Micro Project Report

Project Group ID:

Project Title: for eg. "Telecom billing system"

Student Name(s): 1. Maheroz Momin 1261

With Roll Number 2.Laxmi Garale 1250

3. Mugdha Kulkarni 1257

Faculty Name Mrs. R.G.kavathekar

Institution Name: **Annasaheb Dange College of Engineering and Technology, Ashta.**

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Sign of Faculty:

Table of Contents

1. Introduction :

Provide a brief introduction to the project.
A Telecom Billing System in C is a project designed to manage the billing process of a telecommunication service provider.

2. Objective

Clearly state the objective of the project.
To design a simple and efficient telecom billing system using C programming that:

1.Records customer details.

2.Calculates bills based on usage.

3.Displays and manages customer information.

3. Tools and Technologies Used

List the tools and technologies used in the project:

1. language: C Programming
2. another C compiler.

4. Problem Statement

Define the problem your project addresses.

1. Add new customer details.
2. Search customer by ID.
3. Generate and display bills.
4. Delete customer records.

5. Methodology

Describe the approach and steps you followed to develop the project.
Example:

1. **Planning**:The methodology section for a Telecom Billing System micro-project outlines the step-by-step approach followed during the development of the project. Below is an example of how you can write the methodology.

   2. **Design**:The system was designed with a clear structure to ensure scalability and ease of use.

Implementation:

The project was implemented using modular programming techniques to ensure clarity and reusability

Language: C Programming

IDE: Code::Blocks or Turbo C++

Compiler: GCC or any C compiler

2. **Testing and Debugging**:

After implementation, rigorous testing and debugging were conducted to ensure reliability and accuracy.

Debugging:

Syntax Errors: Identified and fixed during compilation.

3. **Documentation**:
   - Prepared the project report with all relevant sections.

6. Algorithm

Write down the step-by-step algorithm used in your program.
Step 1: Start

Step 2: Initialize Variables

Step 3: Display Menu

Step 4: Input User Choice

Step 5: Perform Operation structure and array

Step 6: End

7. Flowchart (Optional)

Include a flowchart to visually represent the logic of your program.

8. Source Code

To add customer

```
Void addCustomer() {
   If (customerCount >= MAX_CUSTOMERS) { // Check if the array is full
      Printf("Customer database is full!\n");
      Return;
   }

   Customer c; // Temporary variable to store customer data
   Printf("Enter Customer ID: ");
   Scanf("%d", &c.id);
   Printf("Enter Name: ");
   Scanf(" %[^\n]", c.name); // Use %[^\n] to read a string with spaces
   Printf("Enter Phone Number: ");
   Scanf("%s", c.phone);
   Printf("Enter Data Usage (in GB): ");
   Scanf("%f", &c.usage);

   // Calculate the bill (Assume $10 per GB)
   c.bill = c.usage * 10;

   // Add the customer to the array
   Customers[customerCount++] = c;
```

```
  Printf("Customer added successfully!\n");

}
```

To display customer

```
Void displayCustomers() {
   If (customerCount == 0) { // Check if there are any customers
      Printf("No customers to display!\n");
      Return;
   }

   // Display table header
   Printf("\nCustomer Details:\n");
   Printf("ID\tName\t\tPhone\t\tUsage (GB)\tBill ($)\n");
   Printf("-------------------------------------------------------------\n");

   // Loop through the array and display each customer's details
   For (int I = 0; I < customerCount; i++) {
      Printf("%d\t%s\t\t%s\t%.2f\t\t%.2f\n",
            Customers[i].id,
            Customers[i].name,
            Customers[i].phone,
            Customers[i].usage,
            Customers[i].bill);
   }
}
```

Search customer

```
Void searchCustomer() {
   Int id, found = 0;

   Printf("Enter Customer ID to search: ");
   Scanf("%d", &id);

   // Loop through the customer array to find a matching ID
   For (int I = 0; I < customerCount; i++) {
      If (customers[i].id == id) {
         // Customer found
         Printf("\nCustomer Found:\n");
         Printf("ID: %d\n", customers[i].id);
         Printf("Name: %s\n", customers[i].name);
         Printf("Phone: %s\n", customers[i].phone);
         Printf("Usage: %.2f GB\n", customers[i].usage);
         Printf("Bill: $%.2f\n", customers[i].bill);
         Found = 1;
         Break;
      }
   }

   If (!found) {
```

```
    Printf("Customer with ID %d not found!\n", id);
  }
}
```

Delete customer

```
Void deleteCustomer() {
  Int id, found = 0;

  Printf("Enter Customer ID to delete: ");
  Scanf("%d", &id);

  // Loop through the customer array to find a matching ID
  For (int I = 0; I < customerCount; i++) {
    If (customers[i].id == id) {
      Found = 1;

      // Shift all subsequent customers to fill the gap
      For (int j = I; j < customerCount – 1; j++) {
        Customers[j] = customers[j + 1];
      }

      customerCount--; // Decrease the customer count
      printf("Customer with ID %d deleted successfully!\n", id);
      break;
    }
  }

  If (!found) {
    Printf("Customer with ID %d not found!\n", id);
  }
}
```

9. Output

Add customer

Input

Enter your choice: 1

Enter Customer ID: 101

Enter Name: John Doe

Enter Phone Number: 1234567890

Enter Data Usage (in GB): 5

Output

Customer added successfully

Display customer

Input

Enter your choice**: 2**

Output

Customer Details:

ID	Name	Phone	Usage (GB)	Bill ($)
101	John Doe	1234567890	5.00	50.00
102	Jane Smith	9876543210	10.00	100.00

Search customer

Input

Enter your choice: 3

Enter Customer ID to search: 101

Output

Customer Found:

ID: 101

Name: John Doe

Phone: 1234567890

Usage: 5.00 GB

Bill: $50.00

Delete customer

Input

Enter your choice: 4

Enter Customer ID to delete: 101

Output

Customer with ID 101 deleted successfully

Exiting the program

Input

Enter your choice**: 5**

Output

Exiting the program

10. Conclusion

Summarize what you learned from this project.
This project strengthened understanding of programming fundamentals and their application in real-world scenarios.

11. References (If Any)

List any books, websites, or resources you referred to while working on the project.