

DEPARTMENT OF INFORMATION SYSTEMS
SYSTEMS DESIGN & DEVELOPMENT



SYSTEMS SPECIFICATION FOR [PROJECT NAME]

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1. INTRODUCTION

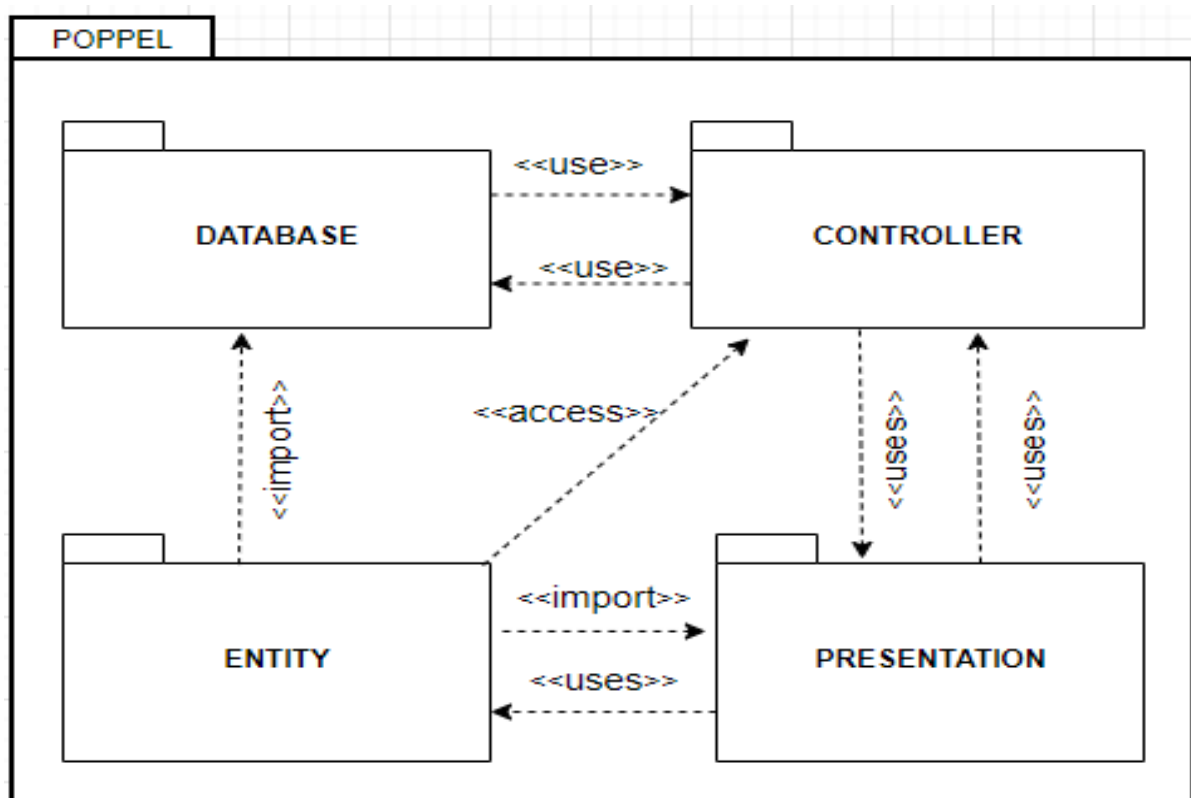
1.1. Overview of Specification

The document has subheadings that are arranged in a chronological order in which they occur. The chronological of these subheadings is demonstrated by showing what happened first, what went on next, what came about in the succeeding occurrences, and until what took place last.

This project comes from a Poppel business company that manufacturer and import confectionary and soft drinks in the Western Cape. The company have been in demand lately, hence getting a lot of customers and customers' complaints. They want solution to that. So previously we started by the business case analysis for Poppel to evaluate the benefit, cost and risk of alternative options and provides a rationale for the preferred solution. We then did the User Requirement Specification (URS) to describes the business needs for what users require from the system. Now we are left with implementing system functionality solution to the Poppel business company to solve the problem. And this is the purpose of this project. Implementing system functionality solution will require us to revise the methodology approach to understand how the system should be implemented be implemented along with justifications for the Poppel business. We will also revise all the diagrams (such as system sequence diagrams and use case diagrams) to have a good understanding of how the user will interact with the system. By doing so, that will ensure that the system functionality provides a good solution to the business and that it meets the user requirements (by doing all the functionalities that are required).

1.2. Context & Scope of System Specification

This project is about Poppel business company that manufacturer and import confectionary and soft drinks in the Western Cape. Poppel was established by Angus McClaren and Bertus van Heerden in 2003. In the past 5 years they have bought a struggling soft drink manufacturing company and they have signed a deal to create a range of branded products for one of the major retail chains. Those two are their greatest achievements so far. The company products have been in demand lately, hence they are getting a lot of customers and customers' complaints. They believed there is a room for improvement. So is the reason the project. The agreed solution was to make an automated system that will manage customer registration online and make order online. The main objective was to allow the customer to register and create order themselves online, have accounting package on the system for stock management and price update for items and total price for customer during ordering and the system must allow online order process which include order entry, cancel order, picking, adjustment and dispatch. Lastly system generating report statement for stakeholder. By this data capture system will be fast and efficient for business.



The database and the controller make use of each other. The data base imports entity, and the entity has access to controller. Entity make use of the presentation. The presentation imports entity. Presentation and controller make use of each other.

1.3. Design Assumptions & Constraints

The trade-off is a situation that involves losing one quality, aspect or amount of something in return for gaining another quality, aspect or amount.

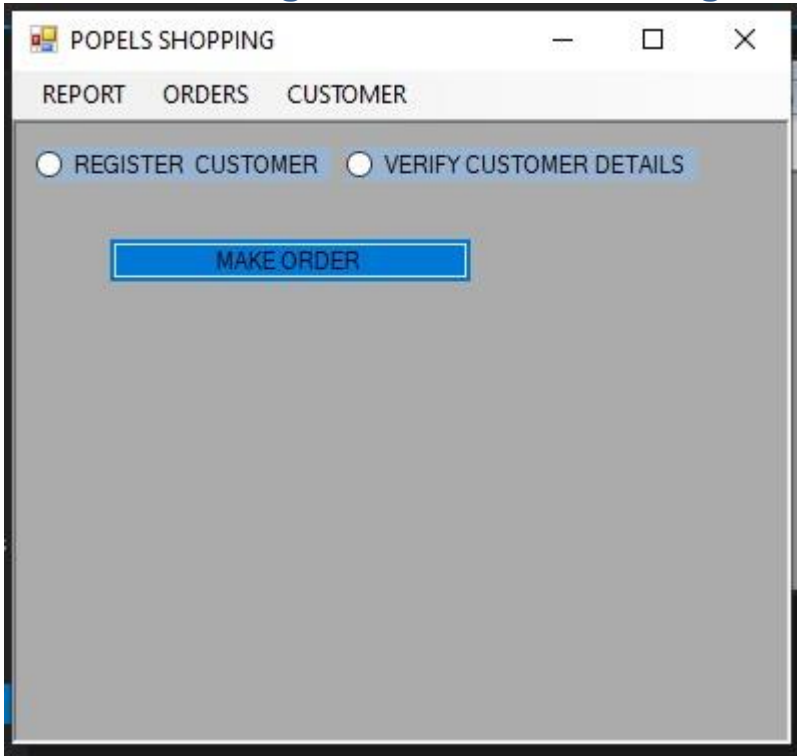
When we are Designing the automated system, we must look to different alternatives such as we could have borrowed/hired the machine, but we decided to build the machine than borrowing it. Hiring the machine would be expensive and as a company it's good to own your own machine. We also have alternatives such as requirements, preferences, objectives, recommendations. User requirements are the most important. Both software and the hardware are important

Limitations would be internal or external factors, for example, resources, suppliers, environmental, legislative ...etc.

We have assumed that all our customers who place order online are smartphone users. We have also assumed that the company will afford to pay all the needed resources.

2. USER INTERFACE & DIALOGUE DESIGN

2.1. Wireframe Diagram or Windows Navigation Document

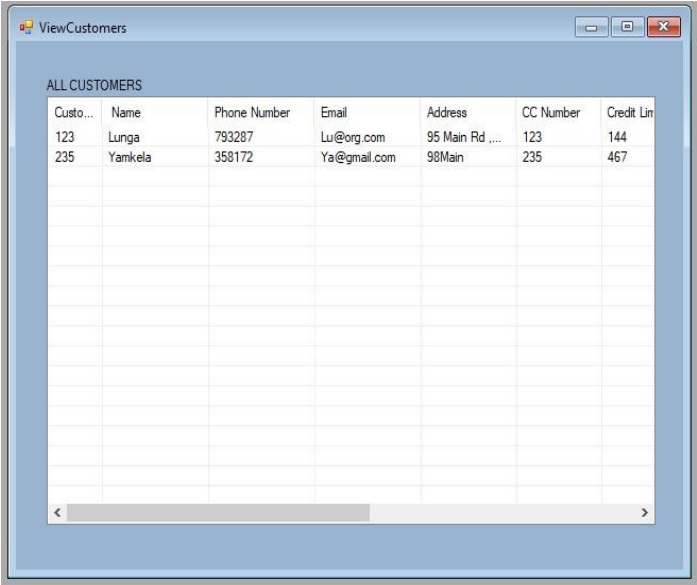
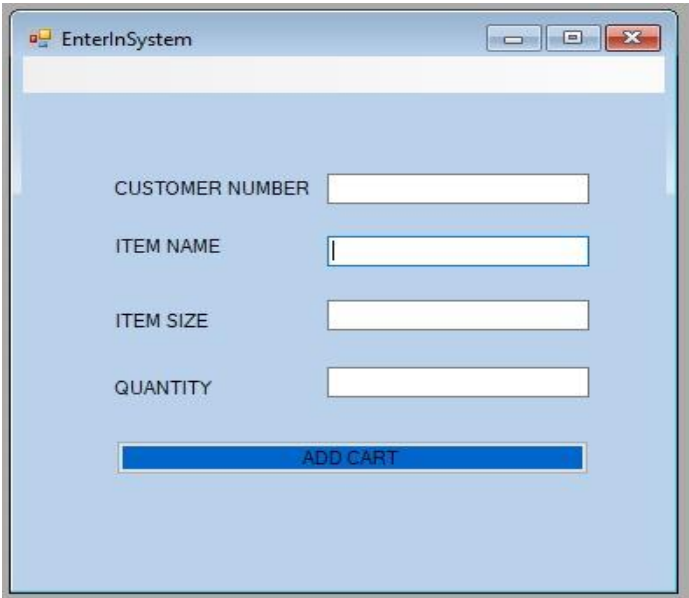
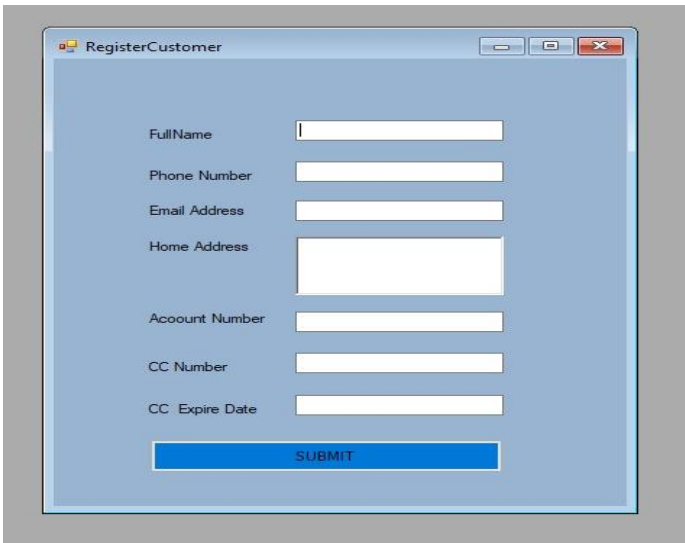
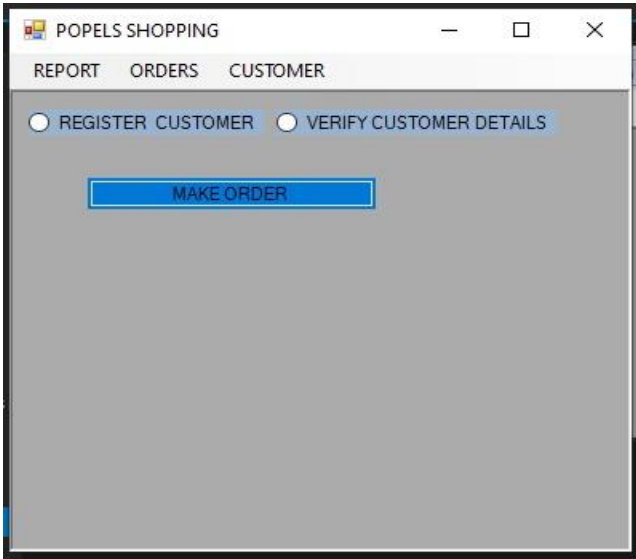


The transitions of this window are: When you click at register customer button it will open a window for registration purpose(That is to register the customer).When you click to verify customer details button the system will open a window to enter the customer information so that we check if the customer already exist into the system. Make Order button is registered customers to make order

2.2. Screen Standards

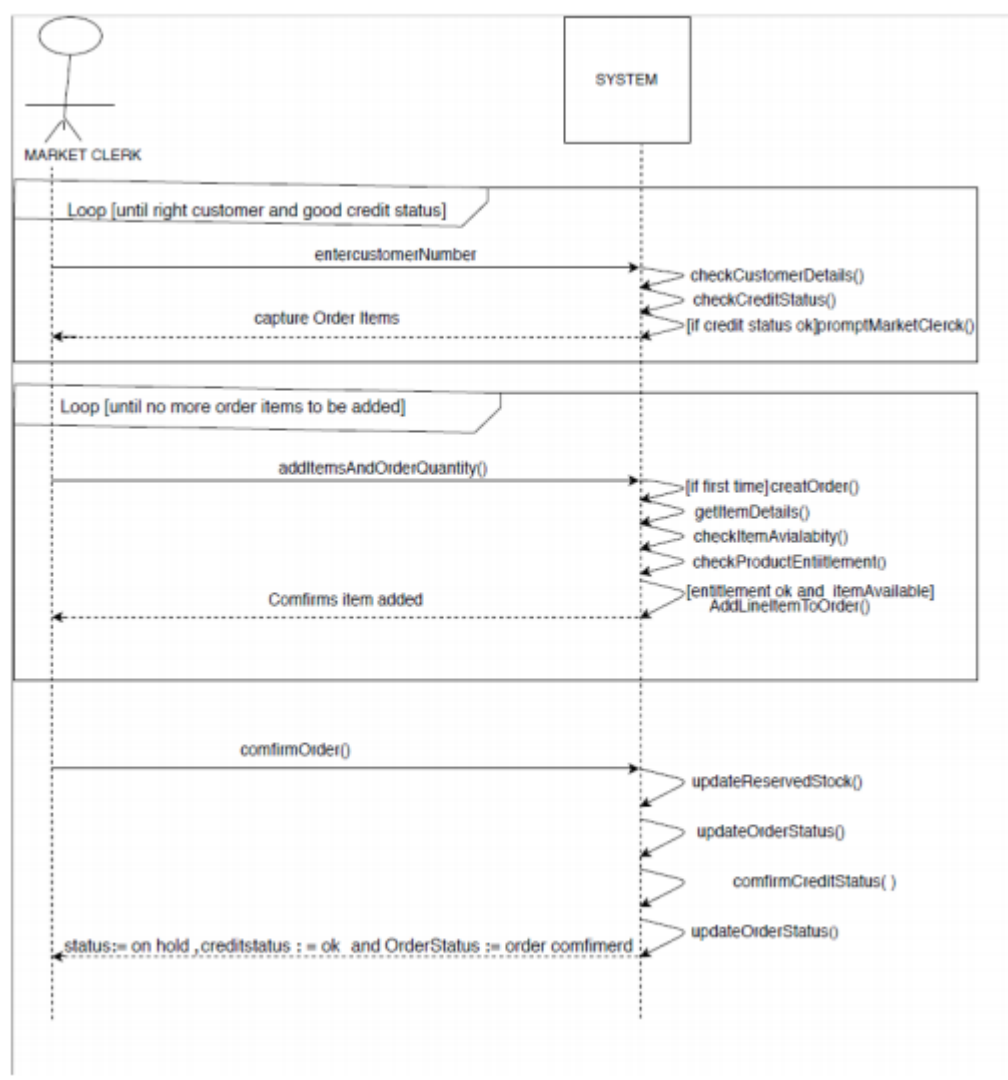
We have used different colors and different fonts for the interface to make it more readable(clear) and attract users attention (interest). The cancel button is red because normally red in interfaces is used for canceling or warning. Different fonts are used to make the button clear.

2.3. Detailed Screen Layout

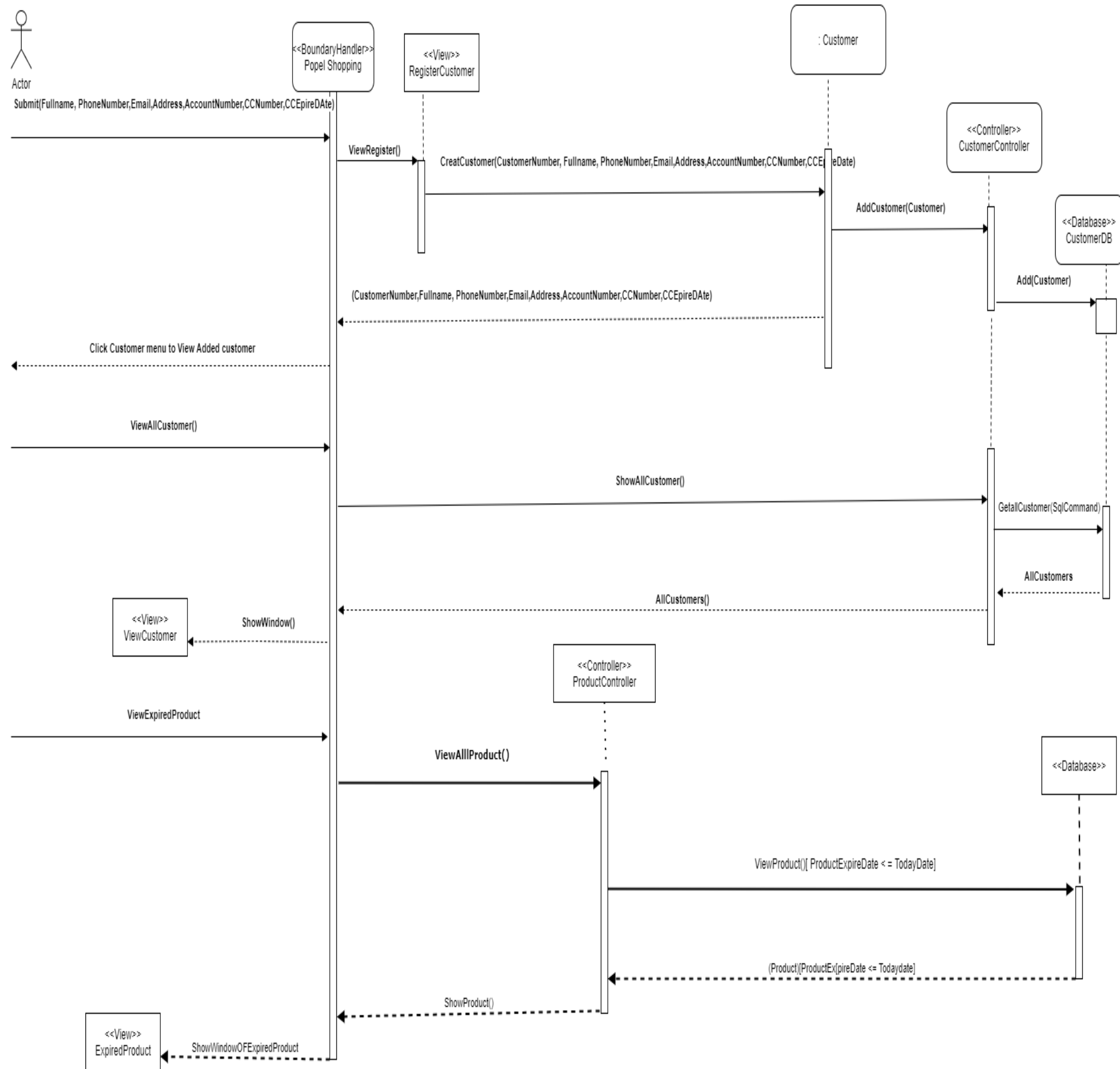


3. DESIGN SEQUENCE DIAGRAMS

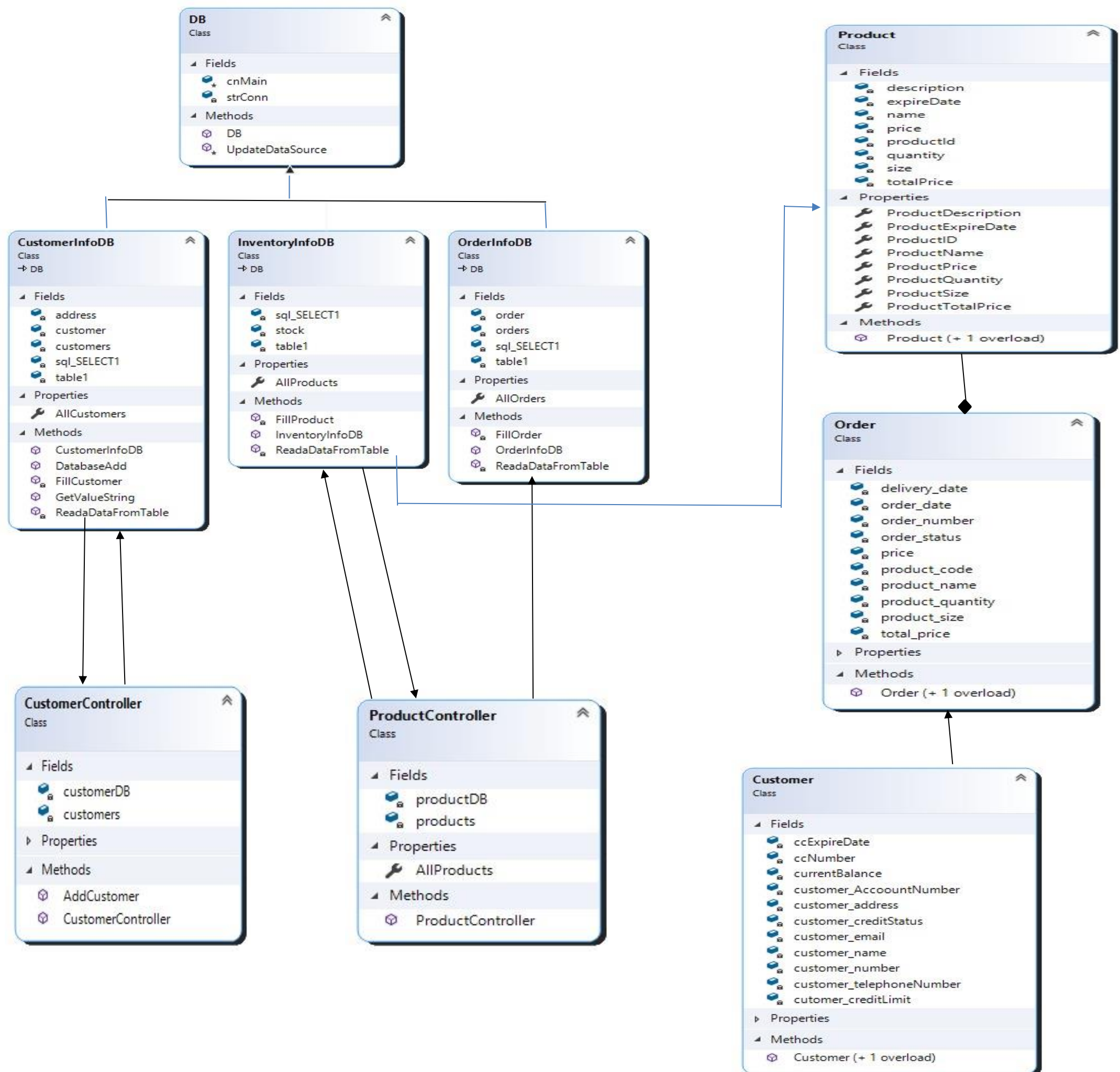
3.1. Make Order



3.2. Add customer, view all customers & View expired product diagram



4. DESIGN CLASS DIAGRAMS



5. ENTITY RELATIONSHIP DIAGRAM

6. REPORT DESIGN

6.1. Report 1

The main purpose of the reports is to communicate the information which has been compiled as a result of research and analysis of data and of issues. A report can be done while you are still progressing with the project to reassure clients and supervisors that you are making progress, that the project is going smoothly, and that it will be completed by the expected date or to give reasons why any of those might not be the case. The report is generated by the person who is doing the project.

Detailed Output Requirements

Report type & ID: operational report ORPT01

Report Objectives: Produce a daily report to identify all expired products in inventory.

Audience: Company executive including managers and shareholders.

Content: The report must show all the expired products.

Layout: columns

Selection: Expired products will be selected in the database inventory table using SQL statement/command.

Sequence: ascending order

Comparison: SELECT * FROM Inventory WHERE Productdate < TodayDate OR Productdate = TodayDate;

Grouping / Summarisation: Expired products must be grouped according to their expiry date.

Media to be used: electronic

Frequency, Timing, Delivery: The report will be generated and made available day to day

Distribution: The report be generated by the automated system of Poppel company.

Privacy, security & integrity requirements: The report should not be accessible by anyone; it should be only accessible who are authorized to e.g. managers.

Report Layout

ReportID	Date	NoOfExpPrdcts	ExpPrdctCatagory	ExpPrdctName	ExpPrdctCode
ORPT01	11/9/2020	7	soft drink	Coca-Cola	12564893746cd
				Pepsi Co	65788856955cd
				Keurig Dr Pepper	75689458547cd
				Hamoud Boualem	86564893746cd
			confectionary	The Chocolate Queen	81824893745cd
				Candy Crate	85824893525cd
				Bubblegum Babes	18565652516cd

7. INPUT-OUTPUT STANDARDS & CONTROLS

7.1. Formalised Outputs:

The system will display the following formalized form outputs on the screen:

- Home window screen output where the user chooses whether he/she is a new customer or registered customer.
- Register customer window screen output including the window to add address and account of the customer.
- Picking List window screen output, orders picked a viewed here.

7.2. Built-In Validation to Ensure Requirements are Met

.NET will be used for user input to be able to check that the information users enter is valid. NET provides a set of validation controls that provide an easy-to-use but powerful way to check for errors and, if necessary, display messages to the user. NET provides the following validation controls: RequiredFieldValidator (Makes an input control a required field), RangeValidator (Checks that the user enters a value that falls between two values), CompareValidator (Compares the value of one input control to the value of another input control or to a fixed value), etc.

7.3. Input Integrity Controls

The Marketing Clerk enters the customer number into the system, the system checks the customer's details and current credit status.

7.4. Output Integrity Controls

The Marketing Clerk display the expired items on the system and print the data.

8. IMPLEMENTATION PLAN

our Implementation plan to be done from the design stage to the final delivery of this phase of the system to users are;

Build, test, integrate system components and deploy the solution

1st step: We will fist program the software using visual studio,

2nd step: We will then do the unit testing of the software, where we test individual method, class, or component before we integrated them with other software. Software components must perform to the defined requirements and specifications when tested in isolation.

3rd step: The next step that will be done is to do the Integration testing, where we test the behavior of a group of methods, classes, or functions of our program. Software components that perform correctly in isolation must also perform correctly when executed in combination with other components. They must communicate correctly with other components in the system.

4th step: We will now do the system test where we do an integration test of an entire system or independent subsystem. A system or subsystem must meet both functional and non-functional requirements.

5th step: After we have integrated the system, we will then do performance test. This is an integration and usability test that determines whether a system or subsystem can meet time-based performance criteria.

6th step: This is a User acceptance test; this is a system test performed to determine whether the system fulfills user requirements

7th step: The last steps will be building training materials and conduct training, then configure and set up a production environment, then deployed the solution to users.

9. TEST PLAN

Test Environment

Both software and hardware will be required for the functionality solution of the system.

minimum hardware requirements are the minimum physical computer resources such as memory, wireless networking, processors etc..., required for the functionality of the system.

Minimum hardware requirements are the minimum software resource requirements and prerequisites that need to be installed on a computer to provide optimal functioning of an application such as office suite, computer security, web browsers etc.

Test Items

During our testing phase we will test all the functions, methods and the classes of the program, this is to detect any software failures so that defects may be discovered and corrected.

Test Approaches

We will perform the following testing types:

Unit testing -To find the problem early in a development cycle we will perform a testing individual units of source code (which is the unit testing).The goal of unit testing is to separate each part of the program and show that the individual parts are correct. This will help find changes that may break a design contract.

Integration testing- This is the phase in software testing in which individual software modules are combined and tested as a group. We will basically test the behavior of a group of methods, classes, or functions of our program. This will be done After the unit testing.

System testing- After integration testing, we will now do a testing that will validates the complete and fully integrated software product to evaluate the end-to-end system specification which is the system testing. This is an integration test of an entire system or independent subsystem. A system or subsystem must meet both functional and non-functional requirements.

Beta Testing-We will do beta testing to test the complete system in the environment in which it will actually be used (The system will be implemented to Poppels Head office and be tested by testers external).

User acceptance testing- is a system test performed to determine whether the system fulfills user requirements. This is a type of testing that will be done by users/customers to determine application/software needs and business processes. This is to ensure that the software must not only operate correctly. but must also satisfy the business and meet user needs.

Problem Tracking (Test Cases)

ID	Test Scenario	Steps to Perform / User action.	Test Data	Expected Results: System behavior or state.	Result - Comments
1.	Find a product	Enter a valid product code	Product Code (Item Code): ABSDE (invalid)	Error message represented by the system shows that the product does not exist.	Enter a valid product Code
2.	Order capture for invalid customer ID	To start order creation, enter Customer Id	UGGHD (invalid ID)	Error message represented by the system shows that the customer does not exist.	The customer must have a valid Customer ID to proceed with the order creation
3.	Order capture for customers in an unacceptable credit status	Credit balance status	Credit status: (unacceptable)	customers with unacceptable credit status are marked as on Hold by the system	The customer must have a good credit status to proceed

1. Trace the error occur when the user wants to find a product but enter an invalid code of the product. The results suggest that the user should enter a Valid product code
2. Trace the errors that occur when customer wants to place order, but they enter an invalid ID. The results/comment suggest how to solve the issue; The customer should enter a valid customer ID
3. Trace error when order capture for customers in an unacceptable credit status. The customer must have a good credit status to proceed

Test Schedule

Popels Test Schedule			
SA CRM	Duration	Start Date	End Date
Poppels External Subsystem	8	1-Sep-20	8-Sep-20
Unit testing	6	1-Sep-20	6-Sep-20
Integration Testing	2	7-Sep-20	8-Sep-20
Online Subsystem	10	9-Sep-20	18-Sep-20
Unit testing	7	9-Sep-20	15-Sep-20
Integration Testing	3	16-Sep-20	18-Sep-20
Poppels Internal Subsystem	12	19-Sep-20	30-Sep-20
Unit testing	8	19-Sep-20	26-Sep-20
Integration testing	4	27-Sep-20	30-Sep-20
About Subsystem	13	1-Oct-20	13-Oct-20
Unit testing	9	1-Oct-20	9-Oct-20
Integration Testing	4	10-Oct-20	13-Oct-20
Club Sub system	6	14-Oct-20	19-Oct-20
Unit testing	4	14-Oct-20	17-Oct-20
Integration Testing	2	18-Oct-20	19-Oct-20
Report and Queries	12	20-Oct-20	31-Oct-20
Unit Testing	8	20-Oct-20	27-Oct-20
Integration Testing	4	28-Oct-20	31-Oct-20
System Testing	14	1-Nov-20	14-Nov-20
Beta Testing	10	1-Nov-20	10-Nov-20
User Acceptance Testing	4	11-Nov-20	14-Nov-20