

CAPSTONE PROJECT

MADHURI HIMA BINDU SATTURI

CIS613 SOFTWARE DEVELOPMENT

STUDENT ID: 21088629

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MILESTONE #1**a. Purpose or Goal of the System:**

Pizza ordering application is an online application designed to allow the customers to order pizza for pick up from store or home delivery. The main goal of designing this application is to allow customers enjoy flexible and quality service. This application gives them an option of making all possible choices from the menu, it allows to save customer contact details if they choose, this saves time of returning customers in placing the order etc.

The Main Goals of the Pizza Ordering Application:

1. To provide customers with an application to satisfy all their requirements i.e. a user friendly application.
2. The application should pop up the current daily deals, for customer to select their choice of deal.
3. When the customer add their order to cart, the application should generate the balance due amount.
4. The application should allow customer to pay for the order using debit card, credit card and cash option should be available if customer has selected to pick up from store.
5. The application should allow them to customize pizza to their choice (toppings, crust, cheese etc.)
6. The customers should be able to easily look up if their order status is ready or not.

b. Primary User(s) of the system

1. Customer is main primary user of the system.
2. Pizza store worker who takes order on phone.
3. Pizza delivery boy.
4. System administrator who manage the online orders.
5. Bank representative accessing the system to process transactions paid by both debit and credit card.

2. Assume the role of the customer. Identify 10 user requirements in user story format “As a (role), I want (feature), so that I can (justification/benefit).”**User Requirements:**

1. As a customer, I want to look for current hot deals and coupons so that I can decide on menu or add any special items to my order.
2. As a customer, I want to access menu so that I can make an order.
3. As a customer, I want to customize my pizza order, so that I can add my favorite toppings, cheese, crust etc.
4. As a customer, I want to add other items from the menu like drinks, salad, bread stick etc. So that I can complete my order.
5. As a customer, I want to apply the coupon to my order so that I can get discount on my total order price.
6. As a customer I would like to track my order so that I can pick my order on time to save my wait time.

7. As a customer, I want to be able to easily make changes to the final order that is made, so that I can make changes (add/delete) to order, not to exceed my budget.
 8. As a customer, I want to check out without any issues, so that I can have good customer experience.
 9. As a customer, I want to get confirmation of order, so that I can track status of order.
 10. As a customer, I want to easily share positive/ negative comments, so that I can appreciate the particular store their service or help them to improve their service quality.
3. **Identify 5 functional requirements and 2 or more non-functional requirements using the “shall” format from Chapter 4.**

Functional Requirements:

- The application shall be able to allow customers to create login.
- The application shall be able to allow customer to order with or without login.
- The application shall be able to allow the customer to choose order pick up, in store or home delivery.
- The application shall be able to allow the customer to make an order of their choice.
- The application shall be able to display pizza store menu list.
- The application shall be able to display the price of each item added from menu to their order in the cart.
- The application shall be able to display order confirmation number.

Non Functional Requirements:

- The application shall be able to support all updates.
- The application shall be able to provide security to customer information.
- The application shall be able to support and manage different customers accessing information at the same time.

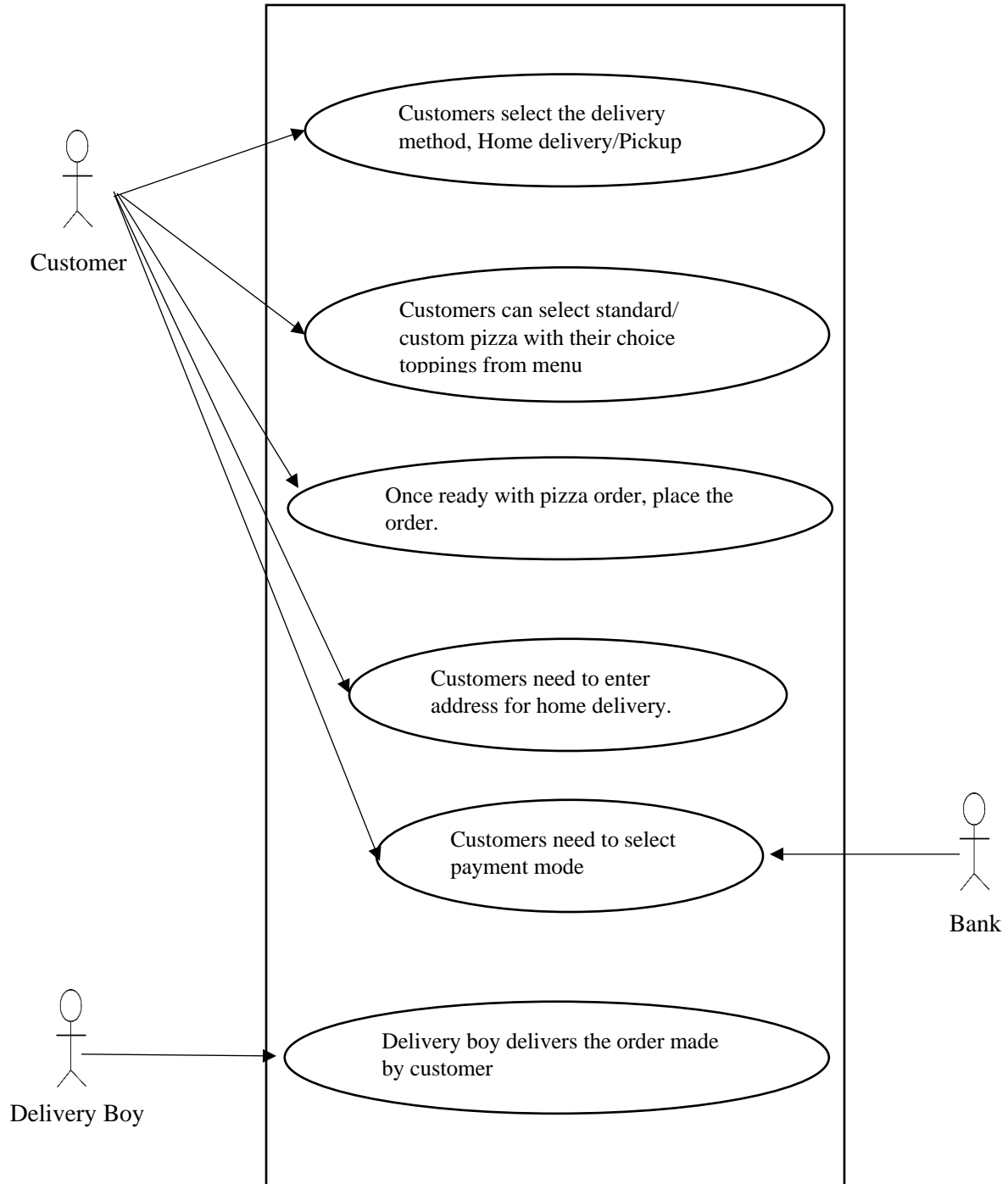
4. Identify 5 use case scenarios and create a simple use case UML diagram for each.

Below are the 5 use case scenarios of the pizza ordering system.

1. Sequence of ordering pizza
2. Track status of pizza order
3. Payment options
4. Role of pizza store manager
5. Delivery method

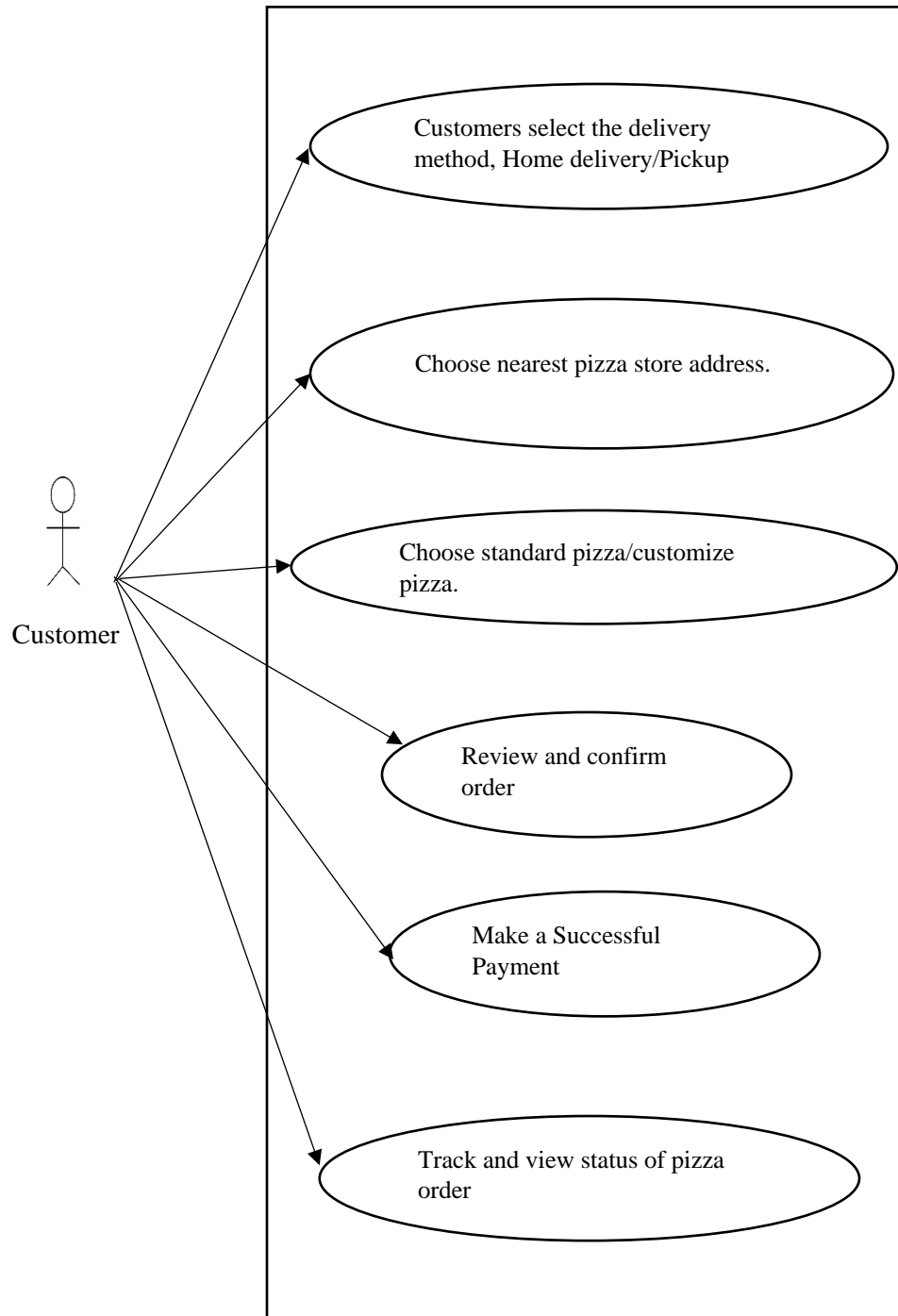
Use Case 1:

Sequence of Ordering Pizza



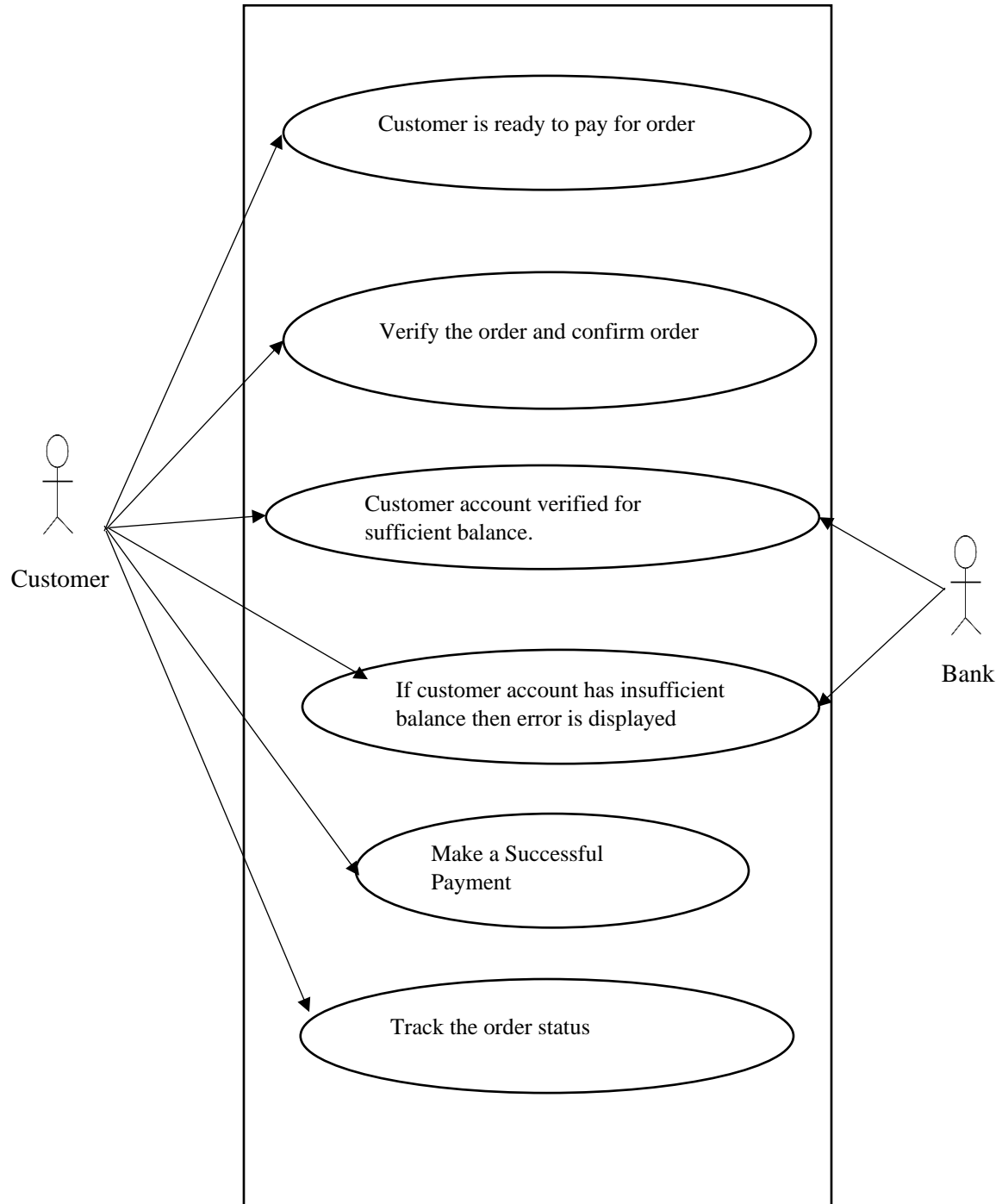
Use Case 2:

Track Status of Pizza Order



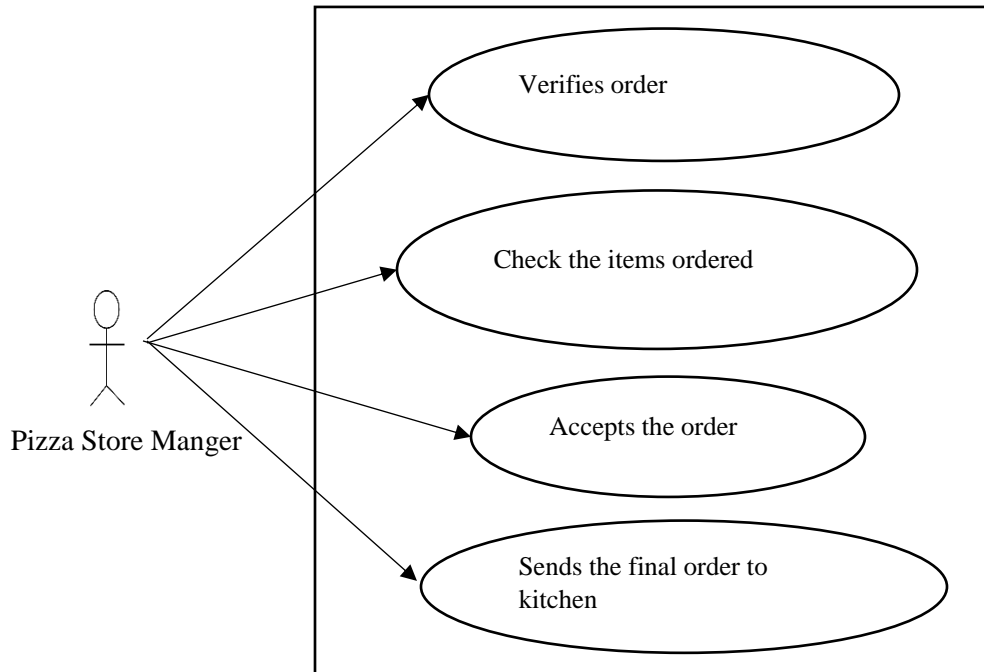
Use Case 3:

Payment Options

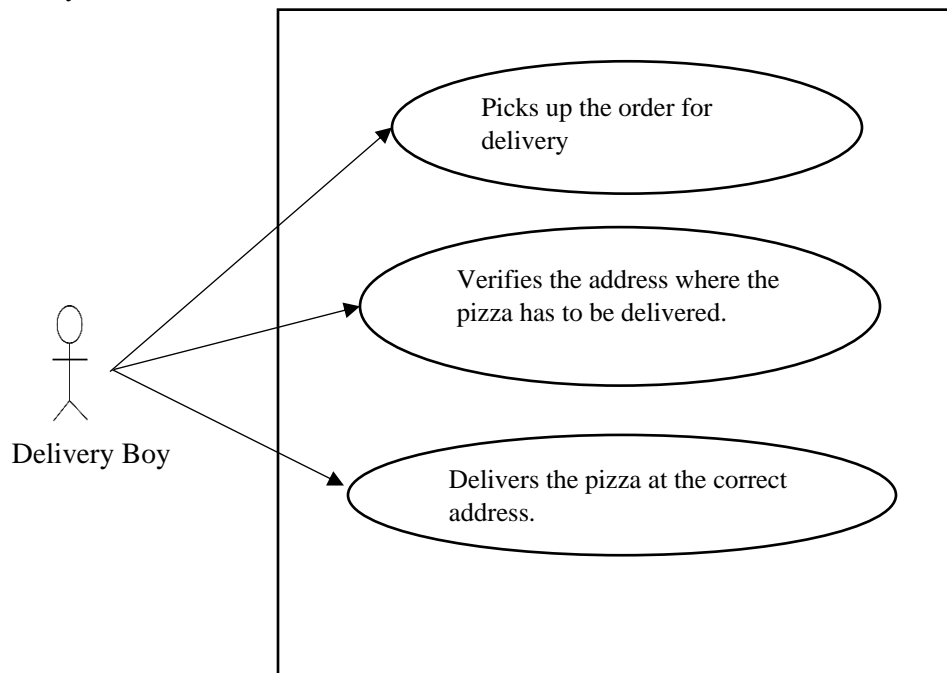


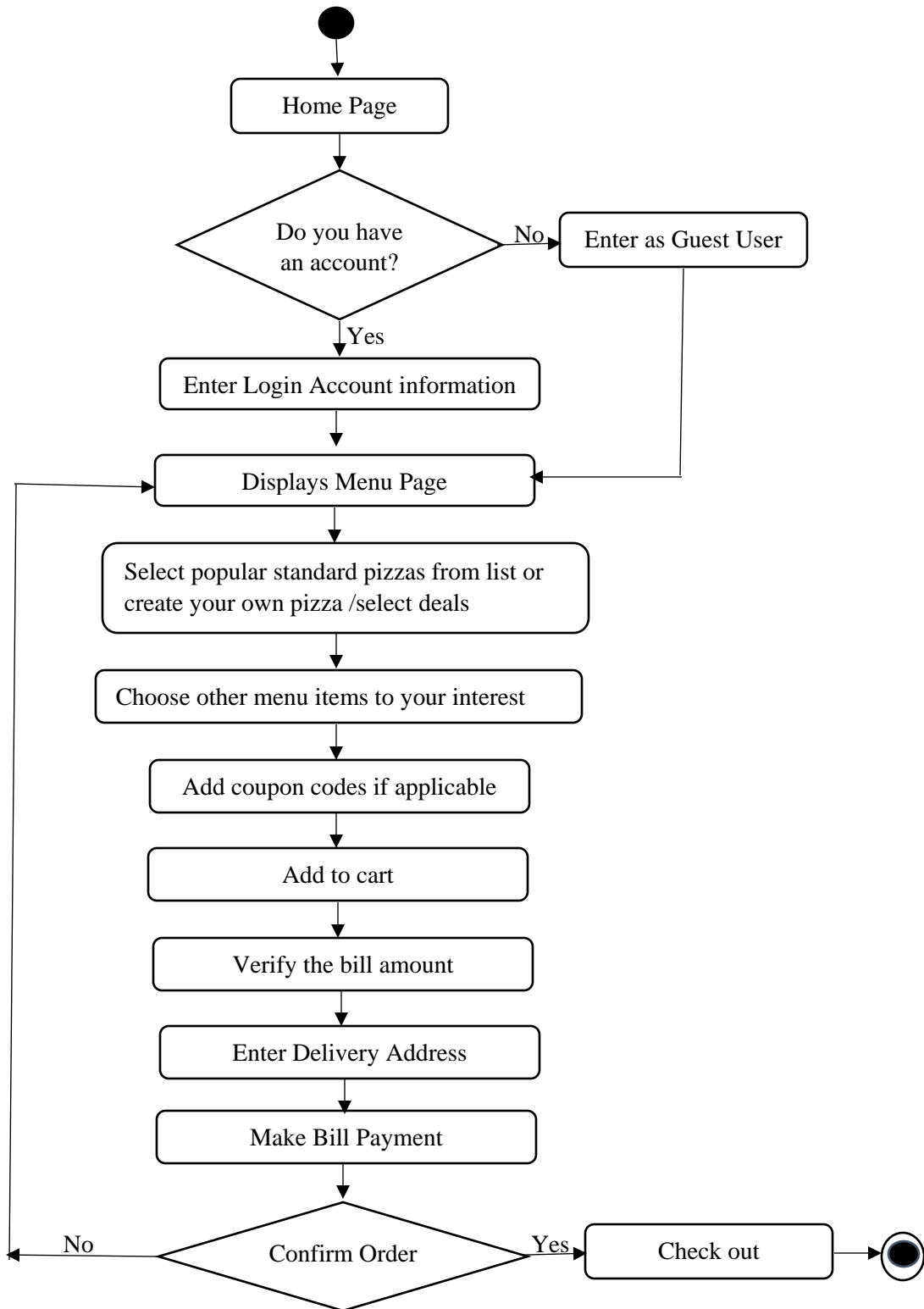
Use Case 4:

Role of pizza Store Manager

**Use Case 5:**

Delivery Method



MILESTONE #2**1. UML Activity diagram for pizza ordering Application:**

2. Test Driven Development Approach:

According to Guru99 (n.d.), the Test Driven Development Approach is the process of developing and running automated tests, before actual development of application. It is carried by following the bellow mentioned steps:

1. Add a test
2. Run all tests and see if any newly added test fails
3. Write some code
4. Run test and Refactor code
5. Repeat

Tests failing and solution to pass the tests:

1. Customer cannot make an order as a guest user.

Write code to make the guest user button visible on the home page beside sign up button.

2. Customer is unable to order customized pizza like size, crust, toppings etc.

Write code to allow users to order for pizza which they can create on their own (Customize pizza).

3. In the menu page, the customer is unable to edit (add/ delete) the items added to the order.

Make changes to the code, to allow users to edit the items added to the order.

4. The customer is unable to make payments for their order.

To allow customer make successful payments for order write code and then create connection with payment gateway, to make transactions.

5. In check out page when discount code is applied to the total. The total amount is not changing.

To apply discount to the total amount, write code for calculation of discount, and display accurate final price.

3. Waterfall software development approach:

I recommend a plan-driven “Water fall” software development approach for developing the pizza ordering application because:

1. The requirements are clear, beginning of the project. Many changes in requirements are not expected during the development process.
2. When sequential process is used for development, the progress of building the application can be easily measured and also helps to be faster.

MILESTONE #3

1. Software Evolution and Maintenance of the System:

Evolution:

“The term software evolution is used in software engineering to describe the procedure of developing software primarily and then constantly updating it for various reasons.”(UKEssays (n.d.)). Software evolution mainly focuses on changes and resettlement i.e. It is a process of transforming the existing software to adjust to the current market situation and inherit some characteristics from the preexisting program.

In the Pizza ordering application the software evolution process helps in tracking each stage of every order till the order status is completed and received by the customer.

It can be useful to the customers to buy pizza store cards in which they can load the cards with money and use these to pay for their order at the counter.

System Maintenance:

There are many items under system maintenance that has to be considered when planning to develop the pizza ordering application like

1. Considering to use the currently popular software and hardware for longer life.
2. Planning the budget required.
3. Use simple, consistent and robust design in order to reduce the possible bugs or fixing if there are any errors.
4. It requires developers with proper understanding of application, so that they can easily and accurately deal with bug fixes and for better maintenance of the system.

2. Risk Analysis:

Risk Analysis and managing risks that might evolve, are very important in software development. Thus below is the risk analysis for pizza ordering application.

Risk Type	Impact	Priority
Security	Security is a serious concern in online websites and web application. Thus when the customers enter sensitive information, when creating account in the pizza ordering system. The hackers can hack system and misuse customer information. Thus it very important to make system very secured.	High

Risk Type	Impact	Priority
Online Payment Risk	The payment gateways used for order payment should be trusted and secured web sites. If not customers card information which is used for making online payment can be easily stolen and misused.	High
User Friendly Application	It is important that the system developed is user friendly, as it allows customers to place orders easily. Thus saving their time.	High
Payment Gateway Failure	In case of payment gateway failure customer will not be able to place order. Therefore the system should suggest other options to the customer	High
Adaptable Software Design	It is essential to use adaptable software design, to easily accommodate new requirements. Else it can cause problems when adding any new requirements in future.	Medium
System Maintenance	It is essential to have experienced staff for system maintenance, this avoids the issue of “System down time”. When customers are trying to place online orders	Medium

System Failure	They need to have enough experienced staff to handle situations when the system failure happens during system maintenance etc. If such issues not handled accurately, can result in loss to business	High
Order Confirmation Failure	Thorough testing of the application should be done to avoid the risk of customer being charged and order not placed correctly. This can cause customer not feeling reliable to use online system for ordering pizza.	Medium
System not displaying current deals	When the application does not display current deals correctly, this option should be temporarily disabled. If not customer can feel ambiguous about online deals not matching physical copy deals.	Low

Project Planning Assignments:

a. Waterfall Approach:

Sl no.	Task	Start Date	Finish Date	Duration	Predecessors
1	Design Web Site	02/23/2018	03/16/2018	15 Days	
2	Log in Account	03/12/2018	03/16/2018	5 Days	1
3	Menu Page	03/05/2018	03/16/2018	10 days	1

4	Coupons and hot deals	03/12/2018	03/16/2018	5 days	1,3
5	Order Check Out	03/19/2018	03/23/2018	5 days	3,4
6	Edit Order	03/21/2018	03/23/2018	3 days	5
7	Order Confirmation	03/26/2018	04/06/2018	7 days	5
8	Track Order	03/26/2018	04/02/2018	5 days	7
9	Order Delivery	04/02/2018	04/10/2018	5 days	7,8
10	Payment Page	04/05/2018	04/16/2018	10 days	5
11	Customer Reviews	04/16/2018	04/20/2018	3 days	

b. Agile Method with two week sprint:

	Sprint 1	Sprint 2	Sprint 3	Sprint4	Sprint5
User Stories	02/26 - 03/09	03/05-03/16	03/19-03/30	04/02-04/13	04/09-04/20
Design Website	Y				
Menu Page		Y			
Payment Window			Y		
Coupons & hot deals				Y	
Log In Account		Y			
Order Confirmation			Y		
Track Order		Y			
Order Check Out			Y		
Order Delivery				Y	
Customer Reviews					Y

c. User Story Rankings

User Stories	Rankings
Design Website	1
Menu Page	2
Payment Page	3
Coupons & hot deals	4
Log In Account	5
Order Confirmation	6
Track Order	7
Order Check Out	8
Order Delivery	9
Customer Reviews	10

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