S.No: 1	Exp. Name: *Project Module*	Date: 2024-05-10

Aim:

Project Module

Source Code:

```
hello.c
```

```c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

#define MAX_CUSTOMERS 100
#define MAX_CALLS 100

// Structure to represent a customer
struct Customer {
    int id;
    char name[50];
    char phone_number[15];
    float balance;
};

// Structure to represent a call record
struct Call {
    int caller_id;
    int receiver_id;
    float duration;
};

// Arrays to store customers and calls
struct Customer customers[MAX_CUSTOMERS];
struct Call calls[MAX_CALLS];
int num_customers = 0;
int num_calls = 0;

// Function to add a new customer
void addCustomer() {
    if (num_customers >= MAX_CUSTOMERS) {
        printf("Cannot add more customers. Customer limit
reached.\n");
        return;
    }

    struct Customer new_customer;

    printf("Enter customer ID: ");
    scanf("%d", &new_customer.id);

    printf("Enter customer name: ");
    scanf("%s", new_customer.name);

    printf("Enter customer phone number: ");
    scanf("%s", new_customer.phone_number);
```

```c
    new_customer.balance = 0;

    customers[num_customers++] = new_customer;
    printf("Customer added successfully.\n");
}

// Function to add a call record
void addCall() {
    if (num_calls >= MAX_CALLS) {
        printf("Cannot add more calls. Call record limit
reached.\n");
        return;
    }

    struct Call new_call;

    printf("Enter caller ID: ");
    scanf("%d", &new_call.caller_id);

    printf("Enter receiver ID: ");
    scanf("%d", &new_call.receiver_id);

    printf("Enter call duration (in minutes): ");
    scanf("%f", &new_call.duration);

    calls[num_calls++] = new_call;
    printf("Call record added successfully.\n");
}

// Function to calculate bill for a customer
void calculateBill(int customer_id) {
    float total_duration = 0;
    float total_cost = 0;

    for (int i = 0; i < num_calls; i++) {
        if (calls[i].caller_id == customer_id) {
            total_duration += calls[i].duration;
        }
    }

    total_cost = total_duration * 0.1; // Assuming cost per
minute is 0.1 unit

    for (int i = 0; i < num_customers; i++) {
        if (customers[i].id == customer_id) {
```

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            customers[i].balance += total_cost;
            printf("Customer ID: %d\n", customers[i].id);
            printf("Name: %s\n", customers[i].name);
            printf("Phone Number: %s\n",
customers[i].phone_number);
            printf("Total Duration: %.2f minutes\n",
total_duration);
            printf("Total Bill: %.2f units\n", total_cost);
            printf("Balance: %.2f units\n",
customers[i].balance);
            return;
        }
    }

    printf("Customer with ID %d not found.\n", customer_id);
}

// Function to display all customers
void displayCustomers() {
    if (num_customers == 0) {
        printf("No customers to display.\n");
        return;
    }

    printf("ID\tName\t\tPhone Number\tBalance\n");
    for (int i = 0; i < num_customers; i++) {
        printf("%d\t%s\t\t%s\t\t%.2f\n", customers[i].id,
customers[i].name, customers[i].phone_number,
customers[i].balance);
    }
}

int main() {
    int choice;
    int customer_id;

    do {
        printf("\nTelecom Billing System\n");
        printf("1. Add Customer\n");
        printf("2. Add Call Record\n");
        printf("3. Calculate Bill\n");
        printf("4. Display Customers\n");
        printf("5. Exit\n");
        printf("Enter your choice: ");
        scanf("%d", &choice);
```

```c
        switch (choice) {
            case 1:
                addCustomer();
                break;
            case 2:
                addCall();
                break;
            case 3:
                printf("Enter customer ID to calculate bill: ");
                scanf("%d", &customer_id);
                calculateBill(customer_id);
                break;
            case 4:
                displayCustomers();
                break;
            case 5:
                printf("Exiting...\n");
                break;
            default:
                printf("Invalid choice. Please enter a number
between 1 and 5.\n");
        }
    } while (choice != 5);

    return 0;
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Hello World