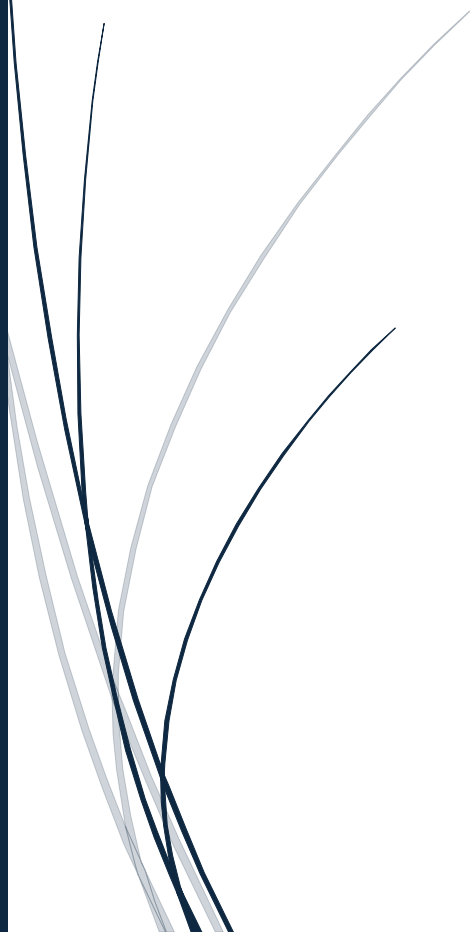




ONT3010

Deliverable 5

ChillTech Innovators



PLAGIARISM DECLARATION

We, **ChillTech Innovators**, hereby declare that the ONT3010 (SD) 3rd Year Project 2024, along with all deliverables submitted by us in the year 2024, are exclusively the product of my original efforts. We further confirm that these submissions have been prepared in full compliance with the guidelines set forth by Nelson Mandela University and under the guidance of our lecturer, Cheryl Schroder.

This project serves as a capstone assessment, which requires us to demonstrate and prove our coding abilities without compromising the principles of academic integrity.

We affirm that:

- All the content, ideas, and concepts presented in this project are our own intellectual property, except where we have given appropriate credit to the original sources.
- Any external sources of information used in the project, including but not limited to books, research papers, articles, websites, and other electronic sources, have been duly cited and referenced using the appropriate citation style as specified by the university.
- We have not used any unauthorized assistance, either human or electronic, during the research, analysis, and development phases of this project.
- The code, design, and implementation presented in this project are original and have not been copied from any other sources. In cases where we have utilised existing code or frameworks, proper attribution has been provided through clear code commenting, providing a clear reference to the source.
- In adherence to the capstone assessment requirements, we acknowledge that even though code reuse might be encouraged in the real world, we are committed to showcasing our coding abilities without excessive reuse. In cases where code reuse or assistance has been used, we ensure that we thoroughly understand the reused code and can provide an oral explanation of such code upon request.
- We are aware of the consequences of not being able to satisfactorily explain the reused code or code with provided assistance. Failure to provide a satisfactory explanation may result in penalties affecting our marks for this project.
- We understand that the use of AI tools for creating content, code, or analysis without explicit permission is prohibited and will be treated as academic misconduct.
- This project has not been submitted in its entirety or in part, to any other institution or university for academic credit or assessment purposes.
- We are aware of the severe consequences of academic misconduct, including plagiarism, and acknowledge that any violations will be dealt with as per the policies and regulations of Nelson Mandela University.
- We understand that NMU may use automated tools to detect plagiarism in this project, and we consent to the submission of this work to such systems.
- We further acknowledge that NMU reserves the right to retain and review this project as a part of their institutional database, solely for the purpose of academic integrity and future plagiarism checks.
- We sincerely attest to the authenticity and originality of this IT project and take full responsibility for its content. If any issues related to plagiarism or academic misconduct are discovered after the submission, we are willing to accept the consequences.

Name	Student #	Date	Signature
Devan Farmer	223118427	28/03/2024	D.C Farmer
Sthandiwe Faith Mbotho	219569045	28/03/2024	SF MBOTHO
Mnqobi Sinisi	224274104	28/03/2024	M.S
Sethu Macingwane	220139687	28/03/2024	S Macingwane

Table of Contents

PLAGIARISM DECLARATION	1
Team Project Matrix.....	4
Project Information	6
Project Scope	7

Team Project Matrix

NELSON MANDELA
UNIVERSITY



3rd YEAR PROJECT OVERVIEW 2024

Team Number	14	Team Name	ChillTech Innovators	
Project Team Members	Student Name		Student Number	Contact Number
	1. Devan Farmer		223118427	073 181 3983
	2. Sethu Macingwane		220139687	078 798 1996
	3. Sthandiwe Faith Mbotho		219569045	063 023 4841
	4. Mngqobi Sinisi		224274104	072 440 4494
PROJECT NAME	ONT3010 – Fridge Management System			
Project System	FRIDGE Management System			
SUBSYSTEM:				
	Subsystem Name		Student Name	
SUBSYSTEM A	Customer Management		Sethu Macingwane	
SUBSYSTEM B	Fridge Fault		Devan Farmer	
SUBSYSTEM C	Fridge Maintenace		Mngqobi Sinisi	
SUBSYSTEM D	Purchasing		Sthandiwe Faith Mbotho	
PROJECT TEAM ROLE MATRIX				
	Student 1	Student 2	Student 3	Student 4
Student Number	223118427	220139687	219569045	224274104
6 Thinking Hats	White Hat		Green Hat	White Hat
Myers-Briggs Personality Type	Logician INTP-T		Defender ISFJ-T	INTJ
SKILL LEVEL				
Project Management	3		1	3
Database Design	5		5	3
Systems Analysis	2		1	4

Systems Designer	4		0	2
User Interface Design	1		0	4
Coding	5		1	3
Testing	3		1	2
Signature	D.C Farmer		SF MBOTHO	M.S

Project Information

For the web pages visuals and functionality, we will be using C# and CSS.

For Databases we will be using SQL in MySql.

For hosting our website, we will be using the NMU servers.

Project Scope

Information Scope

Information Scope
Customer Details
Admin Details
Technician Details
Appointment Details
Fault Report Details
Supplier Details
Quotation Details
Maintenance Details
Inventory Details

Functional Scope

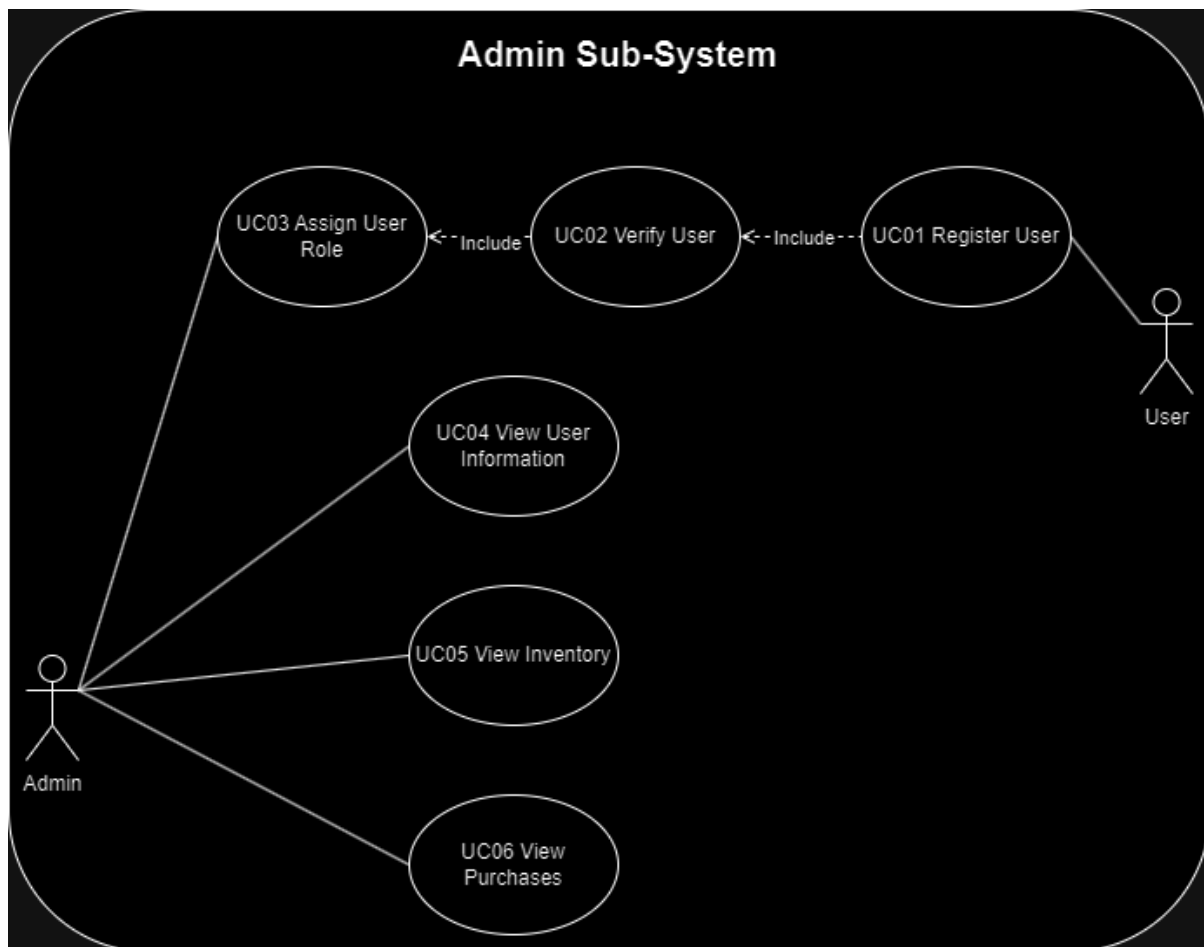
Topic	Description
User	Register
Customer	Request Replacement Fridge
	Report Faults
	Check Fault Status
Admin	Verify User
	Assign User Role
	View User Information
	View Inventory
	View Purchases
Technician	Register
	View Faults
	Schedule Appointment
	Notify Customer
	Diagnose Issue
	Process Fault Report
Inventory Liaison	Manage Supplier
	View Purchase Request
	Process Purchase Request
	Create Delivery Note
Purchasing Manager	Manage Supplier
	View Purchase Request
	Process Purchase Request
	Request Quotation
	View Quotations
	Process Quotation
	Create Purchase Order
Customer Liaison	Manage Customer Info
	Allocate Fridge
	View Fridge
Inventory Liaison	Add Fridge
	Remove Fridge

	View Inventory
Purchasing Manager	View Inventory
	Purchasing Fridge
	Track Fridge Delivery

Communication Scope

Topic	Decription
Communication	We will be using Microsoft Teams for online meetings. We will be using Whatsapp for basic information sharing.

Admin Sub-System



Functional Requirements

UC01 Register User

Purpose – The user enters their information to get registered to the system.

Input – Username, Password, Surname, FirstName, Gender, Email, Contact Number, IDNumber, AddressLine1, AddressLine2, Suburb, City, PostalCode.

Process

- Fill out user information.
- Wait for the Admin to verify user.

Output – User is registered to the system.

UC02 Verify User

Purpose – To verify the user.

Input – User registering.

Process

- Check if the user's information is valid.

Output – User is registered to the system.

UC03 Assign User Role

Purpose – To assign the user to the correct role.

Input – User is verified.

Process

- Admin adds the UserID to the correct role table.

Output – User is assigned to the correct role table.

UC03 View User Information

Purpose – View a user's information.

Input – Selected a user.

Process

- Gets the information for the user.
- Formats the information into a readable form.

Output – View of the user's information.

UC04 View Inventory

Purpose – View inventory.

Input – None.

Process

- Gets the information for all the inventory items like fridges.
- Formats the information into a readable form.

Output – View of the inventory.

UC05 View Purchases

Purpose – View all the purchases, current and old.

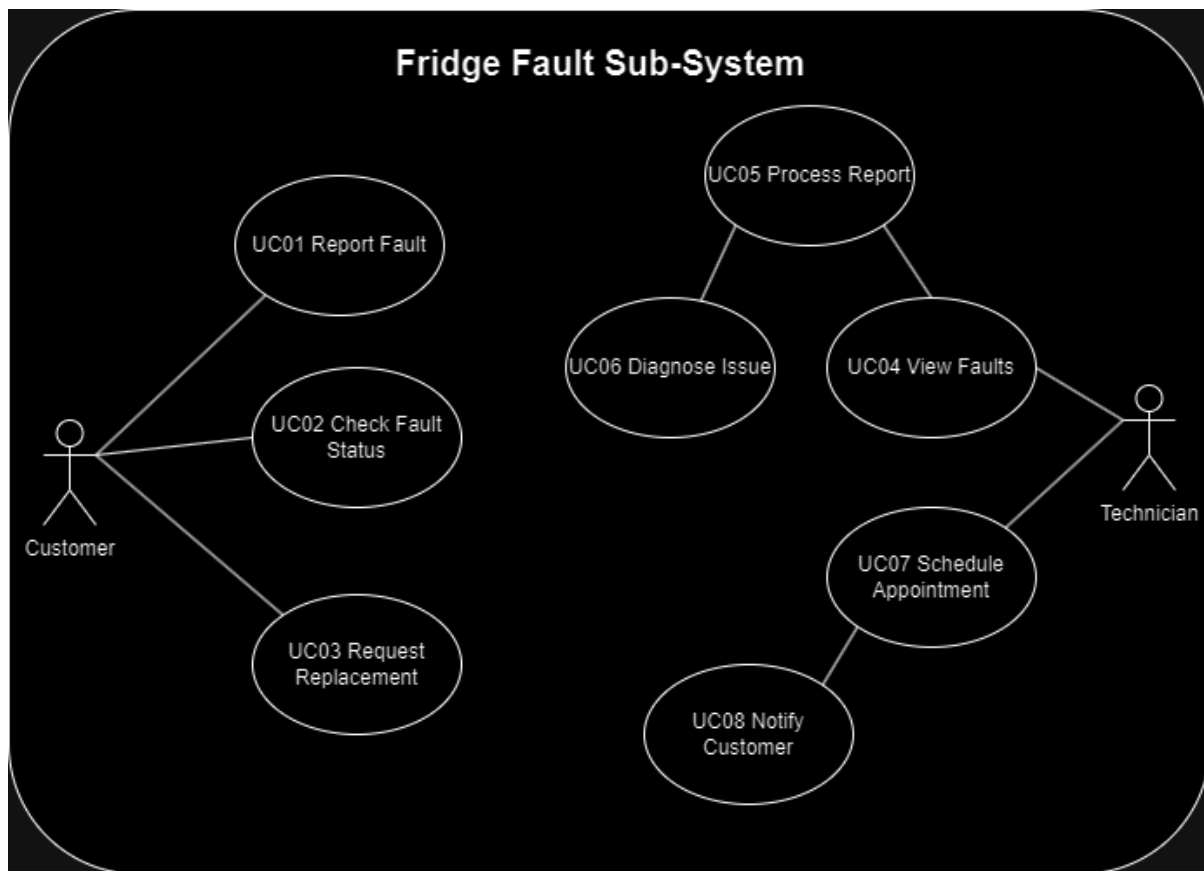
Input – None.

Process

- Gets the information for all the purchasing history.
- Formats the information into a readable form.

Output – View of all the purchases made.

Fridge Fault Sub-System



Functional Requirements

UC01 Report Fault

Purpose – To create a fault report for the customer to clearly inform the technician of the fault.

Input – Information about the fault.

Process

- Fill out the form.
- Store the information.

Output – Information about the fault is stored.

UC02 Check Fault Status

Purpose – To view the status of the fault process of their fridge.

Input – None.

Process

- Gets the information of the fault progress report.
- Shows the information in a readable format.

Output – Information about the fault status is shown to the customer.

UC03 Request Replacement

Purpose – To request for a replacement fridge.

Input – Enter the details for a replacement.

Process

- Checks if the customer is eligible for a replacement.
- Checks if there is an available fridge.

Output – The customer will be updated on the replacement.

UC04 View Faults

Purpose – To show a list of all faults that are related to the technician.

Input – None.

Process

- Checks all the faults that are related to the technician.
- Makes a list of the faults related to the technician.

Output – Shows a list of the faults related to the technician.

UC05 Process Report

Purpose – To view the report the customer made to find a reason for the fault.

Input – Select a fault.

Process

- Gets the report information.
- Format the information into a readable state.

Output – Shows the information of the report for the technician to view and process.

UC06 Diagnose Issue

Purpose – To find the reason for the fault and store the information.

Input – None.

Process

- Gets the diagnoses from the technician.
- Stores the diagnosis.

Output – The diagnosis for the fault is stored in the system.

UC07 Schedule Appointment

Purpose – Schedule an appointment with a customer.

Input – Select a customer.

Process

- Enter details for appointment.

Output – Creates an appointment.

UC08 Notify Customer

Purpose – To notify the customer of the upcoming appointment.

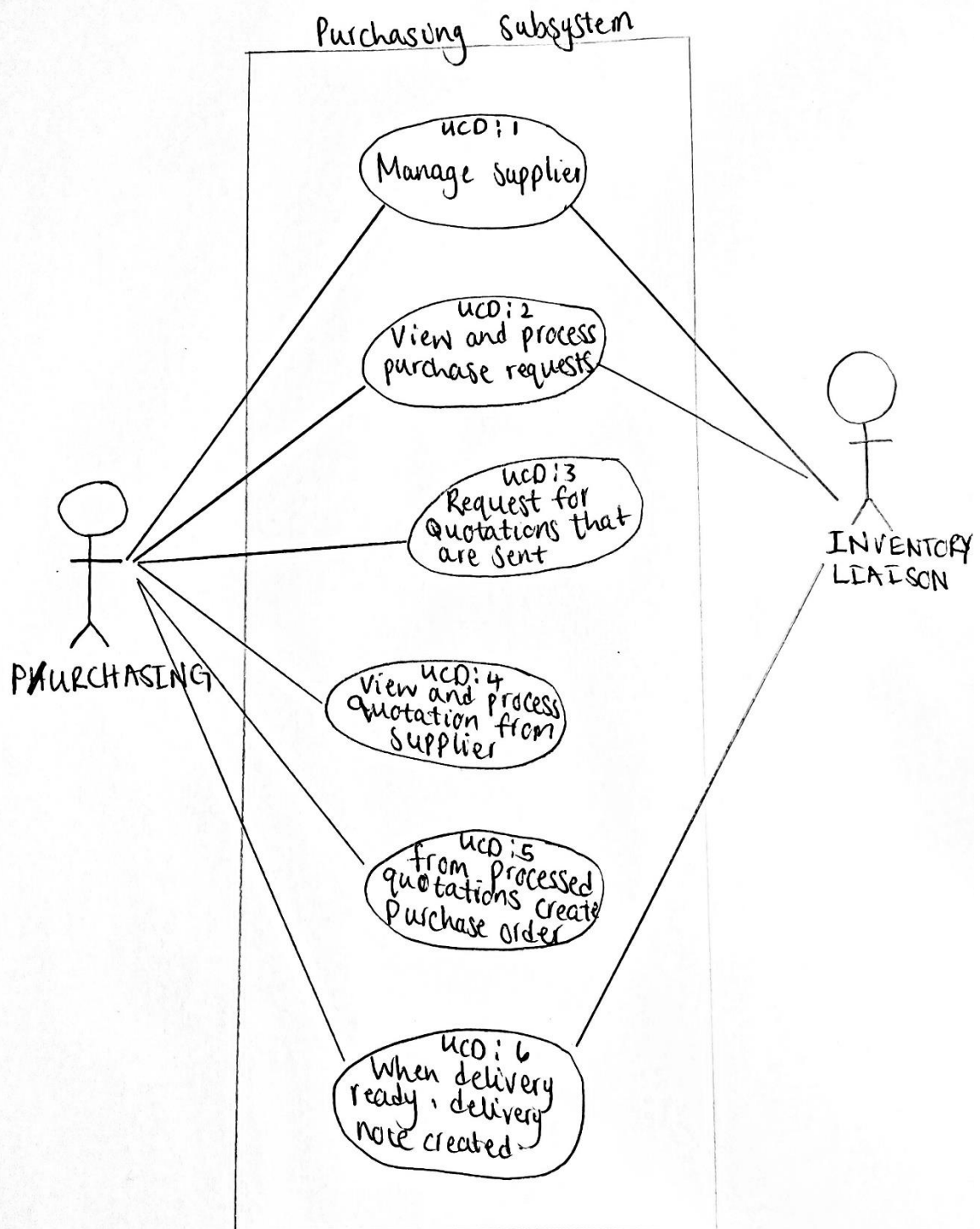
Input – Technician scheduling an appointment.

Process

- Creates an email with appointment information.

Output – Sends the email to the customer to notify them.

PURCHASING SUBSYSTEM



UCD1
PURPOSE: To add a new supplier to the system
PROCESS: Add contact details, products, service offered -Be able to deactivate or delete supplier when necessary
OUTPUT: Supplier registered

UCD2
PURPOSE: Obtaining request handling
PROCESS: Should allow the inventory liaison to submit purchase requests -Manager should be able to view pending purchase requests -Manager should be able to approve or reject purchase requests
OUTPUT: Order is placed successfully

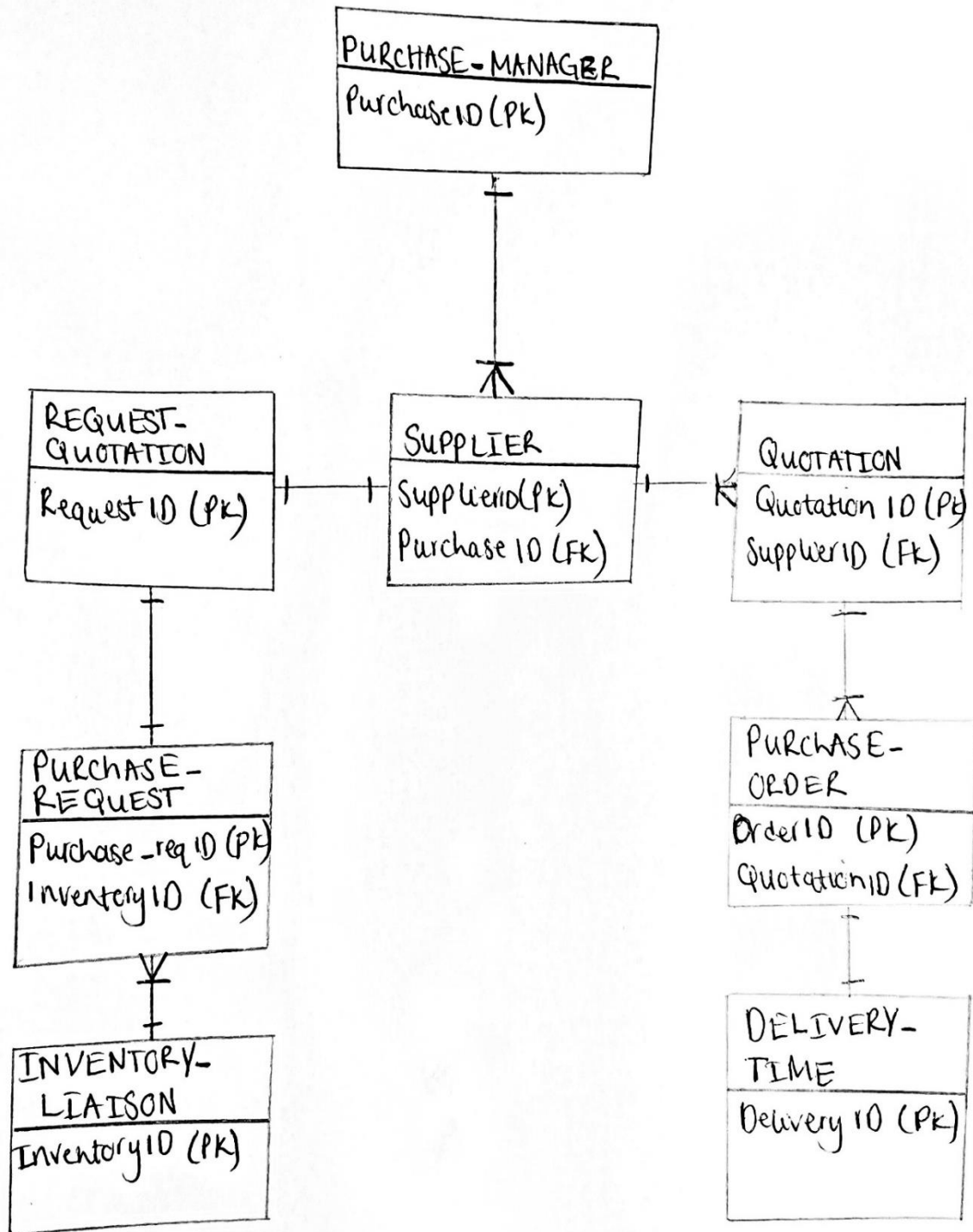
UCD3
PURPOSE: Should generate RFQ automatically
PROCESS – There should include products/services, quantities, and delivery
OUTPUT: all approved purchase request are shown

UCD4
PURPOSE: Store quotations are received
PROCESS- view and compare quotation. -Select the best quotation and mark is accepted
OUTPUT: All quotations are processed

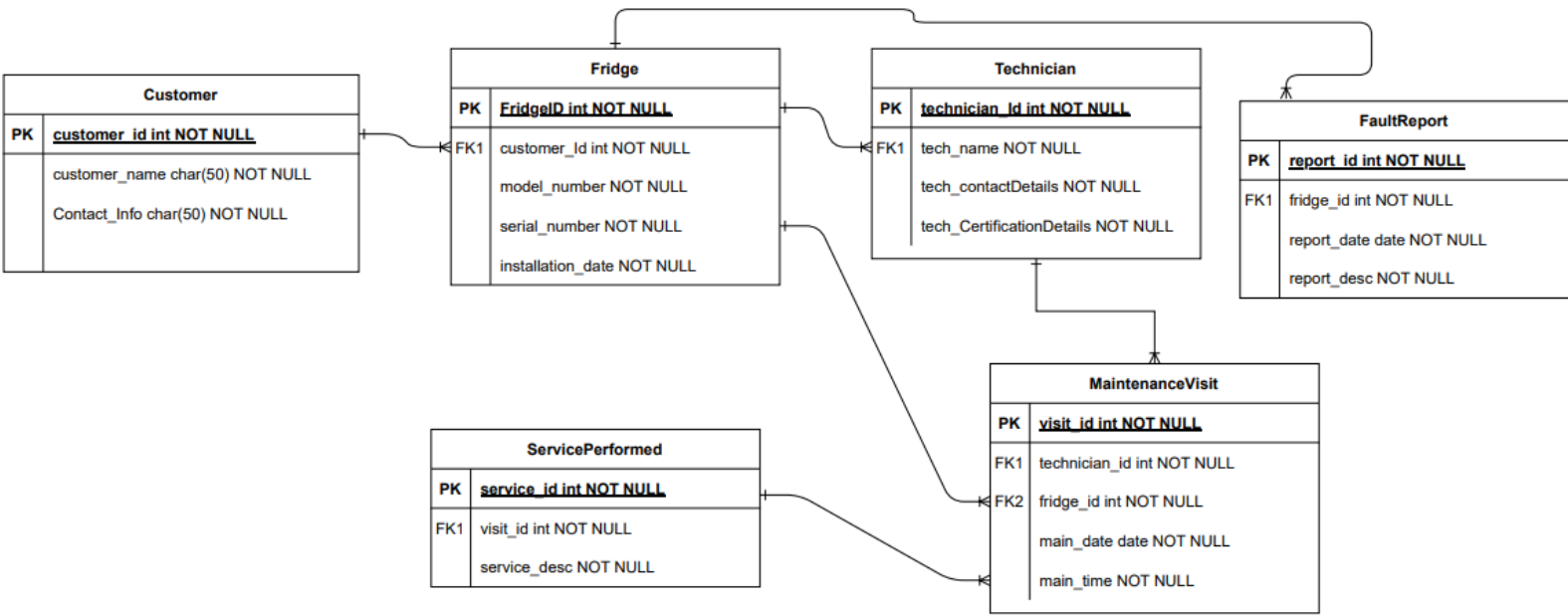
UCD5
PURPOSE: Generate purchase orders based on accepted order
PROCESS: Orders should have supplier information, product ordered, price, and delivery instructions
OUTPUT : Purchase orders are created

UCD6
PURPOSE: Generate delivery notes
PROCESS: Automatically generate a delivery note when an order is processed and ready -Delivery notes should include order number, items bought, delivery date, time
OUTPUT :Delivered goods

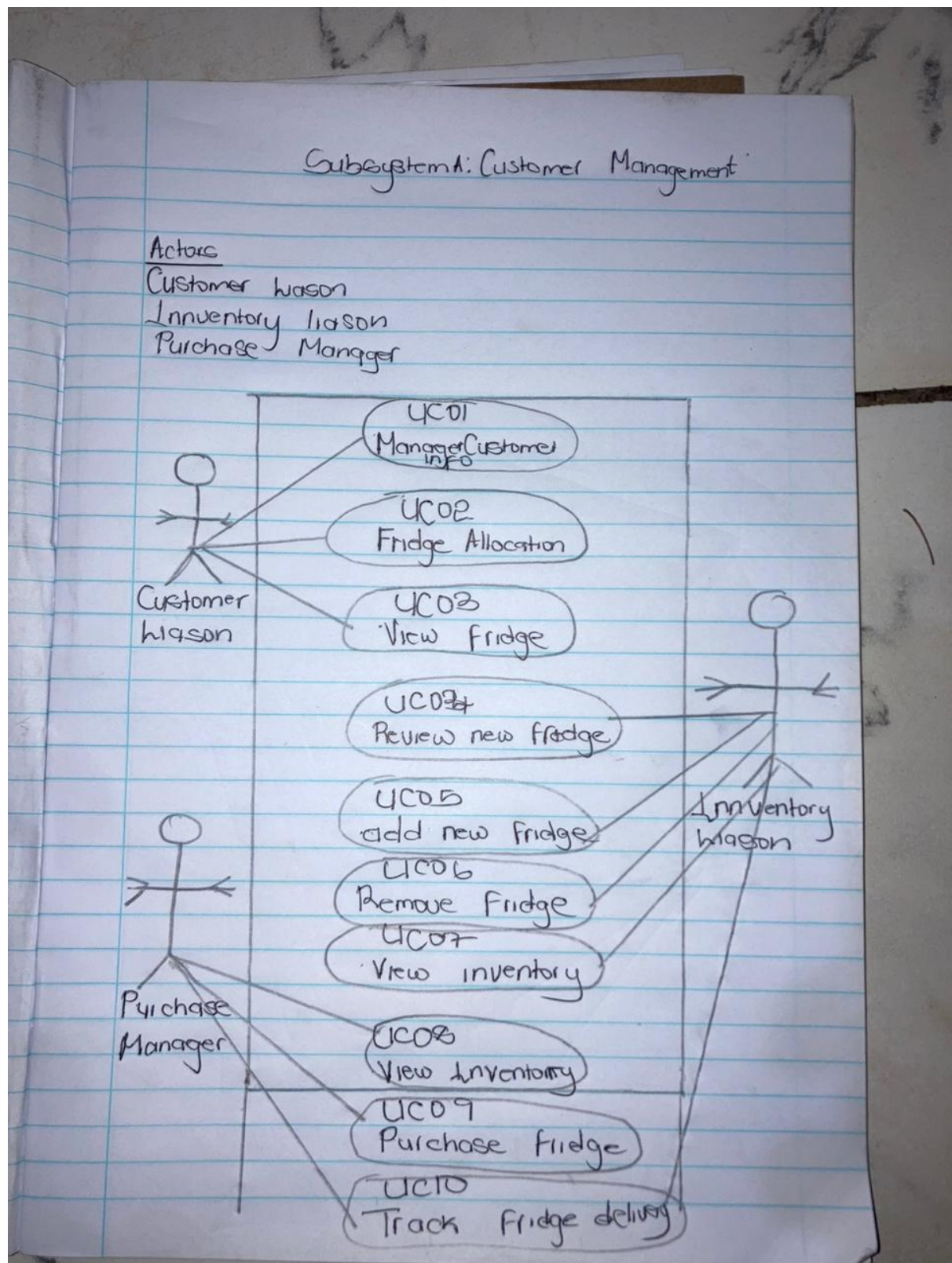
Physical ERD



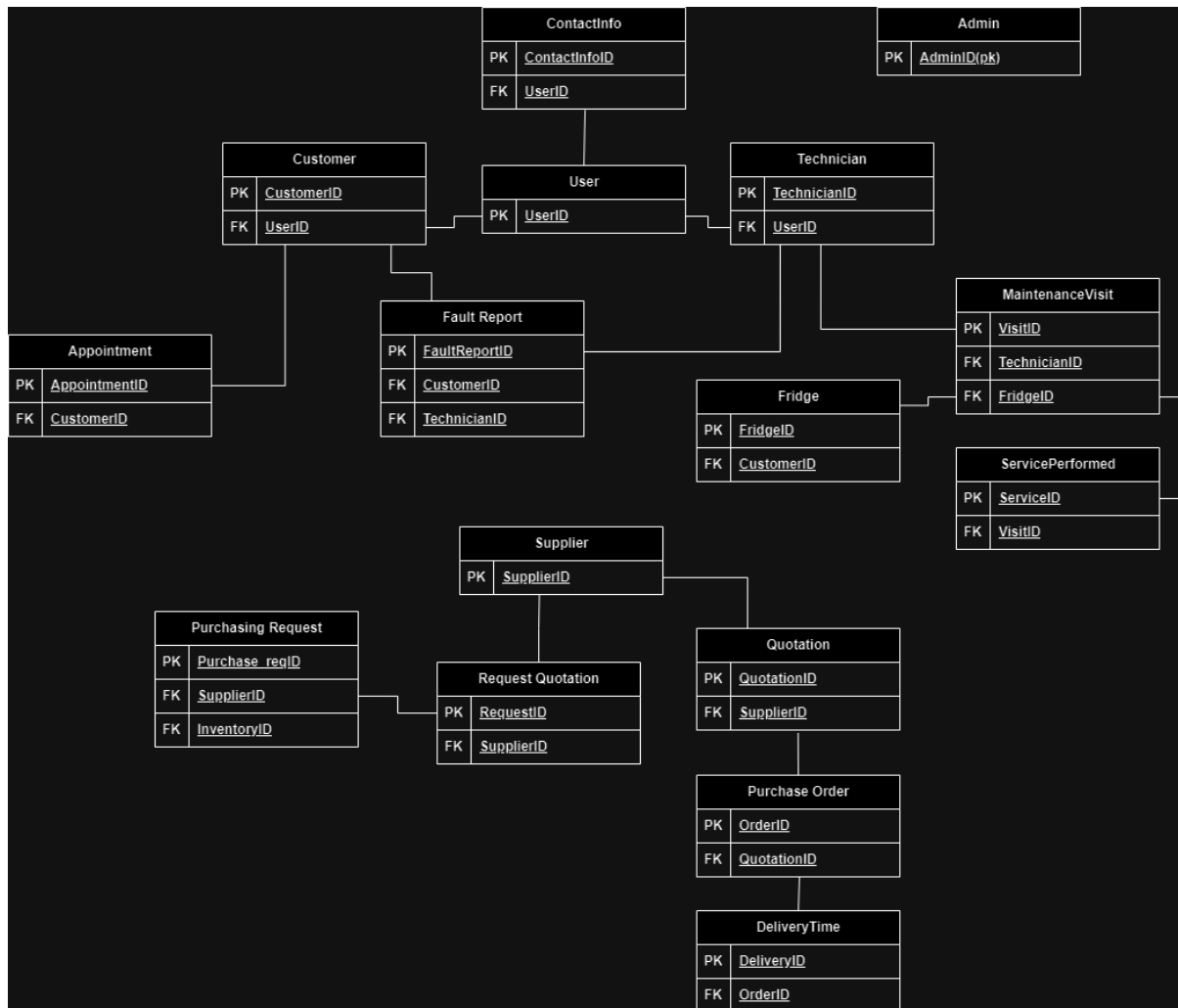
Fridge Maintenance Sub-System



Customer Management Sub-System



Full Physical ERD



Data Dictionary

Entity	Attributes
Supplier	SupplierID(pk) SupplierName purchaseID(fk) ContactInfoID(fk)
Purchase request	Purchase_reqID(pk) SupplierID(fk) status InventoryID(fk)
Quotation	QuotationID(pk) supplierID(fk) quotedPrice validperiod quotePrice
Purchase Order	OrderID(pk) quotationId(fk) orderDate OrderStatus Estimated delivery
DeliveryTime	DeliveryID(pk) OrderID(fk) deliveryDate received quantity date received
Request quotation	RequestID(pk) SupplierID(fk) Total amount Invoice date
User	UserID(pk) Username Password Surname FirstName Gender
ContactInfo	ContactInfoID(pk) UserID(fk) Email ContactNo IDNumber AddressLine1 AddressLine2 Suburb City PostalCode
Customer	CustomerID(pk) UserID(fk)
Technician	TechnicianID(pk) UserID(fk)

MaintenanceVisit	VisitID(pk) TechnicianID(fk) FridgeID(fk) Date Time
Fridge	FridgeID(pk) CustomerID(fk) ModelNumber SerialNumber InstallationDate
ServicePerformed	ServiceID(pk) VisitID(fk) ServiceDescription
Appointment	AppointmentID(pk) CustomerID(fk) Date Time
Fault Report	FaultReportID(pk) CustomerID(fk) Description TechnicianID(fk) TechnicianReport Date