

USER DOCUMENTATION OF

**APELY Distributed
Authentication Systems**

Version 1.0

2nd March, 2012

National Institute of Technology, Kurukshetra

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1. Introduction:

APELY Distributed Authentication System is multipurpose software that helps in maintaining records of the people who have checked in/out in any place. This software enables the people to get registered and then checkin/checkout simply through their Identity card.

1.1 Purpose:

To maintain the records and to search it, is difficult by using a traditional system. In earlier systems, a student needs to carry with him his Identity card whenever he visits a place like CCN. Thus, to eliminate the need of carrying such proofs with one, APELY's need becomes significant. Using this software any student can check in/out with the help of his finger-print only. One thing that he is required to do is to get registered just once for the first time.

1.2 Aim:

The main aim of this software is to provide an authentication platform for a enterprise with advanced technologies and with distributed databases for fast access of results.

1.3 Features:

The main features of the APELY authentication system are as follows:

- Distributed database.
- Support for multiple database.
- Support for SSL to connect database and use encrypted connection.
- Different level of authorization for different Administrators.
- Authentication for users using simply by ID
- Clean and Multi - User interface.
- Detailed identity of users with their photographs.
- Dynamically Configurable.
- Fast access time with database.
- Advance Report generation.
- Extensive log of any prompt event
- Easily understandable help file

1.4 Scope:

This software can be used in large enterprises where employees need to check in/out in their daily routine. This software with some additional features can prove to be a reliable security system as it will allow only registered users to check in and enter.

2. Overall Description

It is a unique and innovative software of its own kind which is practically feasible. To maintain the records and to search it, has become easy through this software.

2.1 Administrator classes and characteristics

Different types of software administrators :

Incharge : He has been given special functions to perform. He is basically administrating the system completely. Some of his functions are like adding a student/guest/Faculty or editing ,deleting their details and other functions related to blacklisting.

Clerk : He is also operating the system but with limited functionality. He has not been given full

control over the system. He can make people to get registered but can't delete or edit some of their details.

Student/guest/Faculty : He can only check in/out through the software.

2.1.1 Detailed User Interfaces

There are different interfaces according to the hierarchy of users. The system will prompt for the initial configuration when it is started at first. When the configuration is done then the configurations are written in a config file. The detailed configuration interfaces are as follows:

2.1.1.1 Initial Configuration Interfaces:

After the software has been configured a authentication window will pop up which will further ask for the login details of the user with the user type. After the user has been authenticated then he/she will be shown his main windows accordingly.

1. Welcome Message Box:

This is a simple welcome message box that welcomes the user for the initial configuration. The user interface the elcome message box is shown below:

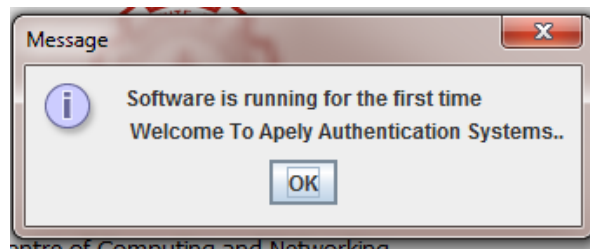


Fig: Simple welcome Box

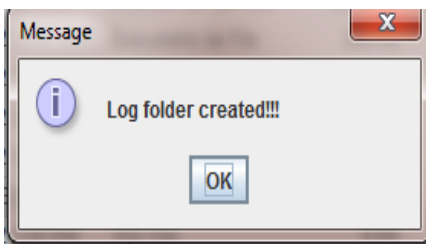
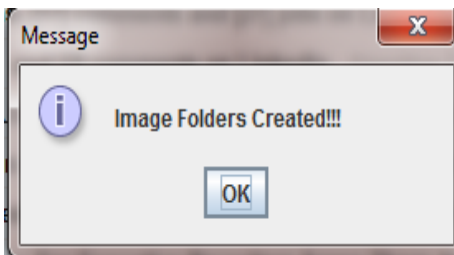


Fig: Message showing the creation of folders



Fig: first welcome form

2. Database Configuration Window:

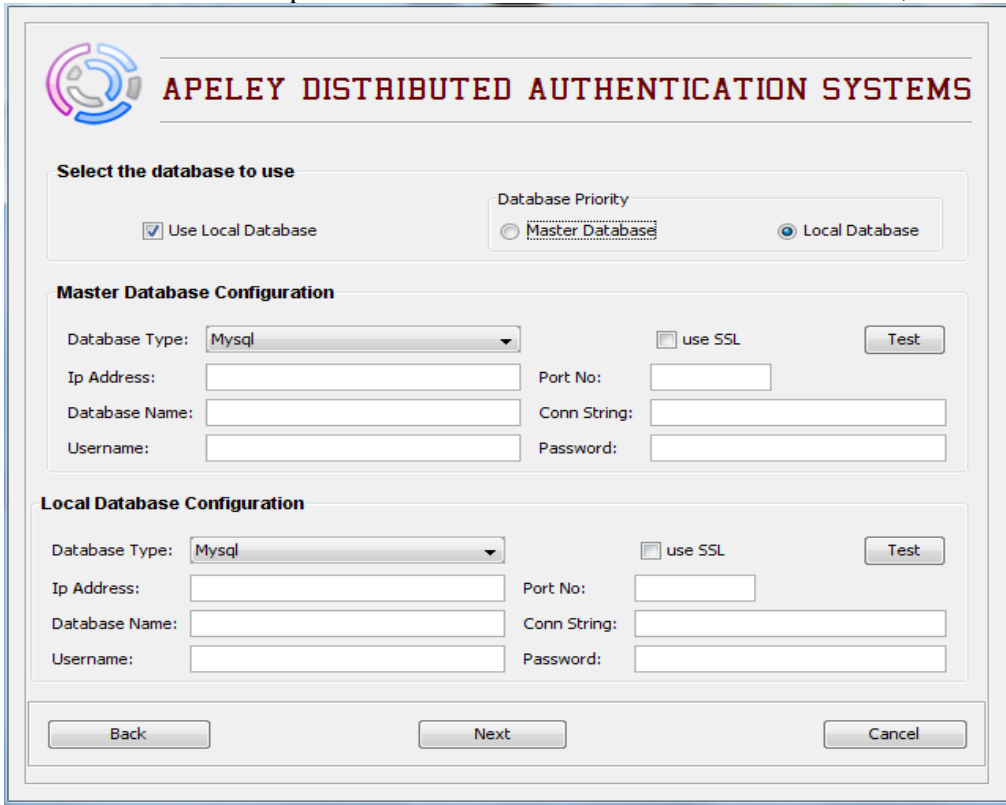
This is more important configuration window that helps the user to configure database. Since the software is based on distributed database concept so he/she can configure a master and a local database. The priority can be set for the database when both databases are activated.

Fig: Database Configuration Window

3. Root user Configuration window and device configuration:

This Configuration window helps user to set a root username and password. When the software is run for the first time. The user of the software can log with this account and create other accounts.

There are also other options that will allow the user to set default webcam, look and feel.

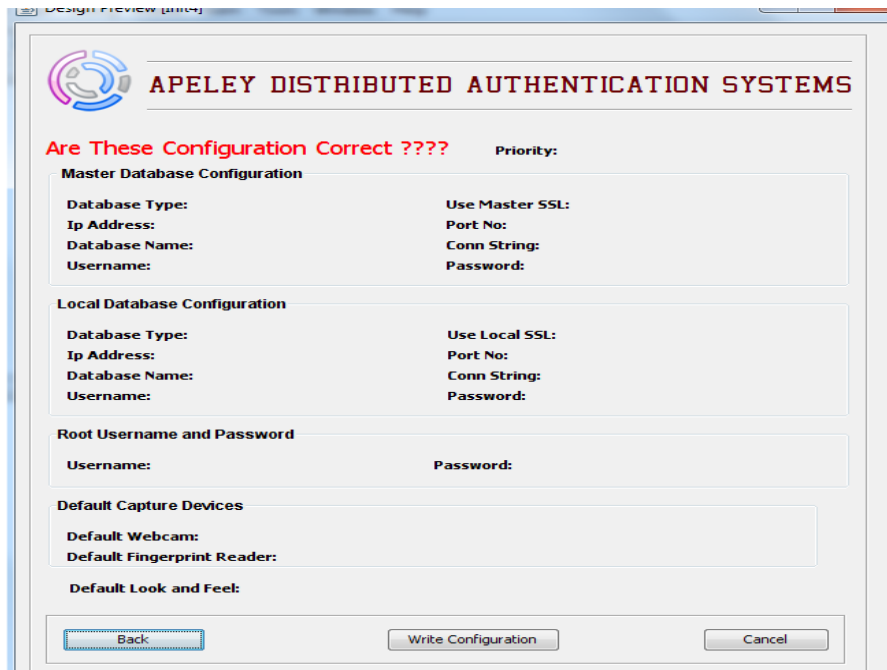


The image shows the 'Root user Configuration' window for Apeley Distributed Authentication Systems. The window has a title bar and a logo on the top left. The main content area is divided into several sections. At the top, there's a 'Select the database to use' section with a checkbox for 'Use Local Database' and a 'Database Priority' section with radio buttons for 'Master Database' and 'Local Database'. Below this is the 'Master Database Configuration' section, which includes fields for 'Database Type' (a dropdown menu), 'Ip Address', 'Port No', 'Database Name', 'Conn String', 'Username', and 'Password'. There's also a checkbox for 'use SSL' and a 'Test' button. The 'Local Database Configuration' section is identical to the Master Database Configuration section. At the bottom of the window, there are three buttons: 'Back', 'Next', and 'Cancel'.

Fig: Root user Configuration window

4. Confirmation window:

This is a window that will ask the user for the confirmation to write the records in the configuration file.



The image shows the 'Confirmation' window for Apeley Distributed Authentication Systems. The window has a title bar and a logo on the top left. The main content area is divided into several sections. At the top, there's a red text prompt 'Are These Configuration Correct ????' and a 'Priority:' label. Below this is the 'Master Database Configuration' section, which includes fields for 'Database Type', 'Ip Address', 'Database Name', 'Username', 'Use Master SSL', 'Port No', 'Conn String', and 'Password'. The 'Local Database Configuration' section is identical to the Master Database Configuration section. Below this is the 'Root Username and Password' section, which includes fields for 'Username' and 'Password'. The 'Default Capture Devices' section includes fields for 'Default Webcam' and 'Default Fingerprint Reader'. The 'Default Look and Feel' section is empty. At the bottom of the window, there are three buttons: 'Back', 'Write Configuration', and 'Cancel'.

Fig: Confirmation window

2.1.1.2 Authentication window

After the software has been configured a authentication window will pop up which will further ask for the login details of the user with the user type. After the user has been authenticated then he/she will be shown his main windows accordingly.

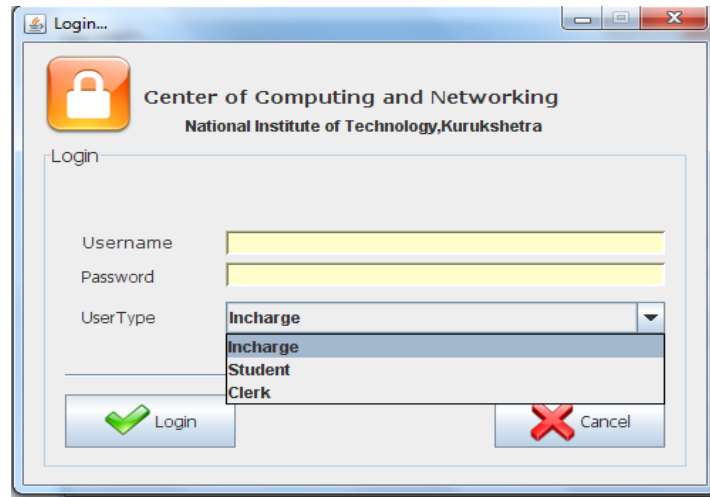
A screenshot of a Windows-style login window titled "Login...". The window has a header with a padlock icon and the text "Center of Computing and Networking, National Institute of Technology, Kurukshetra". Below the header is a "Login" section with three input fields: "Username", "Password", and "UserType". The "UserType" dropdown menu is open, showing three options: "Incharge", "Student", and "Clerk". At the bottom of the window are two buttons: a green "Login" button with a checkmark icon and a red "Cancel" button with an X icon.

Fig: Authentication window

2.1.1.3 Main Forms

1. Incharge Main Form

This is the main window for Incharge which primarily contains all the options available in the student and clerk form. Apart from that it will also contain the options for generating reports, adding new user and configuring the software.

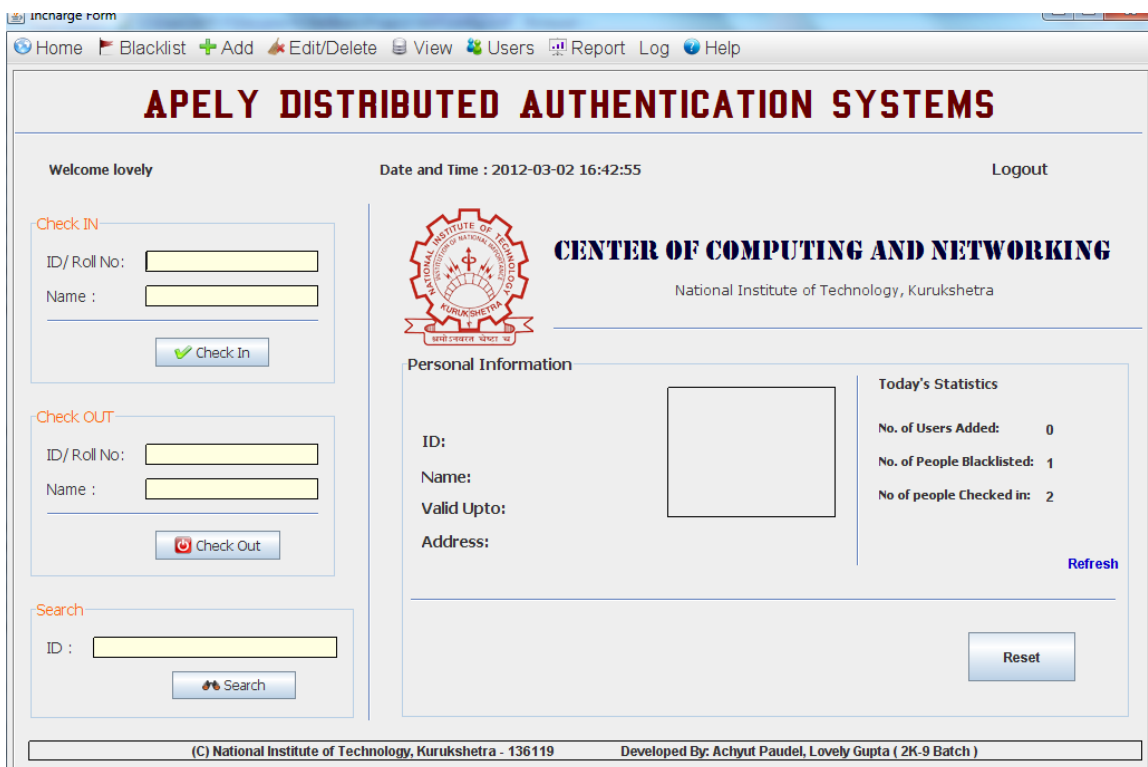
A screenshot of the "Incharge form" application window. The window has a menu bar with options: Home, Blacklist, Add, Edit/Delete, View, Users, Report, Log, and Help. The main content area is titled "APELY DISTRIBUTED AUTHENTICATION SYSTEMS" and includes a "Welcome lovely" message, a "Date and Time : 2012-03-02 16:42:55" display, and a "Logout" link. On the left, there are three sections: "Check IN" with fields for "ID/ Roll No:" and "Name:" and a "Check In" button; "Check OUT" with similar fields and a "Check Out" button; and "Search" with an "ID :" field and a "Search" button. In the center, there is a "Personal Information" section with fields for "ID:", "Name:", "Valid Upto:", and "Address:", and a large empty box for a profile picture. On the right, there is a "Today's Statistics" section showing "No. of Users Added: 0", "No. of People Blacklisted: 1", and "No of people Checked in: 2", with a "Refresh" button. At the bottom, there is a "Reset" button. The footer contains the text "(C) National Institute of Technology, Kurukshetra - 136119" and "Developed By: Achyut Paudel, Lovely Gupta (2K-9 Batch)".

Fig: Incharge Main Form

2. Clerk Main Form

This is the main window for clerk which primarily contains all the options available in the student form. Apart from that it will also contain the options for registering a new student, guest, faculty, adding blacklisting and viewing ,editing and deleting any account.

The screenshot shows the 'Clerk Main' window of the 'Apeley Authentication Systems'. The title bar reads 'Apeley Authentication Systems [Clerk Main]'. The menu bar includes 'Home', 'Blacklist', 'Add', 'Edit/delete', 'View', and 'Help'. The main header displays 'APELY DISTRIBUTED AUTHENTICATION SYSTEMS' in red. Below this, a welcome message 'Welcome lovely' is on the left, the date and time '2012-03-02 17:00:53' are in the center, and a 'Logout' link is on the right. The interface is divided into three main sections. On the left, there are three form groups: 'Check IN' with fields for 'ID/ Roll No:' and 'Name :', a 'Check In' button with a green checkmark icon; 'Check OUT' with similar fields and a 'Check Out' button with a red power icon; and a 'Search' section with an 'ID :' field and a 'Search' button with a magnifying glass icon. The right section features the 'CENTER OF COMPUTING AND NETWORKING' logo and name, followed by 'National Institute of Technology, Kurukshetra'. Below this is a 'Personal Information' section with fields for 'ID:', 'Name:', 'Address:', and 'Valid Upto:', accompanied by a large empty box for a photo. A 'Reset' button is at the bottom right of this section. The footer contains the copyright notice '(C) National Institute of Technology, Kurukshetra - 136119' and the developers 'Developed By: Achyut Paudel, Lovely Gupta (2K-9 Batch)'.

Fig: Clerk Main Form

2. Student Main Form

This is the main window for student which primarily contains check in / check out options apart from student details, help module etc.

The screenshot shows the 'Student Main' window of the 'Apeley Authentication Systems'. The title bar reads 'Apeley Authentication Systems [Student Main]'. The menu bar includes 'Home' and 'Help'. The main header displays 'APELY DISTRIBUTED AUTHENTICATION SYSTEMS' in red. Below this, a welcome message 'Welcome Student ...' is on the left, and a 'Logout' link is on the right. The interface layout is identical to the Clerk Main form, with 'Check IN', 'Check OUT', and 'Search' sections on the left, and the 'CENTER OF COMPUTING AND NETWORKING' logo, name, and 'Personal Information' section on the right. The footer contains the copyright notice '(C) National Institute of Technology, Kurukshetra - 136119' and the developers 'Developed By: Achyut Paudel, Lovely Gupta (2K-9 Batch)'.

Fig: Student Main Form

Various Menu Options:

The Interfaces for the options provided for 3 types of users explained above are as follows:

1. **Add Student:** This option is used to register a new student which would allow him to checkin in future. After filling the fields properly and click on 'Submit' option. A confirmation form will open up. Click on 'Save' to save record.

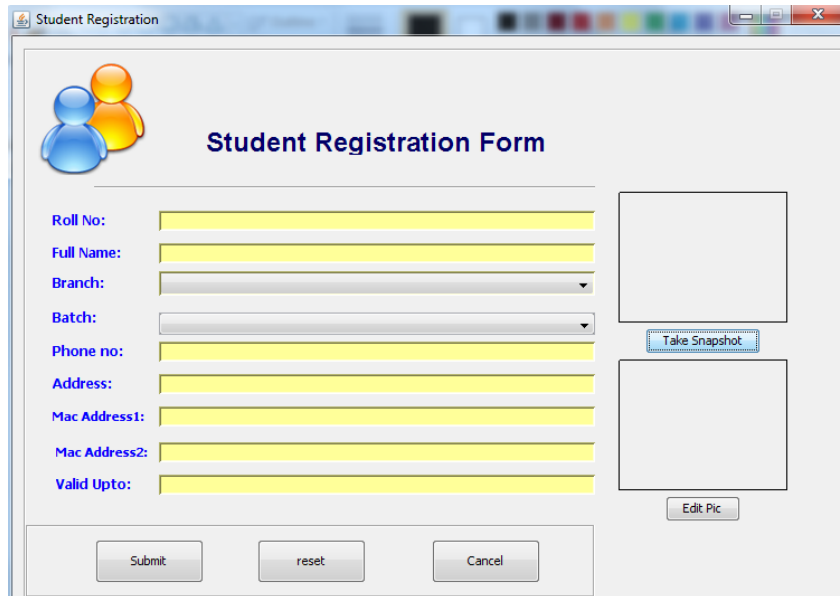
A screenshot of a web application window titled "Student Registration". The window contains a form with the following fields: Roll No, Full Name, Branch (dropdown), Batch (dropdown), Phone no, Address, Mac Address1, Mac Address2, and Valid Upto. There are two empty square boxes on the right side of the form, one above a "Take Snapshot" button and one below an "Edit Pic" button. At the bottom of the form are three buttons: "Submit", "reset", and "Cancel".

Fig: Student Registration Form

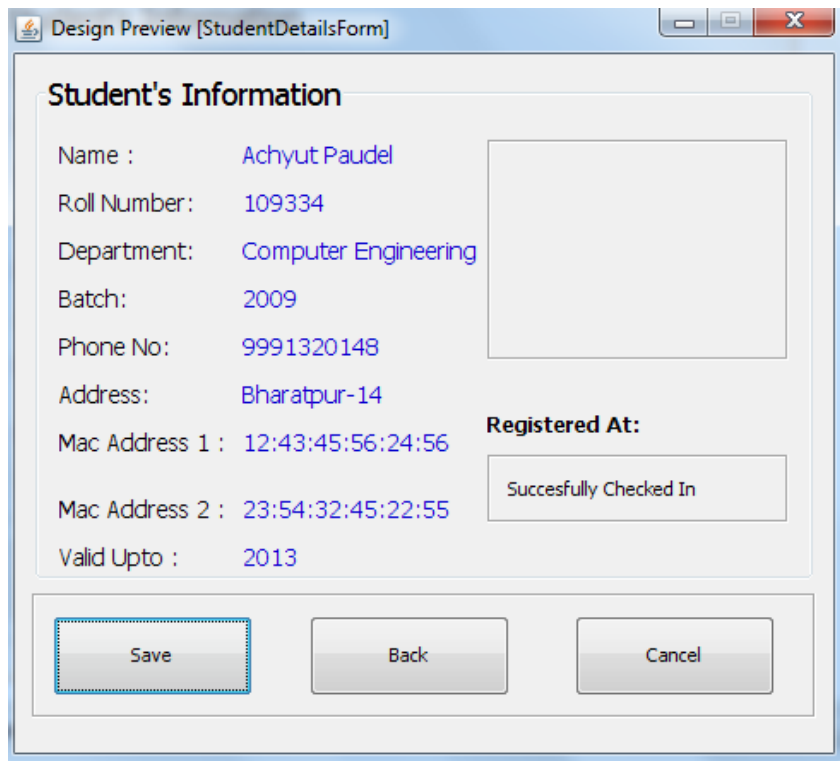
A screenshot of a web application window titled "Design Preview [StudentDetailsForm]". The window displays a form titled "Student's Information" with the following fields: Name (Achyut Paudel), Roll Number (109334), Department (Computer Engineering), Batch (2009), Phone No (9991320148), Address (Bharatpur-14), Mac Address 1 (12:43:45:56:24:56), Mac Address 2 (23:54:32:45:22:55), and Valid Upto (2013). There is a large empty square box on the right side of the form. Below the form, there are three buttons: "Save", "Back", and "Cancel". A "Registered At:" label is positioned above a box containing the text "Succesfully Checked In".

Fig: Student Details Form

2. **Add Guest:** This option is used to register a new guest which would allow him to

checkin in future. After filling the fields properly and click on 'Submit' option. A confirmation form will open up. Click on 'Save' to save the record.



Fig: Guest Registration Form

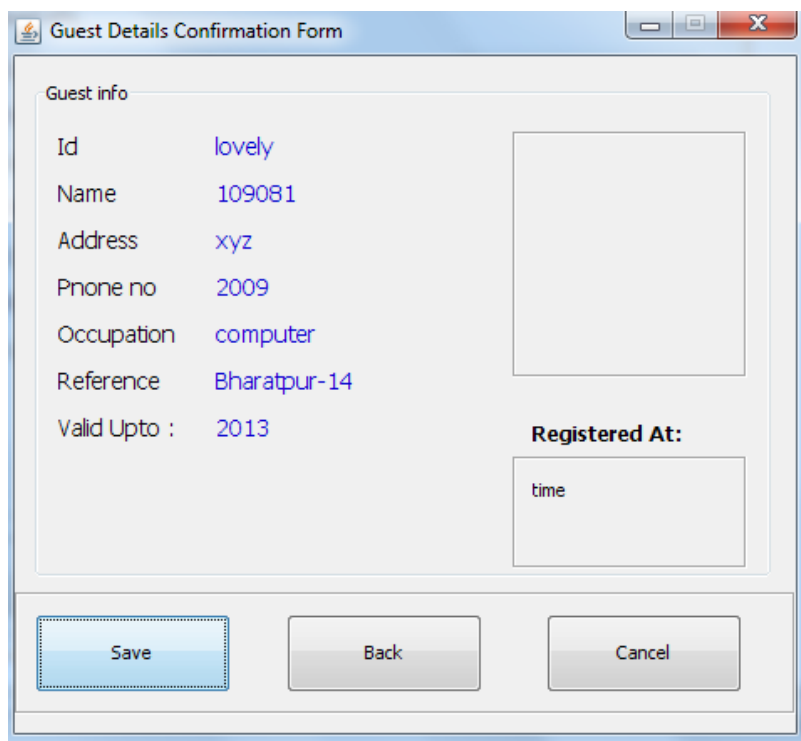
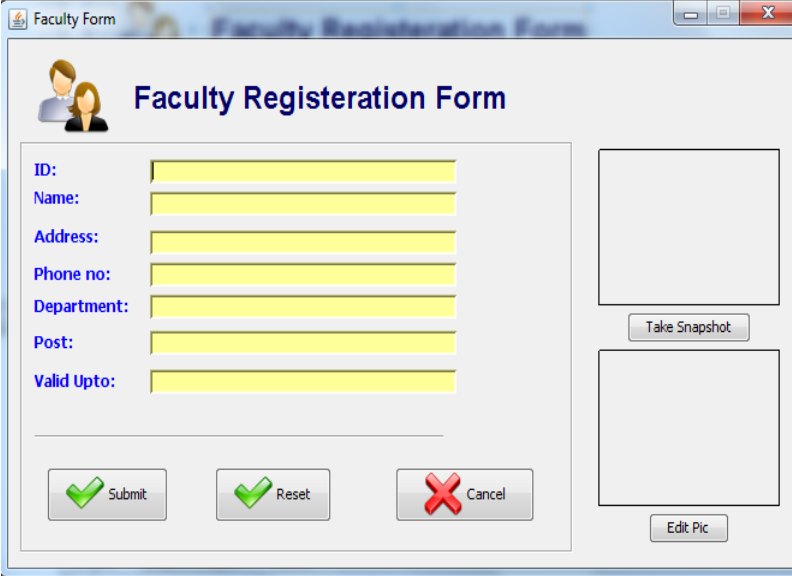


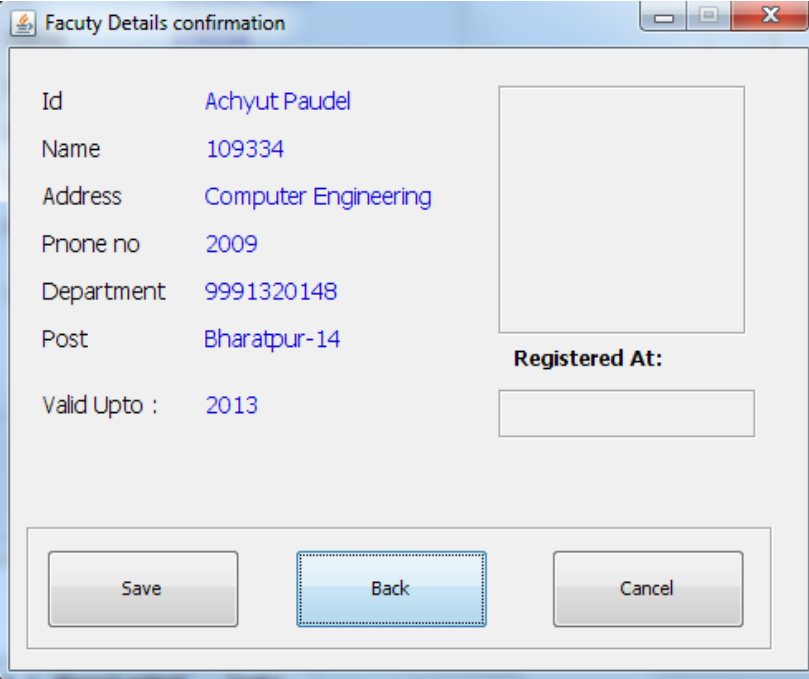
Fig:Guest Details Form

3. **Add Faculty:** This option is used to register a new faculty which would allow him to checkin in future. After filling the fields properly and click on 'Submit' option. A confirmation form will open up. Click on 'Save' to save the record.



The image shows a 'Faculty Form' window titled 'Faculty Registration Form'. It features a header with a small icon of two people. Below the header, there are several input fields for registration details: ID, Name, Address, Phone no, Department, Post, and Valid Upto. To the right of these fields is a large empty box for a profile picture, with 'Take Snapshot' and 'Edit Pic' buttons below it. At the bottom, there are three buttons: 'Submit' (with a green checkmark), 'Reset' (with a green checkmark), and 'Cancel' (with a red X).


Fig: Faculty Registration Form



The image shows a 'Faculty Details confirmation' window. It displays the registration details in a list format: Id (Achyut Paudel), Name (109334), Address (Computer Engineering), Phone no (2009), Department (9991320148), Post (Bharatpur-14), and Valid Upto (2013). To the right of the details is a large empty box for a profile picture, with a 'Registered At:' label and an empty input field below it. At the bottom, there are three buttons: 'Save', 'Back' (highlighted with a blue border), and 'Cancel'.

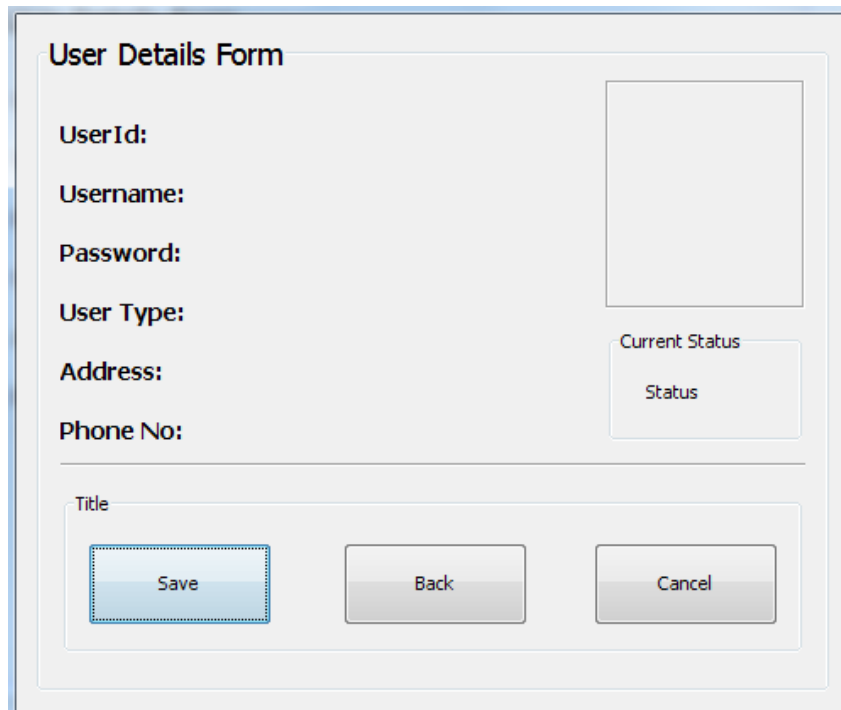
Fig: Faculty Details Form

4. **Add User:** This option present in incharge main form allows him to add new user like clerk who would operate the software. After filling the fields properly and click on 'Submit' option. A confirmation form will open up. Click on 'Save' to save record.



The image shows a 'User Form' window titled 'User Registration Form'. It features a user icon and several input fields: 'User ID', 'Name', 'Password', 'user type' (a dropdown menu with 'Clerk' selected), 'Address', and 'Phone no'. At the bottom, there are three buttons: 'submit' (with a green checkmark), 'Reset' (with a red eraser), and 'cancel' (with a red X).

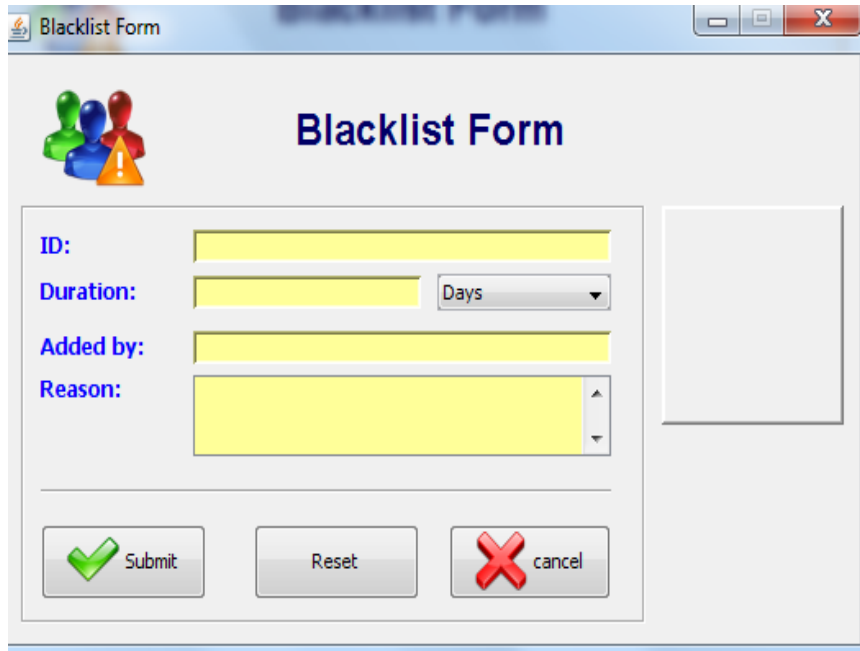
Fig: User Registration Form



The image shows a 'User Details Form' window. It contains input fields for 'UserId', 'Username', 'Password', 'User Type', 'Address', and 'Phone No'. To the right of these fields is a large empty box. Below this box is a 'Current Status' label and a 'Status' input field. At the bottom, there are three buttons: 'Save' (highlighted with a blue border), 'Back', and 'Cancel'. A 'Title' label is positioned above the 'Save' button.

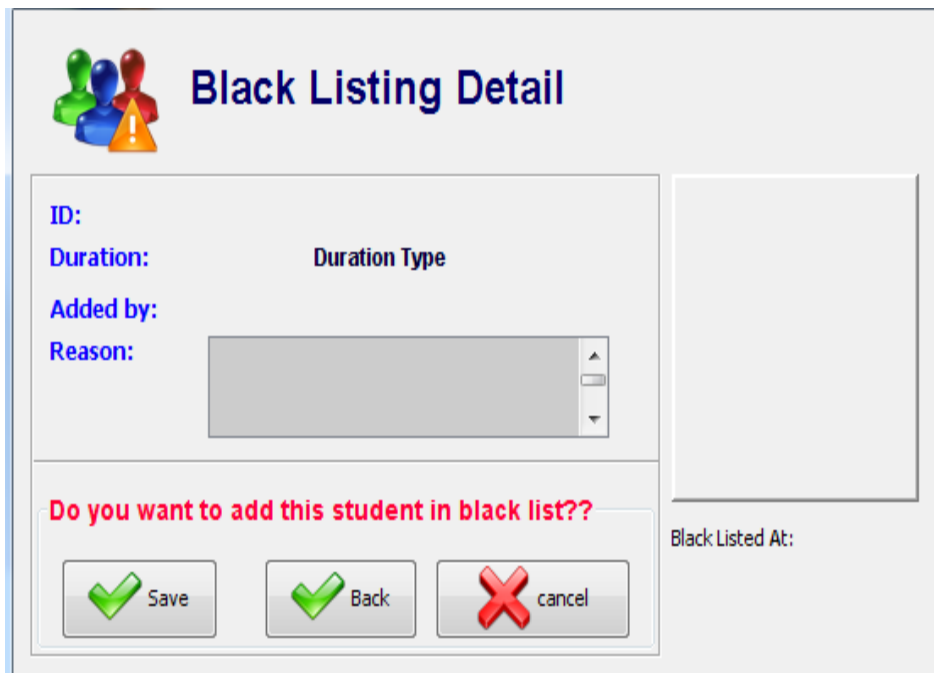
Fig: User Details Form

5. **Add Blacklist:** This is used to blacklist a person who is found guilty in some false practices for a particular duration. A person who has been blacklisted can't checkin till his blacklisted duration is over . After filling the fields properly and click on 'submit 'option. A confirmation form will open up. Click on 'Save' to save the record.



The image shows a software window titled "Blacklist Form". It features a header with a logo of three stylized figures (green, blue, red) and the title "Blacklist Form". Below the header, there are four input fields: "ID:", "Duration:", "Added by:", and "Reason:". The "Duration:" field includes a dropdown menu currently set to "Days". At the bottom of the form, there are three buttons: "Submit" (with a green checkmark icon), "Reset", and "cancel" (with a red X icon). The window has a standard Windows-style title bar with minimize, maximize, and close buttons.

Fig: Blacklist Registration Form

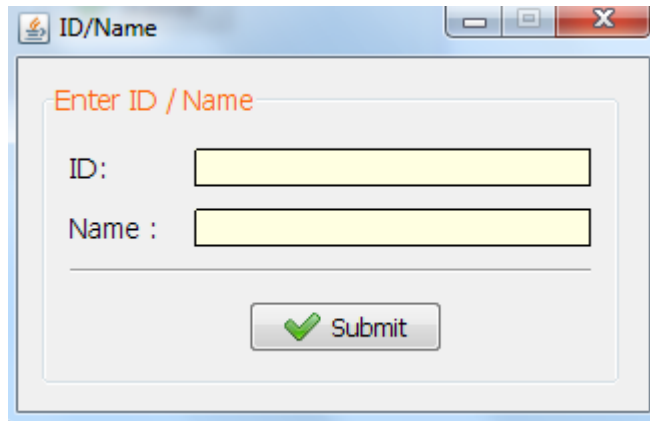


The image shows a software window titled "Black Listing Detail". It features a header with the same logo of three stylized figures and the title "Black Listing Detail". Below the header, there are four input fields: "ID:", "Duration:", "Added by:", and "Reason:". The "Duration:" field includes a dropdown menu currently set to "Days". Below the input fields, there is a red text prompt: "Do you want to add this student in black list??" followed by three buttons: "Save" (with a green checkmark icon), "Back" (with a green checkmark icon), and "cancel" (with a red X icon). To the right of the form, there is a large empty rectangular area and a label "Black Listed At:". The window has a standard Windows-style title bar with minimize, maximize, and close buttons.

Fig: Blacklist Details Form

6. **View Student/Faculty/Guest/Blacklist/User:** This is used to view details of those who have registered. A prompt asking for Id and Roll no will come up. Fill in the fields with appropriate details whose record is to be viewed.

7. **Edit/Delete Student/Faculty/Guest/Blacklist/User:** These options when selected will pop up a window asking for Id and name. By entering the fields properly, one can edit/delete a particular record.



A confirmation form will be displayed. Click on 'edit' or 'delete' to edit or delete the record respectively.

8. **Report:** It includes various options like Report by date, current Report, user report etc. Select an appropriate option according to which report is to be generated.

2.2.2 Hardware Interfaces

- I. Screen resolution of at least 1280 * 768 for the proper and complete view of the screen. Higher resolution will not be the problem.
- II. Support for the Printer (dot-matrix/laser/bubble jet etc). Appropriate drivers are to be installed for printing the reports which are generated.
- III. Network cards will be required for the connection to the INTERNET and the intranet.

2.2.3 Software Interfaces:

- I. Any windows/UNIX/ Mac or other operating systems which are able to run JRE
- II. Any database server to provide back end database support. Oracle, Mysql, Mssql are preferred.

2.2.4 Servers required:

- I. Backup server to create the backup of the all data periodically.

This Server will be used to backup every data and the database daily. This server requires 2TB of disk space, 2.5 GHz processor, 1000 MPBS Ethernet card in minimum.

2.2.5 Memory Constraints:

To run the Application the user must have at least 64 MB RAM. Since the Application is built in java so the memory requirement can vary with different versions of JRE.