Solution Direction and Design- Group Task 04P

Team Name: Team Grotle

Tutorial Class: Tue 12:30 EN310

Team Members:

Tutor: Man Lau

Group members	Student ID	Comments (Agree, disagree with final outcome, and Why)
Hamish	103607352	I'm satisfied with the end scope submitted. I feel that it's an excellent summation of all our ideas and inputs. It's concise but not to the point where the scope described is vague. I also think that it addresses what's required by the background. 10/10
Dilni	103616345	I am satisfied with the work which was completed for task 4. We all collectively shared and discussed ideas on how to complete the task. Which ultimately led to a satisfactory outcome where all sections of the task were complete. An example of this would be the completion of the high level diagram. Where we shared our own diagram and discussed and researched best ways to complete the diagram. Some members went to get extra feedback from the convenur as well to adi the completion which helped a lot. Therefore, I agree and am happy with the outcome.
Kamar	103607585	I'm happy and satisfied with the end result of task 4. The work completed was done with the help and contribution of all team member's ideas and efforts. Each member not only did their own share of work which we collectively assigned but also helped to improve and offer suggestions for other teammates' work.
Melanie	103489466	I agree with the final outcome because all group members have made their contributions and reviewed the entire document together.
Justin	102589705	I am satisfied with the way that task 04p has turned out. I believe that each team member has put in their best effort in the completion of this task. Each part was broken down, with key comments which we felt should be implemented into each question. Additionally, each question was checked by others creating a cohesive piece of work. Again, I am completely satisfied with the result of the task.
Tevy	103139978	I agree with this outcome, because we had discussed the whole picture of this task, then divided each part to contribute equally.
Cormac	102581060	I am very happy with the outcome of this task and the decisions of the team. I feel that everyone did great work to bring this document to completion and that the ideas expressed best represent our collective vision for the project going forward.

Solution Directions

I. Web Based Application

Another possible solution is a web application. This website will be able to be accessed both onsite at the grocery store and remotely. This application would work similarly to the desktop application, in that it would replace the current pencil and paper system in place, feature a database to store member's personal details, as well as a way to convert said tables into a downloadable CSV file.

The main benefit of a system like this would be its accessibility, as you'd be able to access it from almost anywhere. This would mean that set–up would be very minimal, as you'd only need to access the website from a computer, as opposed to downloading an application. Furthermore, company computers wouldn't be necessary, as administrators would be able to access the site from their own computers. It would also be more cost effective, due to its web based nature. Also, any changes wouldn't require a manual update. This means that changes wouldn't impact upon usage, nor would updates take time downloading once published.

II. Desktop Application

One proposed solution was a desktop application that will be onsite at the Goto Grocery. That will replace the current member and sales record management system. The application is a sales and member record managing software.

Therefore making it easier for the store staff and management to help members keep on top of popular products and sales invoices. As well as increasing efficiency as all data tables are automatically updated when information is added about a customer purchase. This data would be displayed in an interface that would showcase which products are low in stock. Hence generating reports in a spreadsheet format directly after data has compiled which can be accessed in weekly and monthly reports. These reports can be exported into a CSV file.

Additionally, there is an added security element to the software. As records can only be accessed by staff and edited by the management of the grocery store .Whereas a paper-based system can be physically viewed by anyone who has the physical files. As the physical files have a chance of getting lost where the records on the desktop application are available on the store computer.

Solution and problem domains

I. Problem Domain

GotoGro currently has an existing paper-based system which they are currently finding it difficult to manage their members' expectations. With the current system, it is difficult to organize record data causing over or under ordering of products. Additionally, the paper-based method can be slow, difficult to maintain and harder to manage. This directly affects the businesses productivity which can cause a decline in the performance of the organization. With the current system, it can cause dissatisfaction across members as they feel that their needs are not being met which may lead to them switching to another service. Currently, GotoGro are facing a problem within their business operation, the scale of the project and keeping up with the demands and expectations of their members.

II. Solution Domain:

Desktop application

The solution which is being proposed is a record management onsite desktop application. Which ultimately replaces the paper-based system and digitizes it. The new computerized system allows management to edit and view members and sales records. Also, data collected from members and products purchased will be compiled into a spreadsheet report that can be exported into a CSV format. which management can analyse and make educated and informed decisions on product orders, as the reports tell most popular products monthly , weekly. Additionally the inventory of products and popular products to members. Therefore orders can be phrased accordingly. Ultimately leading to improved member experience shopping at GotoGro grocery store.

Web-Based application

Final Choice

The chosen solution is the on-site desktop-only application as it fits the needs of the client the best and has the least amount of overhead. As GotoGro is transitioning from a paper-based system, and all they need is the ability to manage, record and export member sales reports, the on-site desktop application will suit their needs the best. Not only will the desktop application be easier to understand and operate for the GotoGro management, but having the system offline will keep GotoGro from needing to manage setting up and maintaining an internet connection in order to run the software. It is for these reasons an on-site desktop-only application is the solution chosen.

Programming Skills

The following table summarises whether each member has experience in certain programming languages and API:

		Cormac	Dilni	Hamish	Justin	Kamar	Melanie	Tevy
Java Database Connectivity (JDBC)		✗	✗	✗	✓	✗	✓	✗
SQL	Azure	✗	✗	✗	✓	✗	✗	✗
	AWS	✗	✗	✗	✓	✗	✗	✗
	MariaDB	✓	✓	✗	✓	✓	✓	✓
Front-End	HTML	✓	✓	✓	✓	✓	✓	✓
	CSS	✓	✓	✓	✓	✓	✓	✓
	JavaScript	✓	✓	✓	✓	✓	✗	✓
Back-End	Java	✗	✓	✗	✓	✗	✓	✗
	PHP	✓	✓	✓	✗	✓	✓	✓
	Ruby	✓	✓	✓	✓	✓	✗	✗
	Python	✗	✗	✓	✓	✗	✗	✗
Other	C#	✓	✓	✓	✓	✓	✓	✓
	C++	✓	✓	✗	✓	✗	✓	✓

Similar Software/Competitors

Square and Clover are point of sale (POS) systems that can perform similar operations to the proposed software. Both of them have record management capabilities, as well as a report generation feature for analysis purposes.

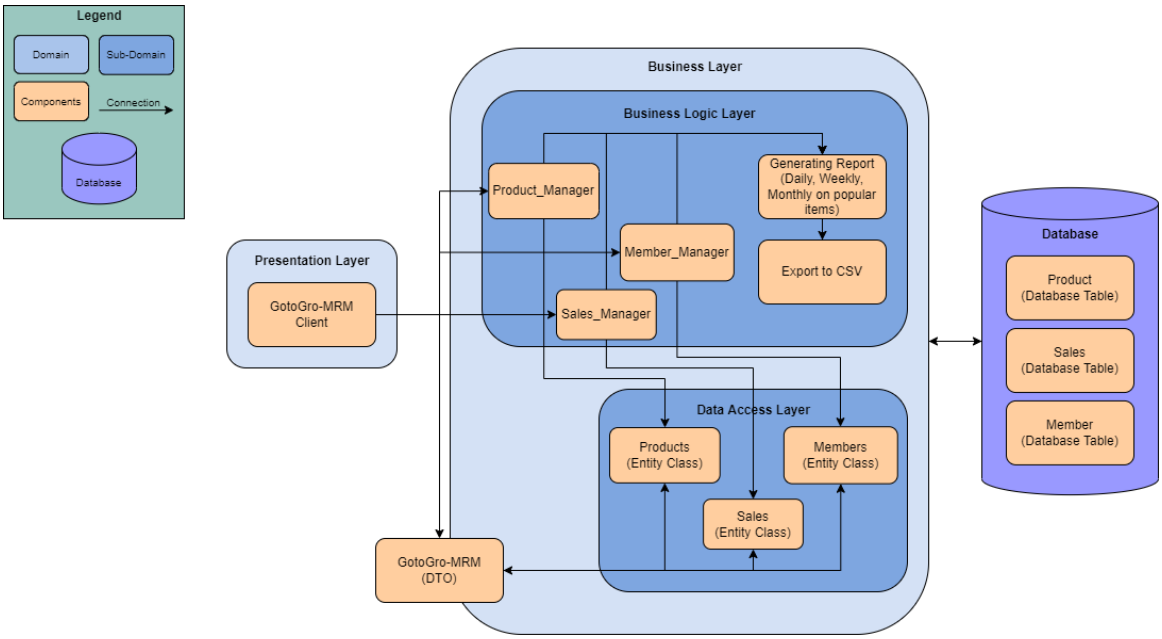
Competitors that are similar to GotoGro would be Costco and Toscarnos. Just like GotoGro, they implement a member-based system in their stores. Thus, we believe that Costco and Toscarnos are also utilizing a system that is similar to the proposed software in order to carry out their daily operations.

Knowledge in the company/business

Our knowledge and interactions with GotoGro and its business model are a new venture for us and we do not possess knowledge about how businesses are run. However, part of our team is familiar with companies that operate under similar business models such as Costco and Toscarnos as well as Woolworths and IGA that operate with a subscription and points system.

Design

High-Level design of the project:



Components

Component	Description	Role and Responsibilities
GotoGro-MRM Client	A new Desktop Application designed for GrotoGro	GotoGro Employee will use this application in order to Manage member records through the database system.

GotoGro-MRM (DTO)	A Data Transfer Object	This is used to carry data between the Business logic layer and Data Access layer.
Sales_Manager	A Sales object in business logic	This object is where employees can add new sales records and manage existing sales records.
Member_Manager	A Members object in business logic	This object is where employees can add new members and manage existing member records.
Product_Manager	A Product object in business logic	This object is where employees keep Product stock records.
Generating Report	A Generating Report object in business logic	This object is used for generating the daily, weekly, and monthly report on popular items. This is where the employee will get the report and analyse which product to be ordered.
Export to CSV	An Exportation object in business logic	This object is used for converting the report into the CSV format.
Products (Entity Class)	A Products Entity Class in Data access layer	This is where it receives parameters from Products_Manager in the Business logic layer, and passes it to Products in the database, and vice versa.
Members (Entity Class)	A Members Entity Class in Data access layer	This is where it receives parameters from Members_Manager in the Business logic layer, and passes it to Products in the database, and vice versa.
Sales (Entity Class)	A Sales Entity Class in Data access layer	This is where it receives parameters from Sales_Manager in the Business logic layer, and passes it to Products in the database, and vice versa.

Products (Database Table)	The Products entity in database system	This is where the data of the Products being stored in the database.
Members (Database Table)	The Members entity in database system	This is where the data of the Members details being stored in the database.
Sales (Database Table)	The Sales entity in database system	This is where the data of the Sales records being stored in the database.