Final Year CSE AY 2023-24
Project Management
Assignment No 3
(UML diagrams)

Name: Khushi Nitinkumar Patel
PRN No: 2020BTECS00037

1. For the scenario given below create/draw different UML diagrams (DFD level 0, 1 and 2).

Online Bookstore System

An online bookstore allows users to browse books, add them to a cart, and then purchase them. Once purchased, users can download the digital version or opt for home delivery for physical copies.

Entities (External Entities):

1. Customer: The person using the online bookstore.

2. Payment Gateway: External system to handle transactions.

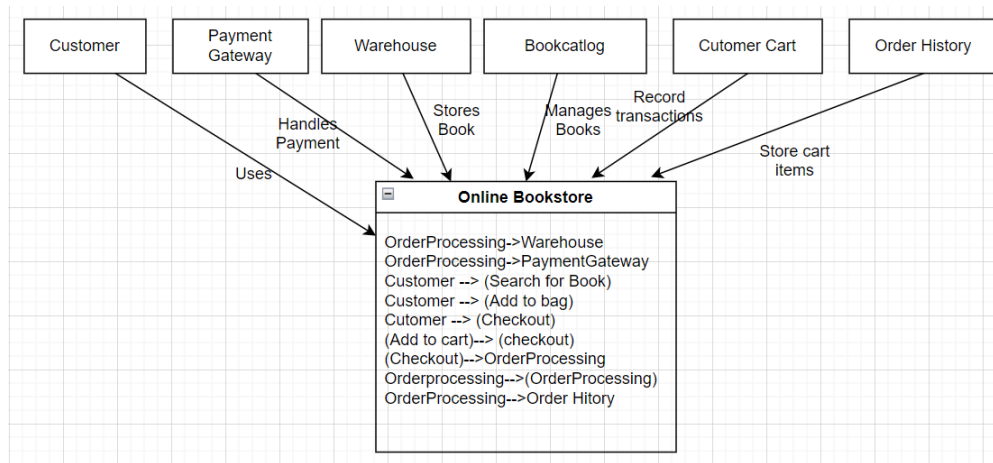3. Warehouse: Physical location where books are stored.

Processes:

1. Search for Book: Customers can search for books using this process.

2. Add to Cart: Customers can add books to their cart using this process.

3. Checkout: Process where customers finalize their purchase.

4. Order Processing: Process where the order details are sent for either digital delivery or physical shipping.
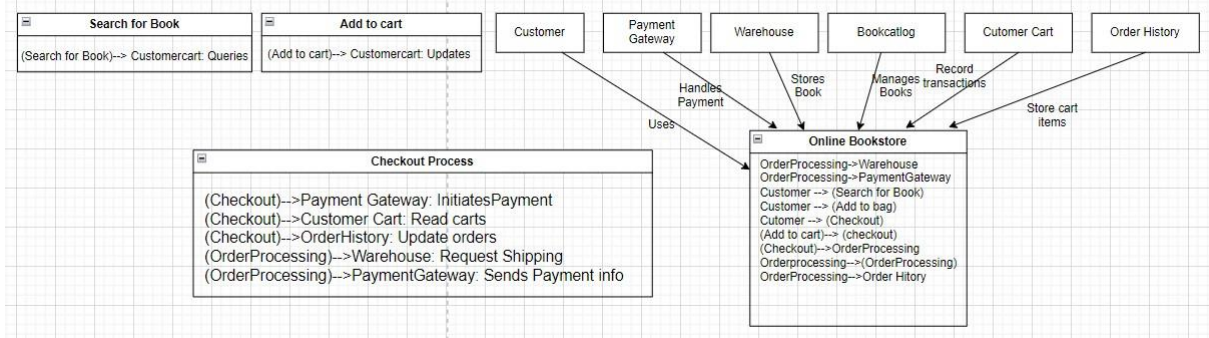
Data Stores:

1. Book Catalog: A database or store where all books and their details are stored.

2. Customer Cart: Temporary storage where selected books are held before purchase.

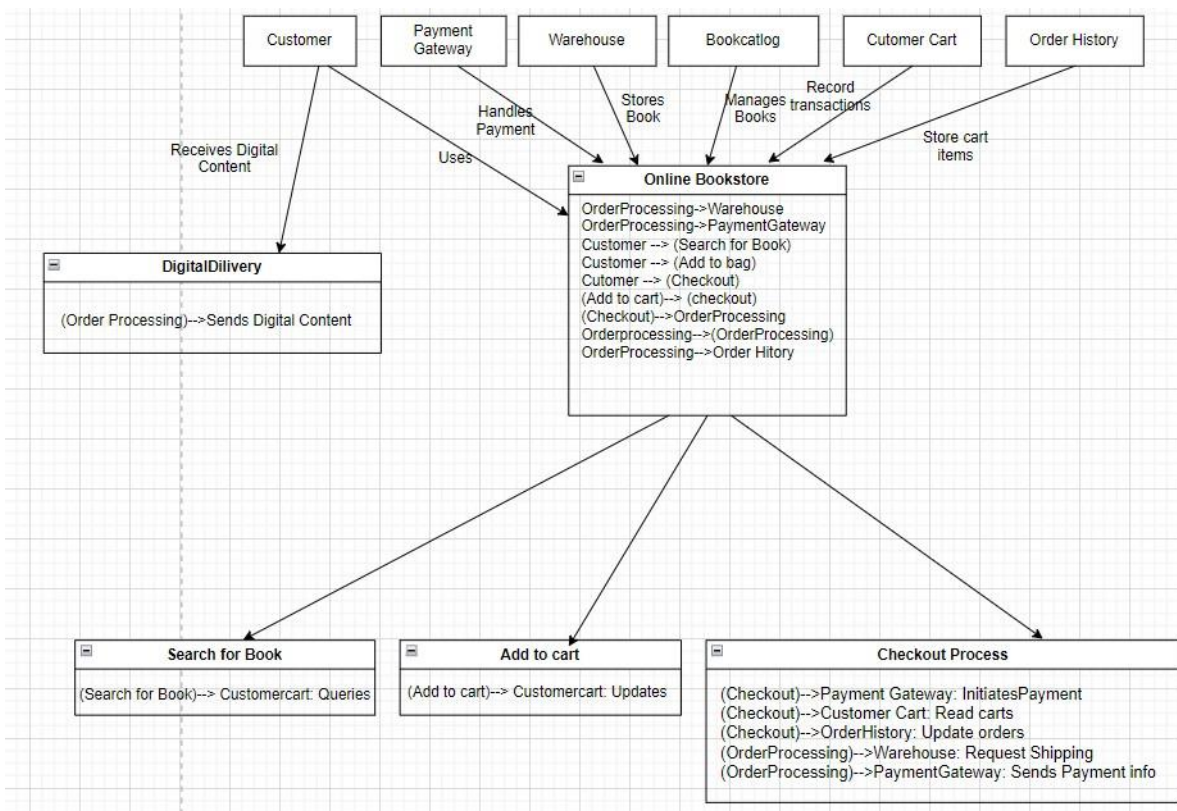3. Order History: A record of all transactions and purchases.

DFD LEVEL 0:

DFD LEVEL 1:

Search for Book

(Search for Book)--> Customercart: Queries

Add to cart

(Add to cart)--> Customercart: Updates

Customer   Payment Gateway   Warehouse   Bookcatlog   Cutomer Cart   Order History

Handles Payment
Stores Book
Manages Books
Record transactions
Store cart items
Uses

Checkout Process

(Checkout)-->Payment Gateway: InitiatesPayment
(Checkout)-->Customer Cart: Read carts
(Checkout)-->OrderHistory: Update orders
(OrderProcessing)-->Warehouse: Request Shipping
(OrderProcessing)-->PaymentGateway: Sends Payment info

Online Bookstore

OrderProcessing->Warehouse
OrderProcessing->PaymentGateway
Customer --> (Search for Book)
Customer --> (Add to bag)
Cutomer --> (Checkout)
(Add to cart)--> (checkout)
(Checkout)-->OrderProcessing
Orderprocessing-->(OrderProcessing)
OrderProcessing-->Order Hitory

DFD LEVEL 2:

Customer   Payment Gateway   Warehouse   Bookcatlog   Cutomer Cart   Order History

Handles Payment
Stores Book
Manages Books
Record transactions
Store cart items
Receives Digital Content
Uses

Online Bookstore

OrderProcessing->Warehouse
OrderProcessing->PaymentGateway
Customer --> (Search for Book)
Customer --> (Add to bag)
Cutomer --> (Checkout)
(Add to cart)--> (checkout)
(Checkout)-->OrderProcessing
Orderprocessing-->(OrderProcessing)
OrderProcessing-->Order Hitory

DigitalDilivery

(Order Processing)-->Sends Digital Content

Search for Book

(Search for Book)--> Customercart: Queries

Add to cart

(Add to cart)--> Customercart: Updates

Checkout Process

(Checkout)-->Payment Gateway: InitiatesPayment
(Checkout)-->Customer Cart: Read carts
(Checkout)-->OrderHistory: Update orders
(OrderProcessing)-->Warehouse: Request Shipping
(OrderProcessing)-->PaymentGateway: Sends Payment info

2. For the scenario given below draw an activity diagram.

Hotel Room Booking Process

Description: A customer wishes to book a room in a hotel. The process starts with checking room availability for the desired dates. If a room is available, the customer provides personal details and payment information. If the payment is successful, the room is reserved, and a confirmation is sent to the customer. If the room is not available or payment fails, the customer is informed of the issue.

Activity Diagram Steps:

1. Start the Process: Begin with a start node.

2. Check Room Availability:

3. Decision Node: "Is the room available for desired dates?"

If yes, proceed to the next step. If no, provide a message "Room not available" and end the process.

4. Enter Personal and Payment Details: The customer provides personal details and payment information.

5. Process Payment: Decision Node: "Is payment successful?"

If yes, proceed to next step. If no, provide message "Payment failed" & end process.

6. Reserve Room: The system reserves the room for the customer.

7. Send Confirmation: The system sends a booking confirmation to the customer.

8. End the Process: End with an end node.

Free UML tools: 1. StarUML 2. Umbrello 3. Draw.io 4. UML designer tool 5. Umple

Activity Diagram: