

# Problem Statement: **Dynamic Memory Management in a Mini Banking System**

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You are tasked with implementing a simple banking system in C that uses dynamic memory management to handle multiple customer accounts. Each customer has the following details:

- **Name:** The customer's full name.
- **Account Number:** A unique identifier for the customer's account.
- **Account Balance:** The current balance in the customer's account.
- **Transaction History:** A list of transactions (deposits/withdrawals) performed by the customer, where each transaction includes a description.

Requirements:

1. **Dynamic Memory Allocation:** You must use pointers to dynamically allocate memory for customer details and transaction history.

2. **Customer Structure:** Design a `Customer` structure with the following fields:

- `char* name`: A pointer to dynamically allocated memory for the customer's name.
- `int account_number`: A unique integer representing the account number.
- `float balance`: The account balance as a floating-point number.
- `char** transaction_history`: A pointer to an array of strings that stores transaction descriptions.
- `int transaction_count`: The number of transactions recorded for the customer.

3. **Functions to Implement:**

- `create_customer()`: Dynamically allocates memory for a new customer, including the customer's name and an empty transaction history.
- `update_balance()`: Updates the account balance (either deposit or withdrawal).
- `add_transaction()`: Adds a transaction to the customer's transaction history.
- `print_customer_info()`: Displays all the information about a customer, including the transaction history.
- `free_customer()`: Frees all dynamically allocated memory for a customer.

4. **Transaction History Management:** The system should store transaction records dynamically. If the maximum allowed number of transactions is reached, no more transactions can be added for that customer.

5. **Memory Management:** Properly manage memory allocation and deallocation to avoid memory leaks.

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### Example Workflow:

- **Create Customer:** A user creates a new customer with their name, account number, and initial balance.
  - **Update Balance:** The user deposits or withdraws money, updating the balance.
  - **Transaction Recording:** Every time a deposit or withdrawal occurs, the system logs the transaction with a description.
  - **Display Information:** The system can display the customer's details and their transaction history at any time.
  - **Free Memory:** When a customer is no longer needed, all allocated memory should be freed.
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