contactManager.ts

```typescript
// contactManager.ts


// 1. Defining Interface
interface Contact {
  id: number;

  name: string;

  email: string;

  phone: string;

}


// 2. Implementing ContactManager Class
class ContactManager {
  private contacts: Contact[] = [];


  // Add a new contact
  addContact(contact: Contact): void {
   const exists = this.contacts.some(c => c.id === contact.id);

   if (exists) {

    console.log(`❌ Error: Contact with ID ${contact.id} already exists.\n`);

     return;

   }

   this.contacts.push(contact);

   console.log(`✅ Contact "${contact.name}" added successfully!\n`);

  }


  // View all contacts
```

```typescript
viewContacts(): void {

  console.log(" 📋 Viewing All Contacts:");

  if (this.contacts.length === 0) {

    console.log(" 📭 No contacts found.\n");

    return;

  }

  console.table(this.contacts);

  console.log("");

}


// Modify an existing contact

modifyContact(id: number, updatedContact: Partial<Contact>): void {

  const contactIndex = this.contacts.findIndex(c => c.id === id);

  if (contactIndex === -1) {

    console.log(`❌ Error: Contact with ID ${id} does not exist.\n`);

    return;

  }

  this.contacts[contactIndex] = { ...this.contacts[contactIndex], ...updatedContact };

  console.log(`✅ Contact with ID ${id} updated successfully!\n`);

}


// Delete a contact

deleteContact(id: number): void {

  const contactIndex = this.contacts.findIndex(c => c.id === id);

  if (contactIndex === -1) {

    console.log(`❌ Error: Contact with ID ${id} does not exist.\n`);
```

```javascript
      return;
    }

    const removed = this.contacts.splice(contactIndex, 1);

    console.log(`✅ Contact "${removed[0].name}" deleted successfully!\n`);
  }
}


// ------------------
// 3. Testing Script
// ------------------

console.log("📞 Welcome to the Contact Manager Assignment Test!\n");


const manager = new ContactManager();


// Adding contacts
console.log(" ◆ Adding Contacts:");

manager.addContact({ id: 1, name: "Reethu", email: "reethu@example.com", phone: "8147183647" });

manager.addContact({ id: 2, name: "Neethu", email: "neethu@example.com", phone: "9876543210" });


// Attempt to add a duplicate
manager.addContact({ id: 1, name: "Preethu", email: "preethu@example.com", phone: "9112823373" });


// View all contacts
console.log(" ◆ Viewing Contacts:");

manager.viewContacts();
```

```
// Modify a contact

console.log(" ◆ Modifying Contact:");

manager.modifyContact(2, { email: "neethu.new@example.com", phone: "9998887777" });


// Attempt to modify a non-existent contact

manager.modifyContact(5, { name: "Unknown" });


// View contacts after modification

console.log(" ◆ Viewing Contacts After Modification:");

manager.viewContacts();


// Delete a contact

console.log(" ◆ Deleting Contact:");

manager.deleteContact(2);


// Attempt to delete a non-existent contact

manager.deleteContact(5);


// View contacts after deletion

console.log(" ◆ Viewing Contacts After Deletion:");

manager.viewContacts();


console.log(" 🎉 Contact Manager Test Completed!");
```

Result:

```
📞 Welcome to the Contact Manager Assignment Test!

🔹 Adding Contacts:
✅ Contact "Reethu" added successfully!

✅ Contact "Neethu" added successfully!

❌ Error: Contact with ID 1 already exists.

🔹 Viewing Contacts:
📋 Viewing All Contacts:

┌─────────┬────┬───────────┬─────────────────────────┬────────────────┐
│ (index) │ id │  name     │  email                  │  phone         │
├─────────┼────┼───────────┼─────────────────────────┼────────────────┤
│   0     │ 1  │ 'Reethu'  │ 'reethu@example.com'    │ '8147183647'   │
│   1     │ 2  │ 'Neethu'  │ 'neethu@example.com'    │ '9876543210'   │
└─────────┴────┴───────────┴─────────────────────────┴────────────────┘

🔹 Modifying Contact:
✅ Contact with ID 2 updated successfully!

❌ Error: Contact with ID 5 does not exist.
```

```
🔹 Viewing Contacts After Modification:
📋 Viewing All Contacts:

┌─────────┬────┬───────────┬───────────────────────────┬────────────────┐
│ (index) │ id │  name     │  email                    │  phone         │
├─────────┼────┼───────────┼───────────────────────────┼────────────────┤
│   0     │ 1  │ 'Reethu'  │ 'reethu@example.com'      │ '8147183647'   │
│   1     │ 2  │ 'Neethu'  │ 'neethu.new@example.com'  │ '9998887777'   │
└─────────┴────┴───────────┴───────────────────────────┴────────────────┘

🔹 Deleting Contact:
✅ Contact "Neethu" deleted successfully!

❌ Error: Contact with ID 5 does not exist.

🔹 Viewing Contacts After Deletion:
📋 Viewing All Contacts:

┌─────────┬────┬───────────┬─────────────────────────┬────────────────┐
│ (index) │ id │  name     │  email                  │  phone         │
├─────────┼────┼───────────┼─────────────────────────┼────────────────┤
│   0     │ 1  │ 'Reethu'  │ 'reethu@example.com'    │ '8147183647'   │
└─────────┴────┴───────────┴─────────────────────────┴────────────────┘

🎉 Contact Manager Test Completed!
```