**Cable Operator System Overview**

**1. System Overview**

The Cable Operator system offers three subscription plans to customers: **Basic**, **Premium**, and **VIP**. These plans are designed to provide a range of channels to the subscribers, and customers can choose the plan based on their preferences. The system allows for the management of customers, including adding, removing, and editing their details. Additionally, the system tracks the payment status of each customer and allows for plan changes. The status of each customer (Active/Inactive) can be monitored to manage subscriptions effectively.

**2. Key Features & Components**

**a. Subscription Plans**

* **Basic Plan**: This plan includes a set of essential channels.
* **Premium Plan**: This plan includes all channels from the Basic plan, along with additional premium channels.
* **VIP Plan**: This plan includes all channels from the Premium plan, along with exclusive VIP channels.

**b. Customer Management**

* **Adding Customers**: New customers are added to the system after they choose a plan and make a payment. Each customer will have:
  + **Unique ID**: A unique identifier for each customer.
  + **Name**: A unique name for searching and identification.
  + **Subscription Plan**: The plan the customer has subscribed to (Basic, Premium, or VIP).
  + **Payment Status**: The payment status (Paid/Partial/Unpaid).
  + **Customer Status**: Whether the customer is active or inactive.
* **Removing Customers**: A customer can be removed from the system, effectively ending their subscription.
* **Editing Customer Details**:
  + The customer's plan can be updated (e.g., upgrade or downgrade between Basic, Premium, or VIP).
  + The customer’s personal details, such as their name or contact information, can be updated.
  + The customer’s payment status can be updated (e.g., change to paid, partially paid, or unpaid).

**c. Payment Status**

* Customers have three types of payment statuses:
  + **Paid**: The customer has paid the full amount for their subscription.
  + **Partially Paid**: The customer has paid only a portion of the subscription amount.
  + **Unpaid**: The customer has not made any payments yet.

**d. Customer Status**

* **Active**: A customer is considered active if they have an active subscription, whether paid in full or partially.
* **Inactive**: A customer is considered inactive if they have canceled their subscription or have not made the necessary payments.

**e. Searching & Reporting**

* The system allows for searching customers by either their **unique ID** or **name**.
* After searching, the details of the customer can be viewed, which include:
  + **Customer ID**
  + **Name**
  + **Subscription Plan**
  + **Payment Status**
  + **Customer Status** (Active/Inactive)

**f. Plan Assignment & Tracking**

* When a customer subscribes, the system will **assign the selected plan** to the customer based on the payment made.
* The system can **track** and update the customer's plan as needed (e.g., if the customer decides to switch from Basic to Premium or VIP).

**3. System Workflow**

1. A customer is **added** to the system after selecting a plan and making the payment.
2. The system assigns the channels associated with the selected plan to the customer.
3. The customer’s **payment status** is tracked (Paid/Partial/Unpaid).
4. If the customer wishes to change their plan, the system allows for **plan updates** (e.g., upgrading or downgrading).
5. You can **view and manage** all customer details, including their name, plan, payment status, and whether they are active or inactive.

**4. Additional Considerations**

* **Data Persistence**: The system should store customer information, including payment status and plan details, for future retrieval and updates.
* **Input Validation**: Ensure that all customer data and payments are properly validated (e.g., valid customer ID, payment amount, etc.).
* **User Interface**: If a graphical user interface (GUI) is implemented, it should be simple and functional, allowing easy addition, search, and management of customers.