```
n = int(input("Enter the number of clients: "))
numbers = [int(input(f"Enter phone number {i + 1}: ")) for i in range(n)]
print("The numbers entered are:", numbers)

table_size = 10

def hash_function(key):
    return key % table_size

def linear_probing(key, table):
    index = hash_function(key)
    for _ in range(table_size):
        if table[index] is None:
            return index
    index = (index + 1) % table_size
    return -1

def quadratic_probing(key, table):
    index = hash_function(key)
    for i in range(table_size):
        new_index = (index + i**2) % table_size
        if table[new_index] is None:
            return new_index
    return -1

def double_hashing(key, table):
    index1 = hash_function(key)
    index2 = 7 - (key % 7)
    for i in range(table_size):
        new_index = (index1 + i * index2) % table_size
        if table[new_index] is None:
```

```
            return new_index
        return -1

while True:
    print("\nMenu:")
    print("1. Linear Probing")
    print("2. Quadratic Probing")
    print("3. Double Hashing")
    print("4. Exit")

    choice = int(input("Enter your choice: "))

    if choice == 4:
        print("Exiting program.")
        break

    hash_table = [None] * table_size

    if choice == 1:
        print("\nUsing Linear Probing:")
        for num in numbers:
            index = linear_probing(num, hash_table)
            if index != -1:
                hash_table[index] = num
            else:
                print(f"Could not insert {num}. Hash table is full!")

    elif choice == 2:
        print("\nUsing Quadratic Probing:")
        for num in numbers:
            index = quadratic_probing(num, hash_table)
```

```
        if index != -1:
            hash_table[index] = num
        else:
            print(f"Could not insert {num}. Hash table is full!")

elif choice == 3:
    print("\nUsing Double Hashing:")
    for num in numbers:
        index = double_hashing(num, hash_table)
        if index != -1:
            hash_table[index] = num
        else:
            print(f"Could not insert {num}. Hash table is full!")

    else:
            print("Invalid choice! Please select a valid option.")
    continue
    print("Hash Table:")
    for i in range(table_size):
        print(f"Index {i}: {hash_table[i]}")
```