



RACHNA COLLEGE OF ENGINEERING &
TECHNOLOGY, GUJRANWALA

CONTACT MANAGEMENT SYSTEM

SOFTWARE ENGINEERING PROJECT DOCUMENTATION



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Contact Management System Proposal

Introduction:

Effective contact management is crucial for individuals or businesses to maintain a well-organized contact list, streamline communication, and manage groups of contacts for different purposes. This proposal outlines the design, features, and implementation plan for a **Contact Management System (CMS)** that offers an intuitive and secure solution for managing users, contacts, groups, and user profiles. The system aims to simplify contact storage, management, and user interaction with real-time data updates while ensuring scalability, maintainability, and data security.

Objectives:

1. To provide a secure platform for users to manage their contact details.
2. To streamline the process of adding, editing, and deleting contacts and groups.
3. To enable user profile management with options to change passwords and update personal information.
4. To ensure data security and implement role-based access control.
5. To enhance user experience with a clean, responsive, and easy-to-navigate interface.

Scope:

The **Contact Management System** will include the following functionalities:

1. **Login Module:**
 - User authentication with username and password.
 - "Show Password" option for ease of use.
2. **Main Dashboard:**
 - Central navigation for managing contacts, groups, and profile settings.
 - Option to logout, change password, and edit profile.
3. **Profile Management:**
 - Users can view and update their personal profile information.
 - Ability to change the password with verification.
4. **Group Management:**
 - Users can create, edit, and remove contact groups.
 - View a list of all available groups and assign contacts to groups.
5. **Contact Management:**
 - Users can add, update, delete, and view contact details (e.g., Name, Email, Phone, Address).
 - Search for contacts by name, email, or phone number.

Key Features:

1. **User-Friendly Interface:**
 - Intuitive forms for managing contacts, groups, and user profile.
 - Clear navigation and responsive design.
2. **Real-Time Data Processing:**
 - Instant updates when adding, editing, or deleting contacts or groups.
3. **Search and Filtering:** Advanced search options for quickly finding specific contacts or groups.
4. **Security:**
 - Role-based access control to ensure proper authorization levels.
 - Password hashing for secure storage of user credentials.
5. **Profile Management:**
 - Ability for users to update personal details and change passwords.

User Requirements

High Priority (HP)	<ol style="list-style-type: none">1. Ease of Use: The system must have an intuitive interface for managing contacts and groups.2. Role-Based Access: Ensure only authorized users can access certain features like changing passwords.3. Data Accuracy: Accurate computation and validation for contacts and groups.4. Error Handling: Clear and meaningful error messages for invalid operations.
Medium Priority (MP)	<ol style="list-style-type: none">1. Security: Include authentication with password protection.2. Search Functionality: Ability to search for specific contacts, groups, or users.3. Responsiveness: Ensure smooth operation on various screen sizes.
Low Priority (LP)	<ol style="list-style-type: none">1. Aesthetics: A visually appealing and clean design for user forms.2. Accessibility: Ensuring the application is accessible to users with disabilities.

Functional Requirements

High Priority (HP)	<ol style="list-style-type: none">1. User Registration and Login: Allow users to sign up and log in with username and password.2. Profile Management: Users must be able to view and update their profile, including changing their password.3. Group Management: Create, edit, and remove groups.4. Contact Management: Add, update, delete, and view contacts.5. Search Functionality: Search contacts by name, email, or phone number.
Medium Priority (MP)	<ol style="list-style-type: none">1. Data Validation: Ensure proper validation (e.g., valid email, phone number format).
Low Priority (LP)	<ol style="list-style-type: none">1. Backup/Export: Allow data export in CSV/Excel format.

Non-Functional Requirements

Priority	Requirement Description
High Priority (HP)	<ol style="list-style-type: none">1. Performance: The system must execute CRUD operations within 2 seconds.2. Reliability: Ensure system uptime of 99.9%, with error-handling mechanisms.
Medium Priority (MP)	<ol style="list-style-type: none">1. Scalability: The system should accommodate additional modules such as advanced contact categorization.2. Maintainability: Modular code structure with clear documentation for easy maintenance.
Low Priority (LP)	<ol style="list-style-type: none">1. User-Friendliness: Simple navigation for non-technical users.

Implementation Plan

1. **Phase 1: Requirements Analysis**
 - Gather detailed user requirements.
 - Finalize system architecture and design.
2. **Phase 2: Development**
 - Develop modules for **Login, Main Dashboard, Profile Management, Group Management, Contact Management, and Search.**
 - Integrate data validation, error handling, and user authentication.
3. **Phase 3: Testing**
 - Conduct unit, integration, and system testing.
 - Validate against both functional and non-functional requirements.
4. **Phase 4: Deployment**
 - Deploy the system on the target environment.

- Provide user training and documentation.
5. **Phase 5: Maintenance**
- Address bugs and implement enhancements based on user feedback.

Priorities Table

Requirement Type	Description	Priority
User Requirement	Ease of Use	HP
Functional Requirement	User Registration and Login	HP
Functional Requirement	Contact and Group Management	HP
Functional Requirement	Profile Management (Edit Profile, Change Password)	HP
Non-Functional Requirement	Performance and Reliability	HP
Non-Functional Requirement	Scalability	MP

Test Cases for Contact Management System

1.User Management

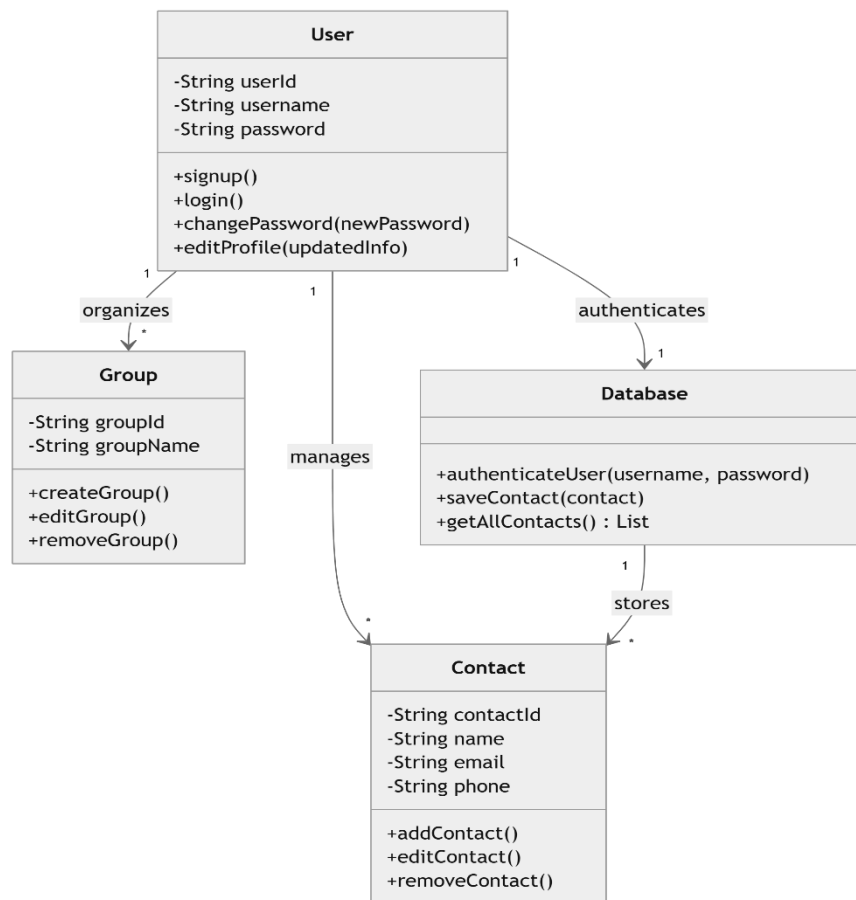
Test Case ID	Test Case Description	Steps to Execute	Expected Result	Status
TC-USER-001	User Registration	1. Open Registration Form. 2. Fill fields: Username, Password, 3. Click "Save".	User saved successfully.	Pending
TC-USER-002	User Login with valid credentials	1. Open Login Form. 2. Enter valid Username and Password. 3. Click "Login".	User logged in successfully.	Pending
TC-USER-003	User Login with invalid credentials	1. Open Login Form. 2. Enter invalid Username or Password. 3. Click "Login".	Error message: "Invalid credentials".	Pending
TC-USER-004	Update User Profile	1. Open Profile Form. 2. Update details. 3. Click "Save".	User profile updated successfully.	Pending
TC-USER-005	Change User Password	1. Open Change Password Form. 2. Enter current and new password. 3. Click "Change".	Password changed successfully.	Pending

2.Group Management

Test Case ID	Test Case Description	Steps to Execute	Expected Result	Status
TC-GRP-001	Create New Group	1. Open Group Management Form. 2. Fill fields: Group Name. 3. Click "Save".	Group created successfully.	Pending
TC-GRP-002	Edit Group	1. Open Group Management Form. 2. Select a group. 3. Edit details. 4. Click "Update".	Group updated successfully.	Pending
TC-GRP-003	Delete Group	1. Open Group Management Form. 2. Select a group. 3. Click "Delete".	Group deleted successfully.	Pending

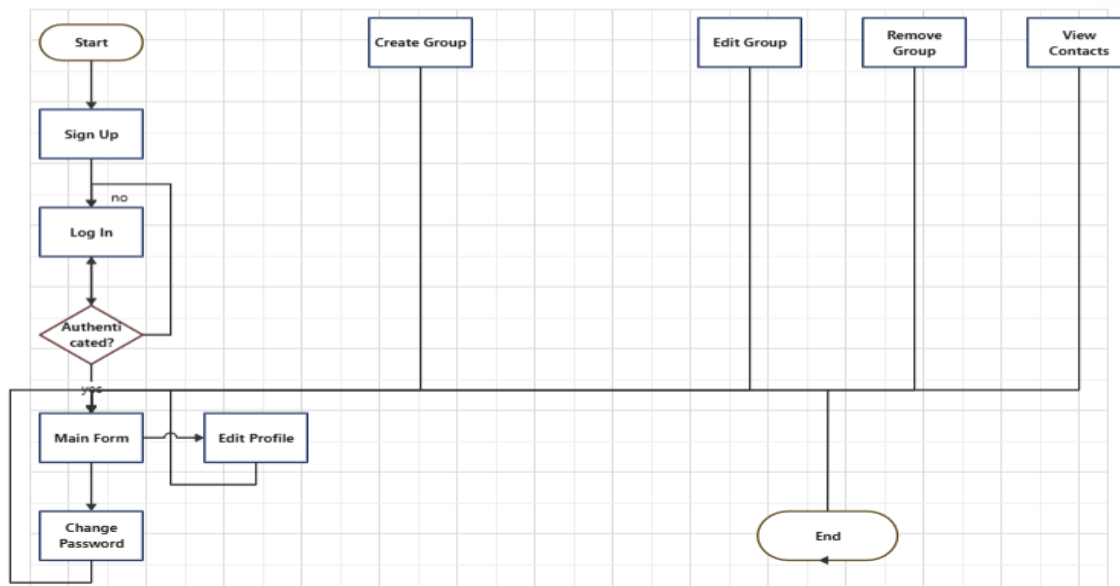
3.Contact Management

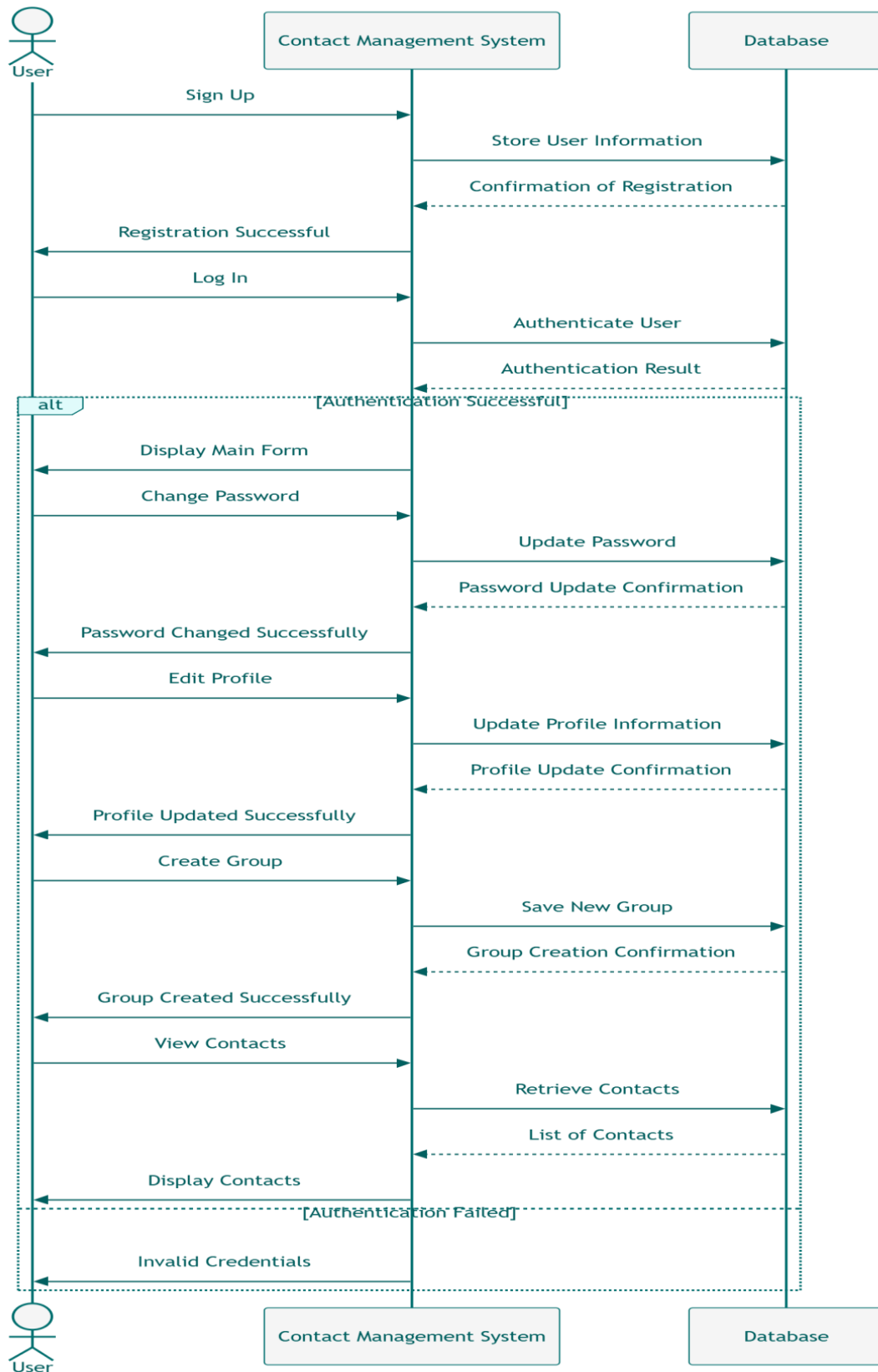
Test Case ID	Test Case Description	Steps to Execute	Expected Result	Status
TC-CON-001	Add New Contact	1. Open Contact Form. 2. Fill in fields: Name, Phone, Email. 3. Click "Save".	Contact saved successfully.	Pending
TC-CON-002	Edit Existing Contact	1. Open Contact Form. 2. Select a contact. 3. Edit details. 4. Click "Update".	Contact updated successfully.	Pending
TC-CON-003	Delete Contact	1. Open Contact Form. 2. Select a contact. 3. Click "Delete".	Contact deleted successfully.	Pending
TC-CON-004	Search for Contact	1. Open Contact Form. 2. Enter Name or Phone in the search bar. 3. Click "Search".	Contact displayed in the results.	Pending



Class Diagram:

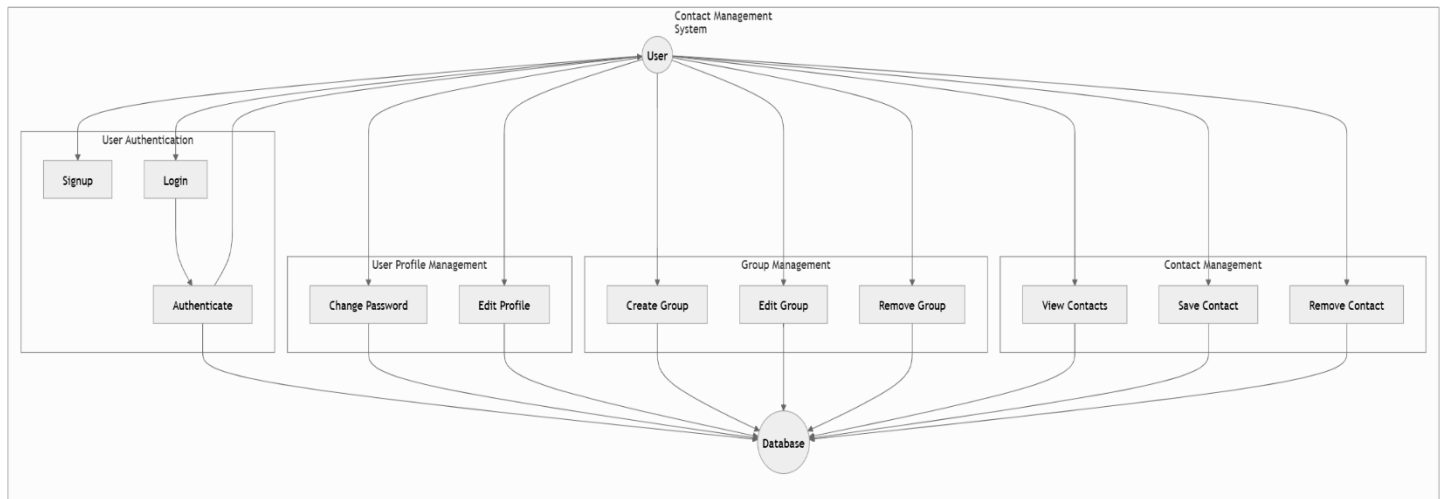
State Diagram:





Sequence Daigram:

Activity Daigram:



Project Overview:

The **Contact Management System (CMS)** is a desktop application designed to efficiently manage user profiles, contacts, and groups. It provides an intuitive interface for users to sign up, log in, create/edit contacts, manage contact groups, and perform searches on contact information. The system uses **C#** with **Object-Oriented Programming (OOP)** concepts and stores data in an **Oracle** database.

1.Signup And Login Form:

The screenshot shows a window titled "Login Here" with a "Create new account" form. The form includes input fields for First Name (Abdul), Last Name (Ahad), Username (Admin), and Password (masked with dots). There is a "Picture:" label next to a small image of a person. A "Sign in" button is at the bottom, and a link "<< Already have an account? Log in here!" is at the very bottom.

The screenshot shows a window titled "Login Here" with a "Log in" form. It includes input fields for Username (Admin) and Password (masked with dots). A "Login" button is centered below the fields. At the bottom, there is a link "You don't have an account yet? Sign up here! >>".

Main Form:

The Main Form displays a contact list with columns for Group ID, Group Name, Contact ID, First Name, Last Name, Phone Number, Email, Address, and Group ID. The list is filtered by 'Friends' and shows 3 contacts. Below the list are buttons for 'Add Group', 'Edit Group', 'Remove', 'Show All Contacts', 'Add Contact', 'Edit Contact', and 'Remove'.

Group ID	Group Name	Contact ID	First Name	Last Name	Phone Number	Email	Address	Group ID
27	Friends	15	Muhammad	Zaman	03430967903	zaman@gmail.com	Nankana Sahib	27
28	Relatives	14	Abdul	Rehman	03245678235	rehman@gmail.com	Pakpattan	27
29	Family	16	Abdullah	Aliq	03102467992	abdullah@gmail.com	Man Chuno	28
		17	Abdul	Ahad	03162459653	ahad@gmail.com	Sakot	29

Profile And Password Change:

The 'Your profile' form displays a user profile with a photo and fields for First Name, Last Name, Username, and a Change password button. The fields are filled with 'Abdul', 'Ahad', and 'Admin' respectively. At the bottom are 'Save' and 'Cancel' buttons.

First Name: Abdul

Last Name: Ahad

Username: Admin

Change password

Save Cancel

The 'Password change' form displays fields for Old password, New password, and Confirm password, each with a masked input field. At the bottom are 'Save' and 'Cancel' buttons.

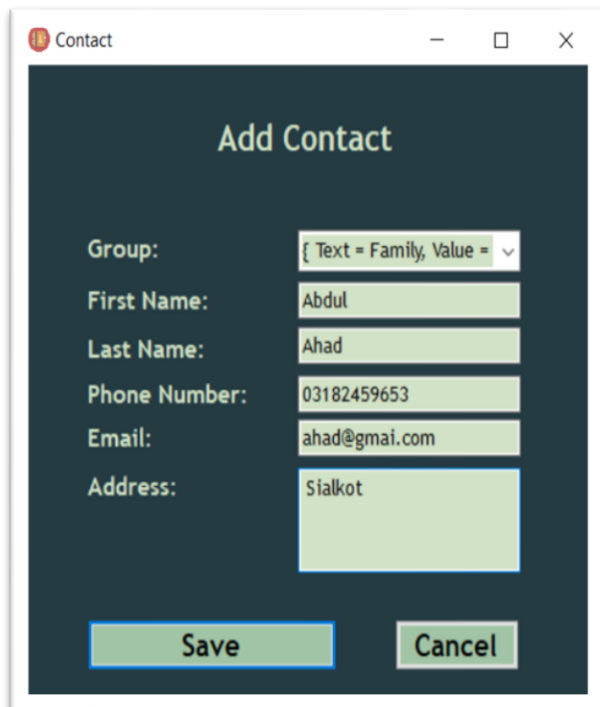
Old password: [masked]

New password: [masked]

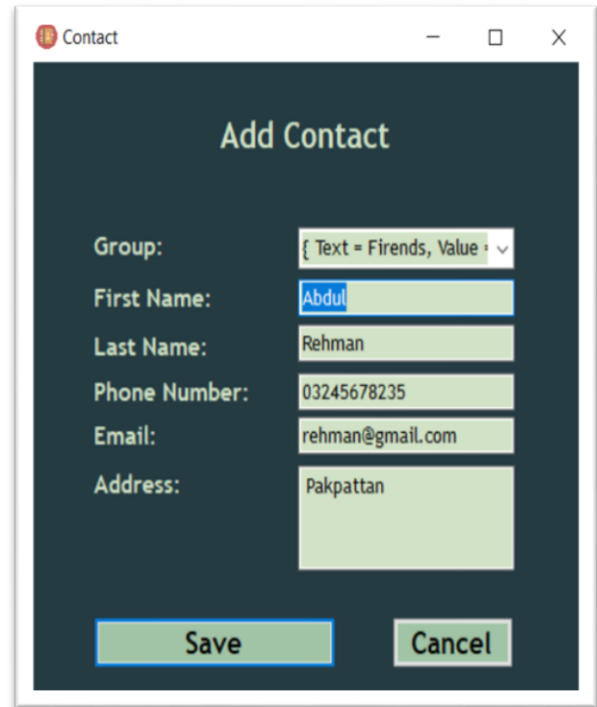
Confirm password: [masked]

Save Cancel

Add Contact /Edit Contact:

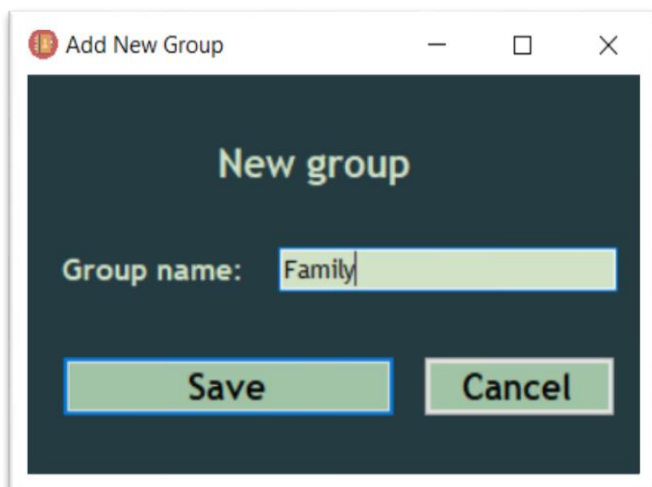


A screenshot of a web application window titled 'Contact'. The main heading is 'Add Contact'. The form contains the following fields: 'Group' (a dropdown menu showing '{ Text = Family, Value = '}), 'First Name' (text input 'Abdul'), 'Last Name' (text input 'Ahad'), 'Phone Number' (text input '03182459653'), 'Email' (text input 'ahad@gmail.com'), and 'Address' (text input 'Sialkot'). At the bottom are 'Save' and 'Cancel' buttons.

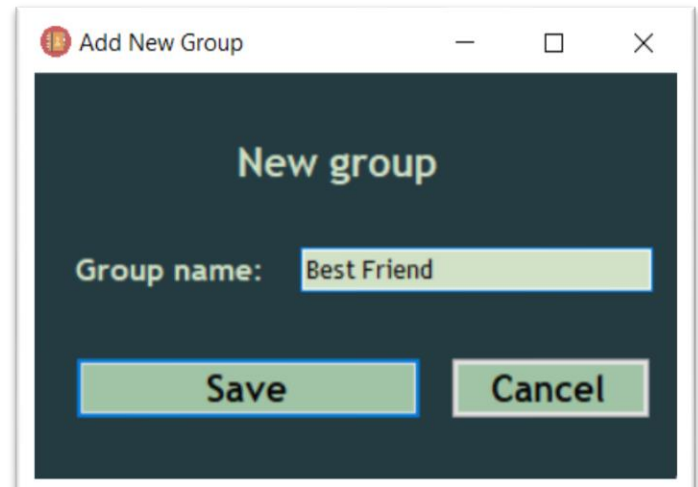


A screenshot of a web application window titled 'Contact'. The main heading is 'Add Contact'. The form contains the following fields: 'Group' (a dropdown menu showing '{ Text = Firends, Value = '}), 'First Name' (text input 'Abdul'), 'Last Name' (text input 'Rehman'), 'Phone Number' (text input '03245678235'), 'Email' (text input 'rehman@gmail.com'), and 'Address' (text input 'Pakpattan'). At the bottom are 'Save' and 'Cancel' buttons.

Add Group/Edit Group:



A screenshot of a web application window titled 'Add New Group'. The main heading is 'New group'. The form contains the 'Group name' field with the text 'Family'. At the bottom are 'Save' and 'Cancel' buttons.



A screenshot of a web application window titled 'Add New Group'. The main heading is 'New group'. The form contains the 'Group name' field with the text 'Best Friend'. At the bottom are 'Save' and 'Cancel' buttons.