



Faculty of Information Technology
Computer Systems Engineering Department
First Semester 2015/2016
Software Engineering COMP433

G6-S1(TL) Final Project-**SRSD**

“ Meat Shop Online ”

Tamer Jaber Id: 1120759

Tawfiq Lahlouh Id: 1110061

Helwa Ahmad Id: 1111864

Dana Barghouthi Id: 1120091

Instructor : Adel Taweel

Project Planning and Management

Group Name:

G6-S1(TL)

Both Name and the role of each student/member:

Student Name	Student Role	Student ID
Tawfiq Lahlouh	project manager	1110061
Tamer Jaber	secretary	1120759
Helwa Ahmad	technical architect	1111864
Dana Barghouthi	Programmer	1120091

Project management strategy:

Our team have been conducting its meetings both at university and through Facebook, we have created a Facebook group to ease the discussion process , we have altogether negotiate all aspects of the problem and each member has to give his/her opinion on the situation and the project manager has to take the final decision upon our decision ,we were using water fall model , since we ensure there were no changing in the requirement and the project requirement was specified from the beginning .

Project manager report

As project manager the table below reflects the work and the tasks each member has undertaken.

Section	Contributed by	Done By	draw by
System CLASSES and their description	Tawfiq + Tamer	Tawfiq + Tamer	Tamer
CLASS diagram	Tawfiq + Tamer	Tawfiq + Tamer	Tamer
OBJECT diagram	Tawfiq + Tamer	Tawfiq + Tamer	Tamer
“Make an order” Sequence Diagram	Tawfiq + Tamer	Tawfiq + Tamer	Tawfiq
“Cancel an order” Sequence Diagram	Tawfiq + Tamer	Tawfiq + Tamer	Tawfiq
“view List Sequence” Sequence Diagram	Dana + Helwa	Dana + Helwa	Dana
“Login” Sequence Diagram	Dana + Helwa	Dana + Helwa	Dana
State Diagram	Tawfiq + Tamer +Helwa	Tawfiq + Tamer +Helwa	Tamer
integrate the whole phase			Tamer

Name	Contribution
Tawfiq Lahlouh	30%
Tamer Jaber	37%
Helwa Ahmad	15%
Dana Barghouthi	18%

Group Member report :

Tamer Jaber "secretary":

- > During the course I've tried my best to sharpening my communication skills through playing the role of a liaison "secretary", firstly I have negotiate with my teammates their course schedule and their free time and ask them to provide me with their schedules to ease our meeting process, and finally I summarize it with this table "as shown below".
- > I have created the Facebook groups which ease our communication within our team and with the others "customer and developer group".
- > Each and every message on Ritaj board I have summarize it to my team right away
- > Also I ensured to remind my team about the due date.
- > For each phase due date I have organized all the work into one single document and deliver it through Ritaj
- > I have conducted : the Effort/Time estimation calculation, class analysis model, login scenario,

Names ==>	Dana "Programmer"	Tawfeek "manager"	Helwa "technical architect"	Tamer "secretary"	suitable for :
SAT	12:00-1:00 + 2:00-5:00	8:00-1:00	Holiday	11:00-1:00 + 2:00-5:00	12:00-1:00 Dana-tawfeek-tamer
MON	11:00-1:00 + 2:00-5:00	8:00-1:00	10:00-11:30 + --> 5:00	11:00-1:00 + 2:00-5:00	11:00-1:00 ALL
TUE	12:30-1:00 + 2:00-5:00	11:00-12:30 + 2:00-5:00	2:00-5:00	11:00-12:30 +2:00-5:00	2:00-5:00 ALL + [11:00-12:30 Tawfeek+tamer]
WED	11:00-1:00 +2:00-5:00	8:00-1:00 + 2:00-5:00	10:00 -2:00	11:00-1:00 + 2:00-5:00	11:00-1:00 ALL
THU	12:30-1:00 + 2:00-5:00	11:00-12:30 + 2:00-5:00	Full	11:00-12:30 +2:00-5:00	2:00-5:00 + [11:00-12:30 Tawfeek+tamer]

Dana "Programmer" :

Helwa "technical architect":

Requirement Elicitation and Analysis

Requirement Business description -supplied by the customer group

Our business is a meat shop, we have several kinds of meat to sell and our work is mainly to deliver the kind of meat that someone asks for.

We want a software that can help us to make his process easier by offering the available meat in a website that serve at most 50 person concurrently. In this way, anyone can see the available kinds of meat and we can deliver to him upon his request.

The website should be able to provide the following services:

1. Show the menu and the prices of the available kinds of meat.
2. Let the customer make an order.
3. Let the customer see the invoice for meat he/she requested.
4. Make a secure payment system via visa card.
5. Ask the customer for location to deliver the order.
6. Once the user makes an order, he can delete it just within 10 minute after submission.
7. If the customer doesn't have a visa card, there will be an option to pay when the meet is delivered, but there must be a confirmation on the order.

The customer cannot make an order between 12:00 AM and 9:00 AM because the shops will be closed. In addition, the website must show all the information of the shop (phone number, address, and name).

Another important point, which is the case if the website is down for any reason, it will show an apology and a list of numbers that can be used to make an order via phone.

User & system requirements:

User Requirements:

1. The system shall provide online meat shop services that deliver what customers request using the website, the website should offer a friendly, simple graphical user interface.
2. The system shall be able to serve a large number of users at least 100 person concurrently.
3. The payment method shall be via visa card.
4. The system shall permit users to make accounts using the website to start making orders, and take some required information. The customer should be notified by the status of the order by the account.
5. The customer could use the service through surfing the web or through a mobile application.
6. The website should be in Arabic and English languages.

System Requirements:

R1:1: The system shall provide an efficient user interface, "to do what is required by the least time and steps " also fits many frames such "mobile" aslo the needed time for a user to learn how to use it not exceeds 5 minutes.

R1:2: The system shall show the user all types of meats available and provide their prices, and if there is a discount on purchasing so the user can select which type he/she wants.

R1:3: To ease the ordering process and make it catchy the system should provide photos of the available meats.

R2:1: The system shall be able to allow a hundred users concurrently to use it through allocating a special server, and ensuring that it will not go down, also it shouldn't letting the customers to wait (waiting time at most 3 minute).

R3:1: The payment method vi visa card shall be ensured that is a secured payment.

R4:1: The system shall permit the user to provide the size and amount of his / her order of meat.

R4:2: The system shall notify the customers that the shop is closed through the website interface and show them the latest ads, discount,,,

R4:3: The system shall be able to determine the total cost of the order that calculated using the price of the order itself that depends on the type, size and quantity of the order, the cost of delivering that depends on the customer destination address.

R5:1: The system shall be supported by a mobile application that provide the same functionality as the website.

Scenarios section :

General scenario :

Antonia, Brad, Angelina accessed Meat shop online, Antonia and Brad have accounts on the system, Antonia and Brad have logged in successfully to the system while Angelina has not an account since it's her first visit to the website and so she has to sign up first, Antonia search for lamb meat and choose 2 kg amount as an order, and so she has 10 minutes to pay for her order and the opportunity to update her order, the 10 minutes finished and she didn't change her order and so, the order will be prepared by the employee and she will receive her order ASAP. Brad search for lamb meat and choose 5 kg amount as an order, after the 10 minutes finished he didn't pay for his order and so the system has notify him that he didn't paid for his order yet and so the system ask if he wants to make a new order or not, he decide not to make a new order and so the system cancelled his order. After Angelina signed up, she search for cow meat and choose 4 kg as an order, after she made her order and during the 10 minutes, she has changed her mind and wants to change the amount to be 2.5 kg of lamb meat and so she has paid for her order, the order will be prepared by the employee and she will receive her order ASAP.

Tawfiq -Cancel order scenario :

Normal:

Antonia, Brad, accessed meat shop online, they have accounts on the system and logged in successfully to the system, Brad search for Hurry meat and choose 6 kg amount as an order, and so he has 10 minutes to pay for his order and the opportunity to update his order, after 6 minutes he has changed his mind and wants to cancel his order by clicking on cancel order button and the system ask him that you want to cancel the order or make new one, he decide to choose cancel, after that the employee will approve the cancellation.

Alternative:

Antonia, Brad, accessed meat shop online; they have accounts on the system and logged in successfully to the system, Antonia search for lamb meat and choose 3 kg amount as an order, and so she has 10 minutes to pay for her order and the opportunity to update her order, the 10 minutes finished and she doesn't pay for her order, there is an alternative way such that the system asked her for make a new order before the cancellation.

Error:

Antonia, Brad, accessed meat shop online, they have accounts on the system and logged in successfully to the system, Antonia search for lamb meat and choose 3 kg amount as an order, and so she has 10 minutes to pay for her order and the opportunity to update her order, the 10 minutes finished and she pay for her order, after that she has changed her mind and wants to cancel her order, so the cancellation will be denied and the order process will be continue.

Tamer - login scenario:

Normal: Adel access the website of Meat shop online to buy meat ,as the welcoming interface asks him to enter his username and password to login ,Adel has already signed up and so he has a valid account and so he enters his username and password , the information he provided has a successful validation and so the system logged him successfully and displayed his specific interface as customer .

Alternative: Ali access the website of Meat shop online to buy meat , as the welcoming interface asks him to enter his username and password to login ,Ali has already signed up and so he has a valid account and so he enters his username and password , the system notify him by an error message that he has entered an incorrect username and/or password , and so the system asks him if he forget his password or username and so a verification code will be sent to his email to continue the login process ,,

Error 1: Abed as employee has entered incorrect username and password , so an error message will be displayed by the system ,,

Error 2: Majd as customer has entered incorrect username and password for five times consecutively and so an error message that inform her that she will be denied to access the website for the coming half hour so she has to wait half hour to try again ,,

Helwa - View demand list scenario

Normal scenario: Bilal an employee in meat shop. He access the meat shop online and He make an employee account by enter his information and employee number that get it from administer of shop. Then login for his account by enter his name and password. He is viewing demand list and check for ready meat orders and confirm it, and approve other that cancelled.

Alternative scenario:

Bilal an employee in meat shop. He access the meat shop online using his account by entering his name and password but he denied from the system because an error in system. The system get for him the password or user name that entered is false, retry enter them. After this error, he go to the administrator for shop and talk him about an error that occurred, so the administrator get bilal new employee number, so bilal take it and make another account and enter his information and login to the system without any error.

Error scenario:

Bilal an employee in meat shop. He access the meat shop online using his account by entering his name and password but he denied from the system because an error in system. The system get for him the password or user name that entered is false, retry enter them.

Dana - make order scenario:

Normal scenario:

Amira open her account in meat shop .Check the available items .she want a kilo of sheep meat and one chicken. Amira select sheep meat then choose sheep leg then enter the quantity 1-kilo .she want the order in 12 pm then add her demand to carte. After that, she goes back to home and select chicken. Then choose a white chicken then select completely one. She want the order in same time then she add it to carte. Finally she press to button buy and the system will discount the price from it account in bank by using visa card number.

Alternative scenario:

Sami access the website of meat shop. He open his account then search about his favorite fish meat. He used to require it from the site but he didn't found it. Therefore, he call the company to ask about this kind of meat. Fortunately he find it's require arrived soon then he demand by phone.

Error scenario:

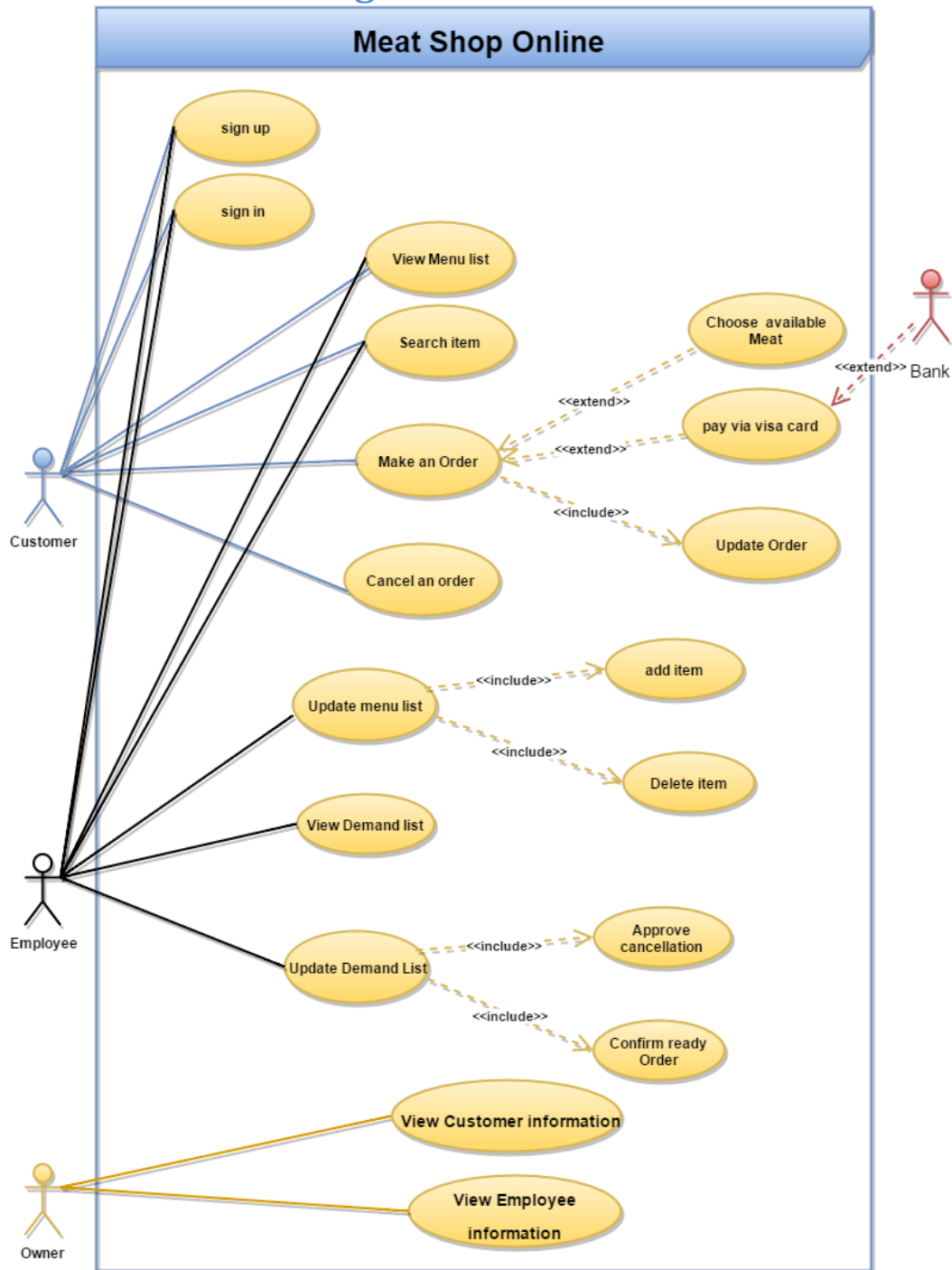
Nadia access the website of meat shop. She open her account then search about some meat for weekend lunch. She find some lovely chicken legs. She add her order to carte then she remember she invite her friends to the lunch so she need more legs. Then she removed it order and back to demand more but she didn't find enough of this stuff.

ACTORS analysis and their description.

ACTORS	Description	USE-CASE
Customer	This actor represents someone who is a customer of the meat shop, that can search and order meat online.	<ol style="list-style-type: none">1. Login2. search3. demand meat online4. cancel demanded meat5. pay for his/her order
Employee	This actor represents someone who takes the customer order, check if any customer delete its order or not to prepare it and update the order list.	<ol style="list-style-type: none">1. Update the demand list2. view demanding meat3. approve the cancellation
Owner	This actor represents someone who owns the meat shop, manage the shop and access the personal data of the employee and customer	<ol style="list-style-type: none">1. access to personnel data and administrative matters relating to the shop

Note : a bank don't directly intervene with our system ,but our system rely on it with the payment process and so we have shown it below on the overall use case diagram

Overall use case diagram:



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Detailed description of key USE-CASES:

Tawfig - Cancel demanded meat use case :

Actors	Customers
Description	Customers may cancel their demand. The order can be deleted or canceled if the ordered meat is not ready and the timer less than 10 min . Cancellation can be approved by the employee.
Pre-conditions	<ol style="list-style-type: none">1. The customer sign in2. The customer order meat3. The order is not ready
Sequence/Flow of Events	<ol style="list-style-type: none">1. The customer make an order2. Cancel order3. employee should approve the cancellation after checking if the timer equal 10 min, and the customer not pay.4. If the order ready (timer \geq 10 min and pay) and the customer make cancel the order, the cancellation will be denied
Data	Customer info, order info, meat status(ready or not)
Stimulus/Trigger	Customer can use the meat shop to cancel the order.
Post-conditions/ Response	<ol style="list-style-type: none">1. Cancel the order, if successful.2. continue the order, if failed.
Comments	There is no limits in the number of cancellation.

Tamer -Login Use Case:

Actors	Owner , Employee , Customer
Description	For each actor there will be a special interface with its appropriate functionality that fits each actor specifically
Pre-conditions	To use the system actors must be signed in that is (actor has a valid account “signed up has achieved” and enters both username & password successfully)
Sequence/flow of event	<ol style="list-style-type: none"> 1. The system shows a welcoming interface that requests the actor to enters both username and password. 2. The actor provide the system with both username and password 3. The system validates the entered username and password , upon a successful validation the actor logs into the system to the appropriate interface . 4. if validation was not successfully achieved that is incorrect username or password entered , the system displays an error message and let the user choose to cancel or forget password option “changing the password via email and sending a verification code “
Data	Username, password, verification code (if was an error gain via email).
Trigger	An actor access the website and wants to login
Post-conditions	<ol style="list-style-type: none"> 1. Display the actor interface 2. Store the data “latest login time ,,”

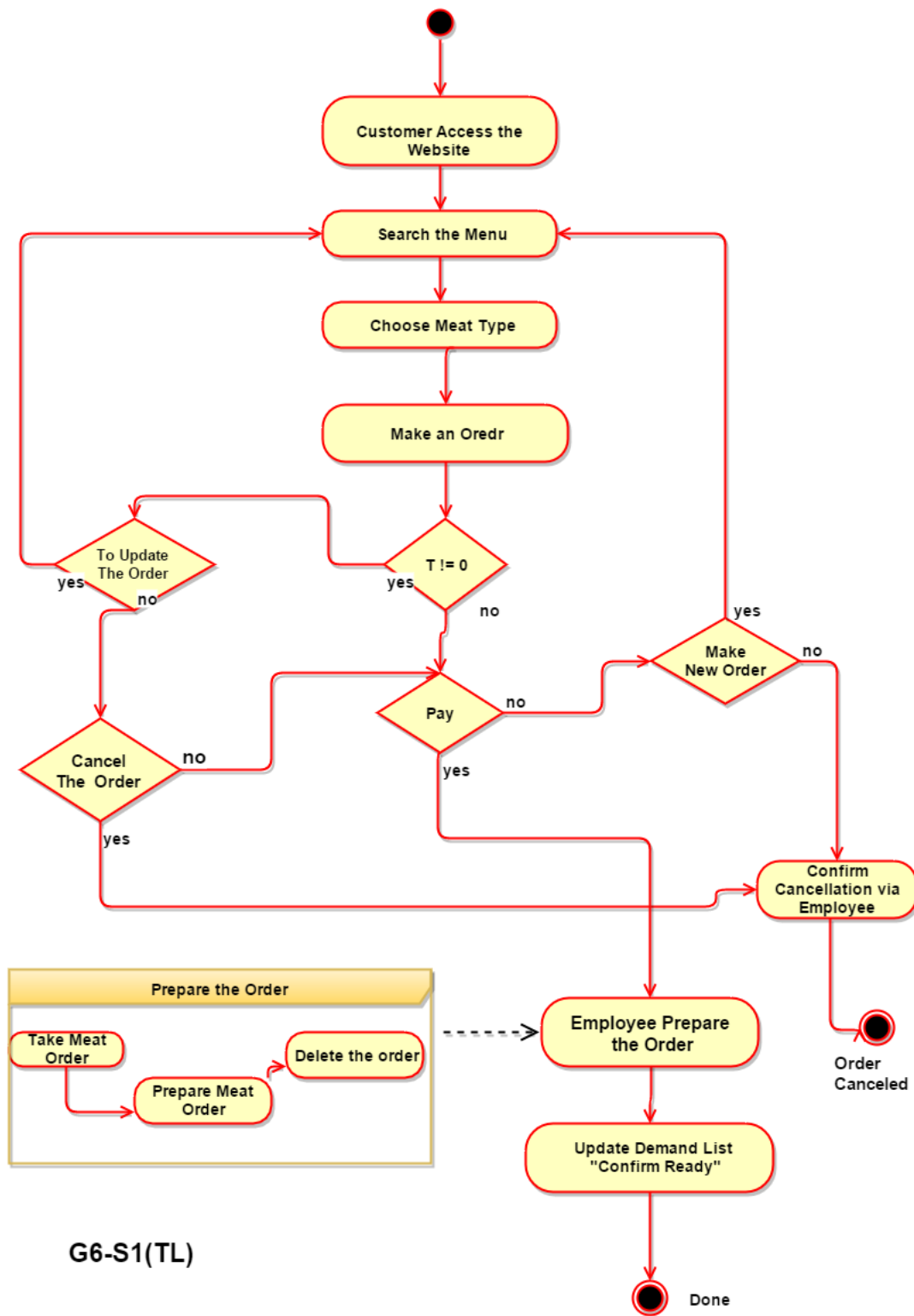
Helwa - View Demand meat list Use case

Actors	Employees
Description	The employees that work in customer service can view the demanded meat list with its full description
Pre-conditions	Have an employee account
Sequence/Flow of Events	1- open employee account 2- click on demand list to view
Data	Employee sign in his/her information
Stimulus/Trigger	Employee can view demanding list
Post-conditions/ Response	View full demanding list

Actors	Customer
Description	A customer can demand his\her meat order online, determine the type, quantity and when delivered.
Pre-conditions	has customer account on meat shop
Sequence/Flow of Events	<ol style="list-style-type: none"> 1- open customer account 2- select type ,quantity of meat and when delivered , and add to carte 3- pay for your order meat online 4- when the payment is authorized then demand is confirmed
Data	meat information, payment information
Stimulus/Trigger	Order confirmed
Post-conditions/ Response	meat demand was successful
Comments	Customer must be sure the address added when made account it's true because the order will arrive to it.

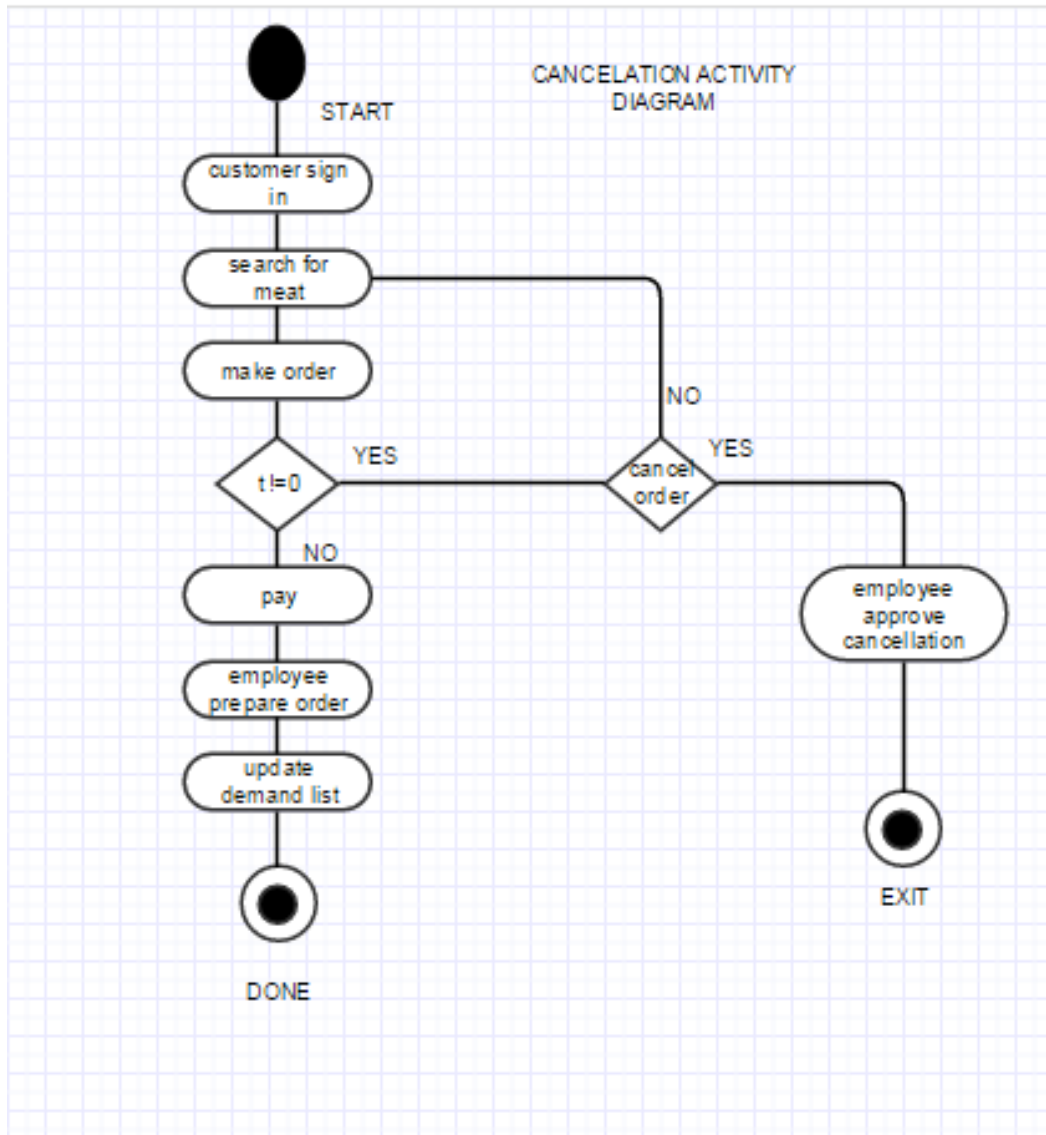
Dana -Demand meat online Use case :

ACTIVITY diagrams: Main Activity diagram:



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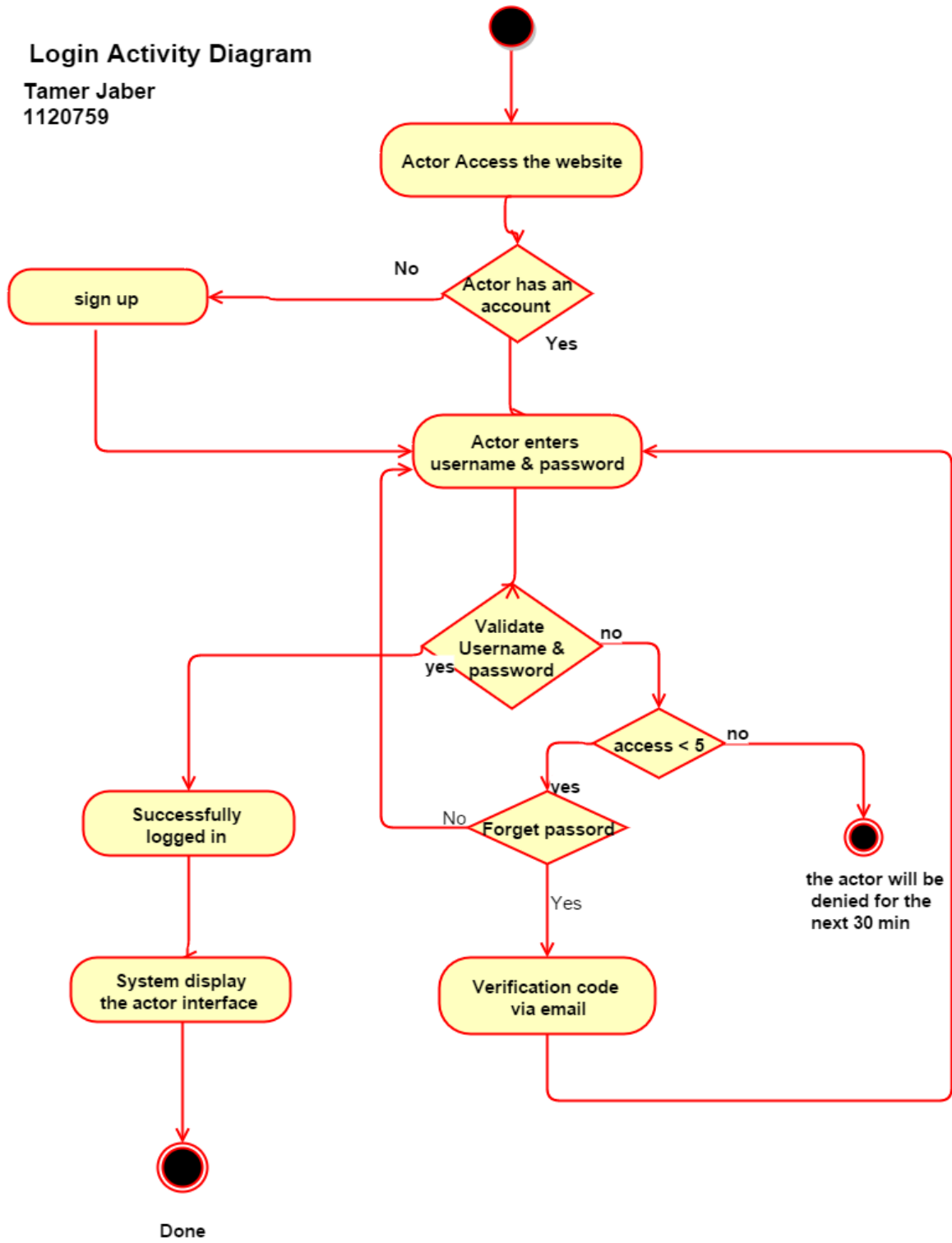
Tawfiq- Cancel order activity Diagram :



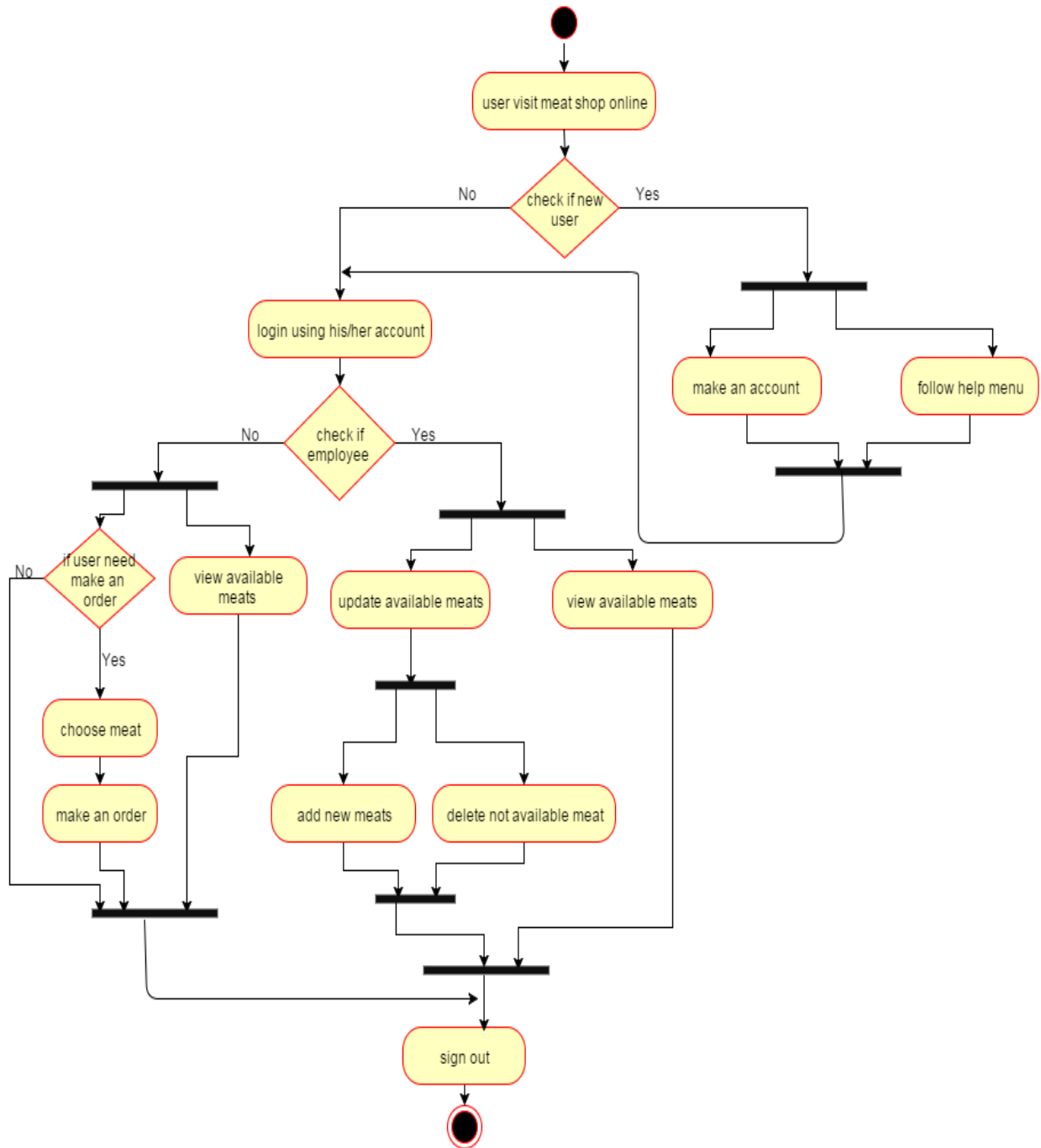
Tamer- Login activity Diagram :

Login Activity Diagram

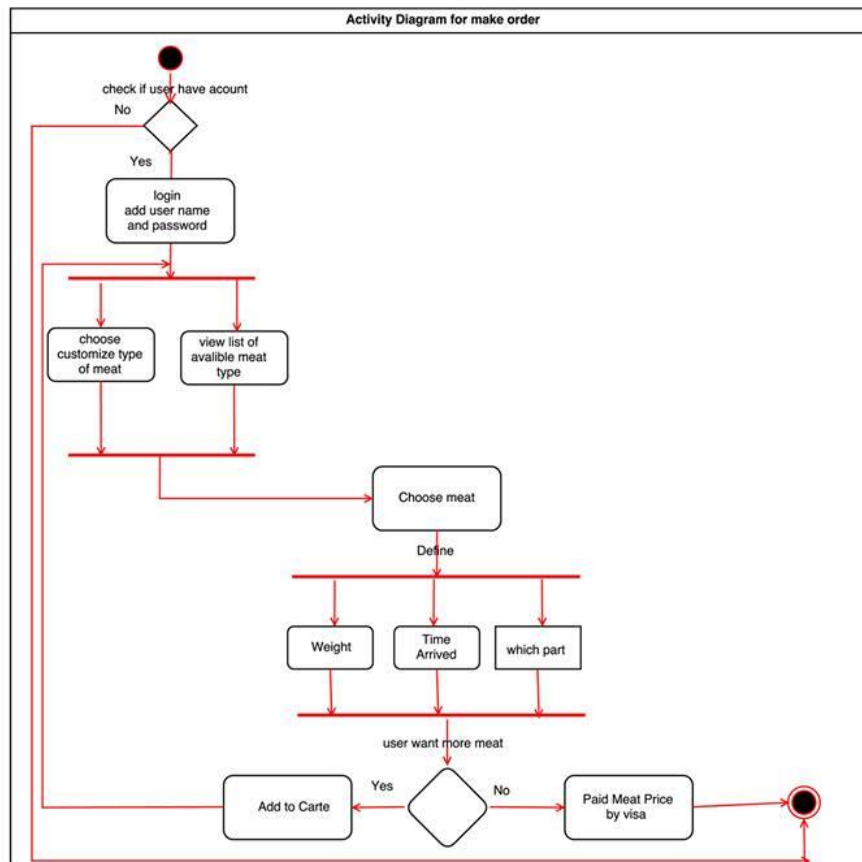
Tamer Jaber
1120759



Helwa -View meat list Activity Diagram:

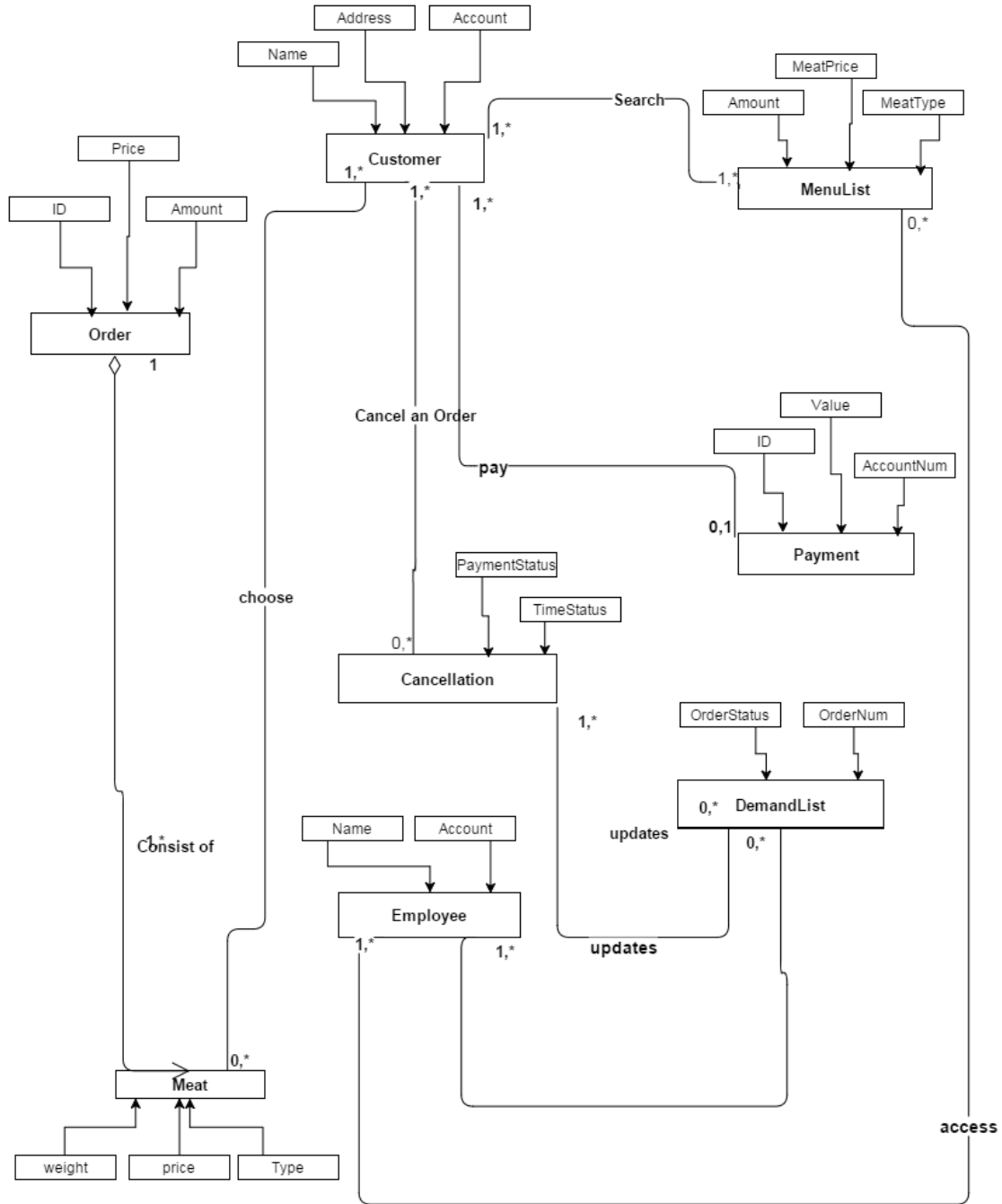


Dana-make order activity Diagram :



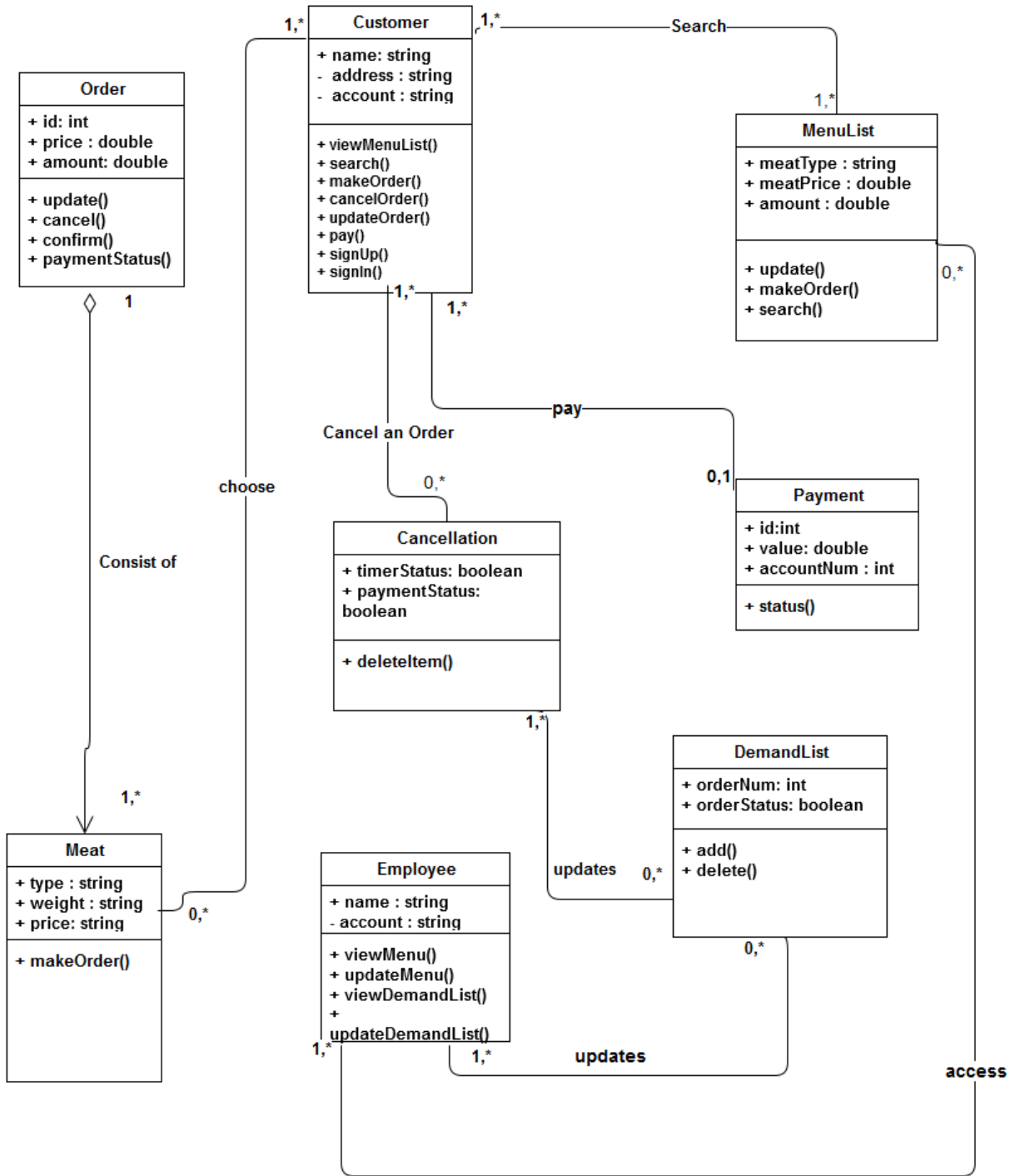
System Modelling and Design

Analysis model - Done By Tamer



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Detailed CLASS Diagram:

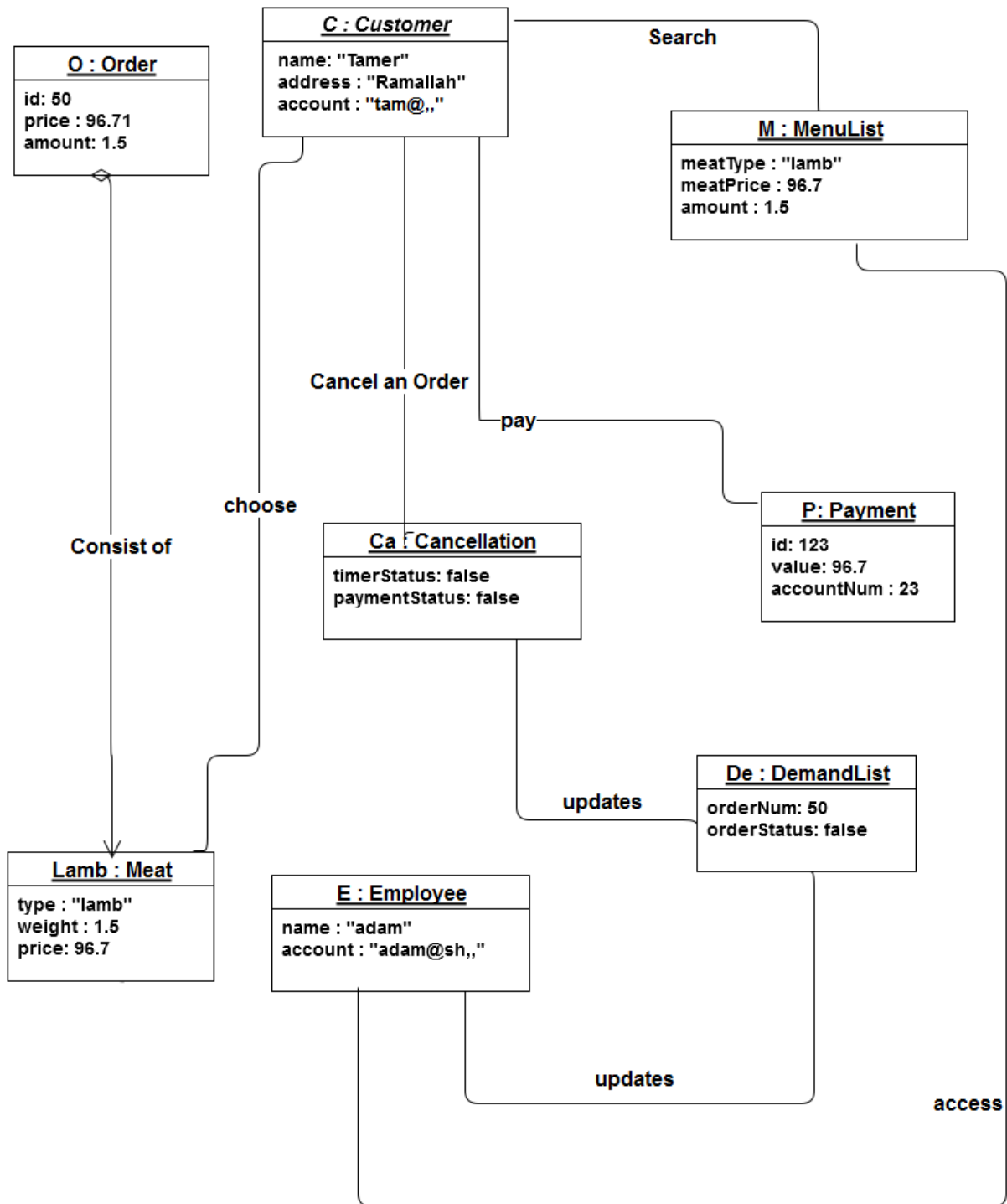


G6-S1(TL)

CLASSES and their description :

Class	Description
Customer	Store name and address of the customer, customer can order meat and search for items in the menu .
Payment	Contain details about customer account and the order value
Menu list	Contain types of available meat and price for each, it is ordered by customer
Meat	It's a meat that has type and amount and price that the customer can choose among and make order
Order	Customer can choose and pay for his/her order mainly consist of meat items
Delete	Customer can delete order if he/she not paid within the 10 minutes period
Demand list	Contains list of ordered meat, That can be cancelation "approve" or ready "confirm"
Employee	Person who can update meat demand list if any change occurs in the list

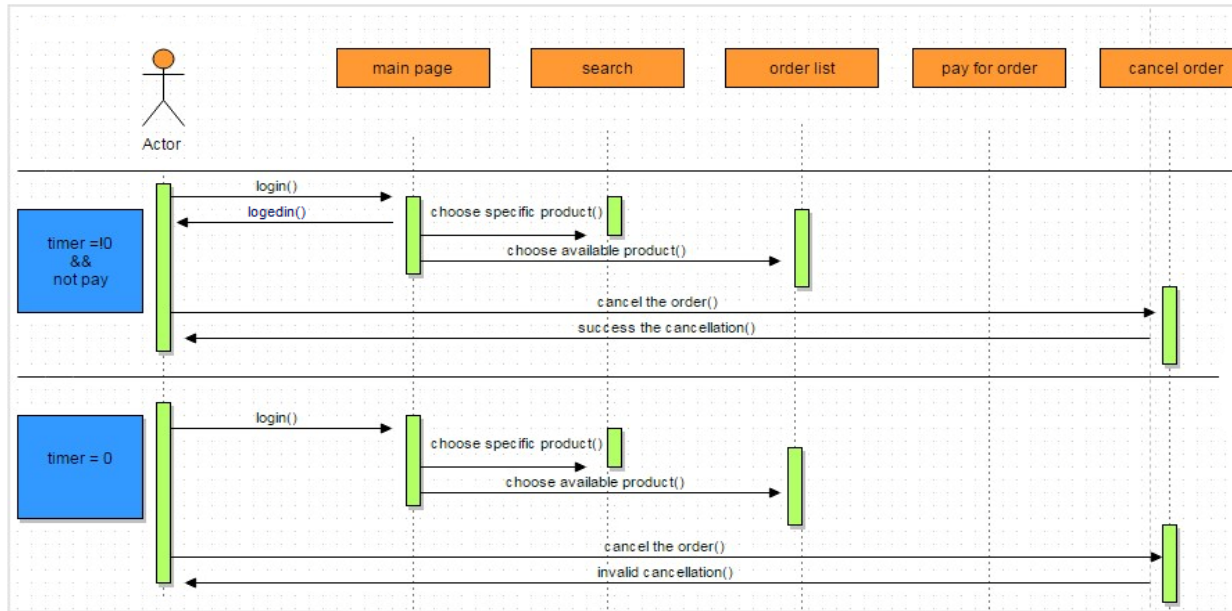
Object Diagram :



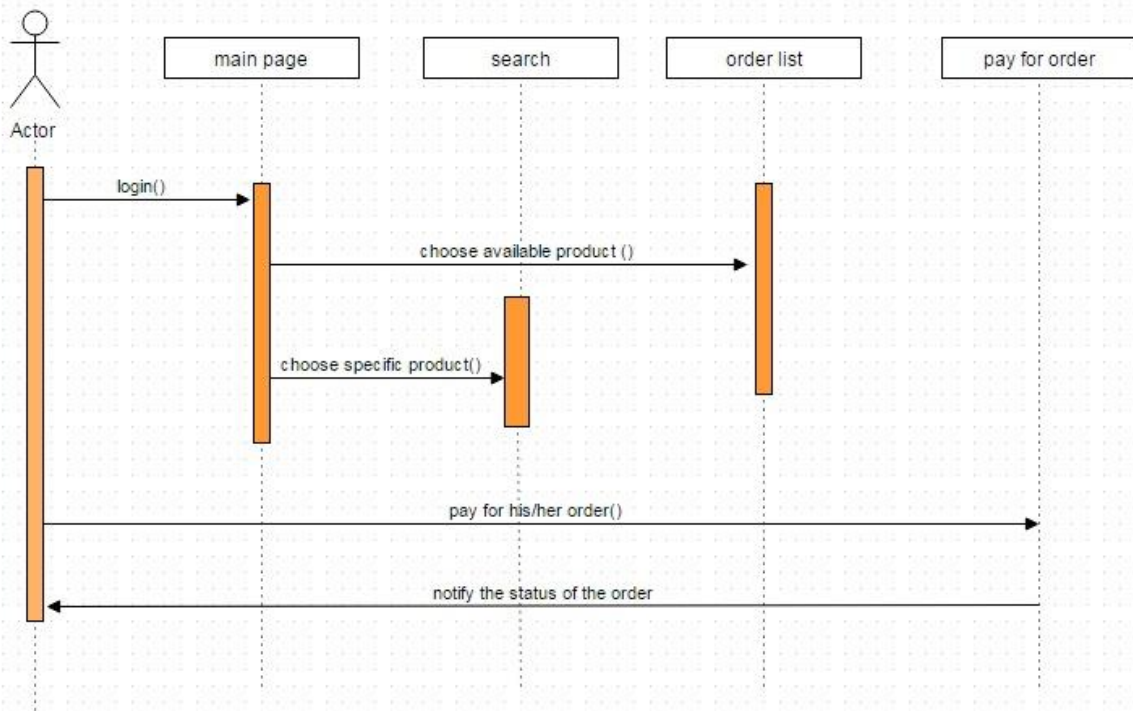
G6-S1(TL)

SEQUENCE diagrams

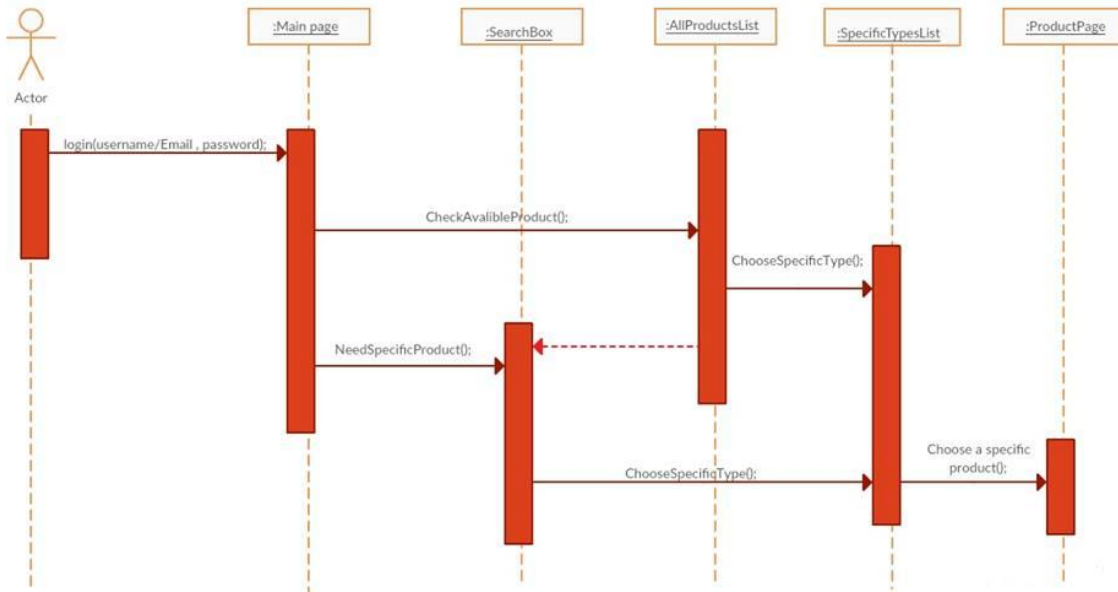
Cancel an order Sequence Diagram :Done by "Tamer + Tawfik"



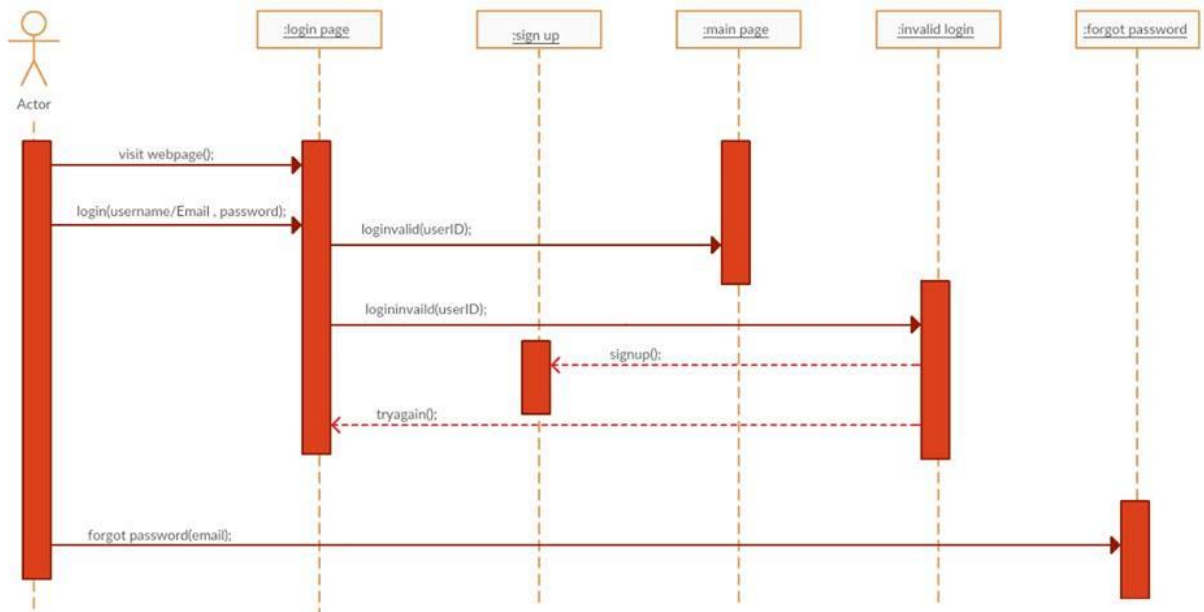
Make an order Sequence Diagram : Done by "Tamer + Tawfik"



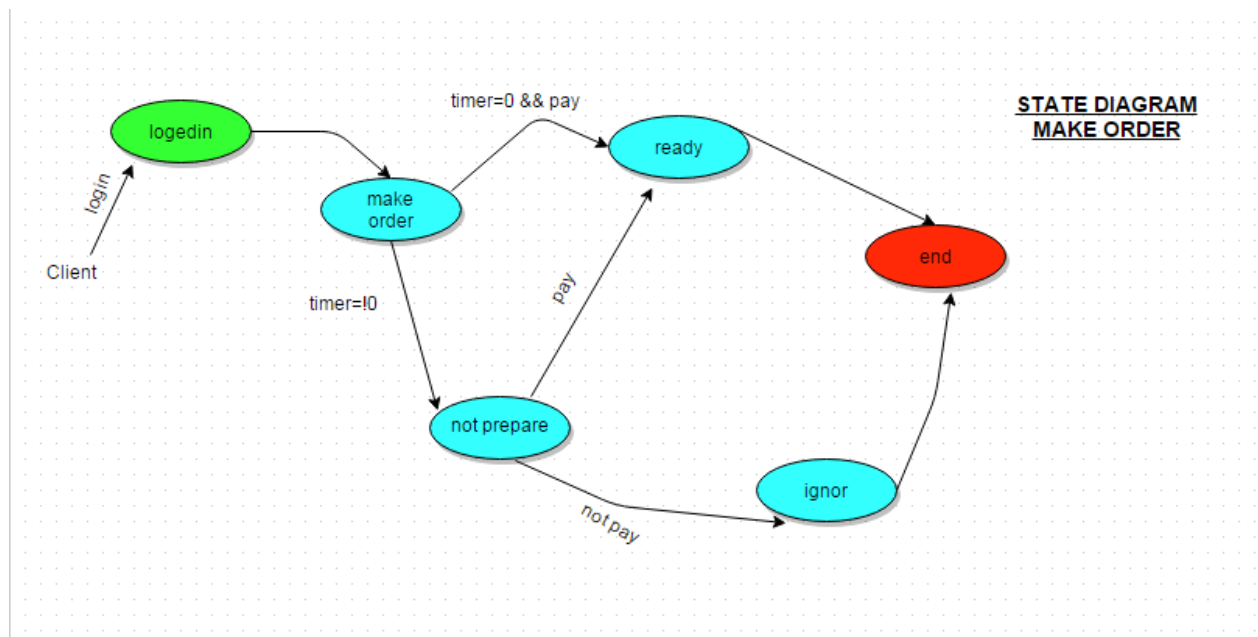
view List Sequence Diagram Done by "Dana":



Login Sequence Diagram Done by Dana:



State Diagram "Done Tawfik" :



✚ Evaluation :

Section	Contributed by	Done By	draw by
System CLASSES and their description	Tawfiq + Tamer	Tawfiq + Tamer	Tamer
CLASS diagram	Tawfiq + Tamer	Tawfiq + Tamer	Tamer
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"Cancel an order" Sequence Diagram	Tawfiq + Tamer	Tawfiq + Tamer	Tawfiq
"view List Sequence" Sequence Diagram	Dana + Helwa	Dana + Helwa	Dana
"Login" Sequence Diagram	Dana + Helwa	Dana + Helwa	Dana
State Diagram	Tawfiq + Tamer + Helwa	Tawfiq + Tamer + Helwa	Tamer
integrate the whole phase			Tamer

System Design

General design goal:

Low coupling: couple between two classes means that these classes collaborate frequently. Customer, Meat and order list classes collaborate frequently which means that they should be in the same domain class, so we grouped these classes in the same component (order Database). We can see other coupled classes and their component diagram in the component diagram below.

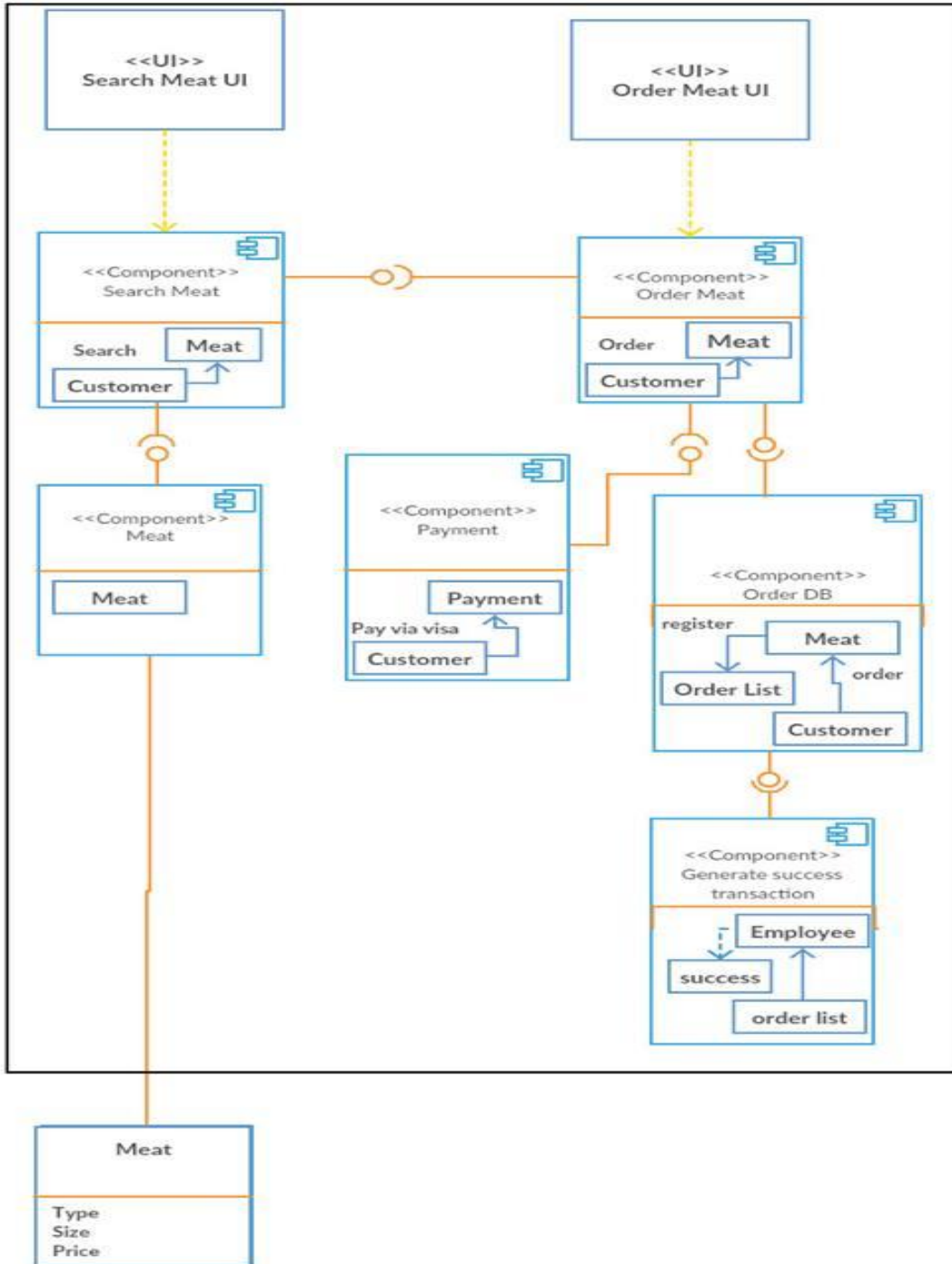
high cohesion: to make components diagram less complex, and every component serves one functionality. That is each component we have designed in our system does a well-defined job, i.e. we define two components: "Customer", "Employee" that will lead to high cohesion since we separate each component to serve only one functionality. Instead of having only one component called "USER" that contains both employee and customer that will lead to low cohesion system, as we can see from our component diagram the connection between components is simple and not complex.

Specific system goal:

Performance in terms of processing speed: the system response time for every instruction conducted by the user must not exceed more than a minimum of 10 seconds. The system has high performance rate when executing user's input and provides system response within a short time, usually 50 seconds for highly complicated tasks and 20 to 25 seconds for less complicated tasks.

user-friendliness in terms of training days: the system provides an easy-to-use GUI, that has a simple layout which serves each function separately, that is our GUI information density does not exceed the 31% of the interface, which is a good design term in "HCI", our system needs a maximum of one day of training to be familiar with all functionality and services.

Component Design

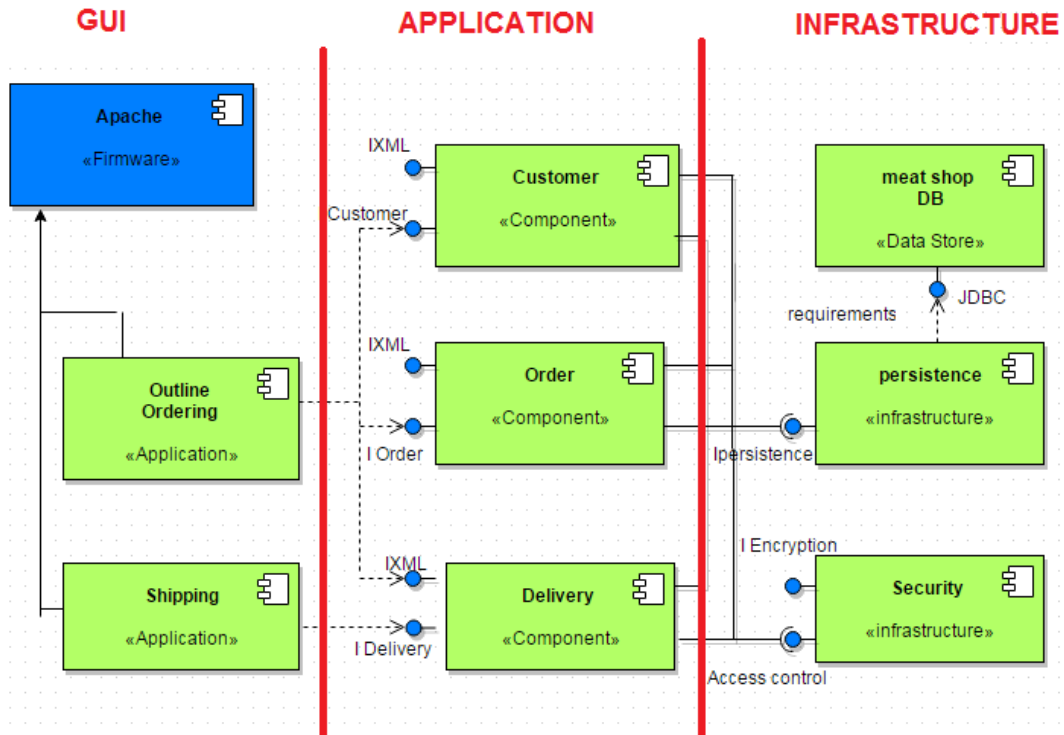


Overall architecture diagram -Done by Tawfiq

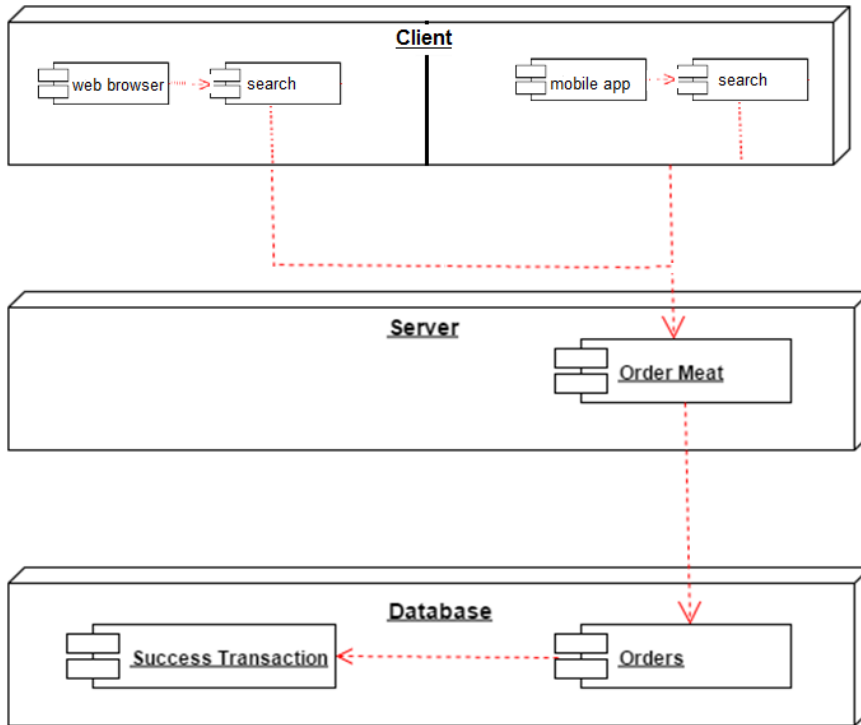
As we can see the diagram has 3-layers, one for the GUI, one for Application, and infrastructure, The User interface classes assigned as application components, and we assign common technical classes to infrastructure components.

> couple between two classes means that these cases collaborate frequently.

> To make components diagram less complex, and every component serves one functionality



Deployment diagram - Done by Tamer & Tawfik



Assessment and Effort Estimation

Done by Tamer

UR	Estimated Effort	Estimation # of developer	Total Effort
UR1 - GUI	1 pw	1	1
UR2 - Code </>	1 pw	2	2
UR3- VISA	1 pw	2	2
UR4 - Design	2 pw	2	4
UR5 - Mobile	2 pw	2	4
UR6 - Translate	1 pw	1	1
Total effort/avg	8 pw	10/6= 1.67	14 pw
Scheduled time 30%	8*1.30=10.4 pw		14*1.30= 18.2
Cost		Avg salary=\$250	250*18.2=4550
Profit Margin(min=10%, max=30%)		Min cost →	4550*1.10=5005
		Max cost →	4550*1.30=5915

Appendix

Our Team Meetings -Done by Tamer:

Date	Duration Time	Subject	Attendance	taken actions
17-Oct-2015 Sat	20 min	>Ice breaking	ALL	-create FB group
20-oct-2015 Tue	15 min	>Time table	ALL	-making time table to ease meeting process
21-oct-2015 Thu	10 min	>Understanding the Business	ALL	-start making business document
24--oct-2015 Sat	15 min	>Understanding the Business &USER REQUIREMENTS	ALL	-setting question to be asked for our Customer
27-oct-2015 Tue	25 min	>USER REQUIREMENTS	ALL - Tawfik	-understanding the business Req and write document
3-Nov-2015 Tue	30 min	>Requirement Analysis	ALL	-setting question to be asked for the customer
5-Nov-2015 Thu	10 min	>Requirement Analysis	ALL - Dana	-ensure our understanding for the business
11-Nov-2015 Wed	10 min	>Requirement Analysis	ALL	Make some changes on the req
14-Nov-2015 Sat	20 min	>Modifying Requirement Analysis >,USER REQUIREMENTS,	ALL	Ensure our changes and set up meeting with our customer
19-Nov-2015 Thu	10 min	>Modifying Requirement Analysis , >USER REQUIREMENTS, >Understanding the Business	ALL-tamer	Negotiate actors role
25-Nov-2015 Wed	10 min	Discuss all the previous works	ALL	Ensure every things alright with our customer
8 Dec-2015 Tue	10 min	Getting ready to the up coming phase	ALL	-recap all the work
10 Dec-2015 Thu	15 min	System Modelling and Design : use case	ALL-dana	Negotiate the business functionality
15 Dec-2015 Tue	20 min	System Modelling and Design : use case	ALL	Just drawing draft together and suggest changes
17 Dec-2015 Thu	20 min	System Modelling and Design : Overall Activity Diagram	ALL	Changes have been made ,payment problem
19 Dec-2015 Sat	30 min	System Modelling and Design : Overall Activity Diagram	ALL -Helwa	Changes have been made
22 Dec-2015 Tue	25 min	System Modelling and Design : use case , Overall Activity Diagram	ALL	ensure the timer and the payment are correct

2 Jan-2016 Sat	30 min	architectural Design	ALL	-draw draft and understand
4 Jan-2016-Mon	20 min	component design	ALL	Make changes and ensure the previous work and their goals
6 Jan-2016 Wed	25 min	deployment diagram	ALL	Finalizing the deployment

Our Team Meetings with Customer –Done by Tamer:

Date	Duration Time	Meeting Subject	Attendance	Taken action
21 Oct Wed	30 min	>Ice breaking >understanding the business	All	- Taking notes about the business
27 Oct Tue	10 min	>Work on business description and requirement	All	-summerize the business requ
4 Nov Wed	20 min	>Ensure the requirement meets the business needs	All	- Our work has been approved
25 Nov Wed	15 min	>Discuss the actors role and their > use cases and	All	-payment method to be approved next meeting "visa"
28 Nov Sat	10 min	>Discuss the scenario	All	-payment method approved
1 Dec Tue	25 min	>Discuss All activity diagram	Ahmad KH , Ehab A , Tamer & Tawfik	-To work on timer within the diagrams
2 Dec Wed	5 min	>To approve the activity diagram changes	Ahmad KH Tamer Tawfik	-changes on the activity diagram approved
15 Dec Tue	15 min	>Discussed system classes ,	All	--start working on class diagram
17 Dec Thu	20 min	>Discusses object diagram.	All	-class diagram approved
5 Jan Tue	15 min	> architectural Design >component design and >deployment diagram	All	- All works have been approved

The End