



Office of the College of Informatics and Computing Sciences

**AN INNOVATIVE HUMAN RESOURCE MANAGEMENT SYSTEM IN BATANGAS
STATE UNIVERSITY-LIPA CAMPUS**

In Partial Fulfilment of the Requirement in

CS 111 – Computer Programming

By:

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BSIT 1201

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FINAL PROJECT

A. Topic: Human Resource Management

B. Title of the Project: An Innovative Human Resource Management System in Batangas State University-Lipa Campus

A. Purpose and Description:

The Human Resource Management Office (HRMO) is a vital department within the University, contributing to the achievement of the institution's goals, vision, and Strategic Plan. With direct oversight from the Administration Services Office, the HRMO focuses on managing employee data and facilitating the application process for leaves. Effective management of employee data and leave applications is crucial for ensuring a smooth workflow within the University. The HRMO's role in these areas helps maintain accurate records, facilitate leave requests, and promote fairness and consistency in leave management processes. By efficiently managing employee data and leave applications, the HRMO supports the overall functioning of the University, contributes to employee satisfaction, and helps maintain a productive work environment.



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This system The Human Resource Management System is a software application developed in C++ that assists in managing various aspects of human resource functions within an organization. It encompasses several modules, including the Personal Data Sheet and employee's application for leave.

Personal Data Sheet provide a comprehensive overview of an individual's background, qualifications, and personal details about an individual, such as their full name, contact information, date of birth, gender, family background and educational background. A Personal Data Sheet plays a vital role in organizing and documenting an individual's personal information, facilitating efficient data management, and supporting various administrative processes.

Application for Leave application feature in a human resource management system streamlines and automates the process of requesting and managing employee leave, resulting in improved efficiency, transparency, and employee satisfaction. The leave application feature in an HRMS offers several benefits. It centralizes the entire leave management process, eliminating the need for manual paperwork and reducing administrative tasks for HR personnel. It also provides transparency and accountability by keeping a record of all leave requests, approvals, and rejections, which can be valuable for auditing and reporting purposes.



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The system's innovative features and functionalities will revolutionize the traditional methods of managing personal data and leave applications. It will introduce a user-friendly interface that simplifies the process of submitting leave requests and ensures that employees have a seamless experience. Employees will no longer have to go through cumbersome paperwork or manual processes when applying for leave. Instead, they can conveniently access the system, enter their leave details, and submit their requests with just a few clicks.

Additionally, the system will securely store and manage the personal data of employees. It will provide a centralized and organized repository where employees can store their personal information, such as contact details, educational background, and other relevant data. This ensures that employee data is accurately recorded and easily accessible.

Overall, the introduction of this system will revolutionize the management of personal data and leave applications within the organization. It will bring innovation, efficiency, and convenience to employees, enabling them to easily apply for leave and securely store their personal data. The system's benefits extend to the organization as a whole, promoting effective office management and contributing to improved productivity and employee satisfaction.



**Office of the College of Informatics and Computing Sciences****A. Scope of the Project:****a. Login**

i. Admin Login - This section is designated only for admin, It serves as a security measure that grants authorized individuals access to the admin functions within our system. In order to login as admin within our system, it is necessary to correctly input a fixed username and password.

ii. User Login- Our system is specifically designed for the university's employees. The login interface consists of input fields where users can enter their username or email address along with their password. These fields serve as a means for users to provide their distinct login credentials in order to access the system.

b. Transaction

- Personal data Sheet
- Application for leave



**Office of the College of Informatics and Computing Sciences****c. Admin Interface****i. View Personal Data Sheet and Application for leave**

Admin granted the privilege to view the data that is inputted by the users.

This feature provides administrators with access to the information entered by users within the system.

ii. Modify

- Edit Personal data Sheet**

The system allows administrators to edit the Personal Data Sheet and Application for Leave, which contain user-inputted information. This feature grants administrators the authority to modify and update personal information and leave applications on behalf of users. Under the Personal Data Sheet, administrators can edit various categories of data, including Personal Information, Contact Information, and Educational Background. Personal Information may include details such as full name, date of birth, gender, and other relevant personal identifiers. Contact Information encompasses address, phone number, and email address. Educational Background covers educational qualifications, degrees, certifications, and any other relevant educational details. By being able to edit the Personal



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Data Sheet, administrators can ensure that the information reflects accurate and up-to-date details about each user. They can rectify any errors, update contact information, or incorporate changes in educational background as necessary.

- **Application for leave**

In our system, Admin can also edit the Application for Leave submitted by users. This includes modifying details such as the requested leave period, reason for leave, Administrators may edit leave applications in scenarios where changes to the original request are necessary, such as adjusting the duration

- **Delete Personal Data Sheet and Application for leave**

Administrators have the authority to delete data that users have entered. This feature enables administrators to delete certain information or records provided by users from the system.

d. User Interface**i. Input**

The user will input their information given bellow:



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**Office of the College of Informatics and Computing Sciences****1. Personal Data Sheet**

- Personal information
 - Name
 - Age
 - Sex
 - Citizenship
 - Date of Birth
 - Place of Birth
 - Height
 - Weight
 - Address
- Contact Information
 - Contact Number
 - Email Address
- Educational Background
 - Primary School
 - Secondary School
 - Tertiary School



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Once the user submits their employee information the system will process and store the data securely, making it accessible and modified by the admin.

2. Application for leave

The user will also be able to input their application for leave and the user will typically be prompted to provide specific details within the application. Includes the name, department, position, number of days will leave as well as the starting date and the end date. In Addition there are options given for the reason why you are applying for a leave. This application for leave can view and modify by the admin.

ii. View

User can review the information inputted by them including their Personal Data sheet as well as their application for Leave Record.

iii. Edit

The user has the ability to edit their inputted data whether it is personal data sheet or the application for leave.





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E. Console App Design

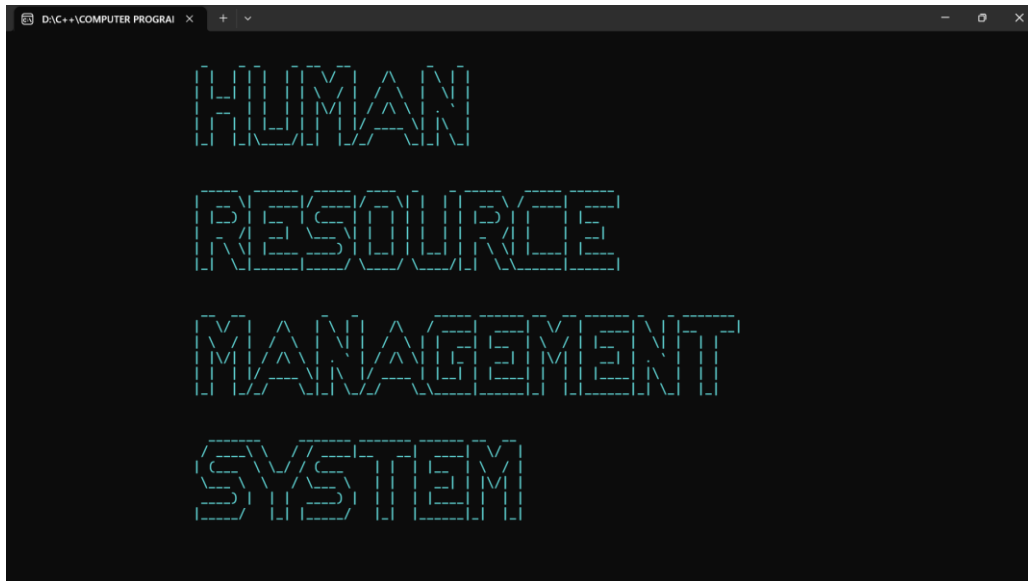


Figure 1. Welcome

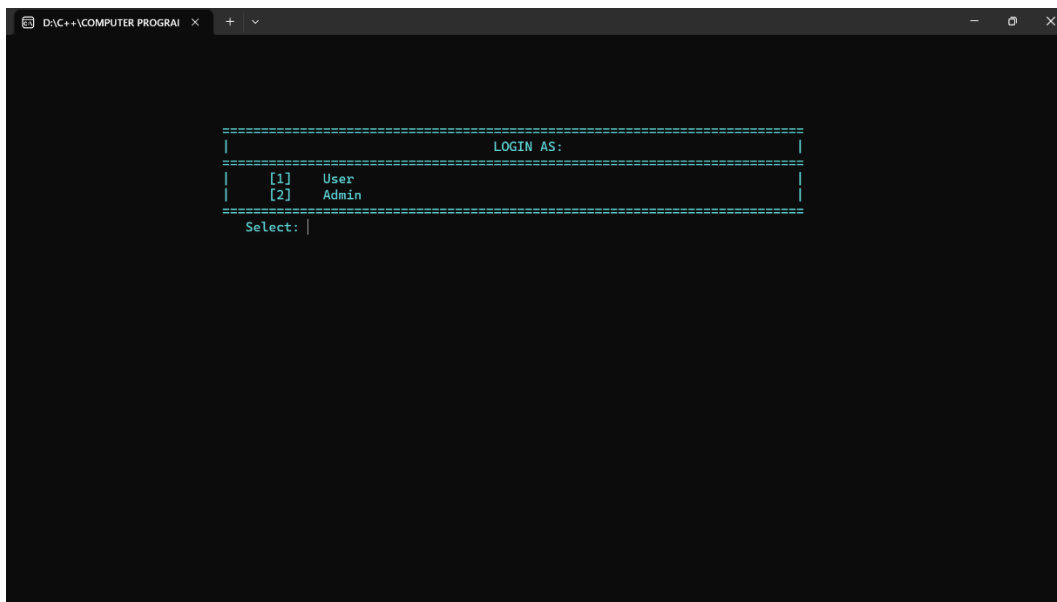


Figure2. Login As



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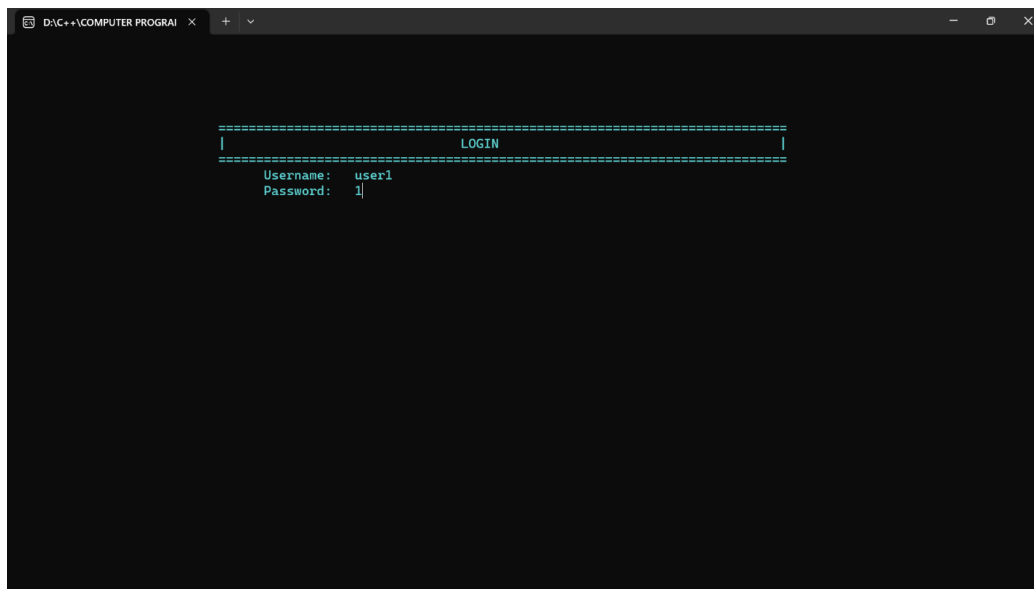


Figure 3. Login as User

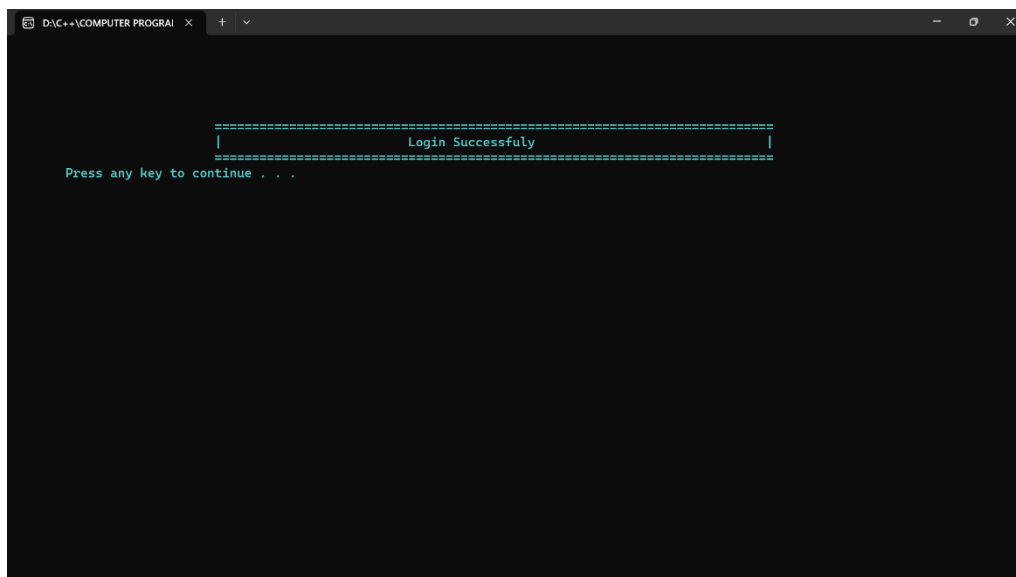


Figure 4. Login Successfully



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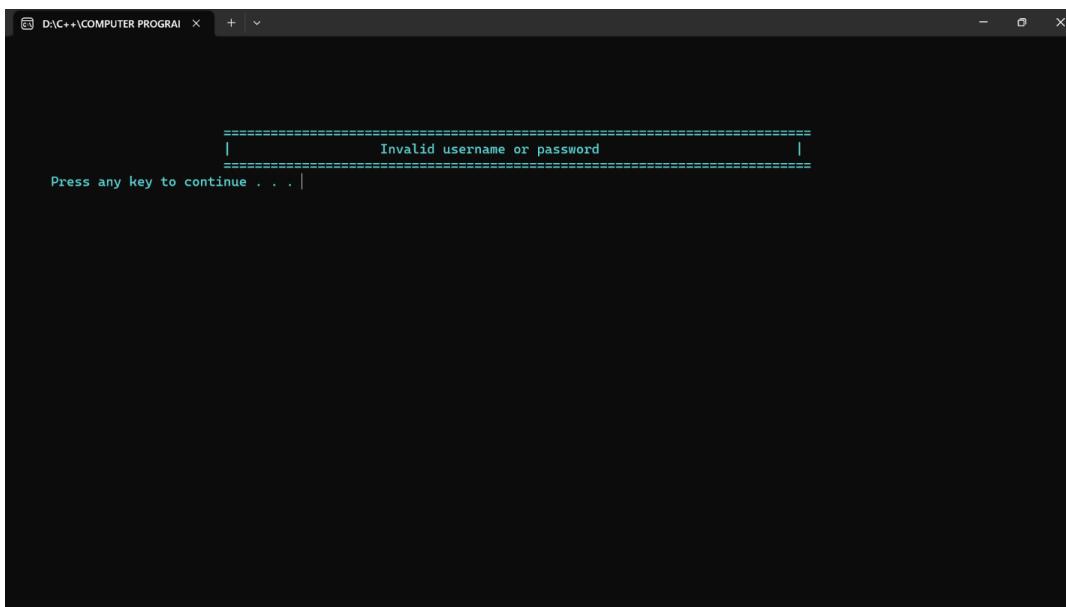


Figure 5. Login Failed

//User Interface

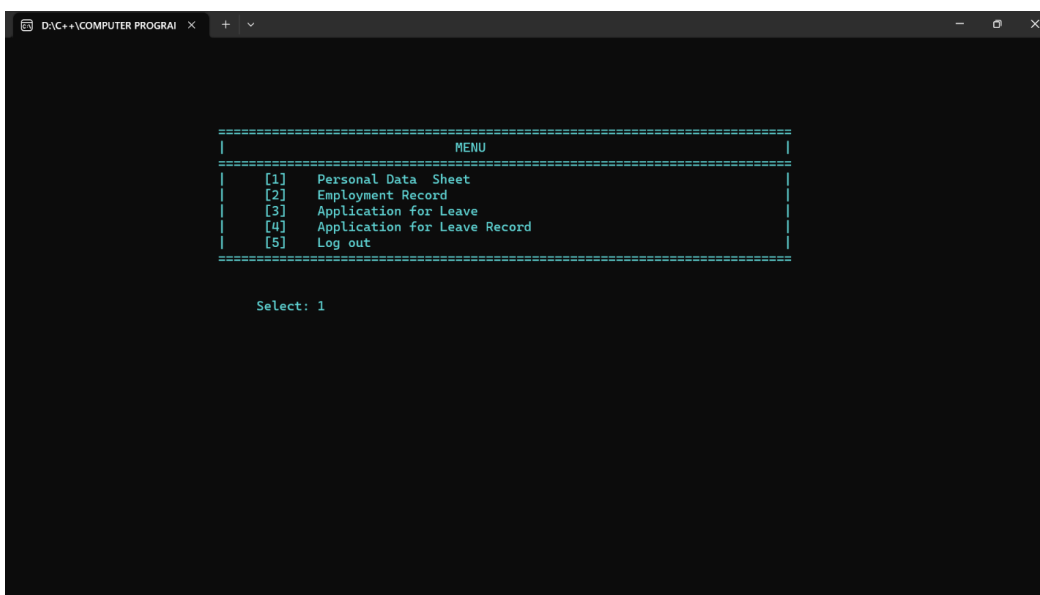


Figure 6. User Menu





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```
=====
|                               ENTER YOUR PERSONAL DATA                               |
=====
|
| Last Name:      Virtucio
| First Name:     Glycel
| Middle name:    Yvon
| Age:            18
| Sex:            Female
| Citizenship:    Filipino
| Date of birth (mm-dd-yyyy): 10-12-2004
| Place of birth: San Jose Batangas
| Height (cm):    147
| Weight (kg) :   45
|
```

Figure 7. Input Personal Information

```
=====
|                               CONTACT INFORMATION                               |
=====
|
| Contact Number: 097654345687
| Email Address:  glycel@gmail.com
|
```

Figure 8. Input Contact Information



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```

=====
| EDUCATIONAL BACKGROUND |
=====
Primary School: Taysan Elementary School
Secondary School: Saint Joseph Academy
Tertiary School: Batangas State University
    
```

Figure 9. Input Educational Background

```

=====
| EMPLOYMENT RECORD |
=====
| PERSONAL INFORMATION |
=====
Name: Virtucio Glycel Yvon
Age: 18
Sex: Female
Citizenship: Filipino
Date of Birth: 10-12-2004
Place of birth: San Jose Batangas
Height (cm): 147
Weight (kg): 45
Contact Number : 097654345687
Email Address : glycel@gmail.com
Primary : Taysan Elementary School
Secondary : Saint Joseph Academy
Tertiary : Batangas State University
=====
| [1] MENU [2] Logout [3] Edit |
=====
Select: |
    
```

Figure 10. Employment Record



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```

=====
                        TYPE OF LEAVE
=====
|-----|
| [A] Personal leave |
|-----|
| [B] Hospitalization Leave |
|-----|
| [C] Government Transaction Leave |
|-----|
A |-----|
| Personal leave |
|-----|
| 3days to leave WithPay |
|-----|
2 | Enter days you leave |
|-----|
| The day you will back is 12/12/2023 |
|-----|
| You have 1 days leave |
|-----|

```

Figure 11. Input Application for leave

```

=====
                        APPLICATION FOR LEAVE
=====
|-----|
| PERSONAL INFORMATION |
|-----|
| Name: Glycel YvonRoblesVirtucio |
|-----|
| Department: CICS |
|-----|
| Position: Instructor |
|-----|
| No days of leave : 2 |
|-----|
| Start Date: 12/10/2023 |
|-----|
| End date: 12/12/2023 |
|-----|
| [1] MENU [2] Logout [3] Edit |
|-----|
Select:

```

Figure 12. Application for leave Record





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```

=====
|                                     |
|                               ENTER YOUR PERSONAL DATA                               |
|                                     |
| Last Name:      Virtucio           |
| First Name:     Glycel             |
| Middle name:    Yvon               |
| Age:            18                 |
| Sex:            Female             |
| Citizenship:    Filipino           |
| Date of birth (mm-dd-yyyy): 10-12-2004 |
| Place of birth: San Jose Batangas  |
| Height (cm):    147                |
| Weight (kg) :   45                 |
|                                     |
|=====
  
```

Figure 13. Edit Employment Record

```

=====
|                                     |
|                               TYPE OF LEAVE                               |
|                                     |
| [A] Personal leave                |
| [B] Hospitalization Leave         |
| [C] Governement Trancsaction leave |
|                                     |
|=====
A |                                     |
|                                     |
| Personal leave                    |
|                                     |
| 3days to Leave WithPay           |
| Enter days you leave              |
|                                     |
|                                     |
| The day you will back is 12/12/2023 |
|                                     |
| You have 1 days Leave             |
|                                     |
|=====
2 |
  
```

Figure 14. Edit Application for leave



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//admin interface

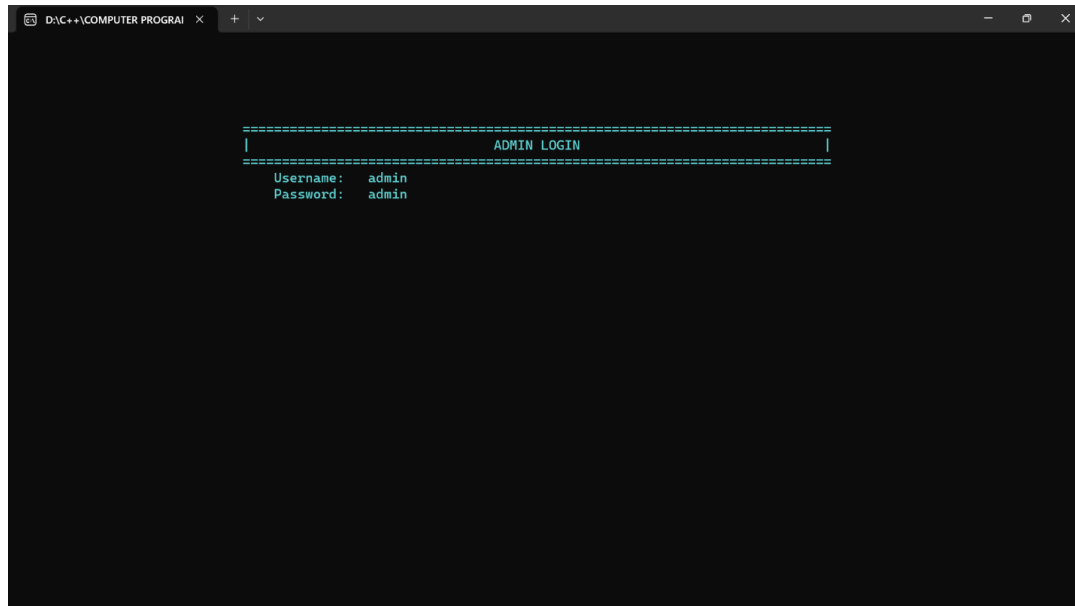


Figure 15. Admin Login

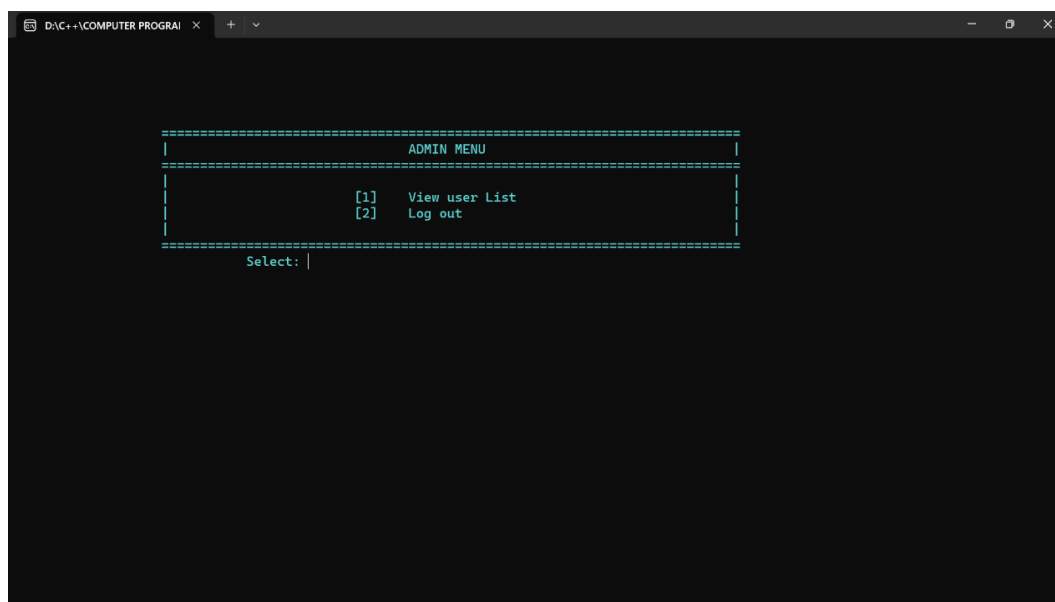


Figure 16. Admin Menu



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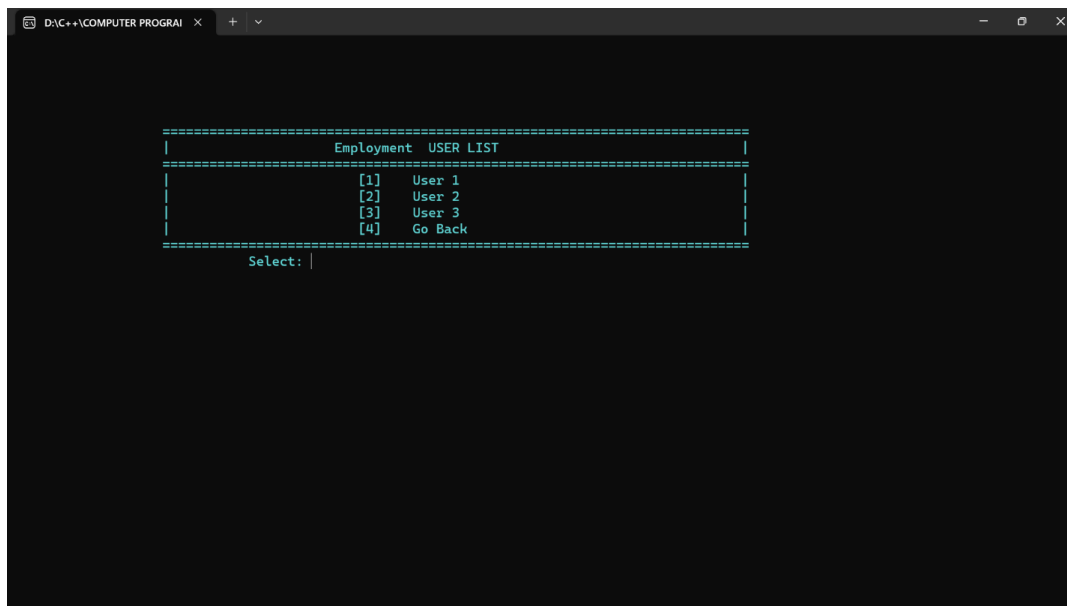


Figure 17. User list

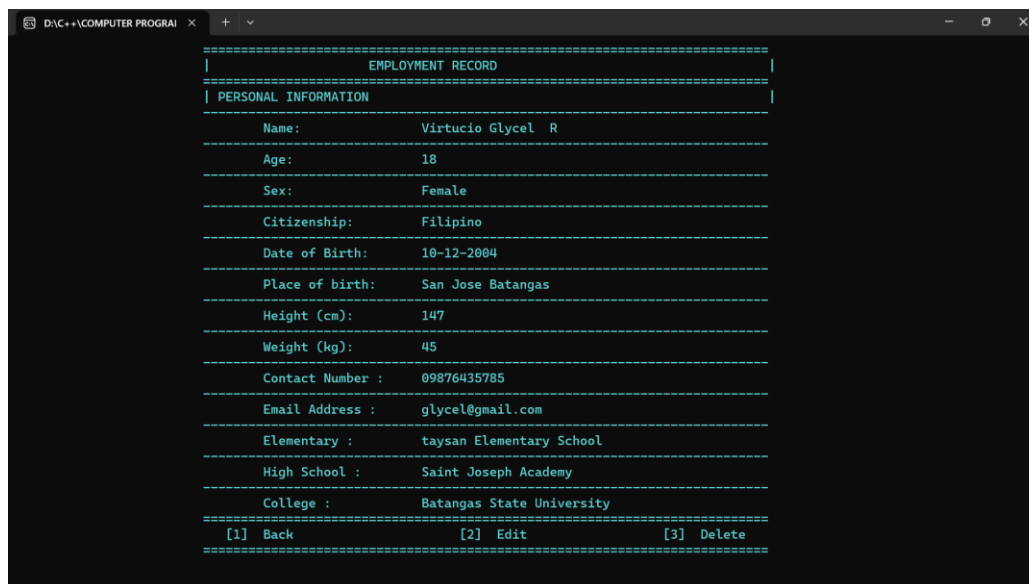


Figure 18. Admin View Personal Data Sheet



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```
=====
|                               |
|               ENTER YOU PERSONAL DATA               |
|                               |
|=====|
| Last Name:           Virtucio           |
|-----|
| First Name:          Glycel             |
|-----|
| Middle name:         R                  |
|-----|
| Age:                 18                 |
|-----|
| Sex:                 |
|-----|
```

Figure 19. Edit Personal Data Sheet

```
=====
|                               EMPLOYMENT RECORD                               |
=====
| PERSONAL INFORMATION |
=====
Name:                N/A N/A N/A
=====
Age:                 0
=====
Sex:                 N/A
=====
Citizenship:         N/A
=====
Date of Birth:        N/A
=====
Place of birth:       N/A
=====
Height (cm):         0
=====
Weight (kg):         0
=====
Contact Number :     N/A
=====
Email Address :      N/A
=====
Elementary :         N/A
=====
High School :        N/A
=====
College :            N/A
=====
```

Figure 20. Delete Personal Data Sheet





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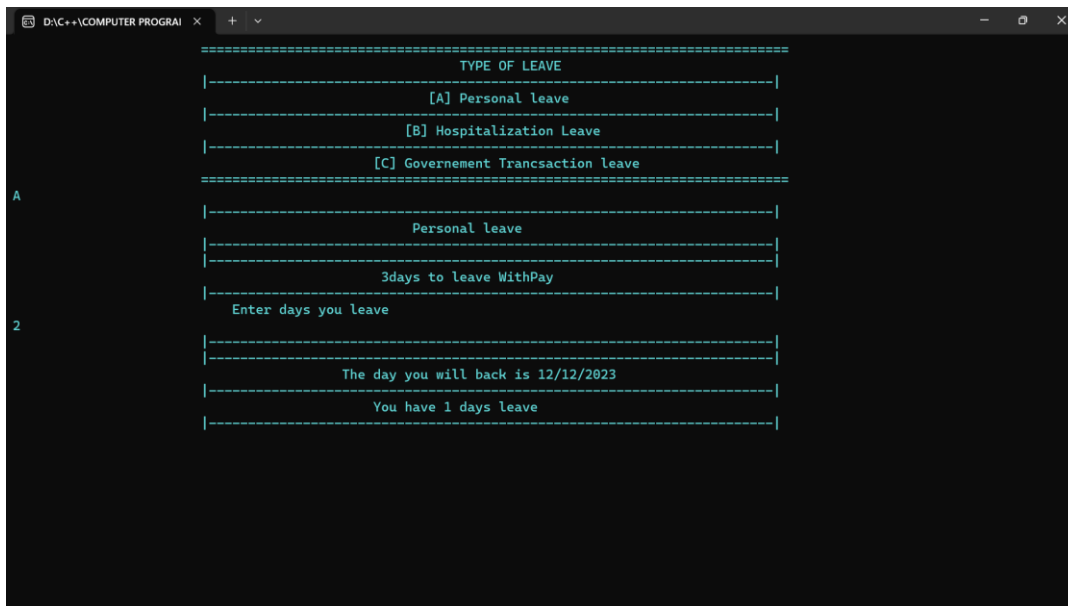


Figure 21. Edit Application for leave

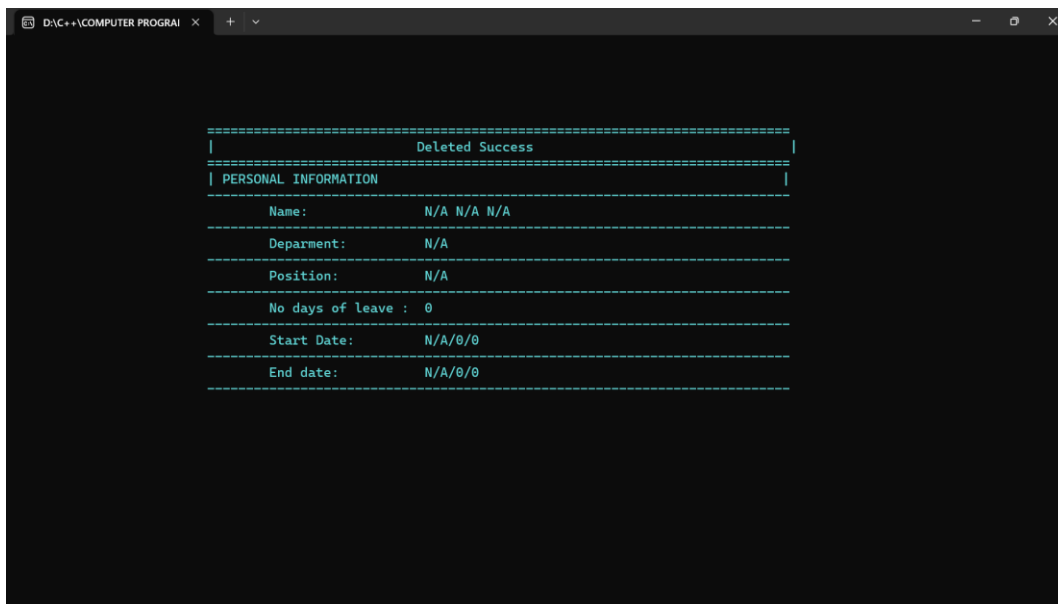


Figure 22. Delete Application for Leave





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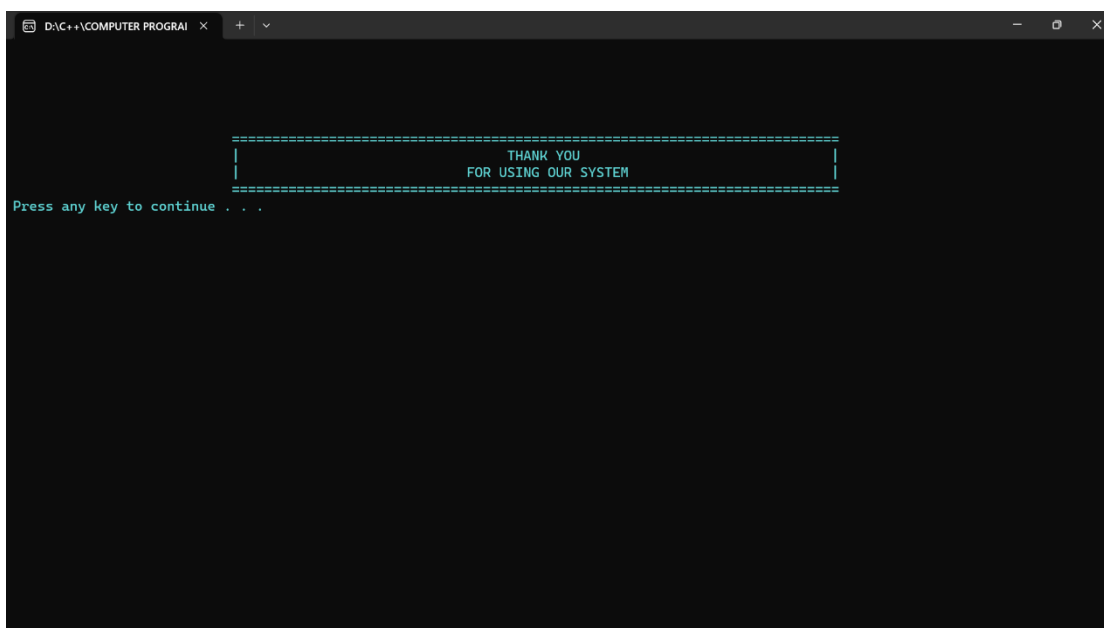


Figure 23. Log Out



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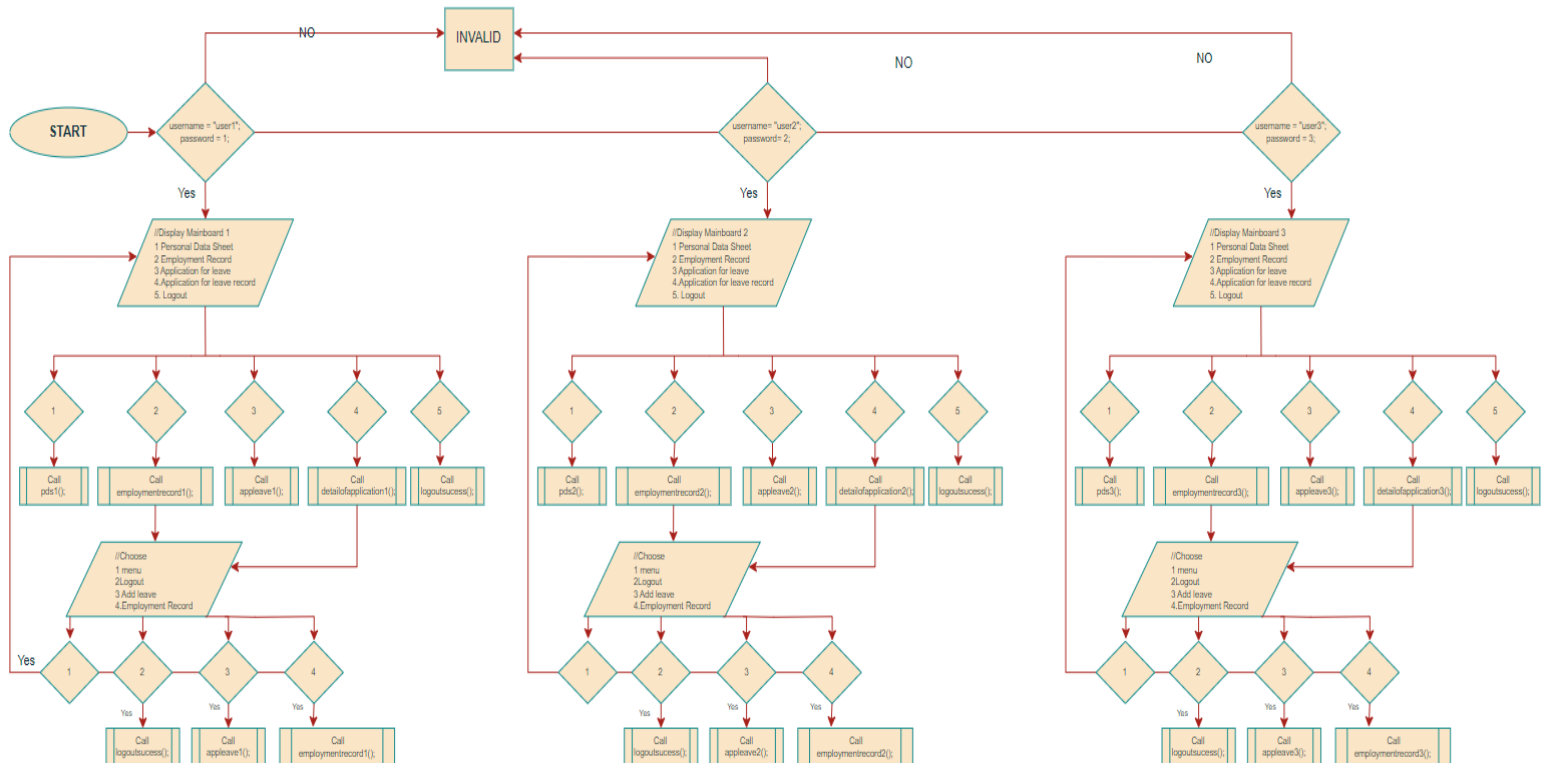


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F. Flowchart and Procedure

FLOWCHART

i. User Interface



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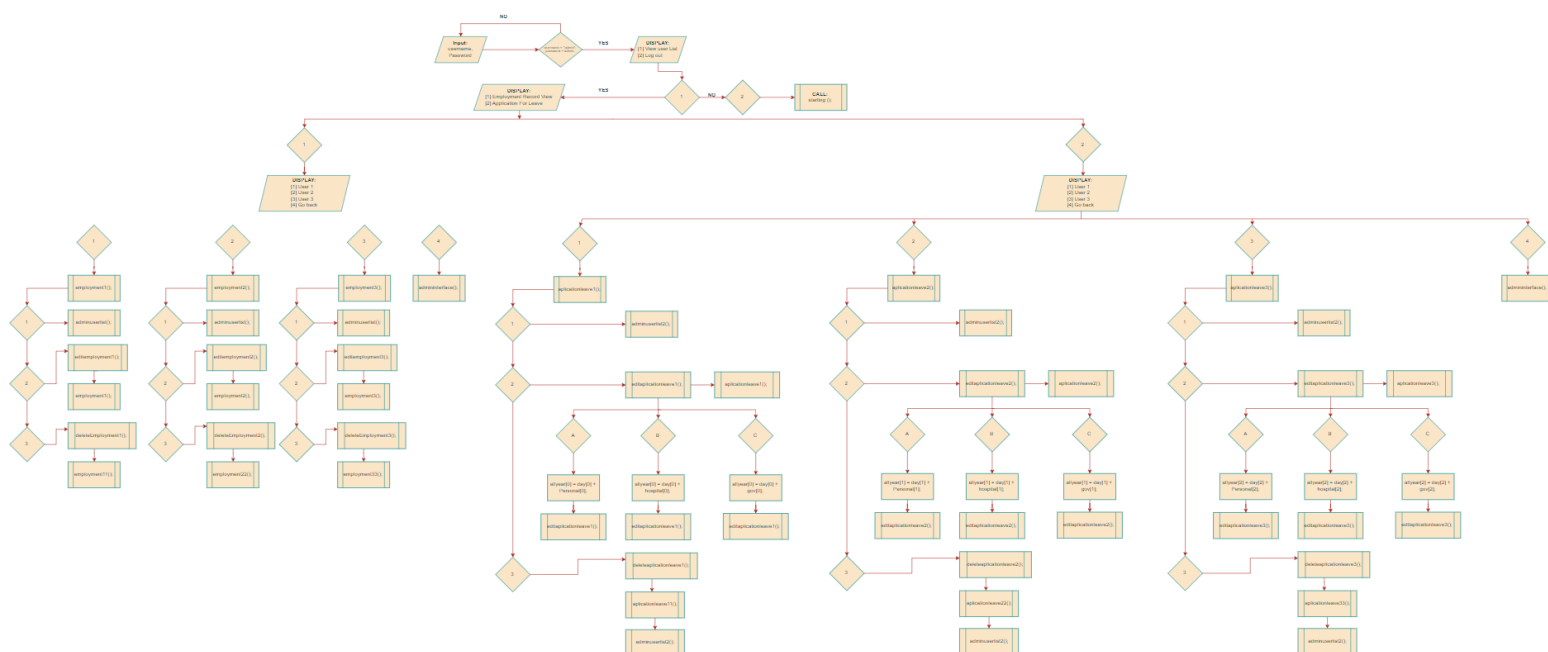
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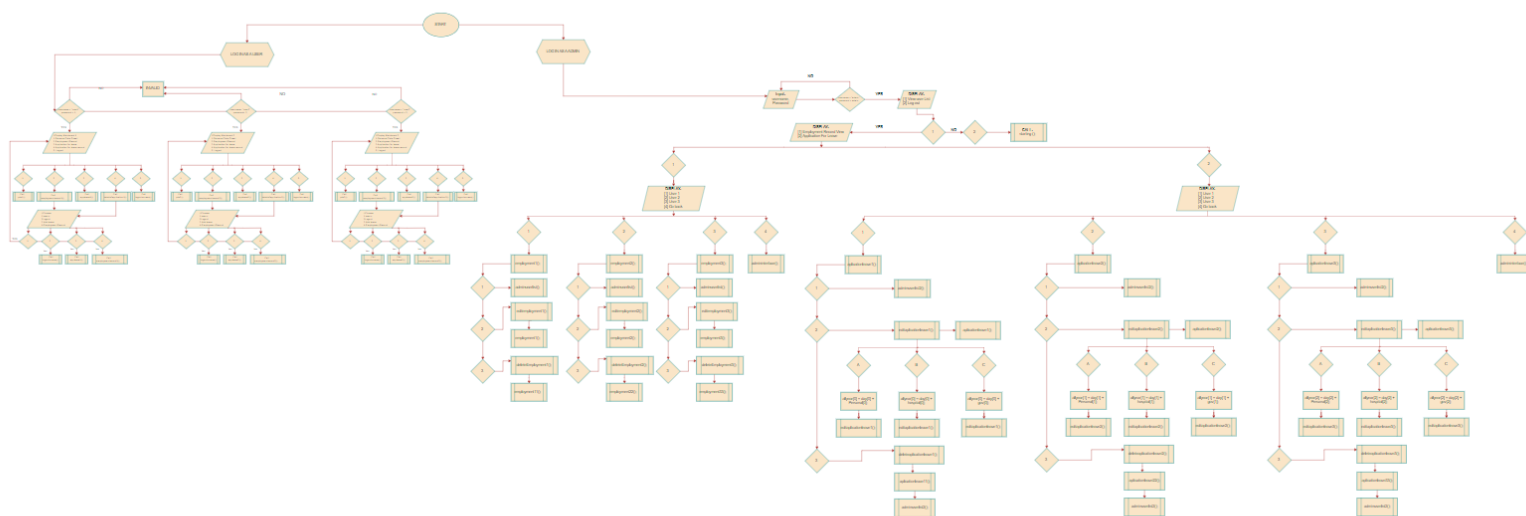
i. Admin Interface





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iii. Whole Process of the System



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**Office of the College of Informatics and Computing Sciences****PROCEDURE****i. Admin**

1. Start the program
2. Login as admin; username=admin, password=admin;
3. Display the admin menu interface using cout statements to print the menu title and options, along with formatting lines.
4. Use a switch statement to determine the selected option based on the value of Choose.
 - If the value is '1', execute the following steps:
 - Call the viewlist() function to handle the view user list option.
 - If the value is '2', execute the following steps:
 - Call the starting() function to handle the log out option.
5. Display the user list interface using cout statements to print the menu title, user options, and formatting lines.
6. Use a switch statement to determine the selected option based on the value of select1.
 - If the value is '1', execute the following steps:
 - Call the employment1() function to handle the user 1 option.
 - If the value is '2', execute the following steps:



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- Call the employment2() function to handle the user 2 option.
 - If the value is '3', execute the following steps:
 - Call the employment3() function to handle the user 3 option.
 - If none of the above conditions are met (default case), execute the following steps:
 - Call the admininterface() function to go back to the admin interface.
7. Display Persnal Data Sheet
 8. Using the declared new variable edit Personal Data sheet
 9. Delete Personal Data Sheet by:
 - a. Assign the value "N/A" to every string variable
 - b. Assign the value 0 to every int variable
 10. Display the Application for leave of the user
 11. Display format for Edit Application for leave
 12. Delete Personal Data Sheet by:
 - a. Assign the value "N/A" to every string variable
 - b. Assign the value 0 to every int variable
 13. Repeat the Process on every user
 14. Logout Account



**Office of the College of Informatics and Computing Sciences****ii. User**

1. Start the program
2. Define an array usernames containing three usernames and an array passwords containing corresponding passwords.
3. Declare variables username, password, and loginuser of type string.
4. Print multiple blank lines to create some space on the screen.
5. Display the login interface using cout statements to print the login title and prompts for username and password.
6. Read the username from the user using cin and store it in the variable username.
7. Read the password from the user using cin and store it in the variable password.
8. Set the initial value of loginsuccessful to false.
9. Iterate through a loop from 0 to 2 (inclusive) using the variable i.
10. Within the loop, check if the username matches usernames[i] and the password matches passwords[i].
11. If the condition is true, set loginsuccessful to true.
12. If so, call the loginfailed() function to handle a failed login.
13. Display the main menu using a series of cout statements to print the menu options and formatting lines.
14. Prompt the user to enter their choice by displaying the "Select: " message.



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15. Read the user's choice from the input using cin and store it in the variable choice[0].
16. Check the value of choice[0] using conditional statements (if-else ladder) to determine the selected option:
 - a. If choice[0] is equal to "1", call the function pds1() to handle the personal data sheet.
 - b. If choice[0] is equal to "2", call the function employmentrecord1() to handle the employment record.
 - c. If choice[0] is equal to "3", call the function appleave1() to handle the application for leave.
 - d. If choice[0] is equal to "4", call the function detailofapplication1() to handle the application for leave record.
 - e. If choice[0] is equal to "5", call the function logoutsucess() to handle the logout process.
17. If none of the above conditions are met, call the main () function to go back to the main menu.
18. Logout



**Office of the College of Informatics and Computing Sciences****iii. Whole Process Of The System**

1. Start the program
2. Declare variables
3. Login as user or admin
4. LOGIN AS USER:
 - a. The program starts, and the necessary variables and arrays are defined.
 - b. Users are prompted to enter their username and password.
 - c. The program checks if the entered credentials match any of the predefined usernames and passwords.
 - d. If the login is successful, the user is presented with a menu.
 - e. Users can select different options from the menu.
 - f. Depending on the selected option, corresponding functions are called to handle specific actions such as managing personal data, employment records, leave applications, and more.
 - g. After completing an action, the program returns to the main menu.
 - h. Users can choose to log out, which ends the program, or they can continue with other menu options.
 - i. If the login fails, the program informs the user and prompts them to try again.



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j. Overall, the program provides a user-friendly interface to interact with different features and perform various tasks.

5. LOGIN AS ADMIN

- a. Start the program and log in as admin with the username "admin" and password "admin."
- b. Display the admin menu interface and handle the selected option based on the value of Choose:
 - If Choose is '1', call the viewlist() function to view the user list.
 - If Choose is '2', log out by calling the starting() function.
- c. Display the user list interface and handle the selected option based on the value of select1:
 - If select1 is '1', handle user 1's option using the employment1() function.
 - If select1 is '2', handle user 2's option using the employment2() function.
 - If select1 is '3', handle user 3's option using the employment3() function.



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- If select1 doesn't match any of the above cases, go back to the admin interface using the admininterface() function.
 - d. .Display the Personal Data Sheet.
 - e. Edit the Personal Data Sheet using a newly declared variable.
 - f. Delete the Personal Data Sheet by assigning "N/A" to every string variable and 0 to every int variable.
 - g. Display the Application for leave of the user.
 - h. Display the format for editing the Application for leave.
 - i. Delete the Personal Data Sheet by assigning "N/A" to every string variable and 0 to every int variable.
 - j. Repeat the process for every user.
6. Log out of the account

