Customer Statement

It is fair to say that technology and the shipment of goods go hand in hand, as todays generation drives for ease and convenience. The business has many customers with unique orders that are flowing through the business in different areas. The owners have a current process in place that makes it very difficult for employees to give the whereabouts of a customer's package. This also leads to many other issues during the delivery process such as when it is going to be delivered, changes in orders, and cancellations. The owners are concerned that by not having proper knowledge on the shipments made, that customers will begin to switch to competitors for consumer needs. While there are numerous automated shipment trackers out there that work; this process can be taken a step forward by implementing more power to the consumers. The system should give more knowledge to the consumer on their products of purchase no matter what time of day. It needs to be a flexible program that can be applied to any consumers electronic because of the variations in smartphones, smart watches, tablets, and laptops. The system should allow the consumer to view quotes of need, orders precise location (including where it has been from start to finish), what teams of employment have worked on it, and see when/why shipments are delayed. This will all be done without the need of interaction from employees for a less complicated/user friendly experience for the consumers.

There are a few assumptions made in order to simplify the system at hand. We assume that the consumer has access to email and an electronic device connected to a network. In addition, it is assumed that no matter the ask of work to be completed, that the quote will always be available to the user.

In order to get the maximum usage out of the system, there will need to be a higher influx of customers. A method to be used is streamlining the new and improved features that give the consumer full access needed to view quotes and shipment locations to perform jobs adequately. In doing so, this will reduce the hassle for customers on their end, increase satisfaction with the business, and therefore increase customer retention. In addition, with the use of this system there will be an attraction for customers because of the ease of use as it pertains to there customer needs. A bonus to the system that could draw more customers in, is the implementation of tracking where a shipment is in accordance to the business teams working on the package.

The website should have an abundance of features that can benefit both customers and the business owner/managers. The website should allow for customers to create personal accounts so that they can store their personal information for future purchases with the idea of having the system be user friendly. The owners/managers will have access to an administrative section of the site in order to set certain variables such as rates on quotes, expediating shipment process, policies, etc. The employees will have their own sperate accounts to handle the day to day operations. Though there is the option of creating a personal account, customers will not be required to create an account but will need a credit card in order to link the shipment to that said customer. The website will add convivence to owners/managers, employees, and customers who will need the service of the business.

Ideally, there will be a mobile application that allows customers to specifically find where their shipment is in accordance with consumer needs. This application will also have the feature of toggling between notifications of the shipments such as: a completion step of one team, shipment location, behind schedule, etc. This will give customer the ease of mind when using the business, creating a smooth user-friendly transaction that will lead to better customer retention.

The system needs to be able to prioritize the quote reports accordingly based on the customers need of date. When an order is received and entered into the system it will be back scheduled based on the customer delivery date or quoted delivery to set an order schedule for the business to follow. The system will allow consumers to view the precise location of the package, along with what team in the business is carrying out that said action. Also, it will track the teams start and completion dates to help maximize efficiency of carrying out orders. The system will also allow users the ability to visually see which orders are behind schedule and the areas that contributed to this delay.

The system will be developed with ease of use for consumers and employees as the main priority. It will need to be intuitive and easy to understand as the business does not have the time to train employees on a unique and comprehensive system. This will also help in drawing new customers in with a simple, yet effective system that gains more retention from the customers. The three main areas of work of the project are: quote/ order entry, quote/ order details, and quote/ order reporting. This idea of quote/ order areas will create simplicity and capture the needed information for that said stage of the business process.

System of Requirements:

- View a prioritized Quote Report based on customer need date
- Back scheduling Orders from delivery date to prioritize workload
- View an orders precise location
- View which business team is carrying out said action
- Track employees and start/completion dates
- Visually see if an order is behind schedule

Functional Requirements Specification

Stakeholders:

The system will be developed with ease of use as the main priority to have a user-friendly environment. This system will help the business increase profits and have better customer retention. Below are examples of people and organizations who would be interested:

- Business Owner
- Managers
- Employees
- Users

Actors and Goals:

Actors	Goals
Administrator	To manage quote pricing, override of expediate shipping and analyze statistics.
Employee	Handle day to day customer support in unison with system. Update system with completion of work from team to team.

User Interface	display open quotes and open orders by priority while not displaying any closed or completed quotes/orders, view an orders precise location and which team has it, track teams and start/completion dates, and see if order is behind schedule.
Database	Stores data for the system and help fulfill orders in accordance to prioritizing based on customer need.

Use Cases:

Casual Description –

UC1: Register Account:

- User creates an account to allow for quick access to quote needs. Requires user to create account over a network and provide information.

UC2: Reserve Dates:

- Allows user to reserve dates based on customer date of need for completion.

UC3: Quotes:

- Employees can view quote reports based on scheduling to prioritize workload.

UC4: Location:

- User can view the orders precise location upon shipment from business.

UC5: Team:

- User can view which team is working on that said order. Furthermore, the viewing of the start and completion dates.

UC6: Behind Schedule:

- User can visually see if an order is behind schedule; this being while completing that said quote or during the shipment process.

Fully Dress Description –

*Use Case 1: Register Account

Primary Actor:	User
Goal:	To allow users to create an account.
Stakeholders:	System, Database
Precondition:	System will request the required information needed from the customer
Post Condition:	The customers account will then be stored within the database.

Main Success Scenario:

1. Customer goes to the website and chooses the "Register" option.
2. The system then returns the page that states the needed information required.
3. The customer then fills out the required fields of entry.
4. The system takes in the information to verify it.
   If not valid, move back to 3. If valid, continue.
5. Information is stored in the database.

*Use Case 2: Reserve Dates

Primary Actor:	User
Goal:	To successfully reserve needed dates for customer.
Stakeholders:	User Interface, Database
Precondition:	The user should be logged into their account at this time. The system will then prompt the user for the reserved dates needed.
Post Condition:	The system will put the requested reserved dates into the database.

Main Success Scenario:

1. User enters the dates based on need of completion.
2. System will confirm the reservation date time for completion.
3. The system will then direct the user to a page which displays the reservation has been confirmed for the customer.

*Use Case 3: Quotes

Primary Actor:	Employee
Goal:	To allow employees access to view work orders to prioritize workload.
Stakeholders:	Employee, Database
Precondition:	The system will allow employees to view the work orders that have been placed.
Post Condition:	This will give the employees information to allocate working time according to customer order needs.

Main Success Scenario:

1. The employee enters the system to view work orders.
2. System will give work order in order from when date placement is made.

*Use Case 4: Location

Primary Actor:	User
Goal:	To allow the users to view the precise location of their order.
Stakeholders:	User Interface, Database
Precondition:	The user will be taken to an interface with their order history

and order made.

Post Condition: At the page, the user will be able to view the exact location of the order they made step by step.

Main Success Scenario:

1. User enter their login to sign into their account.
2. Upon login, they will be able to view their current orders they have.
3. The system will give them the option of viewing the exact location of the current product they have ordered.

*Use Case 5: Team

Primary Actor: User

Goal: To allow the user to view what business team is working on order and the completion of each team.

Stakeholders: User Interface, Database

Precondition: The system will have a selection area for the user to interact with on the main account page regarding the work progress.

Post Condition: The user will be able to view their work order made in perspective to the team that is completing it at that given time.

Main Success Scenario:

1. User is prompted to sign into their given account with their specific credentials.
2. The system will load up the user interface and populate an area of work order.
3. In the work order area, user will be able to view all work orders made from earliest order to latest order made with completion dates.
4. Each order will also show what given business team is working on the order at that given time.

*Use Case 6: Behind Schedule

Primary Actor:	User
Goal:	To allow the user the option of viewing if their given order is behind schedule.
Stakeholders:	Administrator, User Interface, Database
Precondition:	The system will populate the users work order for details on that said order.
Post Condition:	User will be able to view if the order is behind schedule with details on that said issue.

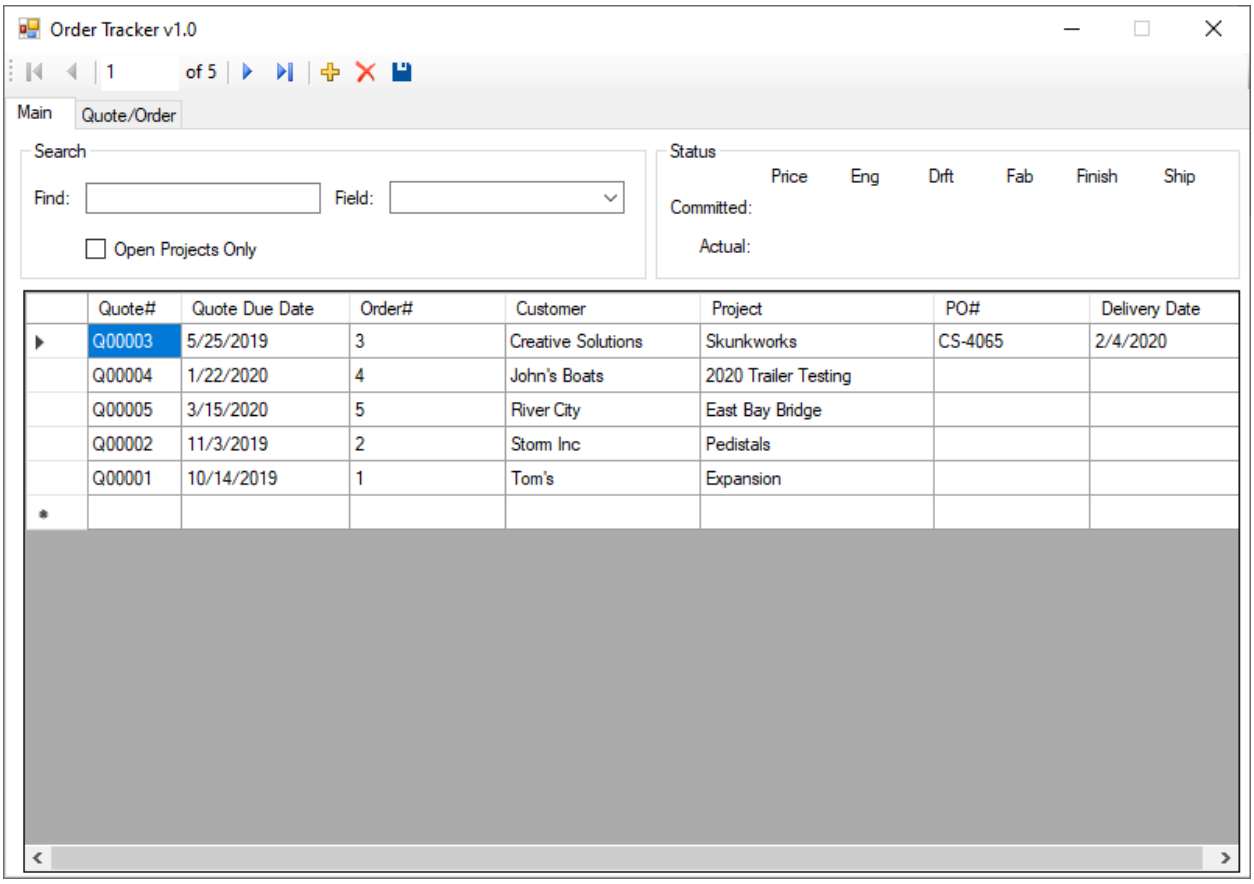
Main Success Scenario:

1. User is prompted to sign into their given account with their specific credentials.
2. The system will load up the user interface and populate an area of work order.
3. The system will give key details on the order of the user including if it is behind schedule and why this is the case.
4. If behind schedule, then send out alert. If not, then continue forward with work order.

4.0 User Interface Specification

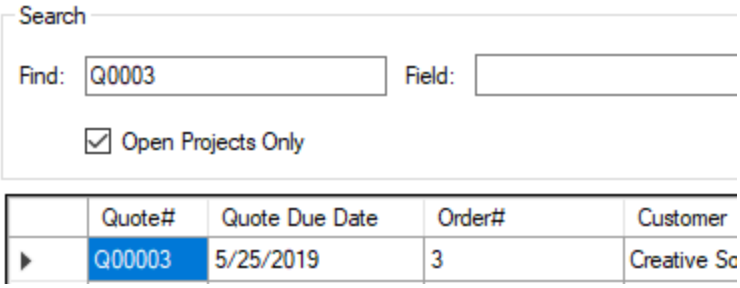
The user interface is designed is a way to be intuitive and user friendly. Minimal data is needed by the user and one click is all that is needed by the user when "Logging" data for Start/Finish Logs.

The main display is a grid-based view for simplicity along with a direct Quote/Order visual representation of location when a Quote/Order is selected.

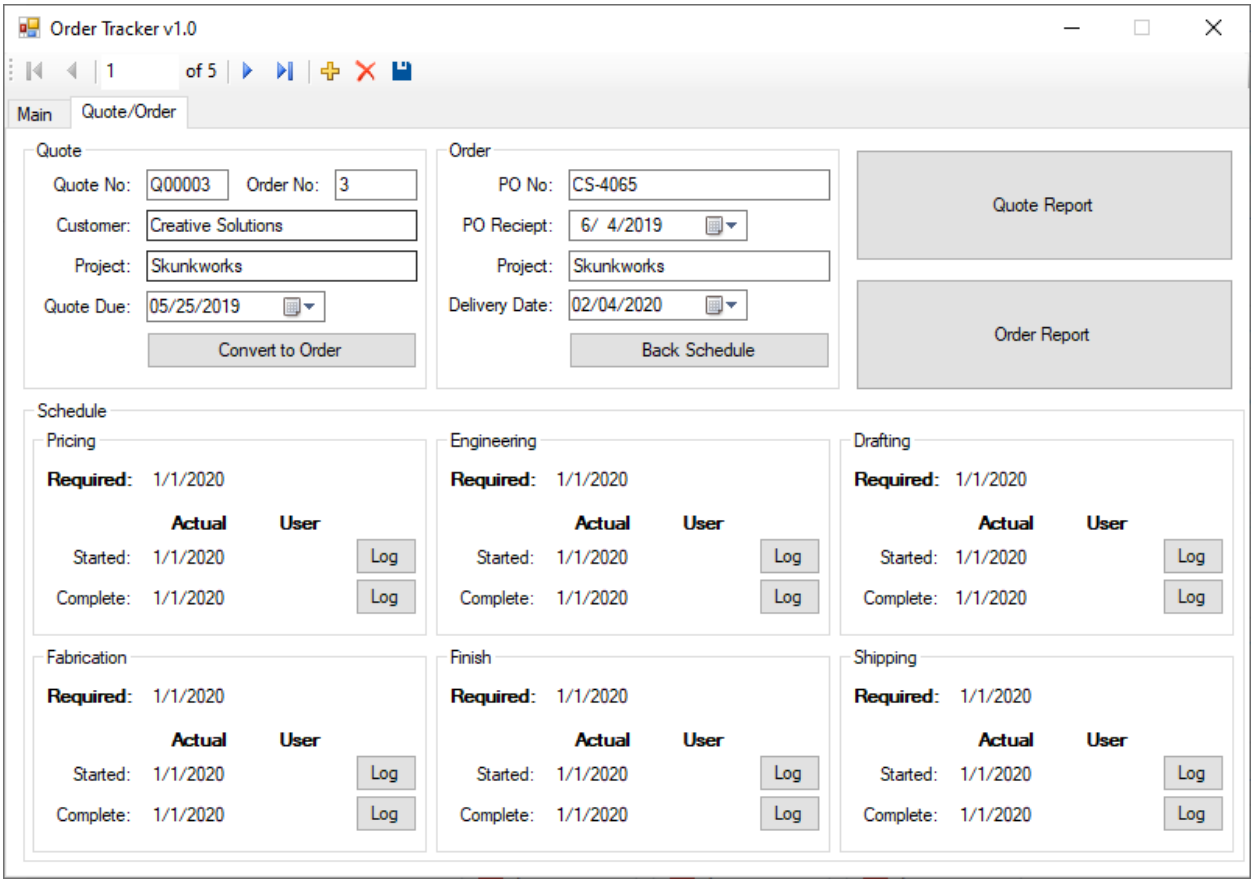


Users will be able to select a Quote/Order and see a Status that shows where the project is located and if it has been tracking on time (Green) or late (Red).

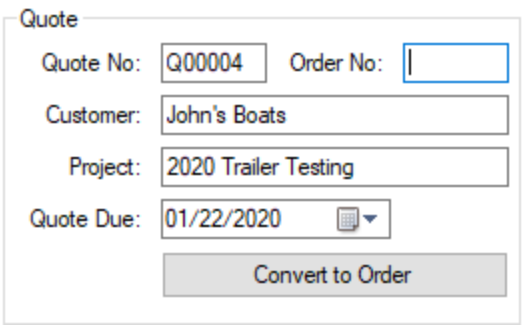
The main screen will also contain a Find or Search allowing the user to quickly narrow down the results to what they are looking for. This will have the ability to limit the Field that is being searched. They can also limit it to only Open Projects.



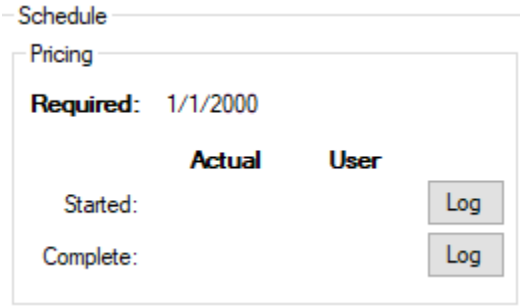
Aside from the main screen there will be a Quote/Order screen used for Quote/Order entry along with a Schedule where users can Log there committed Start and Completion dates into the system.



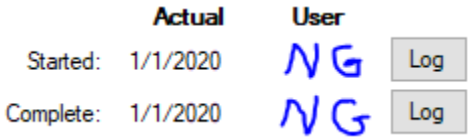
For Quote entry users will be required to enter a Customer Name, Project, and Quote Due date. Quote Number should be auto generated.



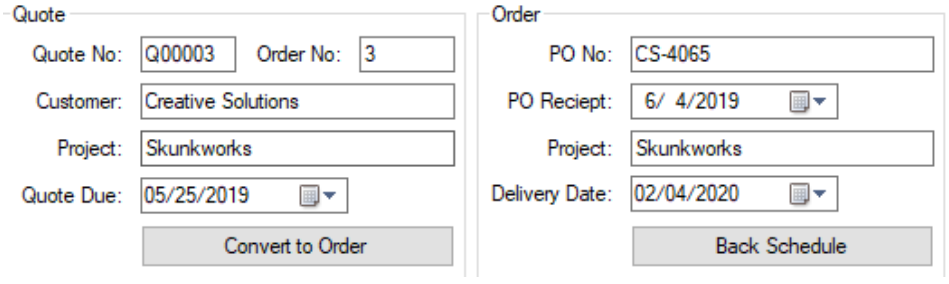
At this point the system will create a quote in the system a set a required date of completion based on the Quote Due date.



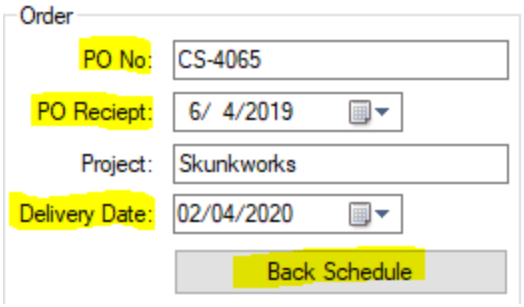
When a User Starts or Completes a quote they will select the "Log" button to log their date/user for tracking purposes.



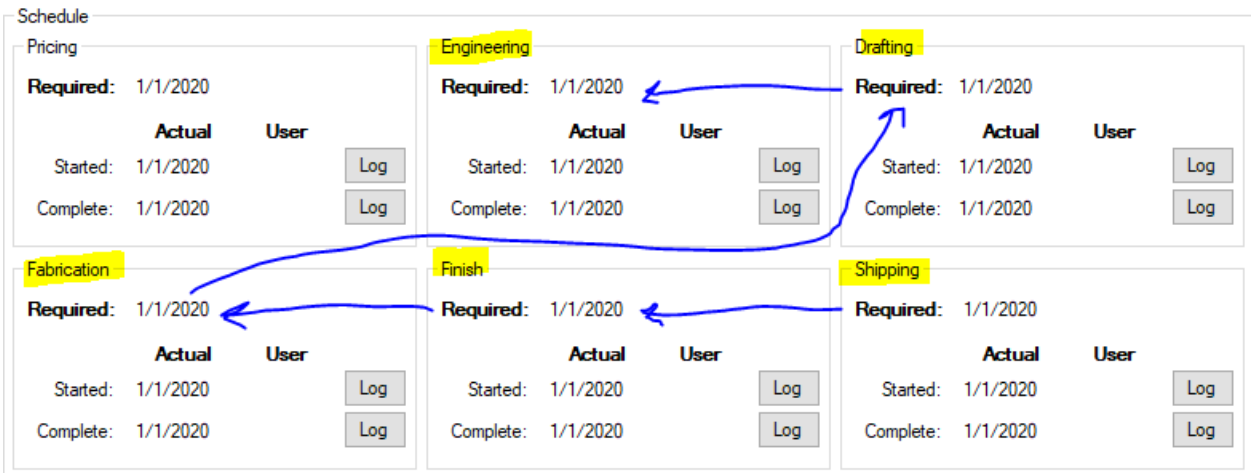
When the user receives a purchase order for the project they will use the "Convert to Order" button to begin the order entry process. This will assign an Order Number.



The user will be required to enter the customer PO#, PO Receipt date, and Delivery Date for the project. Once logged the user will select the "Back Schedule" button to back schedule the requested dates for the rest of the business users to complete.



Back Scheduling will take the delivery date and schedule Engineering, Drafting, Fabrication, Finish, and shipping to meet the delivery address. Users of each department will Log their time the same way as Pricing for a quote.



The back Schedule and User Log's is what will drive the visual display for tracking.

The user will also have the option to view a Quote/Order report. This will likely be added as an additional tab and not driven off buttons like in the current display. This will be displayed with a grid view based on open Quotes/Orders prioritized by Quote Due/Delivery Dates. This should display sim\ilar to the below with one reporting grid for open Quotes and another reporting grid for Orders.

Quote#	Quote Due Date	Order#	Customer	Project	PO#	Delivery Date
Q00003	5/25/2019	3	Creative Solutions	Skunkworks	CS-4065	2/4/2020
Q00004	1/22/2020	4	John's Boats	2020 Trailer Testing		
Q00005	3/15/2020	5	River City	East Bay Bridge		
Q00002	11/3/2019	2	Storm Inc	Pedistals		
Q00001	10/14/2019	1	Tom's	Expansion		

5.0 Domain Analysis

a. Domain Model

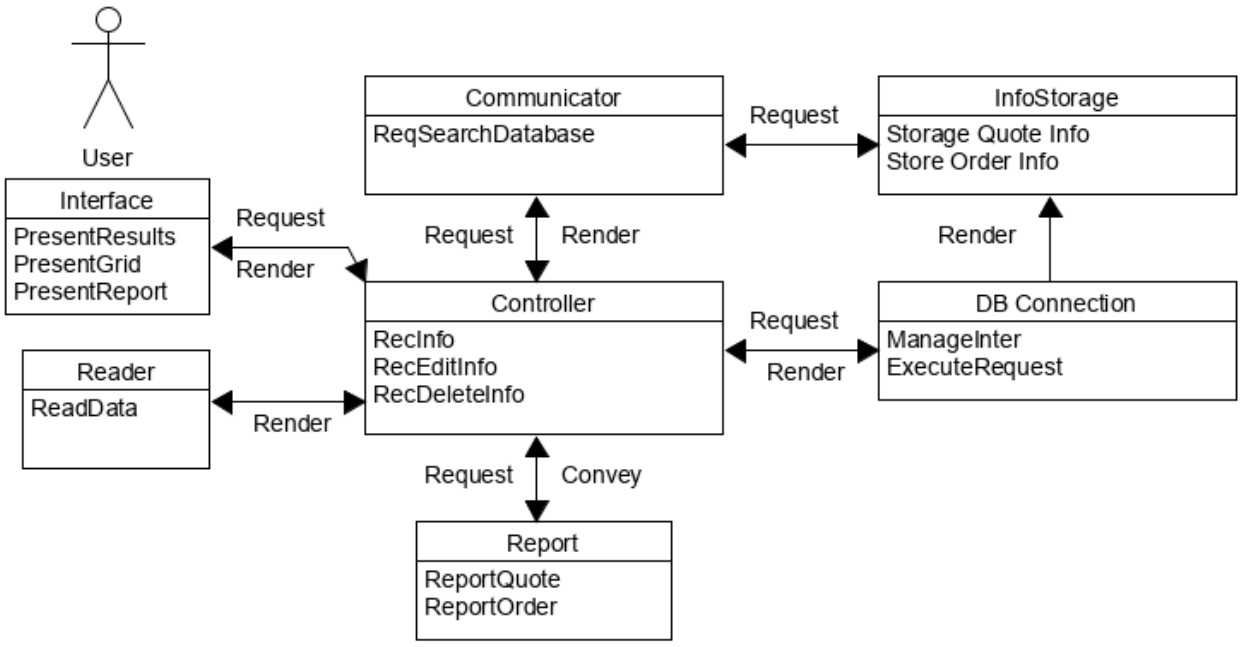


Figure 6-1 Domain Model

Table 6-1 lists the domain model concepts and corresponding responsibilities.

Responsibility	Type	Concept
R1: Read Data the user types in	K	Reader
R2: Store data about Quote/Order	K	InfoStorage
R3: Search request to database	D	Communicator
R4: Display seach results to interface for user	/	Interface
R5: Manage Database interaction	D	DB Connection
R6: Display results from Controller	/	Interface
R7: Receive Report request	D	Communicator
R8: Manage report data	K	Report
R9: Display Report per request	/	Interface
R10: Receive info from Interface (User)	D	Controller

Table 6-1 Conception Definition

Association Definitions - Concepts defined above must work in patterns to finish target requirements. Table 6-2 below give Association Descriptions based on defined concepts.

Concept Pair	Association Description	Association Name
Reader<->Controller	Reader/Controller sends signal to receive data	Generate Request
Communicator<->InfoStorage	Communicator renders request to InfoStorage	Render Request
Controller<->Interface	Interface displays results rendered from Controller	Generate/Convey
DB Connection<->InfoStorage	DB Connection accesses/stores data into InfoStorage	Save Data
Controller<->DB Connection	Controller request DB Connection	Render Request
Controller<->Communicator	Controller request Communicator to search InfoStorage	Generate/Render
Controller<->Report	Controller request Report to analyze data and returns data to Controller	Generate/Convey

Table 6-2 Association Definition

Attribute Definition

Responsibility	Attribute	Concept
R1: Read Data the user types in	ReadData	Reader
R2: Store data about Quote/Order	StorageQuoteInfo StorageOrderInfo	InfoStorage
R3: Search request to database	ReqSearchDatabase	Communicator
R7: Receive Report request		
R4: Display seach results to interface for user	PresentResults	Interface
R6: Display results from Controller	PresentGrid	
R9: Display Report per request	PresentReport	
R5: Manage Database interaction	ManageInter ExecuteRequest	DB Connection
R8: Manage report data	ReportQuote ReportOrder	Report
R9: Receive info from Reader	RecInfo	Controller
R10: Receive info from Interface (User)	RecEditInfo RecDeleteInfo	

Table 6-3 Attribute Definition

Traceability Matrix

Domain Model	UC-1	UC-2	UC-3	UC-4	UC-5	UC-6
Reader	x			x		x
InfoStorage	x	x	x	x	x	x
Communicator	x					x
Interface	x	x	x	x	x	x
DB Connection	x	x	x	x		x
Report					x	x
Controller	x	x	x	x	x	x

Table 6-4 Traceability Matrix

System Operations Contracts

Getting Quote/Order Data

1. PRE-CONDITION – The grid displays
2. POST CONDITION – Users have full view of Quotes/Orders

Viewing Existing Quote/Order

1. PRE-CONDITION – The Quote/Order Tab is displayed
2. POSTCONDITION – Users have view of current data for Quote/Order

Searching Quote/Order

1. PRE-CONDITION – Main tab is displayed and Field populated
2. POST CONDITION – User view all Quotes/Orders related to search

User "Logs"

1. PRE-CONDITION – Quote/Order tab is displayed and user has account
2. POST CONDITION – Users "lock" in date/user for current logged task

PROJECT ESTIMATION – ORDER TRACKER

Actor Classification

Actor Name	Description	Complexity	Weight
Administrator	Manage Quote Price	Complex	3
Employee	Everyday usage of program	Complex	3
User Interface	Display quotes, orders, location	Average	2
Database	Store data for system-fulfill orders	Average	2
		Total Actor Weight	**10**

Use Case Classification

Use Case Category	Weight
UC1: Register Account Complex	15
UC2: Reserve Dates Average	10

UC3: Quotes Simple	5
UC4: Location Average	10
UC5: Team Average	10
UC6: Behind Schedule Average	10
Total Use Case Weight	**60**

UUCP = UAW + UUCW = 10 + 60 = 70

Technical Complexity Factors

Technical Factor	Description	Weight	Perceived Complexity	Calculation
T1	Distributed system (Running on multiple machines)	2	3	2 * 3 = 6
T2	Performance objectives	1	2	1 * 2 = 2

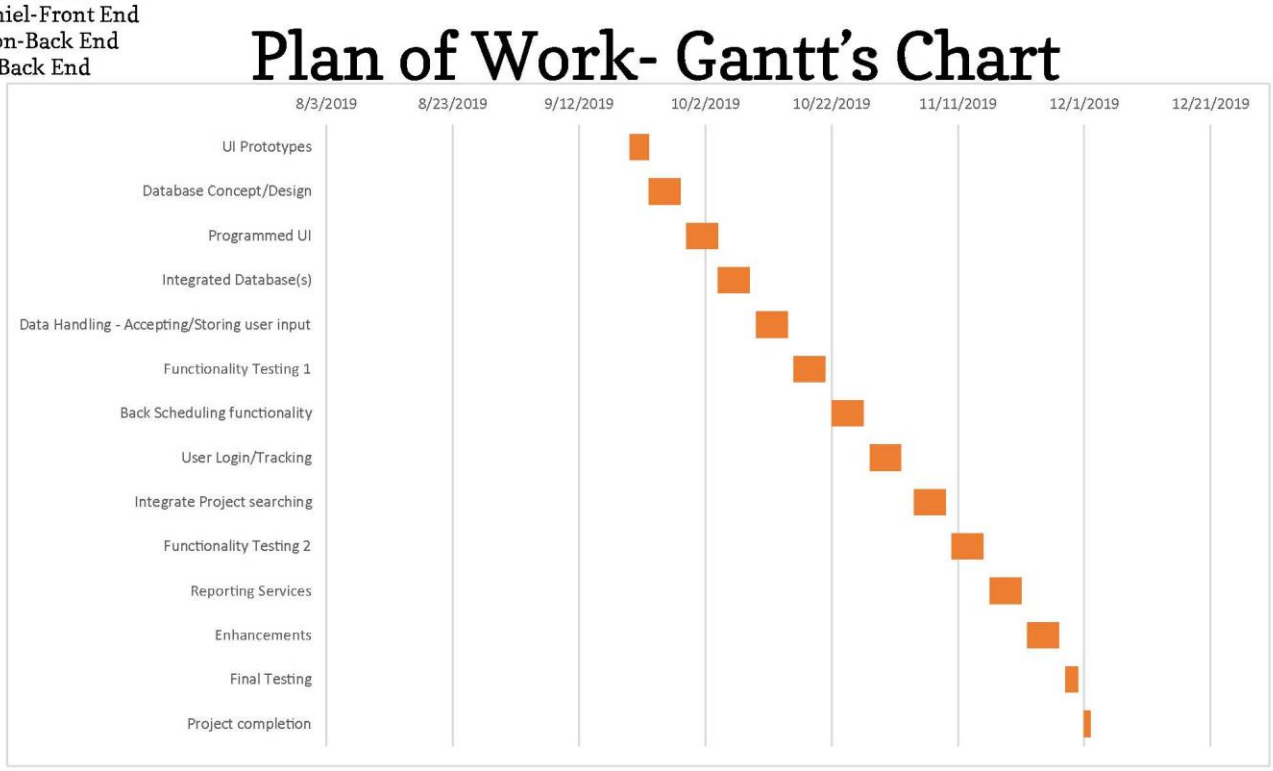
T3	End- user Efficiency	1	2	1 * 2 = 2
T4	Simple Internal Processing	1	1	1 * 1 = 1
T5	Reusable Code	1	0	1 * 0 = 0
T6	Easy to use- very important	1	5	1 * 5 = 5
T7	Portable – Not currently necessary	1	0	1 * 0 = 0
T8	Easy to change	2	2	2 * 2 = 4
T9	Concurrent use	1	4	1 * 4 = 4
T10	Security	1	5	1 * 5 = 5
T11	Direct Access Third Parties	1	0	1 * 0 = 0
T12	Unique training	1	2	1 * 2 = 2
T13	Ease of install	1	3	1 * 3 = 3
	Technical Factor Total:			**34**

TCF = C1 * C2 * (Technical Factor Total) = (0.6)(0.01)(34) = .204

UCP = UUCP * TCF = 70 * .0204 = 14.7

Report One:
Section 1: Customer Statement of Requirements - Brandon
Section 2: System Requirements - Brandon
Section 3: Functional Requirement Specification - Brandon
Section 4: User Interface Specification - Nathan
Domain Analysis - Nathan
Project size Estimation - Sarah
Plan of Work - Logan
References-Logan

Project:
Logan-Front End
Nathaniel-Front End
Brandon-Back End
Sarah-Back End



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Gantt's Chart

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