Amr Khaled GaberAbdelbaset(team leader)   21100834

Mohamed TalatAhmed Elslamwy   21100809
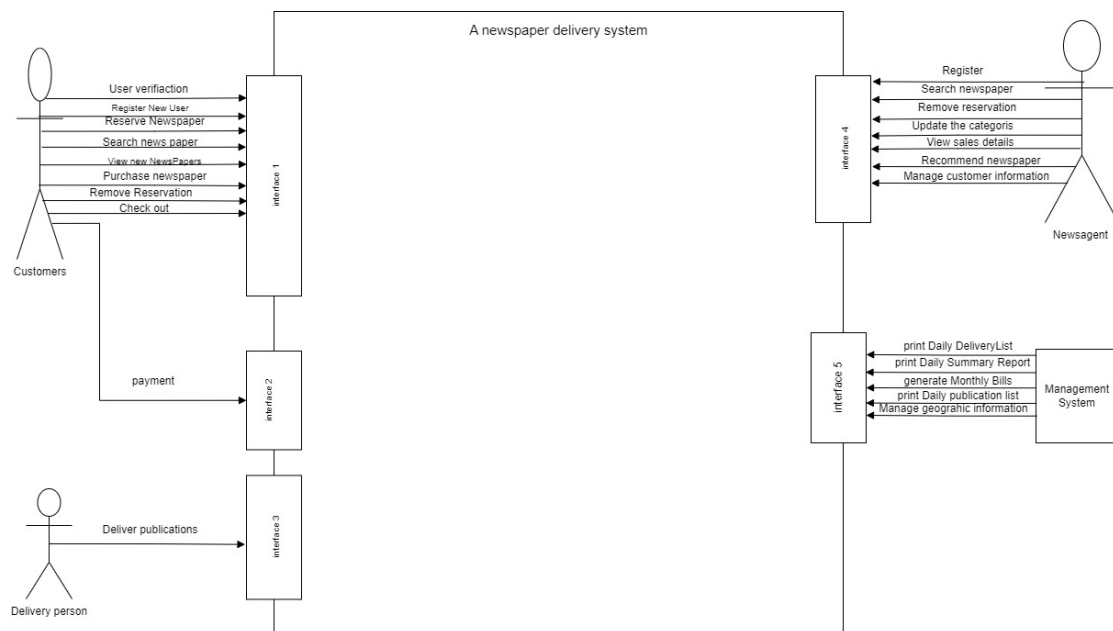
Ahmed Mohamed Elmohamady   21100821

Ahmed Mohamed Dawood   21100820
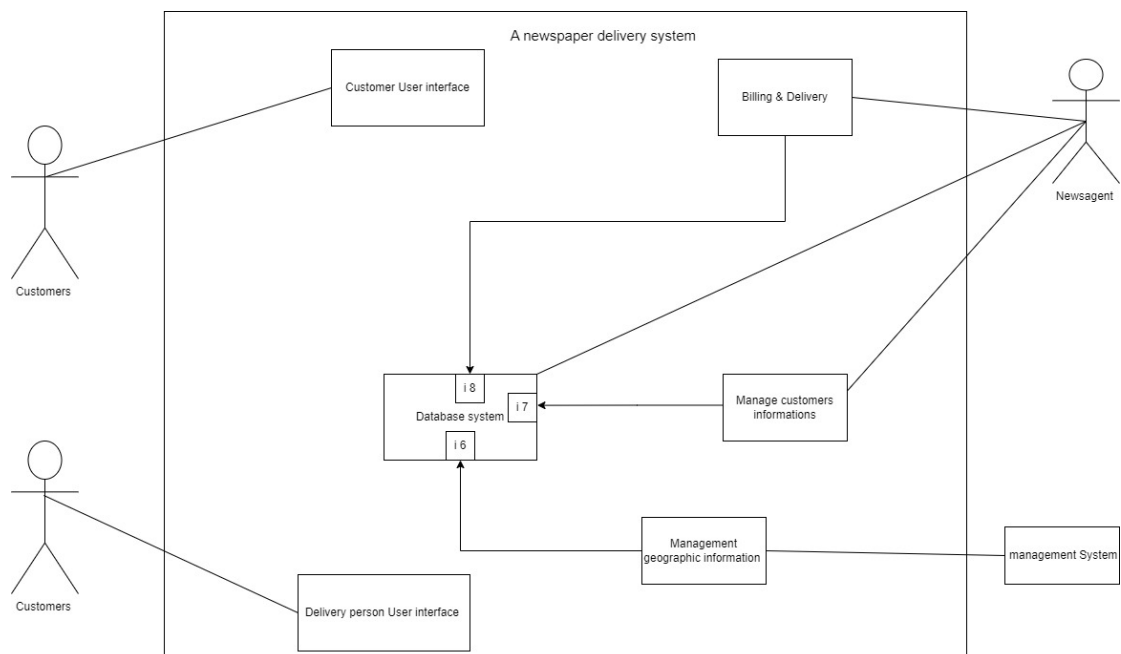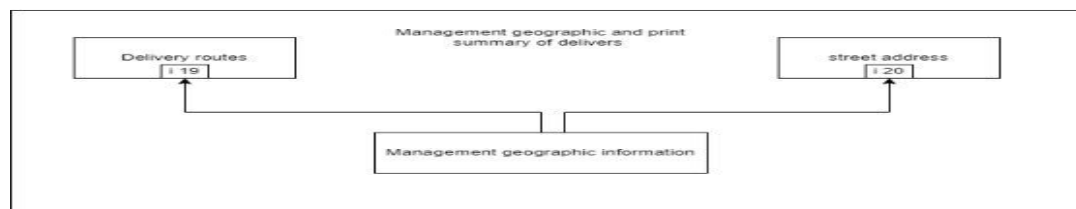
Mohamed Ahmed SaadAl   i21100871

Q2:SA

Level0 :

A newspaper delivery system

Customers
- User verifiaction
- Register New User
- Reserve Newspaper
- Search news paper
- View new NewsPapers
- Purchase newspaper
- Remove Reservation
- Check out

interface 1

payment

interface 2

Delivery person
- Deliver publications

interface 3

Newsagent
- Register
- Search newspaper
- Remove reservation
- Update the categoris
- View sales details
- Recommend newspaper
- Manage customer information

interface 4

Management System
- print Daily DeliveryList
- print Daily Summary Report
- generate Monthly Bills
- print Daily publication list
- Manage geograhic information

interface 5

Level1:

A newspaper delivery system

Customers — Customer User interface

Billing & Delivery

Newsagent

Database system
- i 8
- i 7
- i 6

Manage customers informations

Customers — Delivery person User interface

Management geographic information

management System

Level 2:

Billing and Delivery system

Billing and Delivery management system → i 9 Billing and Delivery Database

Compute monthly bilis → i 10 print biling report

Print report for dliveries

Database Management System

Retrieve info i 12

Queries i 11

Database

edit info i 13

i14 Save in database

Manage customers informations

add Customer information i 15

Update Customer information i 16

Manage customers informations

i 17 Modify Customer information

i 18 Remove Customer information

Management geographic and print summary of delivers

Delivery routes i 19

street address i 20
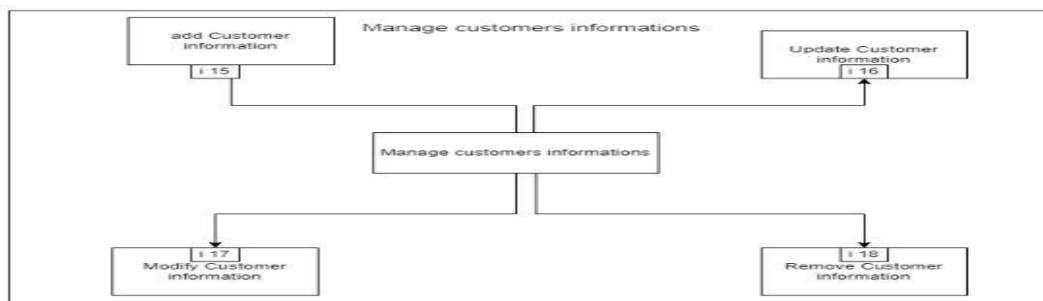
Management geographic information
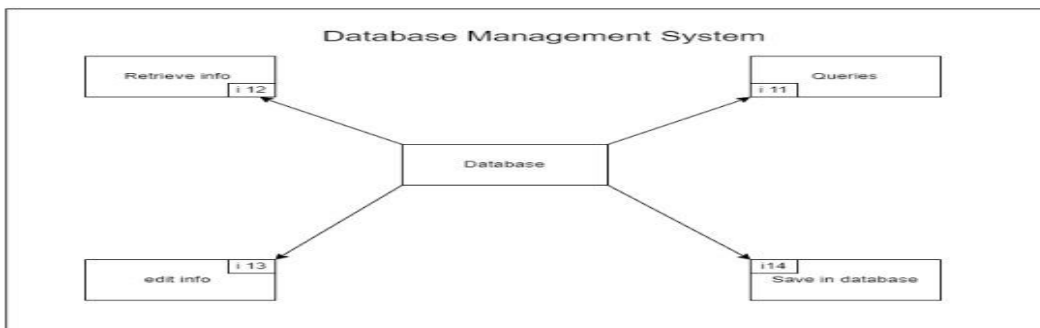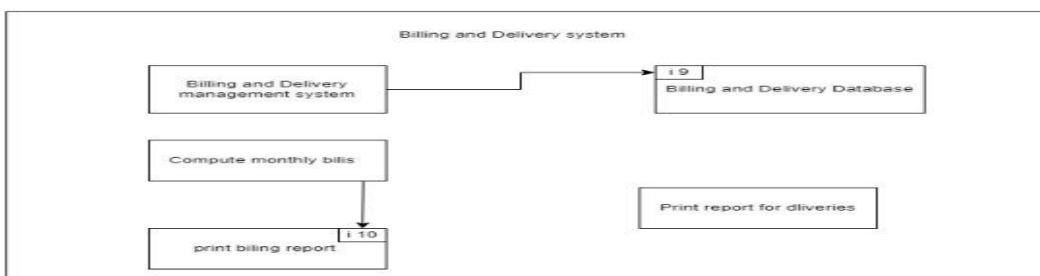
Q3:

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interface definitions:

</div>

Interface 1: library management interface

- Public Boolean search newspaper(string title,int idnewsp)
- Public Boolean check out(int price)
- Public Boolean remove Reservation (string Reservation)
- Public void purchase book(string newspdetails)
- Public Boolean Reserve book(string newspInfo)
- Public void Register new user(string information)
- public void view_newspaper(newspaper spec);
- public void verifyUser(String userID, String passWord);

<div align="center">

Interface 2: payment interface

</div>

- public void payment_With_CreditCard ()
- public void validatePINNumber()
- public void paymentCash ()

interface 3: delivery management system

• public void print _info();

• public void compute_bills();

Interface 4: newsagent management system

- Public void Register (string information)
- Public Boolean search book (string title,int isbn)
- Public Boolean remove Reservation (string Reservation)
- Public void update categories (string books information)
- public data[] add _customer_info()
- public void delete _customer_info()
- public data[] modify _customer_info()

interface 5: management system

- public string address_info()
- public void print _dailydeliverylist();
- public void print _dailyreport();
- public void print _dailypublicationslist();
- public void generate_PaymentProcessfromDatabase(String paymentProcess)

interface 6: geographic management service

- public string address_info()

interface 7: manage customers' service

- public data[] add _customer_info()
- public void delete _customer_info()
- public data[] modfiy _customer_info();
- public void verifyUser(String userID, String passWord);

interface 8: billing and delivery service

- Public void retrieveTrackerInfo(String Tracker ID)
- public void saveTrackerInfo(String trackerName)
- public void compute_bills();
- public void print _dailydeliverylist();
- public void print _dailybillingreport();

interface 9: billing and delivery database

- public void saveTrackerInfoInDatabse(String TrackerName)
- Public void retrieveTrackerInfodatabase(String Tracker ID)
- public void savePaymentProcessInDatabase(String paymentProcess)
- public void compute_billsdatabase()
- public void print _dailydeliverylistdatabase ()
- public void print _dailybillingreportdatabase ()

interface 10: print billing interface

- public void print _billinginfo();

interface 11: queries Interface

- public void usersQueries(String userName)
- Public void QueryAboutTracker(String TrackerName)
- public void QueryAboutnewspaper(String newspaperName)
- public void costumerqueries(String coustmerinfo)

Interface 12: retrieve Informations

- public void retrieveUserInfo(String userEmail)
- public void retrieveTrackerInfo(String trackerID)
- public void RetrieveNewspaperInfo(String newspaperID)
- public void retrieveUserInfo(String userID)

Interface 13: Edit info

- public boolean editInfoSetName(String infoSetID, String newName);

interface 14: save in database

- public void saveInfo(info info);

interface 15: add costumer information

- public data[] add _customer_info()

interface 16: update costumer information

- public data[] update _customer_info()

interface 17: modfiy costumer information

- public data[] modfiy _customer_info()

interface 18: delete costumer information.
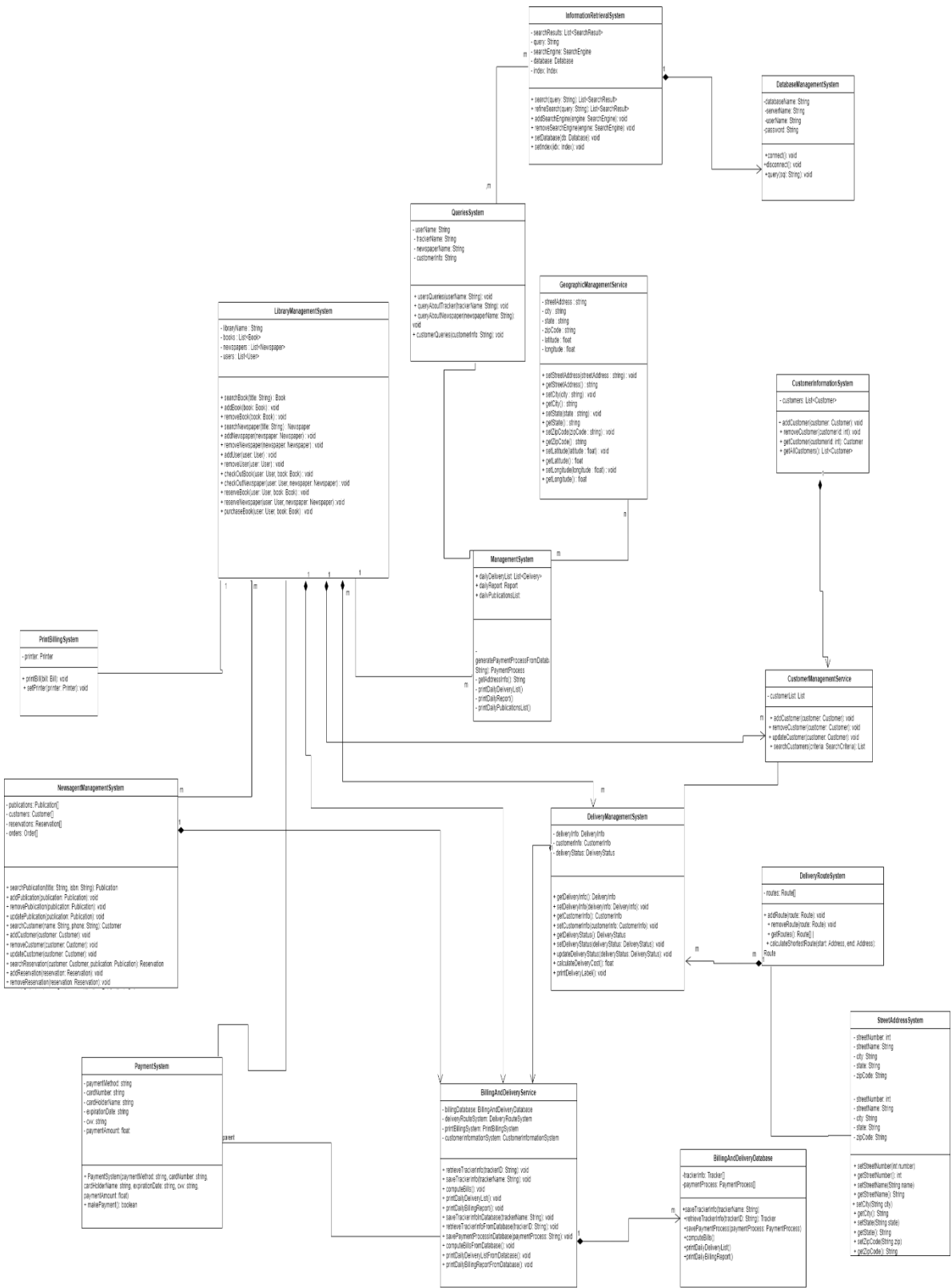
- public data [] delete _customer_info()

interface 19: delivery routes

- public data [] delivery_routesinfo()

interface 20: street address

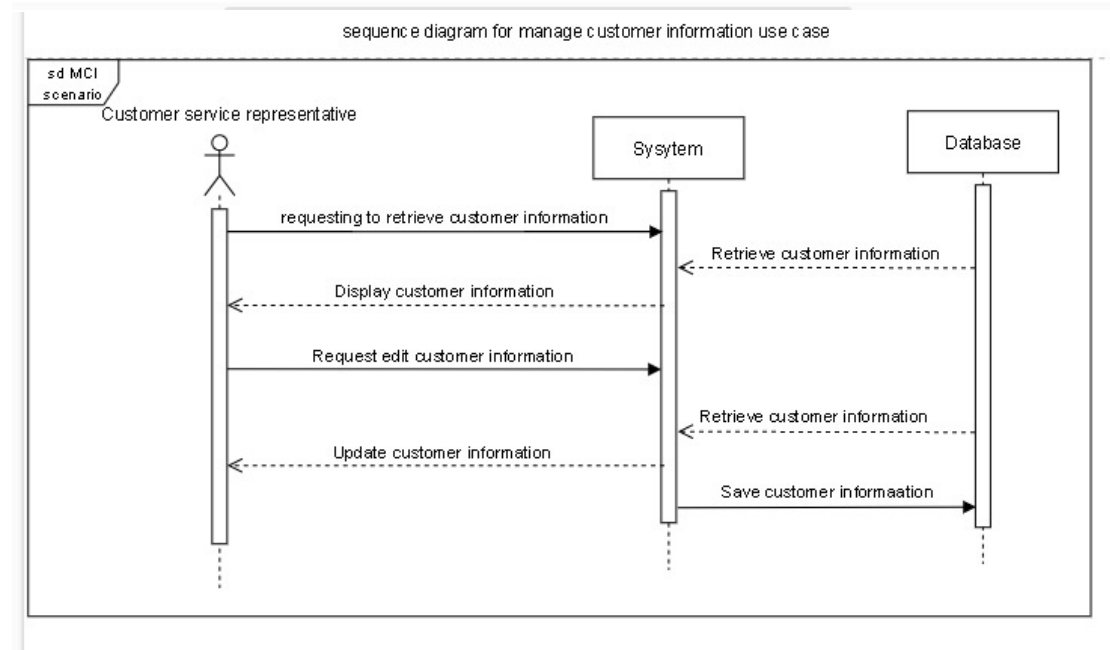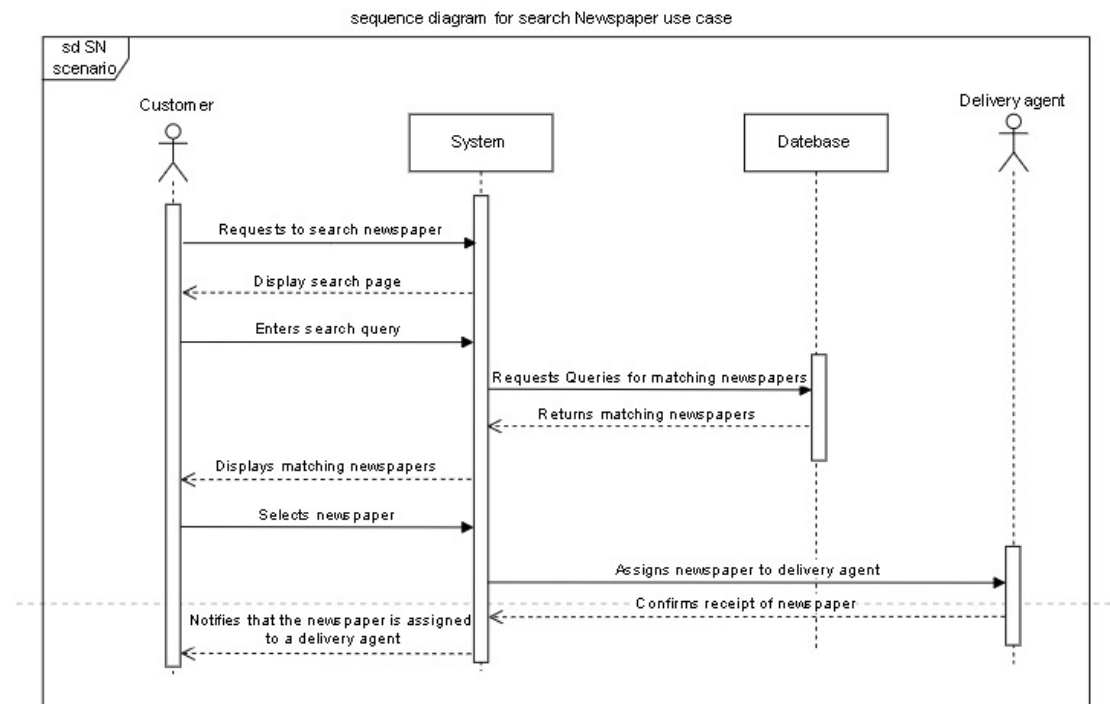- public data [] street_addressinfo()

Q4:

InformationRetrievalSystem
- searchResults : List<SearchResult>
- query : String
- searchEngine : SearchEngine
- database : Database
- index : Index

+ search(query : String) : List<SearchResult>
+ refineSearch(query : String) : List<SearchResult>
+ addSearchEngine(engine : SearchEngine) : void
+ removeSearchEngine(engine : SearchEngine) : void
+ setDatabase(db : Database) : void
+ setIndex(idx : Index) : void

DatabaseManagementSystem
- databaseName : String
- serverName : String
- userName : String
- password : String

+ connect() : void
+ disconnect() : void
+ query(sql : String) : void

QueriesSystem
- userName : String
- trackerName : String
- newspaperName : String
- customerInfo : String

+ usersQueries(userName : String) : void
+ queryAboutTracker(trackerName : String) : void
+ queryAboutNewspaper(newspaperName : String) : void
+ customerQueries(customerInfo : String) : void

GeographicManagementService
- streetAddress : string
- city : string
- state : string
- zipCode : string
- latitude : float
- longitude : float

+ setStreetAddress(streetAddress : string) : void
+ getStreetAddress() : string
+ setCity(city : string) : void
+ getCity() : string
+ setState(state : string) : void
+ getState() : string
+ setZipCode(zipCode : string) : void
+ getZipCode() : string
+ setLatitude(latitude : float) : void
+ getLatitude() : float
+ setLongitude(longitude : float) : void
+ getLongitude() : float

CustomerInformationSystem
- customers : List<Customer>

+ addCustomer(customer : Customer) : void
+ removeCustomer(id : int) : void
+ getCustomer(customerId : int) : Customer
+ getAllCustomers() : List<Customer>

LibraryManagementSystem
- libraryName : String
- books : List<Book>
- newspapers : List<Newspaper>
- users : List<User>

+ searchBook(title : String) : Book
+ addBook(book : Book) : void
+ removeBook(book : Book) : void
+ searchNewspaper(title : String) : Newspaper
+ addNewspaper(newspaper : Newspaper) : void
+ removeNewspaper(newspaper : Newspaper) : void
+ addUser(user : User) : void
+ removeUser(user : User) : void
+ checkOutBook(user : User, book : Book) : void
+ checkOutNewspaper(user : User, newspaper : Newspaper) : void
+ reserveBook(user : User, book : Book) : void
+ reserveNewspaper(user : User, newspaper : Newspaper) : void
+ purchaseBook(user : User, book : Book) : void

ManagementSystem
+ dailyDeliveryList : List<Delivery>
+ dailyReport : Report
+ dailyPublicationsList

- generatePaymentProcessFromDatab : String) : PaymentProcess
- getAddressInfo() : String
+ printDaily(DeliveryList)
+ printDaily(Report)
+ printDailyPublicationsList)

CustomerManagementService
- customerList : List

+ addCustomer(customer : Customer) : void
+ removeCustomer(customer : Customer) : void
+ updateCustomer(customer : Customer) : void
+ searchCustomers(criteria : SearchCriteria) : List

PrintBillingSystem
- printer : Printer

+ printBill(bill : Bill) : void
+ setPrinter(printer : Printer) : void

NewsagentManagementSystem
- publications : Publication[]
- customers : Customer[]
- reservations : Reservation[]
- orders : Order[]

+ searchPublication(title : String, isbn : String) : Publication
+ addPublication(publication : Publication) : void
+ removePublication(publication : Publication) : void
+ updatePublication(publication : Publication) : void
+ searchCustomer(name : String, phone : String) : Customer
+ addCustomer(customer : Customer) : void
+ removeCustomer(customer : Customer) : void
+ updateCustomer(customer : Customer) : void
+ searchReservation(customer : Customer, publication : Publication) : Reservation
+ addReservation(reservation : Reservation) : void
+ removeReservation(reservation : Reservation) : void

DeliveryManagementSystem
- deliveryInfo : DeliveryInfo
- customerInfo : CustomerInfo
- deliveryStatus : DeliveryStatus

+ getDelivery(info) : DeliveryInfo
+ setDeliveryInfo(deliveryInfo : DeliveryInfo) : void
+ getCustomerInfo() : CustomerInfo
+ setCustomerInfo(customerInfo : CustomerInfo) : void
+ getDeliveryStatus() : DeliveryStatus
+ setDeliveryStatus(deliveryStatus : DeliveryStatus) : void
+ updateDeliveryStatus(deliveryStatus : DeliveryStatus) : void
+ calculateDeliveryCost() : float
+ printDeliveryLabel() : void

DeliveryRouteSystem
- routes : Route[]

+ addRoute(route : Route) : void
+ removeRoute(route : Route) : void
+ getRoutes() : Route[]
+ calculateShortestRoute(start : Address, end : Address) : Route

PaymentSystem
- paymentMethod : string
- cardNumber : string
- cardHolderName : string
- expirationDate : string
- cvv : string
- paymentAmount : float

+ PaymentSystem(paymentMethod : string, cardNumber : string, cardHolderName : string, expirationDate : string, cvv : string, paymentAmount : float)
+ makePayment() : boolean

BillingAndDeliveryService
- billingDatabase : BillingAndDeliveryDatabase
- deliveryRouteSystem : DeliveryRouteSystem
- printBillingSystem : PrintBillingSystem
- customerInformationSystem : CustomerInformationSystem

+ retrieveTrackerInfo(trackerID) : void
+ saveTrackerInfo(trackerName : String) : void
+ computeBills() : void
+ printDaily(DeliveryList) : void
+ printDaily(BillingReport) : void
+ saveTrackerInfoInDatabase(trackerName : String) : void
+ retrieveTrackerInfoFromDatabase(trackerID : String) : void
+ savePaymentProcessInDatabase(paymentProcess : String) : void
+ computeBillsFromDatabase() : void
+ printDaily(DeliveryListFromDatabase) : void
+ printDailyBillingReportFromDatabase() : void

BillingAndDeliveryDatabase
- trackerInfo : Tracker[]
- paymentProcess : PaymentProcess[]

+ saveTrackerInfo(trackerName : String)
+ retrieveTrackerInfo(trackerID : String) : Tracker
+ savePaymentProcess(paymentProcess : PaymentProcess)
+ computeBills()
+ printDaily(DeliveryList)
+ printDaily(BillingReport)

StreetAddressSystem
- streetNumber : int
- streetName : String
- city : String
- state : String
- zipCode : String

+ setStreetNumber(int number)
+ getStreetNumber() : int
+ setStreetName(String name)
+ getStreetName() : String
+ setCity(String city)
+ getCity() : String
+ setState(String state)
+ getState() : String
+ setZipCode(String zip)
+ getZipCode() : String

Q5:

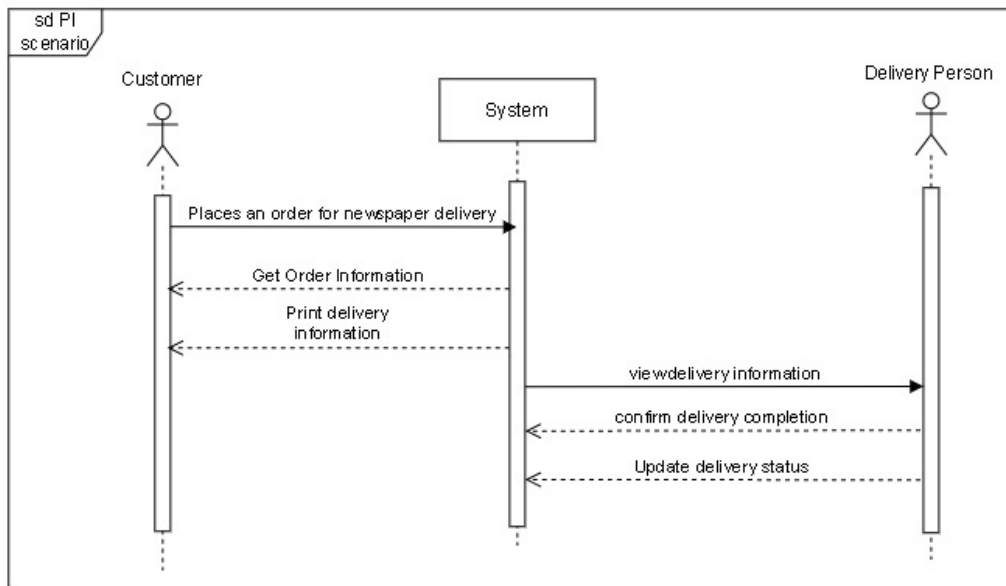| Search for newspaper	checkout	Add newspaper	reservation	Print information
A	B	C	D	E
registration	Manage geographic info	Manage Customer information	Generate Daily Delivery List	Generate Daily Summary Reports
F	G	H	I12	J
Delivery Schedule System	Track Delivery Status	Assign Delivery Persons to Routes	Assign Publications to Customers	
K	L	M	N	

Q5 :

Requirements number	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	1	0	1	1	1	
3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	
4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
5	0	0	0	0	0	0	1	1	0	0	0	1	0	0	
6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	
7	0	0	0	0	1	0	0	1	0	0	0	0	0	0	
8	1	0	1	0	0	0	0	0	0	0	0	0	0	0	
9	0	0	0	1	0	0	0	0	1	0	0	0	0	0	
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
12	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
13	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
17	0	0	1	1	1	0	0	0	0	0	0	0	0	0	
18	0	0	1	1	1	0	0	0	0	0	0	0	0	0	
19	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
20	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	0	1	0	1	1	1	
22	0	0	0	0	0	0	1	0	0	1	0	0	0	0	
23	1	0	1	0	0	0	0	0	0	0	0	0	0	1	
24	0	0	0	1	0	0	0	0	1	0	0	0	0	0	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
28	1	0	1	0	0	0	0	0	0	0	0	0	0	1	
29	0	0	0	0	0	1	0	0	0	0	0	0	0	0	
30	0	0	0	0	1	0	0	1	0	0	0	0	0	0	

Q6:

sequence diagram for search Newspaper use case

sd SN scenario

Customer — System — Datebase — Delivery agent

- Requests to search newspaper (Customer → System)
- Display search page (System ⇢ Customer)
- Enters search query (Customer → System)
- Requests Queries for matching newspapers (System → Datebase)
- Returns matching newspapers (Datebase ⇢ System)
- Displays matching newspapers (System ⇢ Customer)
- Selects newspaper (Customer → System)
- Assigns newspaper to delivery agent (System → Delivery agent)
- Confirms receipt of newspaper (Delivery agent ⇢ System)
- Notifies that the newspaper is assigned to a delivery agent (System ⇢ Customer)

sequence diagram for manage customer information use case

sd MCI scenario

Customer service representative — Sysytem — Database

- requesting to retrieve customer information (Customer service representative → Sysytem)
- Retrieve customer information (Database ⇢ Sysytem)
- Display customer information (Sysytem ⇢ Customer service representative)
- Request edit customer information (Customer service representative → Sysytem)
- Retrieve customer information (Database ⇢ Sysytem)
- Update customer information (Sysytem ⇢ Customer service representative)
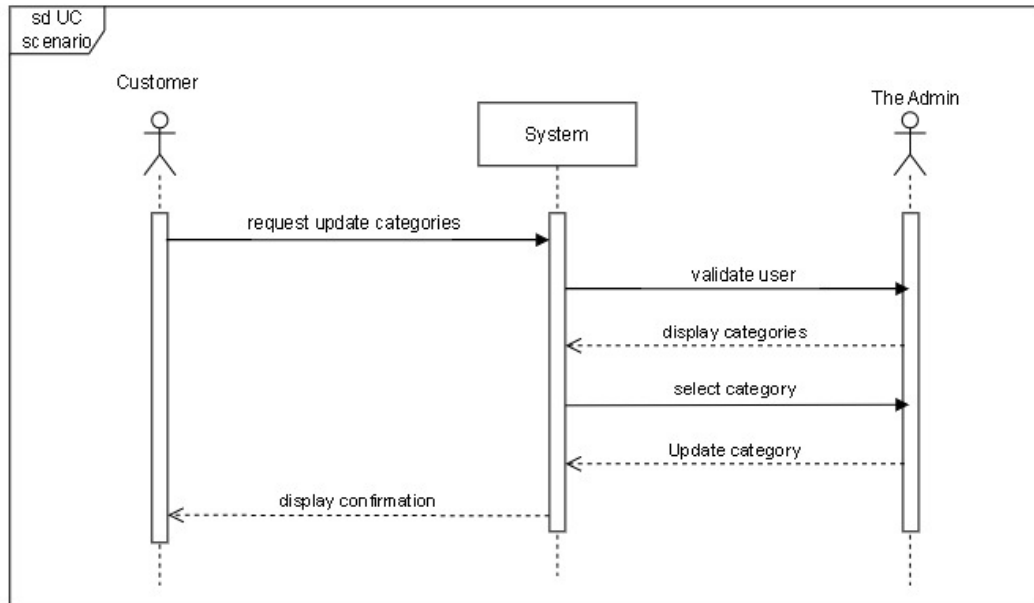- Save customer informaation (Sysytem → Database)

sequence diagram for the Print Information for Delivery Persons use case
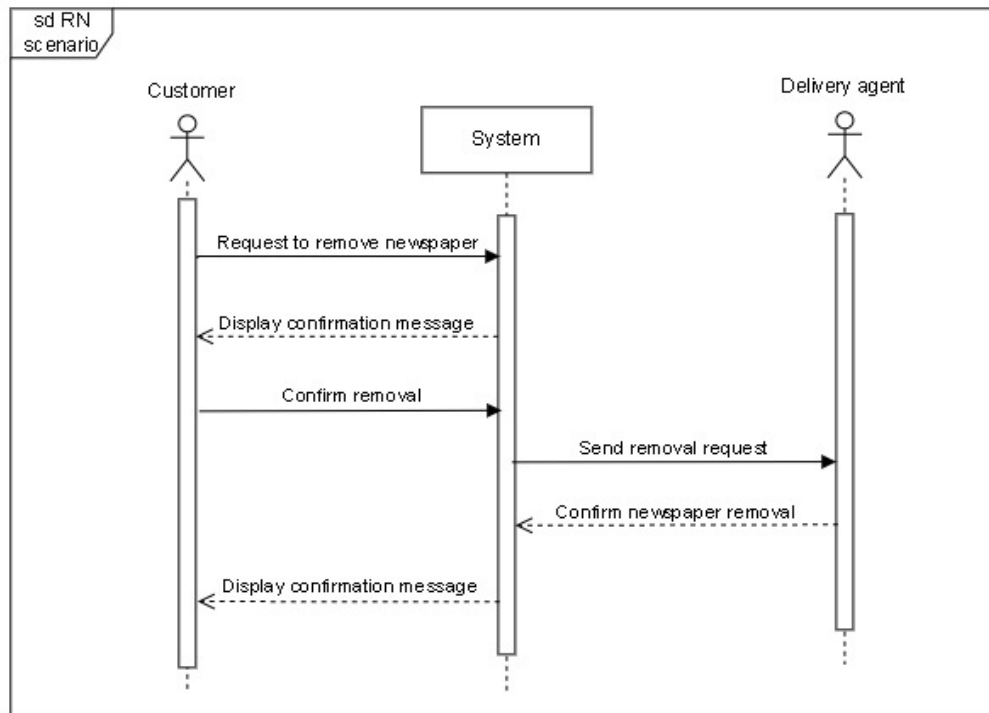

sequence diagram for Reserve Newspaper use case
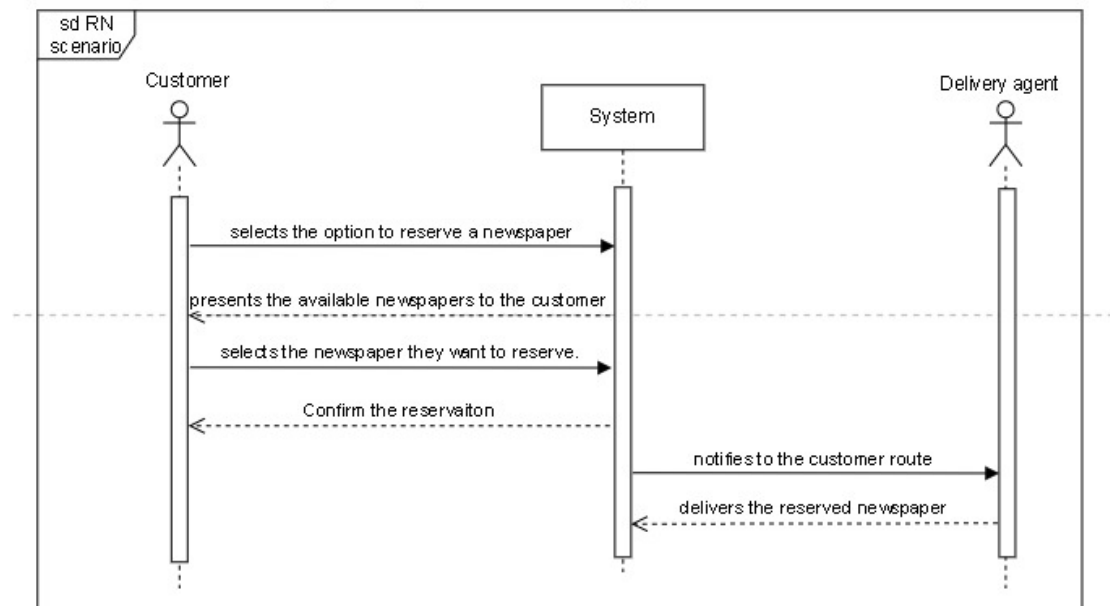
sequence diagram for update categories use case

sequence diagram for remove Newspaper use case

Q7: