WATER SUPPLY MANAGEMENT SYSTEM	
WHAT? (1)	**HOW? (2)**
1) What are the modules required in this system? a) admin module b) Customer module 2)What are the functionalities in admin module? a) login using their email-ID and password. b) Can perform CRUD operations for the payment of bills. c) 3)What are the functionalities in Customer module? A) Customer can register and Login to the system using their email and password. B) Customer can Search and view the usage charges. C) Customer can also view the previous history. D) Customer can make payment for the charges. 3) What are the fields required to view the water charges? Water card ID,Customer name 4) What are the fields required for the customer module? CustomerID, Customer Name, Customer Address. 5) What are the fields required for the payment for the watercharges? OrderID, CustomerID, Charges, PaymentID.	1) Admin: a) Login Method1: Admin can login using username and password. Method2: Admin can login using email and password. Method3: Admin can login through social media. b) CRUD Operation on Customers: Method1: Implement the CRUD operation using customerID Method 2: Implement CRUD operation using customerName . 2)Customer: a) Register & Login Method1: Customer can Register and login using username and password. Method2: Customer can Register and login using email and password. Method3: Customer can Register and login through social media. b) Search Water usage: Method1: Customer can search for their water charge by using waterCardID Method2: Customer can search for the water charges by using Customername. c) Make Payment Method1: Customer can pay the amount by using waterCardId Id & orderId. Method2: Customer can pay the amount using waterCardId. d) Previous charges Details Method1: Customer can view the previous order information by using order Id. Method2: Customer can view the previous order information by using Customer Id.
WHY?(3)	**WHY NOT? (4)**
1) Admin: a) Login Method2: Admin can login using email and password. **(It can be able to find out originality of the user).** B) CRUD Operation on Customer Method1: Implement the CRUD operation on Customer by using customer Id. **(CustomerID is a primary key so it can be uniquely Identified by admin).** 2) Customer: a) Register & Login Method2: customer can register and login using email and password. **(while registering it will get all information about the customer like address etc., and after they have the account to login by using email and password, it can be able to find out originality of the user).** b) Search for the water charges: Method1: Search for the water charges by using waterCardId. **(It's for efficient search of getting water charges information)** c) Make Payment: Method1: Customer can pay the amount by using waterCardId & orderId. **(WaterCardId and orderId are unique for each customer, so that they can pay the amount efficiently)** d) Previous Charges: Method2: Customer can view the previous charges information by using CustomerId. **(Using their customerID, they can view all the previous charges history).**	1)Admin: a) Login Method1: Admin can login using username and password. **(It can't verify the originality of the user. The authentication will fail).** Method3: Admin can login through social media. **(It captures the entire information in that social media. Doesn't maintain privacy).** 2)Customer: a) register and login: method1: Customer can Register and login using username and password. **(There may be a chance for the repetition in username, that may lead to confusions)** b) Search for the water charges: Method2: Customer can search for the water charges by using Customername.**(It will take lot of time to get the charges information)** c) Make Payment: Method2: Customer can pay the amount using waterCardId.**(It may display the previous transactions, somewhat difficult to make the current payment)** d) Previous charges Details Method1: Customer can view the previous order information by using order Id. **(By using order ID, the customer can only see that specific monthly charge and cannot view all the previous charges. Comparision cannot be made between the monthly charges)**

Algorithm for Water supply Management system:

Step1: Start.

Step2: Login using any one of the methods.

Step3: Search the water card using the watercardID or CustomerID to get the information of the customer.
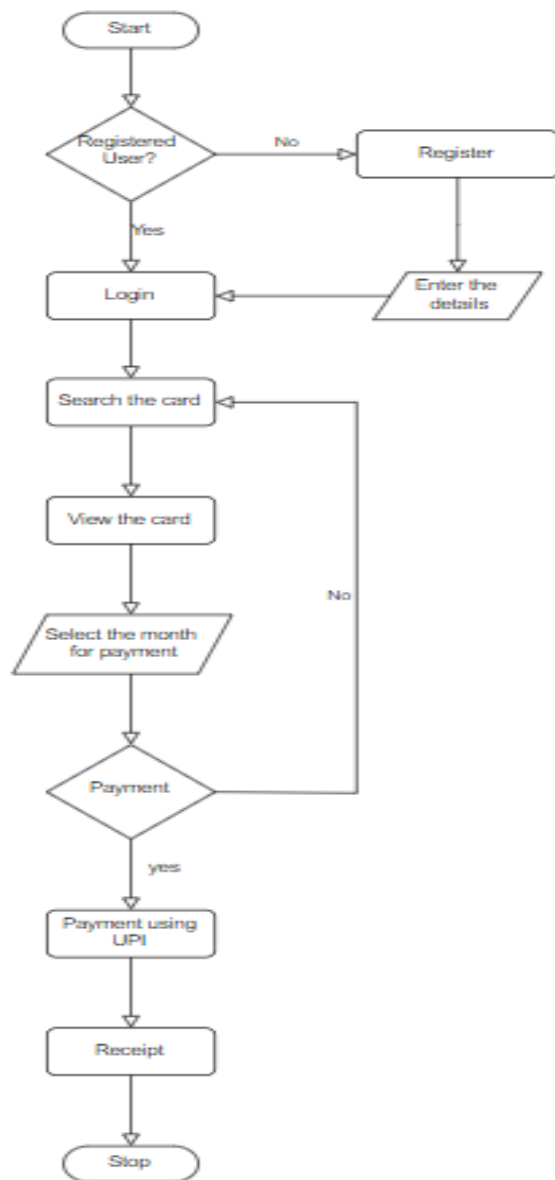
Step4: Enter the month for which you want to pay, it will redirect to the payment page.

Step6: Payment process is done.

Step7: Confirmation and notification is provided.
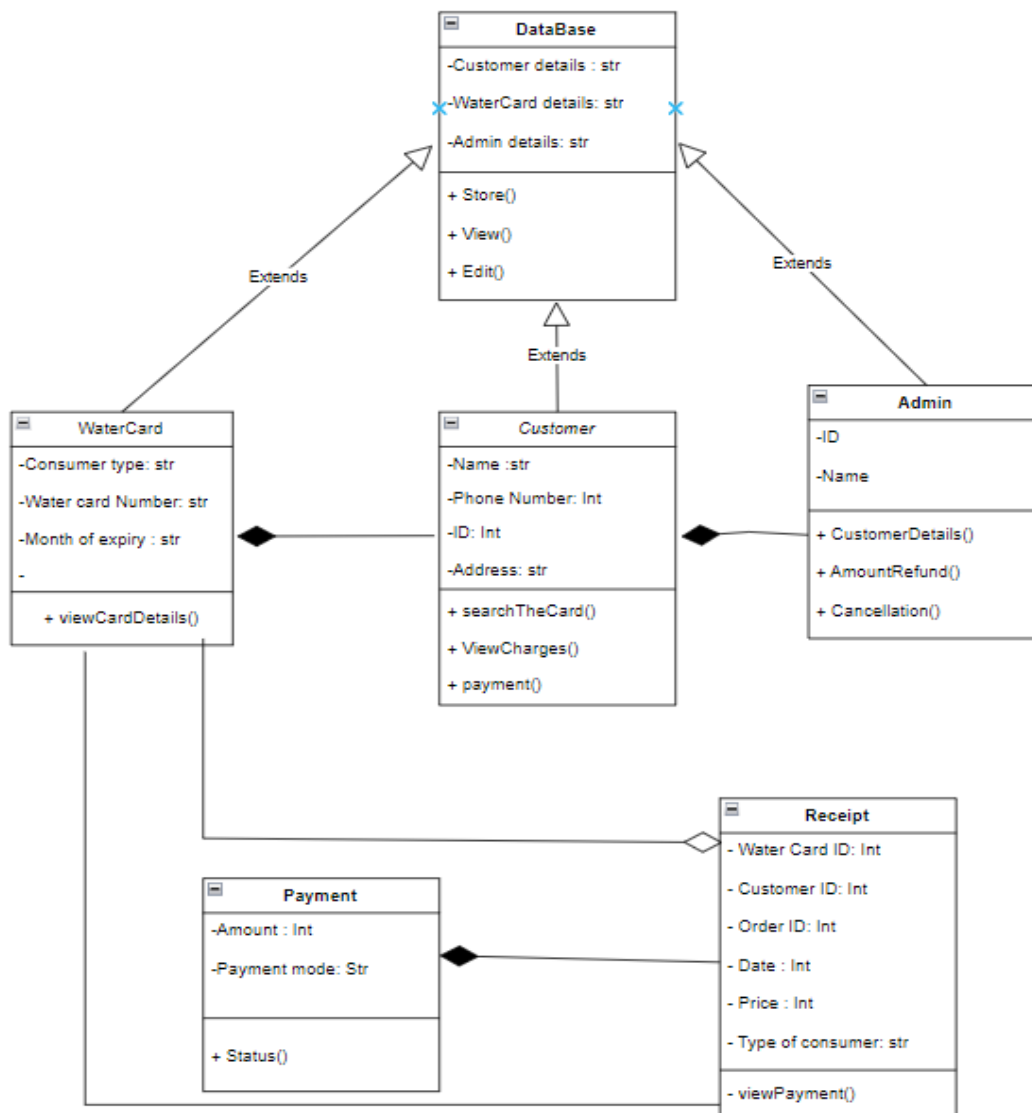
Step8: Stop.

FLOW CHART:

```
                    ┌─────────┐
                    │  Start  │
                    └────┬────┘
                         │
                         ▼
                    ╱─────────╲           No      ┌──────────────┐
                   ╱ Registered ╲─────────────────▶│   Register   │
                   ╲   User?    ╱                  └──────┬───────┘
                    ╲─────────╱                           │
                         │                                │
                       Yes│                               ▼
                         ▼                         ╱──────────────╱
                    ┌─────────┐              ◀─────╱  Enter the   ╱
                    │  Login  │                   ╱   details    ╱
                    └────┬────┘                  ╱──────────────╱
                         │
                         ▼
                  ┌──────────────┐
               ◀──│ Search the card │
                  └──────┬───────┘            │
                         │                    │
                         ▼                    │
                  ┌──────────────┐            │
                  │ View the card │           │
                  └──────┬───────┘          No│
                         │                    │
                         ▼                    │
                 ╱───────────────╱            │
                ╱ Select the month╱           │
                ╱  for payment    ╱           │
               ╱───────────────╱              │
                         │                    │
                         ▼                    │
                    ╱─────────╲               │
                   ╱ Payment   ╲──────────────┘
                   ╲          ╱
                    ╲─────────╱
                         │
                       yes│
                         ▼
                  ┌──────────────┐
                  │ Payment using │
                  │     UPI       │
                  └──────┬───────┘
                         │
                         ▼
                  ┌──────────────┐
                  │   Receipt     │
                  └──────┬───────┘
                         │
                         ▼
                    ┌─────────┐
                    │  Stop   │
                    └─────────┘
```
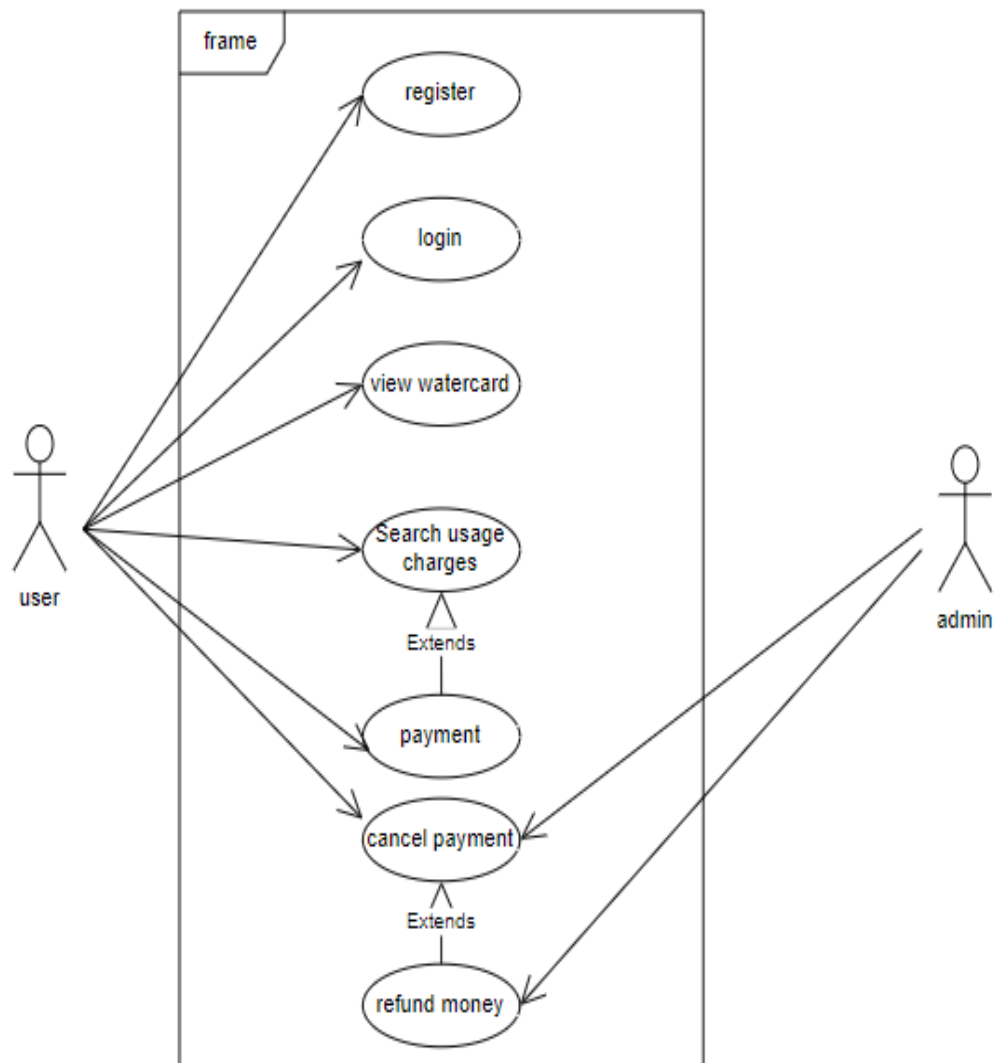
UML DIAGRAMS:

CLASS DIAGRAM:

CLASSES:

- DATABASE
- WATERCARD
- CUSTOMER
- ADMIN
- RECEIPT
- PAYMENT

DataBase

-Customer details : str

-WaterCard details: str

-Admin details: str

+ Store()

+ View()

+ Edit()

Extends

Extends

Extends

WaterCard

-Consumer type: str

-Water card Number: str

-Month of expiry : str

-

+ viewCardDetails()

Customer

-Name :str

-Phone Number: Int

-ID: Int

-Address: str

+ searchTheCard()

+ ViewCharges()

+ payment()

Admin

-ID

-Name

+ CustomerDetails()

+ AmountRefund()

+ Cancellation()

Receipt

- Water Card ID: Int

- Customer ID: Int

- Order ID: Int

- Date : Int

- Price : Int

- Type of consumer: str

- viewPayment()

Payment

-Amount : Int

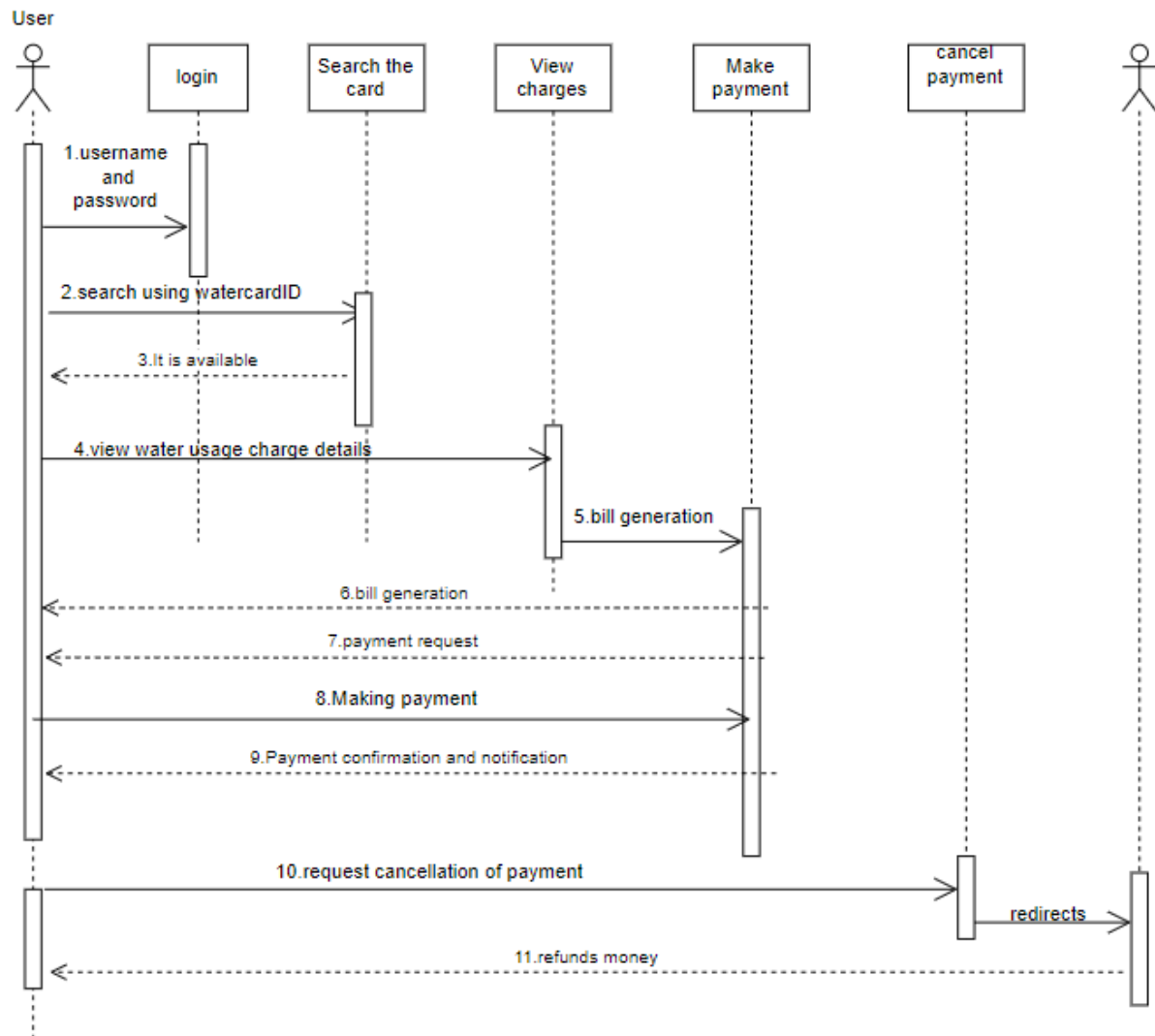-Payment mode: Str

+ Status()

USE-CASE DIAGRAMS:

USE- CASE DIAGRAM FOR GUEST USER:
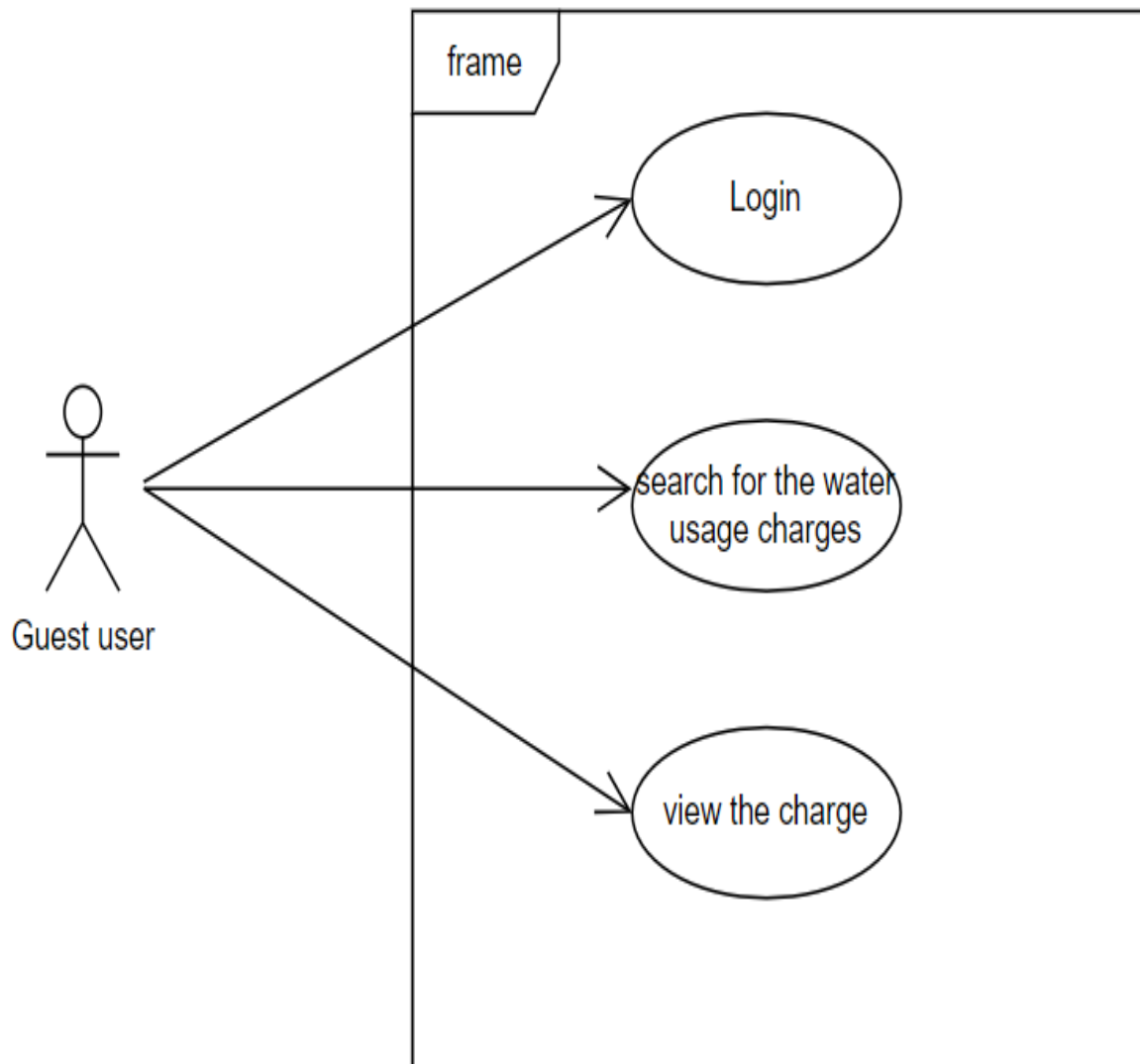
SEQUENCE DIAGRAM:

STATE CHART DIAGRAM: