
AVANTIKA UNIVERSITY

FUNCTIONAL SPECIFICATION DOCUMENT

AVANTIKA STORE MANAGEMENT

DOCUMENT VERSION 1.0

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APPROVALS

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1. Introduction

This document will specify the functional specifications of the desktop application which is developed for Avantika Store Management. It will include all the functionalities of the application like which button will do which work, all the interaction in the application i.e., the complete functioning.

1.1 Purpose of the document

The Functional Specification Document is a document that provides detailed information on *how* the system solution will function and the requested behavior. This document is created based on the high-level requirements identified in the Business Requirements Document and provides traceability on the functional specifications back to the business requirements. Included in this document will be the detailed functional requirements including use cases, system inputs and outputs, process flows, diagrams, and mock ups.

1.2 Project Scope

We can describe the project scopes as the part of project planning that involves determining and documenting a list of specific project goals, deliverables, tasks, costs and deadlines. The project scope for this desktop application will be:

- Store manager can buy used items from customers (Faculty and students).
- Store manager can give used items on loan.
- Store manager can get regular sales analysis.
- Store manager can filter and search records.
- Store manager can manage the store inventory through application.

1.3 Scope of the document

In this document we will going to cover the solution overview that how the solution will look like, functional specification i.e., how the system will function on any input and what will be the output, system configurations, non-functional requirements, Reporting Requirements, Integration requirements that how we will deploy the solution on other users' desktop, Conversion requirements, references like articles, tutorials, videos, etc. and Open issues like what are the current bugs in the application.

1.4 Related documents

Component	Name (with link to the document)	Description
Functional Requirements	https://docs.google.com/spreadsheets/d/1NL88aSlovYX8sOp4DeF6J0R3PKFEfq1h/edit?usp=sharing&ouid=112032649783236354598&rtpof=true&sd=true	It includes the functional requirement according to the objectives.
User Flow	https://drive.google.com/file/d/1RRV7_yo-o-CVAkrnj7tRn-QbHH8yRJtg/view?usp=sharing	It includes the complete user flow of the application.
High-Fidelity Wireframes	https://drive.google.com/file/d/1tjtGFecFkS7UuhBXBaTyOk0w2rOnZEKk/view?usp=sharing	The high fidelity shows that how the application will look like.
Database design	https://drive.google.com/file/d/1MAqinbFF5t44rbhece6qBPU58c9BP2De/view?usp=sharing	It includes the relational schema of the database.

1.5 Terms/Acronyms and Definitions

Term/Acronym	Definition	Description
Transaction History	a statement in paper or electronic form, including the transaction information for each prior transaction going back to the manufacturer of the product.	This term is used on the main dashboard of the application which will show the past buy and sell transactions.
Defaulters	a person who fails to fulfil a duty, obligation, or undertaking.	Here defaulter is used for user who takes product on loan and doesn't return it on time.
Filter by	Means to remove the unwanted data	It is used to filter the different lists in application.
Purchase	The action of buying something.	Here the store manager will purchase old products from customers.
Return	to come or go back to a place	Here return means to return a product to the store manager.
Sell	The action of selling	The store manager will sell products to customers.

1.6 Risks and Assumptions

Risks:

- If the admin forgets the login password then he has to go to the higher authorities for this issue.
- If the application crashes then admin has to again install it.
- Some issues can arise regarding database connectivity because maybe they don't have xampp installed on their desktops.

Assumptions:

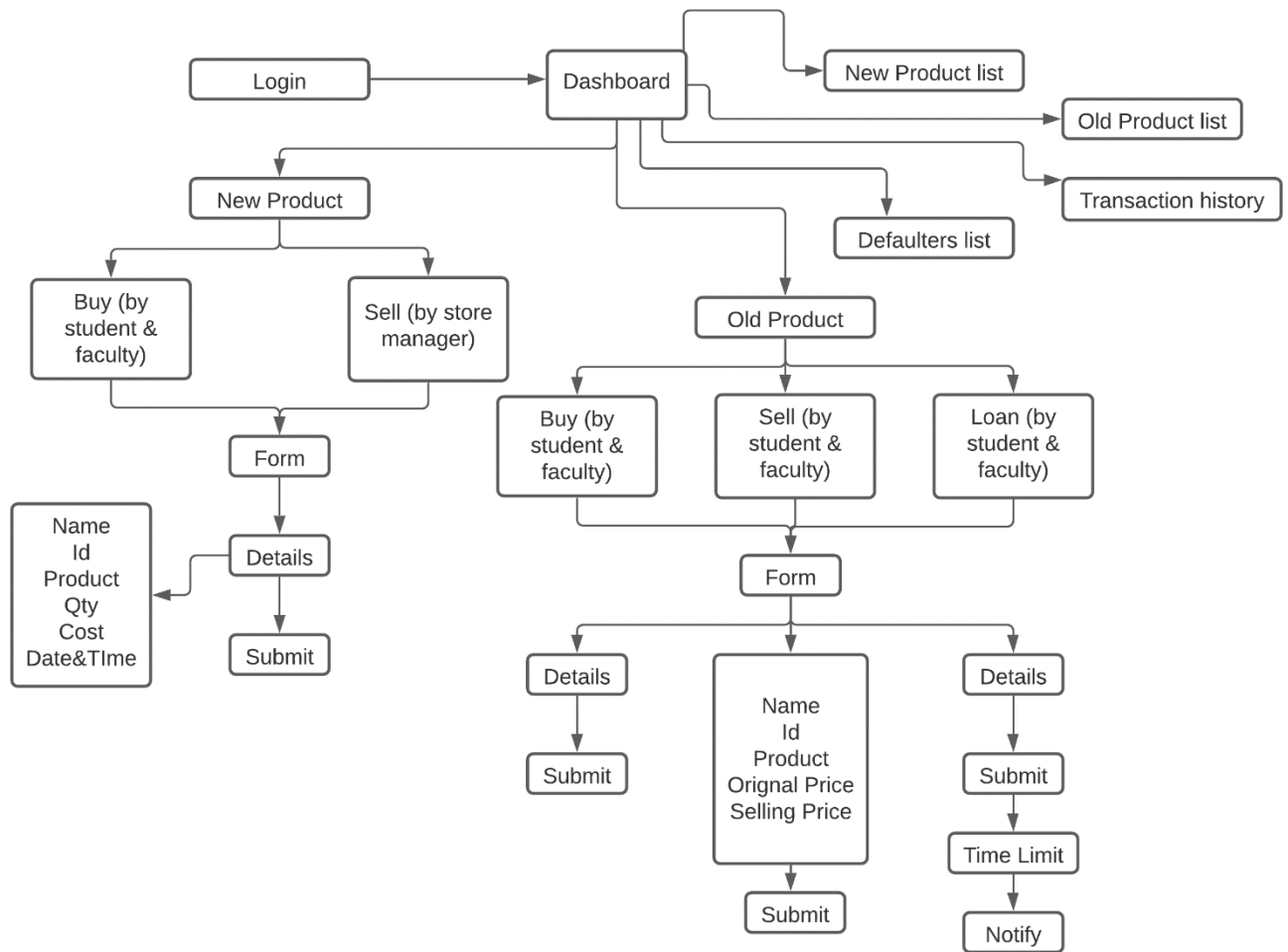
- Assumed that they have a fast processor for better performance of the applications.
- Assumed that xampp is installed for database connectivity.
- They know the login password every time.

2. System/ Solution Overview

The solution is a desktop application for Avantika store management through which store manager can buy used items from customer, can give used items on loan, can get sales analysis, can filter and search records and can manage the store inventory through the application. The objectives of the application are:

1. To design an application which can decrease the time of manual entry in registers.
2. To Promote the use of reused products by new students.
3. To make some benefit to the students who bought the product and now are of no use.

2.1 Context Diagram/ Interface Diagram/ Data Flow Diagram, Application Screen Flow, Sitemap, Process Flow



2.2 System Actors

2.2.1 User Roles and Responsibilities / Authority Requirements

User/Role	Example	Frequency of Use	Security/Access, Features Used	Additional Notes
Students	When a student went to store for buying or selling products they will need this application.	Regular	The system can only accessed by the store manager but the details will be filled by students.	
Faculties	When a faculty went to store for buying or selling products they will need this application	Regular	The system can only accessed by the store manager but the details will be filled by faculties.	
Store manager	If any user comes for buying, selling or loan he can enter the details in less time	Very Frequent	The store manager can access the application with a login password.	

2.3 Dependencies and Change Impacts

2.3.1 System Dependencies

The system should have a fast processor and xampp installed for database connectivity.

2.3.2 Change Impacts

The existing system is to enter manually in a register book for every sell and purchase in the store which is time consuming will get change after deployment of the application. Also, the students with unused products can sell them here and other students can buy them or take them on loan.

3. Functional Specifications

In functional requirements we will talk about all the functionalities of the application:

S.No	Title
01	Project Description
02	Use cases
03	Mock-up
04	Functional requirements
05	Field level specifications

3.1 <Title>

3.1.1 Purpose/ Description

The main purpose of this desktop application is to ease the work of Avantika Store management. By this application the store manager can login with login password and then access different features of it. He can sell/buy/ and give products on loan to students and faculties in a very short amount of time. With that he can also see transaction history, defaulter's list and new/old products' list and can filter it with different options. He will also get a feature of logging out of the system.

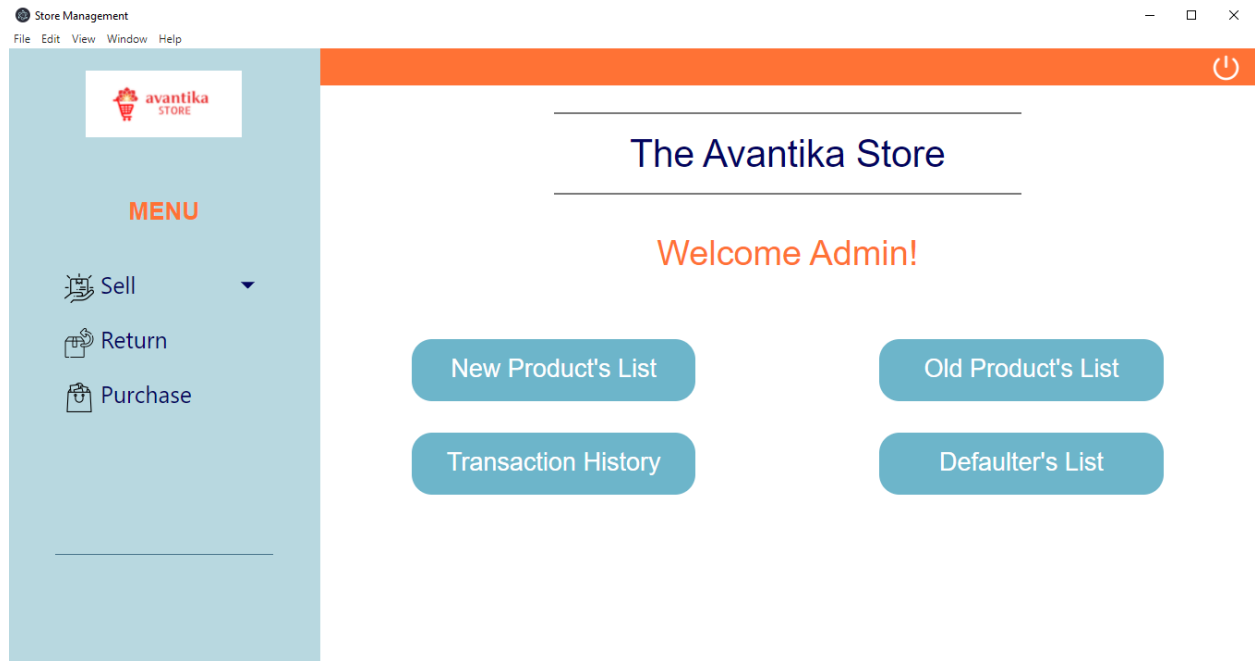
3.1.2 Use case

We will see two use cases

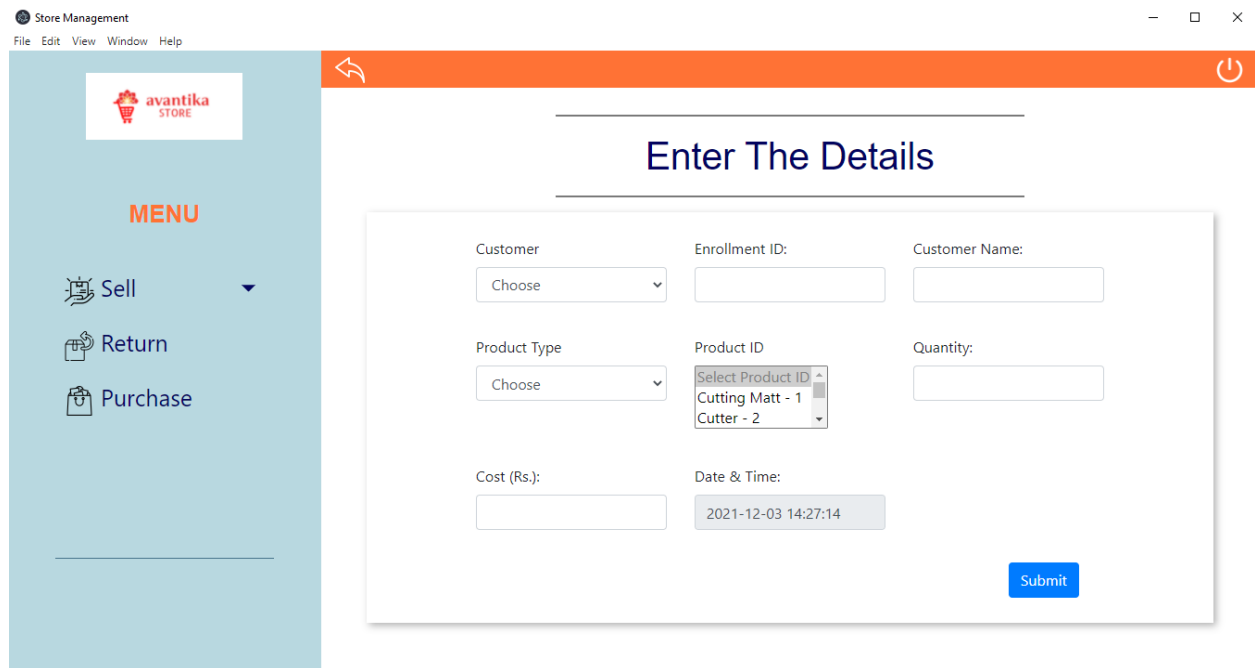
UC-1	Selling product to faculty
Primary Actor(s)	<i>Store Manager and Faculty</i>
Stakeholders and Interest	<i>Store Manager and faculty</i>
Trigger	<i>Faculty visits to store where store manager is already present.</i>
Pre-conditions	<i>Store is open and store manager is present</i>
Post-conditions	<i>The work is done in very less time</i>
Main Success Scenario	<ol style="list-style-type: none">1. <i>Faculty visits store.</i>2. <i>Store manager is there.</i>3. <i>Faculty ask for a medium size file.</i>4. <i>Manager checks in the product's list and say yes, it is there.</i>5. <i>Manager opens sell new products' form.</i>6. <i>Manager asks for faculties details and fills product details.</i>7. <i>Manager enters the details successfully.</i>8. <i>Faculty do the payment and get the product</i>
Extensions	<i>If faculty is not registered in the database with his employee ID, first he/she has to go to the management for registration.</i>
Priority	<i>Faculty ID and product ID will be high priority, other details will be medium priority and payment is low.</i>
Special Requirements	<i>The product should be available.</i>
Open Questions	

UC-2	Taking product on Loan and selling product to store
Primary Actor(s)	Store Manager, student1 and Student2
Stakeholders and Interest	Store Manager, student and student2
Trigger	Students visits to store where store manager is already present.
Pre-conditions	Store is open and store manager is present
Post-conditions	The student2 got the product in very less time and student 1 got some amount in place of product
Main Success Scenario	<ol style="list-style-type: none"> 1. Student1 visits store. 2. Store manager is there. 3. Student1 asks for selling a old product of original cost 200. 4. Manager checks the product quality and the product original price and they mutually decide a selling price of Rs. 110. 5. Manager opens Purchase form and enters the student1 and product details. 6. Student 1 gets his amount in a very short time and moves out of the store. 7. After some time, another student comes and ask for taking a product on loan. 8. Manager checks that whether that product is there in the old products' list and finds that it is there. 9. Manager takes the details of the students and the products. He also asks the duration of loan and enter it in the loan form. 10. The student gets the product n loan after this process.
Extensions	If students are not registered in the database with his employee ID, first he/she has to go to the management for registration.
Priority	student ID and product ID will be high priority, other details will be medium priority and payment is low.
Special Requirements	The product should be available.
Open Questions	

3.1.3 Mock-up



Call-out 1



Call-out 2

Store Management

File Edit View Window Help

avantika

STORE

MENU

Sell

Return

Purchase

Enter The Details

Customer

Choose

Enrollment ID:

Customer Name:

Product ID

Select Product ID

Cutting Matt - 1

Cutter - 2

Duration (in days):

Date & Time:

2021-12-03 14:32:23

Submit

Col-out 3

Store Management

File Edit View Window Help

avantika

STORE

MENU

Sell

Return

Purchase

Return Section

Filter By:

Borrower ID

mm/dd/yyyy

Loan ID	Borrower ID	Name	Product ID	Issue date	Return Date	Duration(days)	Return
11	AU19B1005	abc	1	2021-12-02	--	1	Return

Col-out 4

November 2021

Page 13

Store Management

File Edit View Window Help

avantika

STORE

MENU

Sell

Return

Purchase

Purchase Section

Customer

Choose

Enrollment ID:

Customer Name:

Product ID:

Product Name:

Original Cost (Rs.):

Selling Cost (Rs.):

Quantity:

Date & Time:

2021-12-03 14:34:16

Submit

Reset

Col-out 5

Store Management

File Edit View Window Help

avantika

STORE

MENU

Sell

Return

Purchase

New Products

Filter By:

Product ID

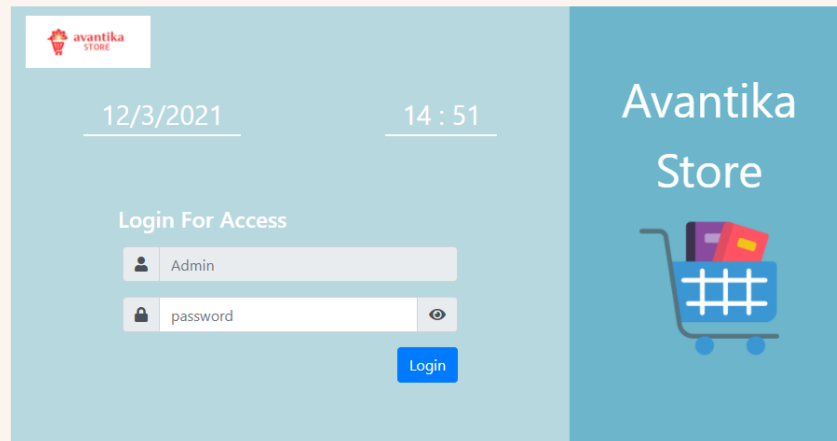
Search by Name

Product ID	Product Name	Quantity	Total Quantity	Selling Cost (Rs.)
1	Cutting matt	-1	5	200
2	Cutter	5	5	100
3	File	15	15	80
4	Pencil	50	50	15
5	Shader	13	13	25

Col-out 6

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Col-out 9

3.1.4 Functional Requirements

For the below table you can refer to call-out 1

Spec ID	Specification Description	Business Rules/ Data Dependency
Sell	Sell option will open two sub-options	
New Product	This option will land the user on a form	
Product on loan	This option will land the user on form for providing loan.	
Return	This option will land the user to return a product.	
Purchase	This option will land the user on a form by which can purchase	
New / old product list	This option will shoe available products	
Transaction History	This option will show the transaction history.	
Defaulter	This option will show the list who didn't returned the product.	

3.1.5 Field level specifications

Form Elements:

Call-out	Field Label	UI Control	Mand?	Editable	Data Type	Value Set	Default Value	Data Example	Data Source
<mock-up reference>	<Label name>	<specify what UI control will be on screen>	<specify if field is mandatory>	<specify if field is editable>	<Specify the data type that will be used for this field>	<If value is from the set, specify the entire value set here>	<Specify if it should be defaulted to any value>	<Provide an example of the data>	<Specify the source of the data>
Call-out 9	Password	Input field	Yes	Yes	Text	none	NA	hshjdvh	User entry
Call-out 9	Username	Textbox	Yes	No	Text	Admin	Admin	Vhgvchsv	Hard coded
Call-out 2	Customer	Dropdown	Yes	Yes	Text	Student, faculty	Choose	Student	User entry
Call-out 2	Enrollment ID	Input field	Yes	Yes	Alpha-numeric	None	NA	AU19B1010	User entry
Call-out 2	Customer-name	Input field	Yes	Yes	Text	None	NA	Anannya	User entry
Call-out 2	Product-type	Dropdown	Yes	Yes	Text	New, old	Choose	New	User entry
Call-out 2	Product ID	Select	Yes	Yes	Text	Product id's	NA	Cutter-2	User entry
Col-out 2	Quantity	Input field	Yes	Yes	Number	None	NA	3	User entry
Col-out 2	Cost	Input field	Yes	Yes	Number	None	NA	200	User entry
Col-out 2	Date & time	Date time	Yes	No	Date time	None	Current	2021-12-03 15:1:5	Hard code
Col-out 3	Duration	Input field	Yes	Yes	Number	None	NA	2	User entry
Col-out 5	Selling Cost	Input field	Yes	Yes	Number	None	NA	200	User entry

Form Business Rules and Dependencies:

Field Label	Validation / Business Rules	Error Messages	Data Dependencies	Additional Info/ Notes
<Label name>	<Specify the validation rules and/or business rules applicable to the form element>	<List the error message that should be displayed and under what conditions>	<Specify if there are any date dependencies>	<Provide any additional information here>
Example: User name	User name shall be a valid	For incorrect user name display on setFocusOff: "Please provide a valid user name"	None	Access prohibited only to affiliates.
Password	Password shall be valid		Non	Access prohibited only to affiliates.
Customer	Should be chosen	Invalid Input	NA	NA
Enrollment ID	Should be chosen	Invalid Input	NA	NA
Customer Name	Should be chosen	Invalid Input	NA	NA
Product ID	Should be chosen	Invalid Input	NA	NA
Product Name	Should be chosen	Invalid Input	NA	NA
Selling Cost	Should be chosen	Invalid Input	NA	NA
Original Cost	Should be chosen	Invalid Input	NA	NA
Date & Time	Default	NA	NA	NA
Quantity	Should be chosen	Invalid Input	NA	NA

Buttons, Links and Icons:

Button, Link, Icon Label	OnClick Event	Other Event	Visible	Enabled Vs Disabled	Navigate To	Validation	Dependencies
<Button label name>	<Specify the operation that would be performed on an on-click event>	<Specify the operation that would be performed on other events>	<Specify default visibility of the button>	<Specify if button is enabled or disabled and the condition, if any>	<Specify the link where the page will be re-directed, if any>	<Specify the validation rules on operation of the button>	<Mention if there are any dependencies on other form elements and/ or buttons>
Example: Submit	Verify if user name and password are correct. If yes, log the user into the system.	OnMouseHover display the following message: "Please provide your web-authentication details to sign in">	Yes, always	Disabled, by default. Enabled, after first key entered in either username or password field.	User Dashboard page	Verify if Username is a valid sunet ID and user name and password match with registry data.	Disable the New user functionality on subsequent pages if user logs in through this button.
Login	If username and password is corrent	Changes color	Yes	NA	Dashboard	Valid password, null field	NA
Submit	If all the fields are correctly filled	Changes color	Yes	NA	Confirmation Pop-up	Checks field validation, null type of filed, insert data in database	NA

4. System Configurations

Following process should be followed to configure the application-

1. Run the .exe file.
2. Give the path of the installation.
3. Check the agreement.
4. Install the setup.
5. Open the application and login with the admin's password.

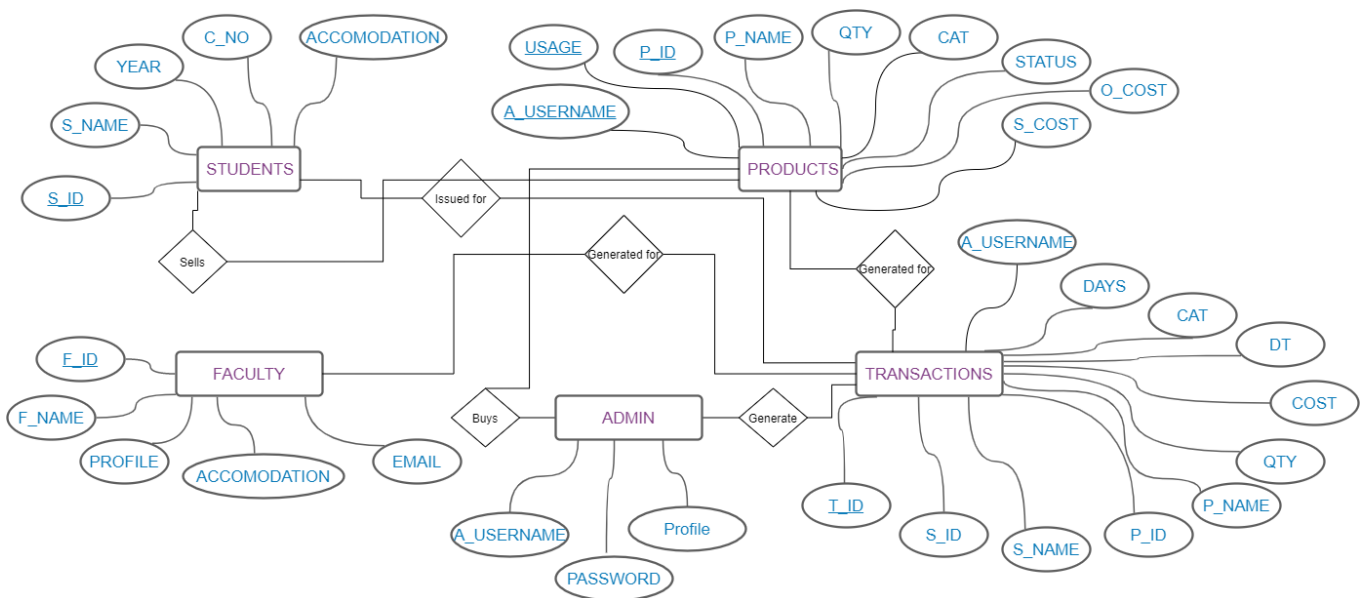
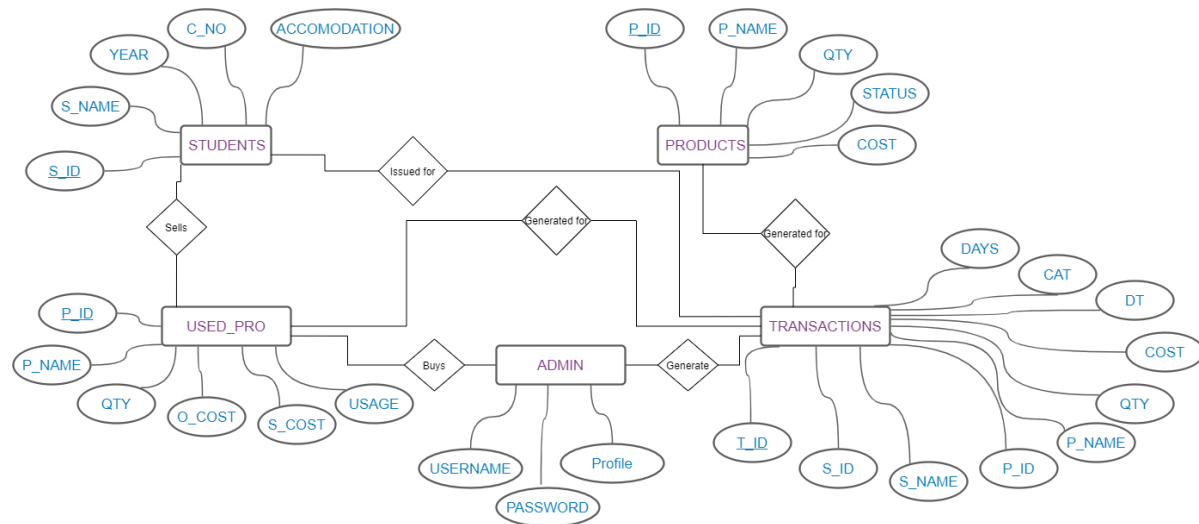
5. Other System Requirements/ Non-Functional Requirements


The non-functional requirements are –

- The system shall filter the tables according to the need.
- The filter combination should work properly and fast.
- The form field should be less time taking.
- The application should work fast.
- There should be a feature of going from one page to every page.
- There should be only one admin i.e., store manager.
- It should store huge amount of data for transaction history.
- It should be user-friendly.

6. Reporting Requirements

In this document we had talked about database versions, while designing database design, the final design completed on the third version. In this part you will see the relational schema of version 1 and 2 and some of the wireframes.



avantika
STORE

Menu

Selling Section

Return Section

Purchase Section

←

⏻

Enter the Details

Enrollment ID

Name

Product Name

Quantity

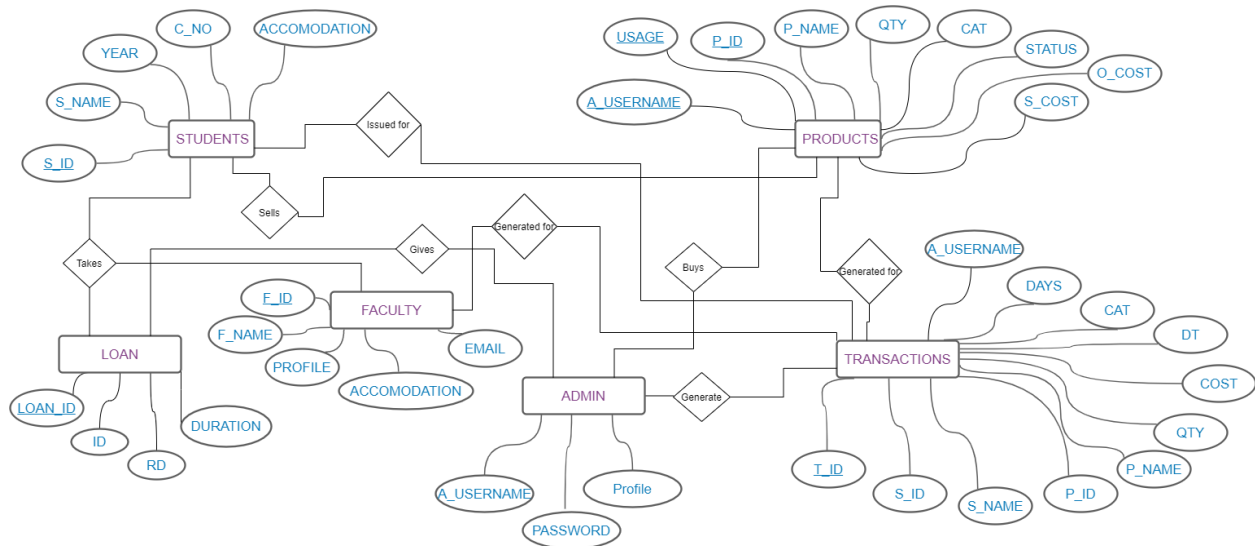
Cost

Date & Time

Submit

7. Integration Requirements

In this topic we will discuss about ERD diagram and exceptions for cross platform.



7.1 Exception Handling/ Error Reporting

Exception/ Error ID	Error	Cause	Solution Strategy
0x87D1041C	caused by issues with the apps manifest if it's a LOB app.	Cross platform	app manifest has been configured correctly to successfully detect the app install.
0x800B0101	A required certificate is not within its validity period when verifying against the current system clock or the timestamp in the signed file	if your deploying Line-of-Business (LOB) apps of the Appx type and the client does not have the required certificates installed.	Confirm that all of the required certificates for the Appx package are installed on the client.

8. References

<https://getbootstrap.com/docs/4.0/components/forms/>

<https://www.w3schools.com/bootstrap/>

https://www.w3schools.com/howto/howto_js_dropdown_sidenav.asp

<https://www.codeproject.com/Articles/359654/11-important-database-designing-rules-which-I-fo-2>

https://www.w3schools.com/jsref/jsref_setdate.asp

9. Open Issues

Issue ID	Issue	Raised By	Raised On	Solution/ Decision	Resolved By	Resolved On	Status
01	User Registration	User	12/3/2021	First he has to register in Avantika University	Store Manager	12/3/2021	Resolved