

**System Requirements**

**P04 : Dairy Farm Management System**

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**CS 491 (A) - S1**

**Submitted to**

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| **Content** | **Totals** | **Obtained** |
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| Functional Requirements | 40 | 40 |
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# Introduction

In attempts to modernize the dairy industry in Pakistan, which is one of the greatest producers and consumers of milk and other dairy products in the region, our proposed and developed system will present a solution to better manage the dairy farms and optimize sales and help in better record keeping.

Furthermore, multiple dairy farm owners will have the opportunity to set up their accounts on our management system, as we aim to develop a multitenant software, which will aid them in getting more customers and for the better management and record keeping of their farms. The system will allow the customer to keep track of daily milk production, sales, expenses and maintenance. Moreover, the system will also provide an interface for the customers of the dairy farm to check their delivery and monthly invoice.

Potential users of our management system include, dairy farm owners (who wish to digitize their records and keep an updated track of their farms) and the customers who wish to order dairy products, be it for domestic or commercial use.

The main purpose of this product will be to provide multiple tenants a way to see various trends in their milk production, expenses and income streams and to make better decisions for the future.

# System Actors

|  |  |
| --- | --- |
| **Actor Name** | **Description** |
| Product Owner | The product owner will be present at the top of the hierarchical structure. The product Owner will ultimately decide which dairy farm owners can set up their accounts on their product. |
| Admin | Admins are the dairy farm owners/Companies themselves. A dairy farm owner will be able to set up their account/dashboard on the main product interface and is also known as the tenant admin. |
| Manager | The tenant manager will be the personnel that would be next in authority after the farm owner. The manager will be the one overlooking the logistics of the farm and is also known as the tenant manager. |
| Customer | The customer will be the actor that will be present at the lowest level of this hierarchical structure. Customer is the one who will get the milk supply and will be able to check his portal on daily basis |

# Functional Requirements

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| --- | --- |
| **Requirements** | |
| **Sr#** | **Requirement** |
| 1 | As a Product Owner, I want to manage which dairy should access my management services. |
| 2 | As an admin, I want to register my company into the provided service. |
| 3 | As an admin, I want to add multiple admins/managers in my team and they should be able to login using their own details. |
| 4 | As an admin, I want to deactivate the manager's role in my company. |
| 5 | As an admin, I want to change my company details from the dashboard. |
| 6 | As an admin/manager, I want to add/edit/remove details of each animal added into our dairy farm and need to view information page of those animals |
| 7 | As an admin/manager, I want to keep track of the status of each cow. Their date of birth, vaccination dates, medication and other dates. |
| 8 | As an admin/manager, I want to manage different categories in my inventory like medicines, animal feed and other inventory items. |
| 9 | As an admin/manager, I want to add items under my categories. |
| 10 | As an admin/manager, I want that if some medicine is given to an animal, then that record should be visible under that respective item present in my inventory. That record should be in chronological order. |
| 11 | As an admin/manager, I want that if the stock of an item gets updated, it’s record should be maintained and should be visible under the item's detail. |
| 12 | As an admin/manager, I want to add/edit/remove employees’ data into my system. |
| 13 | As an admin/manager, I want to add customers' data into my system and maintain their statuses like active/inactive. |
| 14 | As an admin/manager, I want to maintain/add daily expenses like food expenses and medication expenses or through animal purchase etc and also want to specify, if that item used should be decreased from my inventory or not. |
| 15 | As an admin/manager, I want to see the list and details of all the daily expenses and should be able to edit them. |
| 16 | As an admin, I want to see the trend, using graphs, of daily expenses and want to filter expenses on the basis of specified date or the range of dates. |
| 17 | As an admin/manager, I want to maintain/add/edit daily income, that could either be through milk distribution or by selling animals. |
| 18 | As an admin, I want to see the trend, using graphs, of daily income and want to filter them on the basis of specified date or the range of dates. |
| 19 | As an admin/manager, I want to add/edit daily milk production of each milking animal on a single page and I also want this data to be saved under each animal information card. |
| 20 | As an admin/manager, I want to see the trend of milk production of each animal on the basis of date range specified. |
| 21 | As an admin/manager, I want to see the record of milk supplied to a customer on the customer detail page and also filter the record between specified range of dates. |
| 22 | As an admin/manager, I want to apply filters on areas and check how many and which customers are in that area which are getting milk supply. |
| 23 | As an admin/manager, I want to compare the average milk production of each animal in between the selected dates so that I can know which animal is performing well. |
| 24 | As a customer, I want to login to my portal and see the milk supplied to me in a specific month or on a specific date. |
| 25 | As an admin, at the end of each month, I want to select the customers to whom I supplied the milk, and send/release them the invoice of the month and should also be able to change the status of invoice paid or not. |
| 26 | As a customer, I want to see/download the invoice released to me and change the status of invoice on my portal. |
| 27 | As an admin, I want that if someone updated the status of invoice on his portal, I should be notified regarding this. |

# Non-functional Requirements / Quality Attributes

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| --- | --- |
| **Sr#** | **Requirements** |
| 1 | The system should not use extensive memory, not more than 1 GB memory at its time of execution. |
| 2 | The system should not fail more than 3 times for a given week and in case of failure must be available within 5 minutes. [Quantify how many times the system may fail during a week.] |
| 3 | Each page must load within 2 seconds after the user has made a request. |
| 4 | System should be secure against threats essentially the OWASP security standards which include input validation such as validation of data length or range, not disclose sensitive error information such as system details; Data protection by implementing least privilege which would restrict user to only functionality, data and information that they need to perform their tasks.  [It is better if you list down what you want to implement for your system. The requirements of OWASP are too complex for you to handle in this project.] |
| 5 | Privacy standards according to the GDPR be followed i.e. Not withholding personal data without the user’s consent, limitation of data storage that would mean no extra data is collected from the user. [Same comments as above] |
| 6 | The system should scale and be able to handle more traffic, 500 users at peak times that would be from 10am to 5pm. [100 is small number] |
| 7 | For the Usability of the system the user must be able to navigate easily such as not going through a series of pages to make a payment slip request not more than 4 clicks for any request in the navigation. |
| 8 | The system should be expandable from the product owners’ side so that new features may be added such as a personalized data analysis graph.  [Not clear, rephrase this requirement] |
| 9 | The help documentation for the system should be released in the commonly understood language English and Urdu. |
| 10 | The system should cater for faulty inputs and must load or prompt the user for a correct input such as a price calculator accepting numbers and not letters. |
| 11 | The system should require authentications for all resources and information except that are intended to be public, least privilege principle will be followed and access granted would allow users to fulfill their purpose. As needed, access right can be given or withdrawn and in case of failure access controls should fail securely. |

Add requirements for authorization as well. For instance, each user must have some access rights and the system should not allow violation of these access rights. Access rights may be granted or revoked as needed.

# Who Did What?

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| --- | --- |
| **Name of the Team Member** | **Tasks done** |
| Furqan Athar | Functional Requirements |
| Abdullah Saleem | Functional Requirements |
| Khawaja Junaid | Non-functional requirements |
| Saad Qadeer | Introduction, System Actors |

# Review checklist

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| --- | --- |
| **Section** **Title** | **Reviewer Name(s)** |
| Introduction | Abdullah Saleem |
| Actors | Khawaja Junaid |
| Functional Requirements | Saad Qadeer |
| Non-functional requirements | Furqan Athar |