endwhile;?>
table>
>
```

Figure 13 - Request button code

2- Create request form and “send button”

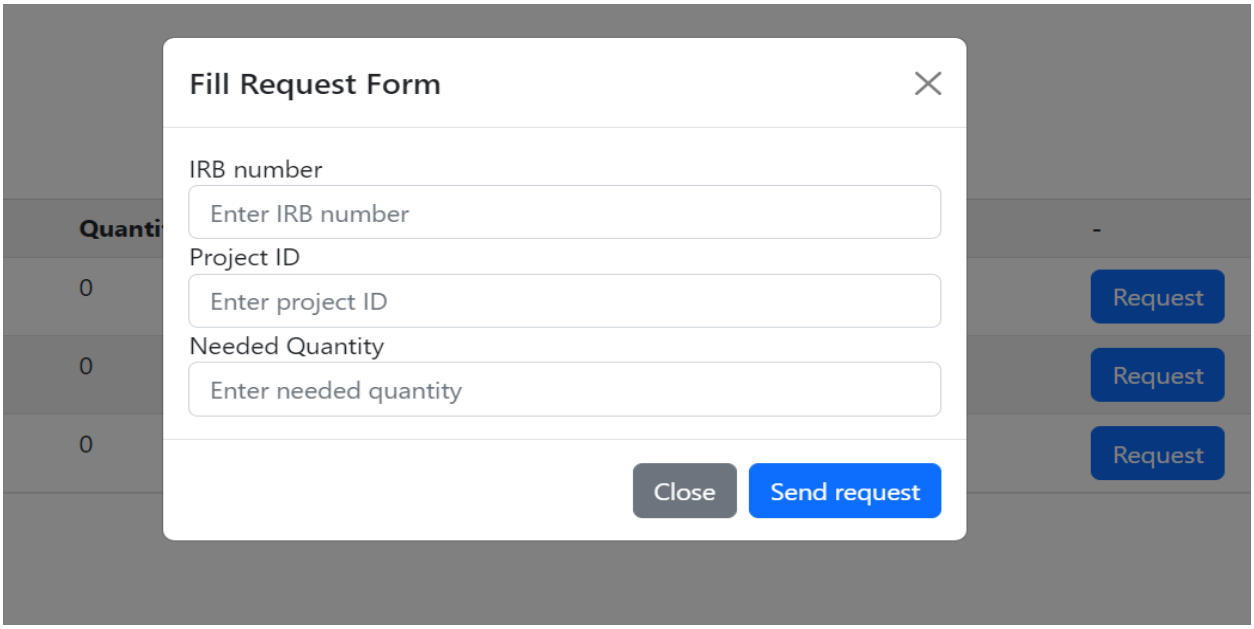

Figure 14- Create request

- Popup form code:

```
<div class="modal-header">
  <h1 class="modal-title fs-5" id="exampleModalLabel"> Fill Request Form </h1>
  <button type="button" class="btn-close" data-bs-dismiss="modal" aria-label="Close"></button>
</div>

<form action="Requests.php" method= "POST">

    <div class="modal-body">

    <div class="form-group">
    <label> IRB number</label>
    <input type="text" name="IRB" class="form-control" placeholder="Enter IRB number">
    </div>

    <div class="form-group">
    <label> Project ID</label>
    <input type="number" name="projectId" class="form-control" placeholder="Enter project ID">
    </div>

    <div class="form-group">
    <label>Needed Quantity </label>
    <input type="number" name="quantity" class="form-control" placeholder="Enter needed quantity">
    </div>
</div>
<div class="modal-footer">
  <button type="button" class="btn btn-secondary" data-bs-dismiss="modal">Close</button>
  <button type="submit" name="sendRequest" class="btn btn-primary">Send request</button>
</div>
```

Figure 15- Popup form code

Data base connection queries

- "Select" query to search in products table:

```php
<?php

if(isset($_POST['search']))
{
    $valueToSearch = $_POST['valueToSearch'];

    // using concat mysql function
    $query = "SELECT * FROM `products` WHERE CONCAT(`CAT`) LIKE '%".$valueToSearch."%'";
    $search_result = filterTable($query);

}
 else {
    $query = "SELECT * FROM `products`";
    $search_result = filterTable($query);
}

// function to connect and execute the query
function filterTable($query)
{
    $connect = mysqli_connect("localhost", "root", "", "WH_db");
    $filter_Result = mysqli_query($connect, $query);
    return $filter_Result;
}

?>
```

Figure 16 - "Select" query to search in products table code

```
-- populate table from mysql database -->
            <?php while($row = mysqli_fetch_array($search_result)):?>
            <tr>
                <td><?php echo $row['Description'];?></td>
                <td><?php echo $row['QuantityOnHand'];?></td>
                <td><?php echo $row['CAT'];?></td>
                <td><?php echo $row['UMO'];?></td>
                <td> <button type="button" class="btn btn-primary" data-bs-toggle="modal" data-bs-target="#exampleModal"> Request</butt
            </tr>
            <?php endwhile;?>
        </table>
    </form>
```

Figure 17 - "Select" query to search in products table code

- “Insert” query to store a request in requests table on data base

```php
<?php
$connect = mysqli_connect("localhost", "root", "", "WH_db");

if(isset($_POST['sendRequest'])){

   $IRB = $_POST['IRB'];
   $projectId = $_POST['projectId'];
   $quantity = $_POST['quantity'];

   $query ="INSERT INTO request (`IRB`, `ProjectID`, `Needed_Quantity`) VALUES ('$IRB','$projectId','$quantity')";
   $query_run = mysqli_query($connect,$query);

   if ($query_run)
   {
       echo '<script> alert("Request Sended");</script>';
       header('Location: Products.php');
   }
   else { echo '<script> alert("Request Not Sended"); </script>';}
}

?>
```

Figure 18-“Insert” query to store a request in requests table on data base code

Testing

This section represents unit testing of the core functions we did in this sprint

Unit Testing:

Warehouse KFSHRC website					
Type of Test Scenario	Description	Platform	Test Case	Expected Result	Actual Result
Unit testing	The requester can search for what he/she needs via #CAT number	Web	Verify the possibility of finding the product.	Knowing if the product found or not	**PASS**
Unit testing	Check the ability to view the data of product.	Web	Verify the possibility of clicking to view the data of the product.	View the data of the product.	**PASS**
Unit testing	Check the ability to fill out the form for a new request of a product.	Web	Verify the possibility of filling out the form for a new request of a product.	Fill out the details for a new request of a product	**PASS**
Unit testing	Check the ability to send the new request of a product.	Web	Verify the possibility of sending a new request of a product after filling out the form.	Sends the new request of a product.	**PASS**

Table 15 - Unit Testing table

Conclusion:

In conclusion, Technology exists to make people's lives easier and solve their problems. We at WAREHOUSE OF KFSHRC are trying to help the Warehouse Administrator in facilitating his operations and organizing them into a system. and In this report we have clarified the two selected requirements and the implementation code that showed us the required output, and use the sequence diagram to illustrate how the different parts of a system interact with each other to carry out a function, and the order in which the interactions occur when a particular use case is executed. also use activity diagram shows business and software processes as a progression of actions.

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APPENDIX

Appendix (A):

Picture of the first meeting that took place with the staff at the beginning of the semester:

Appendix (B):

Interview questions:

1. Are you familiar with warehouse management software? If so, which programs have you used in the past?
2. How would you handle an unexpected problem that added a delay to shipping or receiving?
3. How would you handle changes to warehouse policies and workflows?
4. What is your process for dealing with days when the warehouse is more busier than usual?
5. How do you inventory control ,and warehouse inventory?
6. What would you do if an official asked you for specific materials and he was not present in the warehouse?
7. What are refrigerator medicines? How is it stored?
8. What is a purchase order and how will you process it?
9. How is the process of purchasing direct materials with a specific project number and allocating their delivery to the project manager?
10. How to handle the delivery of materials from the warehouse to the customer?
11. Describe your style of warehouse supervision?
12. Describe some tasks you completed in warehouse?
13. What is your process for handling conflict in the workplace?
14. Describe some challenges you have faced fulfilling shipment orders. How did you approach Them?

- These questions were practically answered and discussed during the meeting, by applying them to work in front of us by use the excel sheet files and their Oracle system

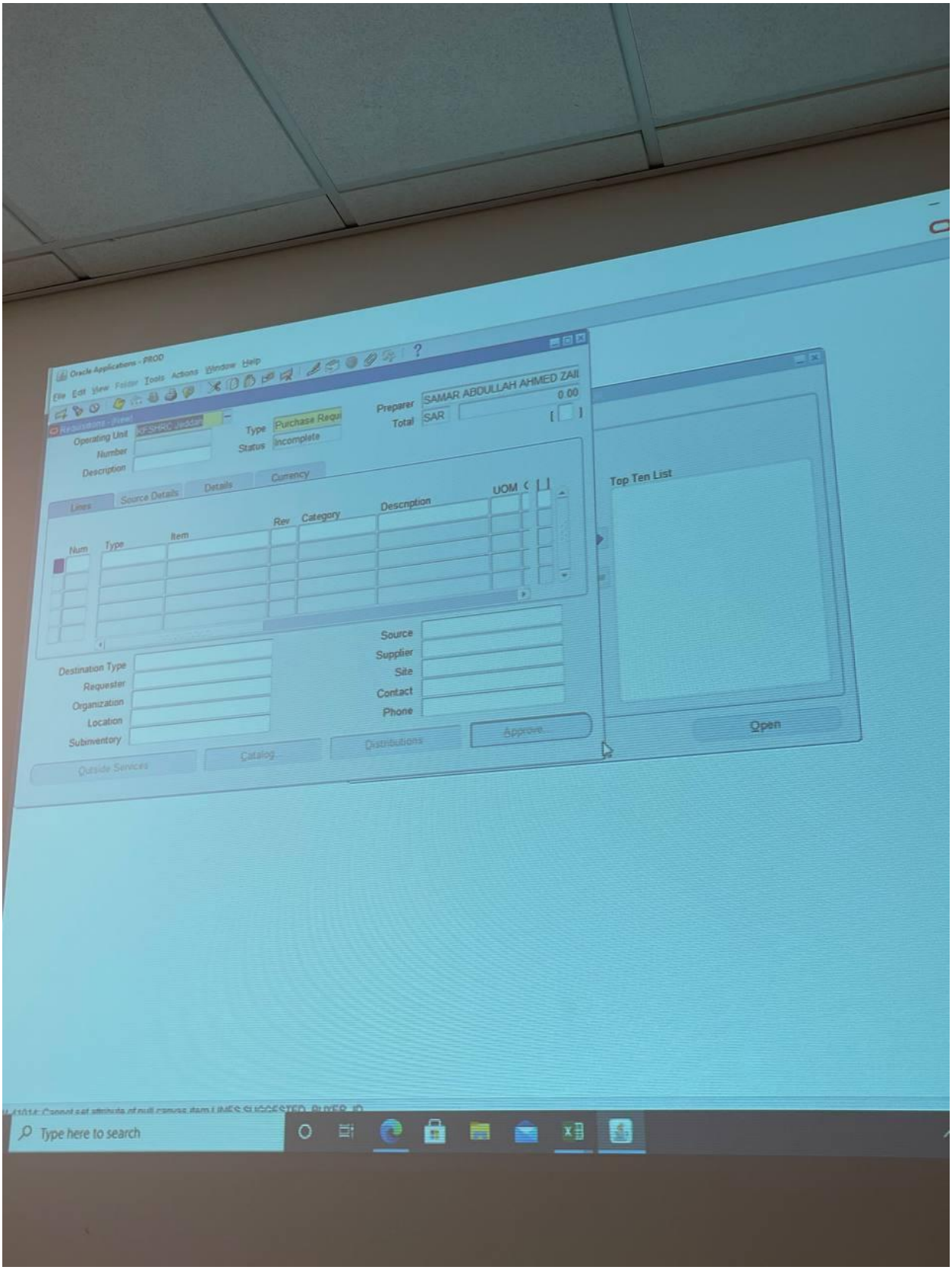
Appendix (C):

Observation:

the Workplace Observation assessment measures skills in observing, following, understanding, and evaluating processes, demonstrations, and other workplace procedures.

Therefore, an observation was made during our visit to them in the King Faisal Specialist Hospital and Research Center to take notes and gather information, as well as to discover more clearly the method of work. This helped us a lot in understanding the system to be implemented.

These are some of the photos that were documented during our visit to them:


Oracle Applications - PROD
File Edit View Folder Tools Actions Window Help
Operating Unit
Number
Description
Type
Purchase Requi
Status
Incomplete
Preparer
SAMAR ABDULLAH AHMED ZAI
Total
SAR
0.00
Lines
Source Details
Details
Currency
Num
Type
Item
Rev
Category
Description
UOM
Top Ten List
Source
Supplier
Site
Contact
Phone
Destination Type
Requester
Organization
Location
Subinventory
Outside Services
Catalog
Distributions
Approve
Open
Type here to search