Technical Documentation
IITG LEAVE APP

IIT-G Leave Management Portal

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1.Introduction

1.1 Purpose

This the technical documentation of the IITG Leave Application developed as a part of the CS243 lab to demonstrate a working model of a Leave application and resolution system for the institute.

1.2 Intended Users

Anyone intending to improve, evaluate or use the application or a part of it can use this document.

1.3 Definitions, Acronyms and Abbreviations

- App refers to the application which has been documented, namely the IITG Leave application
- Database means the MS Access database being used to store and access the data for the application
- Forms refer to the Visual Basic forms developed in the applications
- All common words used in Windows OS, General computer usage, Visual Basic and MS Access also carry the same meaning here
- Font Lucida Fax* is used to refer to form and method names used in the application source code, Arial font is used otherwise

1.4 Overview

- Section 1: Introduction: Introduces to the documentation
- Section 2: Requirements: Hardware and Software requirements
- Section 3: Design: Explains the basic idea of the application
- Section 4: Component description: Explain all the components that make up the application

(* use the following lines as a quick reference to the font:
THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG
the quick brown fox jumps over the lazy dog)

2.Requirements

2.1 Hardware Requirements

a) For using the application, any recent PC/Laptop running Windows 7 or later

b) For other purposes including development, evaluation or other uses, PC capable of running Visual Studio 2013 or newer is recommended

In both scenarios input through pointing devices, touch and/or keyboard is required. Output through a display (resolution equal to or greater than 1280 x 800) is also needed.

Internet connectivity with working SMTP protocol is needed to make the app fully functional. (Mail service has been disabled from source-code as SMTP is blocked in IITG Network)

2.2 Software Requirements (only for development purposes)

The following pre-installed packages in visual basic are used:

- System.IO
- System.Cryptography
- System.Text
- System.Net.Mail

Also, an external package to connect to database: **Microsoft Office 2007 Database Driver** or a newer version of the same is needed to import the following package:

- System.Data.OleDb

    This is used to connect to the ".accdb" suffixed database file

3. Software Design

3.1 Aim

The aim of this software is to provide a simple but efficient leave application and resolution portal for everyone at IIT Guwahati.

The application uses databases and user profiles for round the clock availability and provides only the required options for users at each level. Thus, makes it simple and fast for everyone to apply and resolve leave applications

3.2 Design
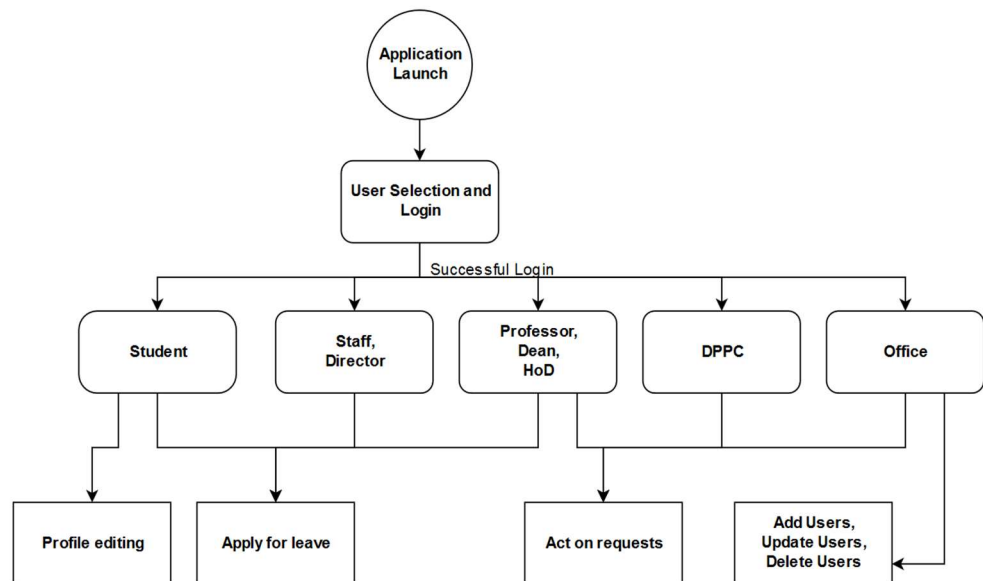
- The user attempts a login through the login portal.
- Different types of users are taken to their corresponding homepages
- Each homepage has a limited set of components defining the actions allowed to each user
- Each node of the flow chart has a form of its own, it contains the details of each action
- It is possible to go backwards on any valid path in the flow chart, as one person will use only one type of profile it has been omitted to retain readability
- Variables are also passed through these paths, this is done to prevent wastage of memory as all forms stay in the memory during app execution.

4.Component Description

4.1 Overview

There are 8 forms in total, the login form (Form1.vb) is the starting point of the application.

4.2 Forms

4.2.1 Login Page (Form1.vb)

Components:

1. UsernameTextBox: Stores/Displays username entered by user

2. PasswordTextBox: Stores/Displays password entered by user either masked as '*' or not depending whether show password checkbox is unticked or not

3. Radio Buttons Group box for selecting the type of user logging

4. ForgotButton: Sends an email with a new random password to user u/sing SMTP protocol (Does not work in IITG network). Calls Forgotbutton_Click when clicked

5. LoginButton: Validates username and password from database and logins if successful. Calls LoginButton_Click when clicked

4.2.2 Student Homepage (Student_HomePage.vb)

To pack all of the functionalities together, multiple panels are used to separate functions
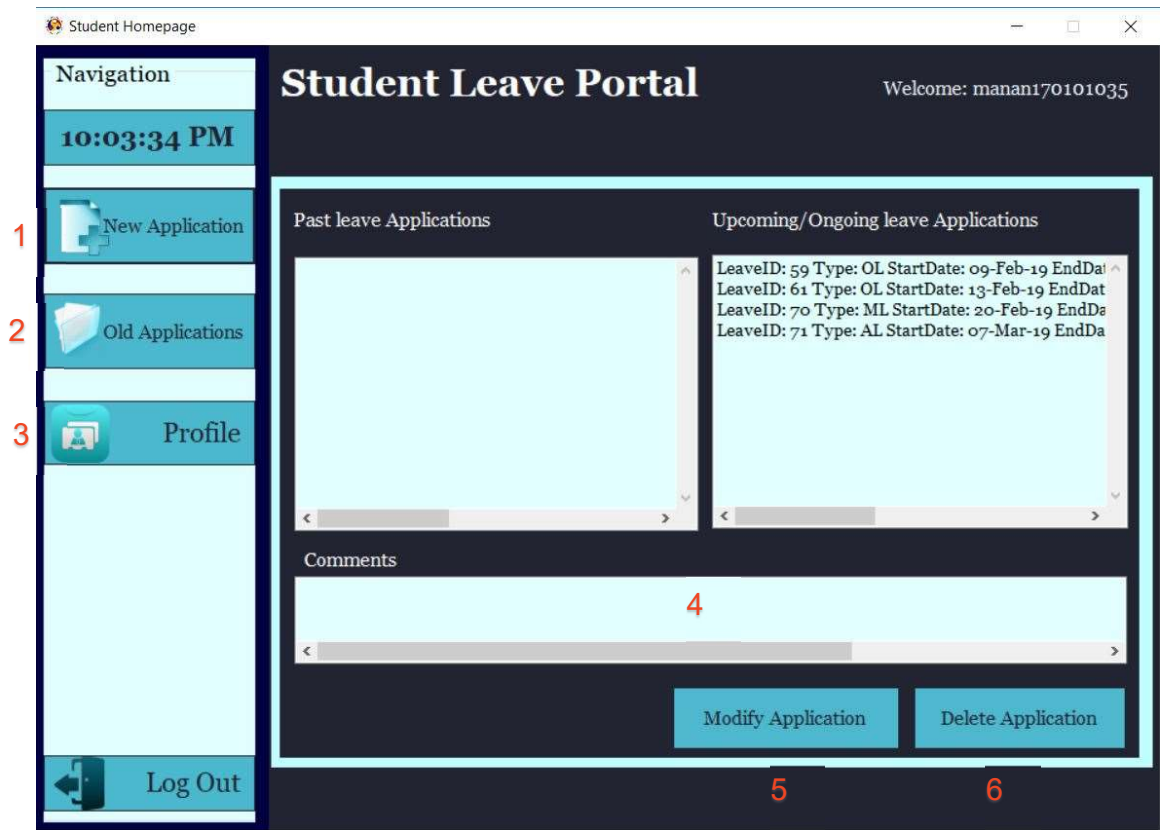
Components:

1) (Button) NAButton: Changes the panel to NAPanel for applying new application. Calls NAButton_Click when clicked

2) (Button) OldButton: Changes the panel to OldPanel for checking already applied leaves. Calls OldButton_Click when clicked

3) (Button) ProfileButton: Changes panel to ProfilePanel for checking and editing profile. Calls ProfileButton_Click when clicked

4) (Data Grid): When entry is clicked comments are shown in comments box. Calls OldUpcomingLeaveListBox_SelectedIndexChanged and OldPastLeaveListBox_SelectedIndexChanged when entry is selected

5) (Button) OldExtendLeaveButton: Helps in modifying upcoming non-approved leaves. Calls ExtendLeaveCancelButton_Click when clicked

6. OldDeleteButton: Deletes upcoming non-approved leaves. Calls OldDeleteButton_Click when clicked

Components:

1. (Button) NAUploadButton: Open file DialogBox to upload pdf file supporting the leave. Calls NAUploadButton_Click when clicked

2. (Button) NAApplyButton: Validates applied leave and stores it into database if successful. calls NAApplyButton_Click when clicked

Components:

1. (Button) ProfileImageChangeButton: Opens file DialogBox to select jpeg image and update profile picture. Calls Button1_Click when clicked

2. (Button) ProfileChangePasswordButton: Changes panel to ChangePasswordPanel and allows password changing. Calls ProfileChangePasswordButton_Click when clicked

3. (Button) ProfileEditButton: Allows editing appropriate fields. Calls ProfileEditButton_Click when clicked

4. (Button) Profilesavebutton: Allows to save data after editing if found valid. Calls ProfileSaveProfilebButton_Click when clicked

Components:

1. (Checkbox) ProfilePasswordCheckBox: Shows/Masks password. Calls ProfilePasswordCheckBox_CheckedChanged_1 when check changed
2. (Button) ProfilePasswordCancelButton: Returns to profile. Calls ProfilePasswordCancelButton_Click when clicked
3. (Button) ProfilePasswordOkButton: Changes the passowrd if data provided is found to be valid. Calls ProfilePasswordOkButton_Click when clicked
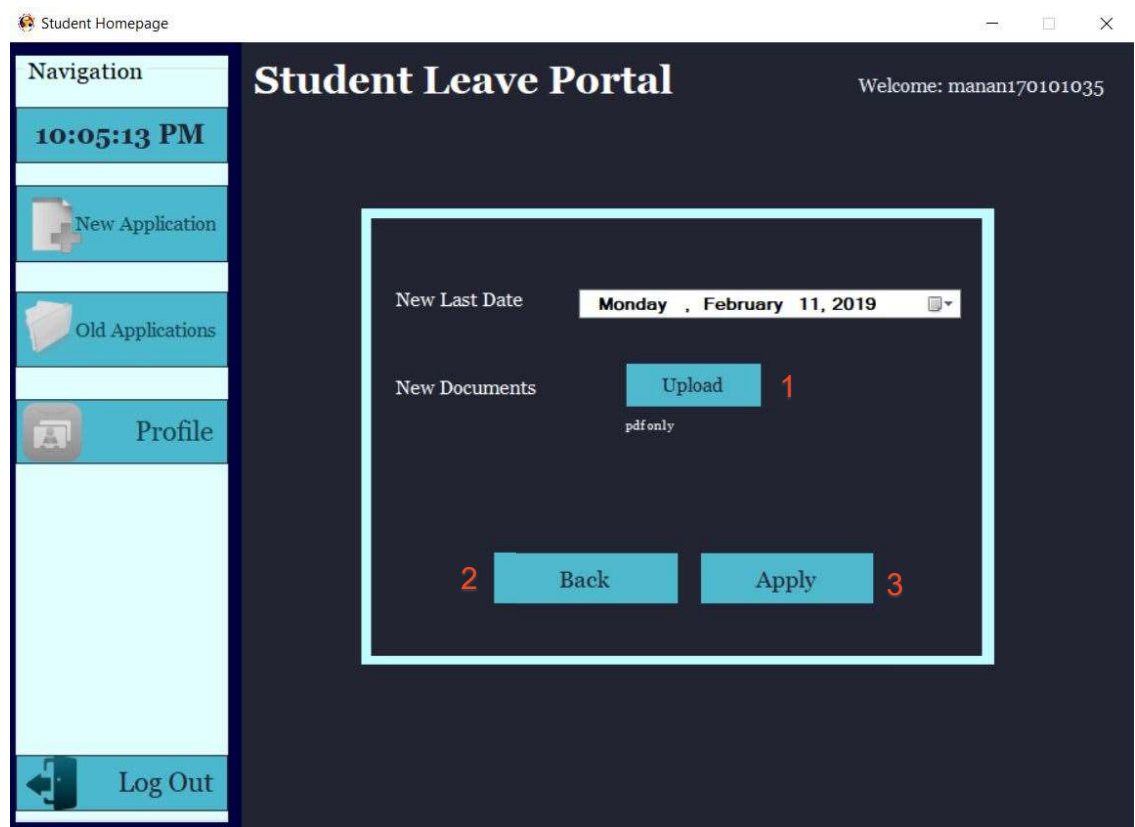
Components:

1. (Button) ExtendLeaveUploadButton: Opens file Dialogbox allowing to select pdf file to upload, calls ExtendLeaveUploadButton_Click when clicked
2. (Button) ExtendLeaveCancelButton: Returns back to old leaves panel. Calls ExtendLeaveCancelButton_Click when clicked
3. (Button) ExtendLeaveApplyButton: Pushes leave to database after checking for its validation. Calls ExtendLeaveApplyButton_Click when clicked

4.2.3 Office Homepage (Office_HomePage.vb)

Components:

1. (Combo) choice_combo: Combo box allowing user to select the user type
2. (Textbox) username_text: Text box used to take username as input from the user
3. (Button) logoutButton: Logs out the student and returns to Login Page
4. (Button) loadUser: Invokes loadUser_Click and loads user info in data grid (see component 10)
5. (Button) approvalButton: Invokes approvalButton_Click and approves the selected leave
6. (Button) DeclineButton: Invokes DeclineButton_Click and declines the selected leave
7. (Button) addUser: Calls addUser_Click and opens form add_User.vb (see 4.2.4)
8. (Button) updateUser: Calls updateUser_Click and opens form userUpdate.vb (see 4.2.5)
9. (Button) deleteUser: Calls deleteUser_Click and opens form userDelete.vb (see 4.2.6)
10. (Date Grid) dgv1: Shows user info loaded when loadUser (component 4) is clicked

11. (Data Grid) dgv2: Shows pending leaves when ref_Button (component 12) is clicked
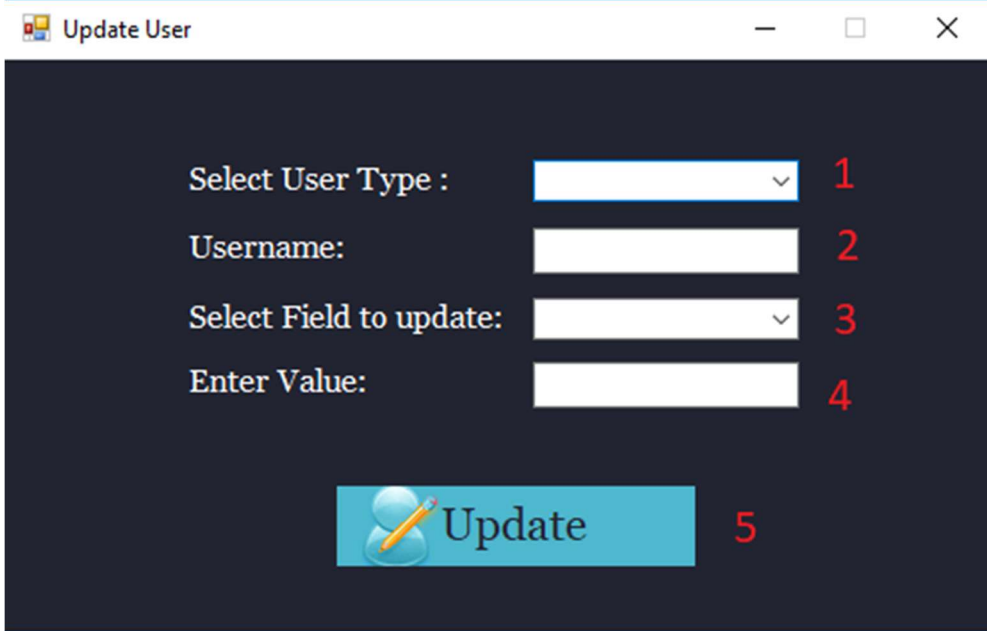12. (Button) ref_Button: Reloades dgv2 (component 11)

4.2.4 Add User (add_User.vb)

Components:

1, 5, 6, 10 (Combo boxes): Take input choice for the label mentioned against them

2, 3, 4, 7, 8, 9, 11 (Text Boxes): Take string input for the label mentioned against them

12. (Button) add: Calls add_Click, it tests the provided choices in component 1-11 and adds user or rejects the request as required

4.2.5 Update User (userUpdate.vb)
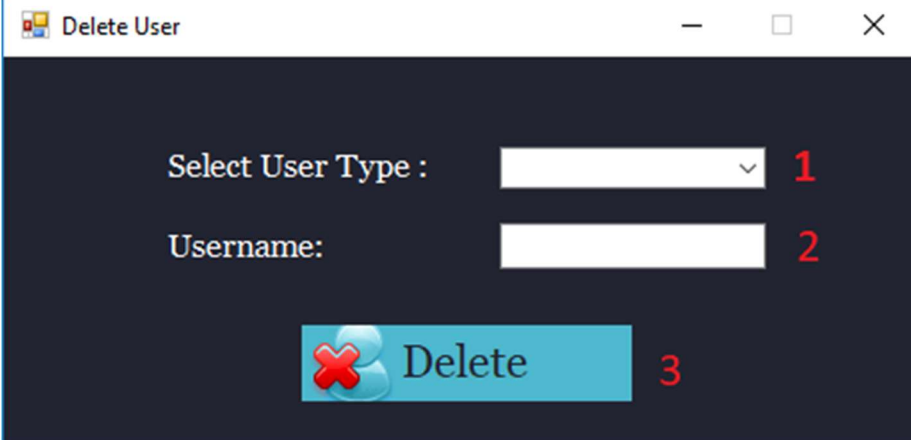
Components:

1. (Combo) choice_combo: Allows to select user type
2. (Textbox) username_text: Takes input for username
3. (Combo) field_Boc: Allows to choose the field to update
4. (Textbox) val_text: Takes input for field
5. (Button) update_button: Calls update_button_Click and attempts to update database according to input in component 1-4

4.2.6 Delete User (userDelete.vb)

Components:

1. (Combo) choice_combo: Allows to select user type
2. (Textbox) username_text: Input for username to be deleted
3. (Button) Delete: Calls Delete_Click and attempts to delete username

4.2.7 Apply for Leave (Apply_for_leave.vb)

Components:

1. (Textbox) nametextbox: Name used to apply for leave (can't be edited by user)
2. (Date Selector) DateTimePicker1: Select the starting date
3. (Date Selector) DateTimePicker2: Select the ending date
4. (Button) applybutton: Apply for leave with dates selected above
5. (Button) Button2: Close the form and return

4.2.8 Rest Homepage (Rest_HomePage.vb)
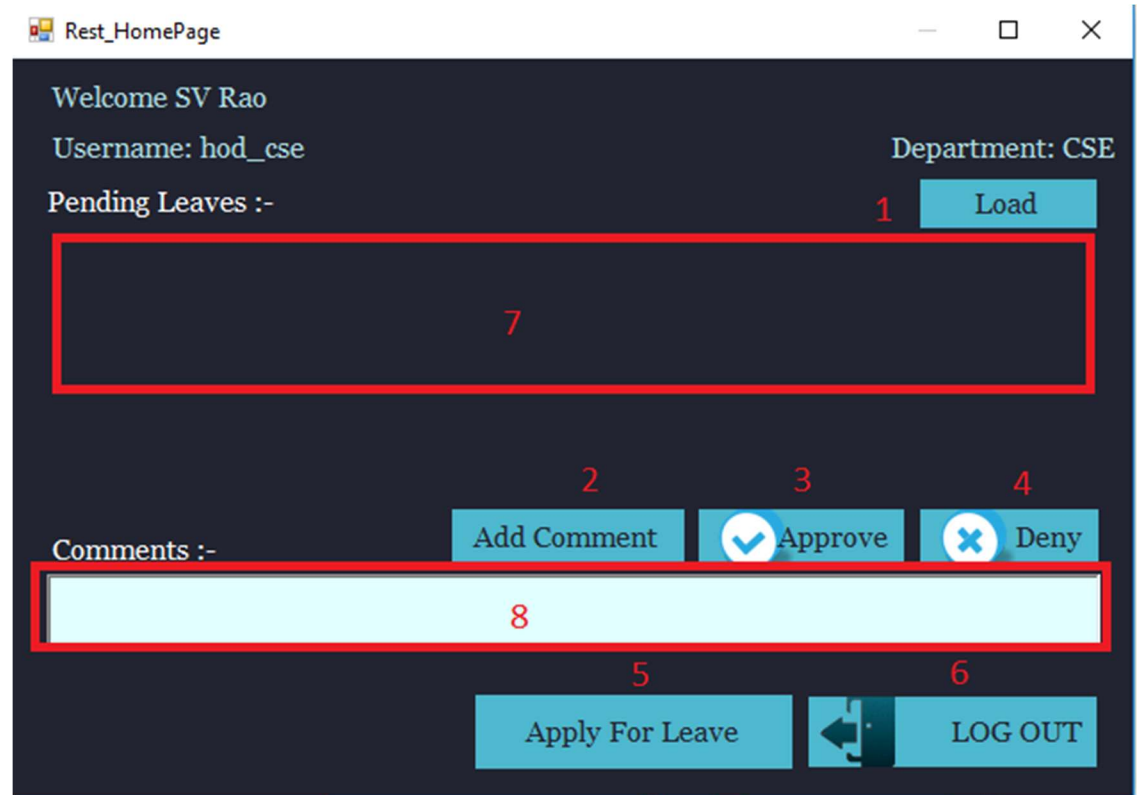
Components:

1. (Button) loadbutton: Calls loadbutton_Click and load leaves in data grid (component 7)
2. (Button) addcommentbutton: Calls addcommentbutton_Click and add comment to selected leave
3. (Button) approvebutton: Calls approvebutton_Click and approve the selected leave
4. (Button) denybutton: Calls denybutton_Click and decline the selected leave application
5. (Button) applyleavebutton: Calls applyleavebutton and launches apply leave form (see form 4.2.7)
6. (Button) logoutbutton:Calls logoutbutton_Click, logs out and returns to login (see 4.2.1)
7. (Data Grid) pendingleavesdgv: Loads data when loadbutton is clicked, leaves can be selected by clicking
8. (Rich text box) addcommentbox: Can take input strings to add as comments to leave application