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BSU - Scholarship Office : Requirements Checklist System

A Project Implementation thru Console Application using C++ Programming
Language presented to the College of Informatics and Computing Sciences
Batangas State University - Lipa

In Partial Fulfillment of the Requirement in
CS 131 – (Data Structures and Algorithms)

By:

GROUP IX

Ciruelas, Keith Andrei A.

Mendoza, Christine Grace D.

Serrano, Rafael Miguel C.

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- I. Topic:** Scholarship Office
- II. Title of the Project:** BSU - Scholarship Office : Requirements Checklist System
- III. Purpose and Description:**

The purpose of the Batangas State University Scholarship Office: Requirements Checklist System is to streamline and simplify the process of submitting required documents for external scholarships. The system serves as a centralized platform that helps applicants ensure they meet all the necessary document requirements. It aims to enhance the efficiency, accuracy, and transparency of the document submission process, ultimately facilitating smoother communication between the scholarship office and applicants.

The Batangas State University Scholarship Office: Requirements Checklist System is a user-friendly software solution designed specifically for managing the document checklist process of external scholarships. The system provides a clear and detailed checklist of required documents for each scholarship program, ensuring applicants have a comprehensive understanding of what is needed.

Applicants can easily access the system and submit their required documents through an online portal.



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The system allows for efficient tracking of document submissions, ensuring timely follow-up and reducing delays. It also enables scholarship office staff to verify the accuracy and completeness of the submitted documents against the requirements.

Through the system, the scholarship office can communicate with applicants seamlessly, sending automated notifications and reminders regarding missing or incomplete documents. This feature promotes efficient and prompt action, facilitating a smoother application process.

The system incorporates robust security measures to protect the confidentiality and privacy of applicant data. It ensures compliance with data protection regulations and allows for secure storage and retrieval of submitted documents.

Additionally, the system generates reports and analytics on document submission and verification processes. These insights provide valuable information to the scholarship office, enabling them to identify areas for improvement and enhance the overall efficiency of their operations. Overall, the Batangas State University Scholarship Office: Requirements Checklist System simplifies the document submission process for external scholarships,



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ensuring that applicants meet the requirements and submit accurate and complete documentation. It enhances the efficiency, accuracy, and transparency of the application process, ultimately benefiting both the scholarship office and the applicants.

IV. Scope of the Project:

Main Transaction: Checking requirements

1. Student Interface: Applying and maintaining scholarship requirements**a. Students Log in**

- Students will log in to check if their requirements are already complete.

b. Information of the students:**i. Name**

- Students' name, middle initial and surname when applying for the scholarship

c. Checklist of documents:**i. 1 by 1 picture**

- It refers to a type of photograph that is required for certain application processes, such as scholarship



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applications. It specifies that the image be a specific size

or aspect ratio, such as 1 inch by 1 inch.

ii. Student ID with 3 signatures

- This document is typically issued by an educational institution to confirm a student's enrollment in a particular academic program or course. It may contain details such as the student's name, ID number, program of study, dates of enrollment, and any additional relevant information.

iii. Certificate of Registration

- An educational institution will typically issue this document to confirm a student's enrollment in a specific academic program or course. It may include information such as the student's name, ID number, program of study, enrollment dates, and any other pertinent information.

iv. Grades

- Grades indicate a student's level of achievement in a





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subject.

v. Certificate of Indigency

- A Certificate of Indigency is a document issued by an appropriate authority, such as a local government or social welfare agency, certifying that an individual or family is economically disadvantaged or unable to meet basic needs. Individuals may be required to use specific benefits, services, or assistance programs designed specifically for those in need.

d. Answer the question:

i. Functionary Parents

- Functionary parents are referring to government or civil servants, there are a few reasons why this information may be relevant in scholarship applications: financial considerations, merit-based scholarships and networking and connections.

2. Scholarship Staff Interface: Checking the submitted requirements

a. Admin log in

- Admin will login their account to access and manipulate the





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student's information.

b. Add student's information

- There might be students that have submitted their requirements but didn't have access to this system.

c. Updating and checking the documents:

- Search students name
 - Find the student's name if the scholarship requirement has already been submitted.

d. View students information and submitted requirements

e. Delete students information

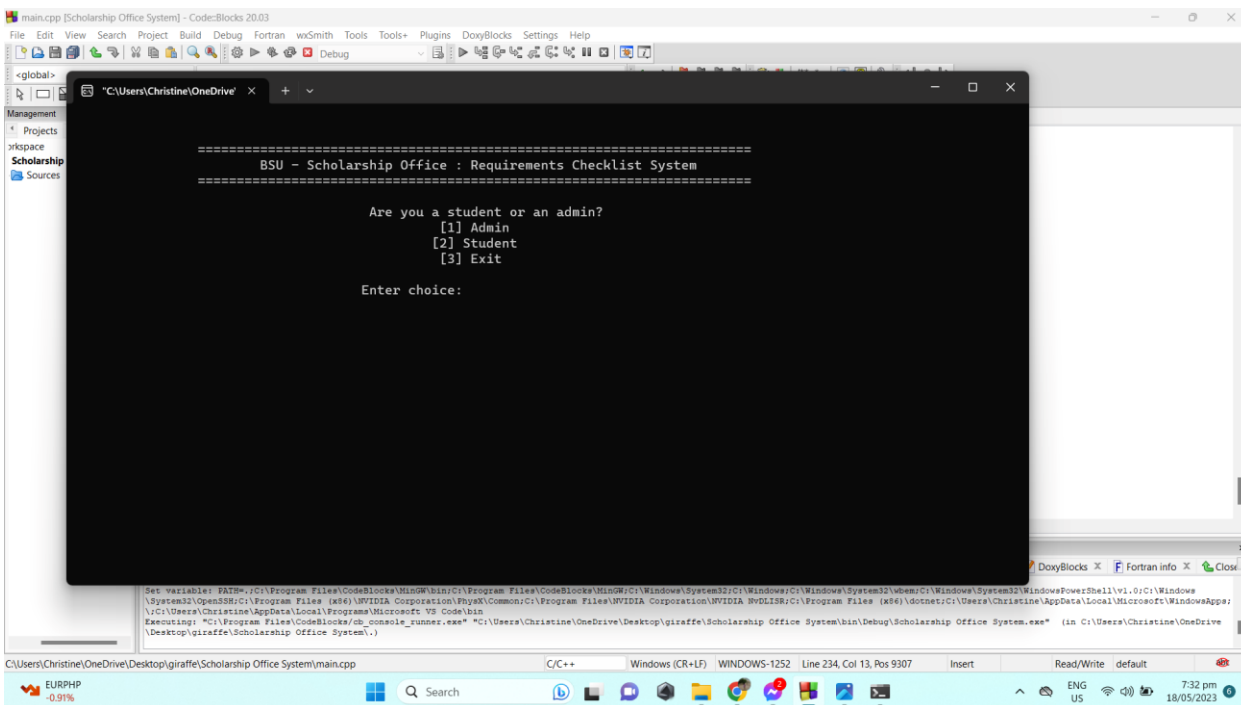
- It will be in case the information is doubled, the student withdraws or didn't really submit the requirements.





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V. Console App Design





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```

main.cpp [Scholarship Office System] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DovyBlocks Settings Help
<global>
C:\Users\Christine\OneDrive\
Management
Projects
Workspace
Scholarship
Sources

***** WELCOME TO ADMIN LOG IN PAGE *****

Email: admin
Password: scholarship

Press ENTER key to continue.....|

Set variable: PATH=C:\Program Files\CodeBlocks\MinGW\bin;C:\Program Files\CodeBlocks\MinGW\bin;C:\Windows\System32\WindowsPowerShell\v1.0;C:\Windows\System32\OpenSSH\bin;C:\Program Files (x86)\NVIDIA Corporation\PhysX\Common;C:\Program Files\NVIDIA Corporation\NVIDIA NVDLISR;C:\Program Files (x86)\dotnet\;C:\Users\Christine\AppData\Local\Microsoft\WindowsApps;
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\bin\Debug\Scholarship Office System.exe" (in C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\.)

C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\main.cpp
C/C++ Windows (CR+LF) WINDOWS-1252 Line 234, Col 13, Pos 9307 Insert Read/Write default 7:32 pm 18/05/2023

```

```

main.cpp [Scholarship Office System] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DovyBlocks Settings Help
<global>
C:\Users\Christine\OneDrive\
Management
Projects
Workspace
Scholarship Office
Sources

.....
MODIFY USER INFORMATION
.....
Enter name of the user to modify: KC A Ciruelas
1x1 picture (y/n): y
Student ID with 3 signature (y/n): y
Certificate of Registration (y/n): y
Report Card (y/n): y
Certificate of Indigency (y/n): y
Functionary Parents (y/n): y

User modified successfully!

Press ENTER key to continue.....

Set variable: PATH=C:\Program Files\CodeBlocks\MinGW\bin;C:\Program Files\CodeBlocks\MinGW\bin;C:\Windows\System32\WindowsPowerShell\v1.0;C:\Windows\System32\OpenSSH\bin;C:\Program Files (x86)\NVIDIA Corporation\PhysX\Common;C:\Program Files\NVIDIA Corporation\NVIDIA NVDLISR;C:\Program Files (x86)\dotnet\;C:\Users\Christine\AppData\Local\Microsoft\WindowsApps;
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\bin\Debug\Scholarship Office System.exe" (in C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\.)

C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\main.cpp
C/C++ Windows (CR+LF) WINDOWS-1252 Line 193, Col 18, Pos 7996 Insert Read/Write default 7:38 pm 18/05/2023

```





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```

main.cpp [Scholarship Office System] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DovyBlocks Settings Help
<global>
C:\Users\Christine\OneDrive\
Management
Projects File
Workspace
Scholarship Office System
Sources

.....
MODIFY USER INFORMATION
.....
Enter name of the user to modify: KC A Ciruelas
1x1 picture (y/n): y
Student ID with 3 signature (y/n): y
Certificate of Registration (y/n): y
Report Card (y/n): y
Certificate of Indigency (y/n): y
Functionary Parents (y/n): y

User modified successfully!

Press ENTER key to continue.....
Set variable: PATH=C:\Program Files\CodeBlocks\mingw\bin;C:\Program Files\CodeBlocks\mingw\bin\Windows\System32\cmd;C:\Windows\System32\cmd;C:\Windows\System32\WindowsPowerShell\v1.0;C:\Windows\System32\OpenSSH\bin;C:\Program Files (x86)\NVIDIA Corporation\PhysX\Common;C:\Program Files\NVIDIA Corporation\NVIDIA NVDLSSR;C:\Program Files (x86)\dotnet\;C:\Users\Christine\AppData\Local\Microsoft\WindowsApps;C:\Users\Christine\AppData\Local\Programs\Microsoft VS Code\bin
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\bin\Debug\Scholarship Office System.exe" (in C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\bin\Debug\Scholarship Office System\bin\Debug\Scholarship Office System.exe)
C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\main.cpp
C/C++ Windows (CR+LF) WINDOWS-1252 Line 193, Col 18, Pos 7996 Insert Read/Write default
29°C Mostly cloudy

```

```

main.cpp [Scholarship Office System] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DovyBlocks Settings Help
<global>
C:\Users\Christine\OneDrive\
Management
Projects File
Workspace
Scholarship Office System
Sources

.....
Delete User Information
.....
Enter name of the user to delete: Ken D Mendoza

User deleted successfully!

Press ENTER key to continue.....]
Set variable: PATH=C:\Program Files\CodeBlocks\mingw\bin;C:\Program Files\CodeBlocks\mingw\bin\Windows\System32\cmd;C:\Windows\System32\cmd;C:\Windows\System32\WindowsPowerShell\v1.0;C:\Windows\System32\OpenSSH\bin;C:\Program Files (x86)\NVIDIA Corporation\PhysX\Common;C:\Program Files\NVIDIA Corporation\NVIDIA NVDLSSR;C:\Program Files (x86)\dotnet\;C:\Users\Christine\AppData\Local\Microsoft\WindowsApps;C:\Users\Christine\AppData\Local\Programs\Microsoft VS Code\bin
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\bin\Debug\Scholarship Office System.exe" (in C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\bin\Debug\Scholarship Office System\bin\Debug\Scholarship Office System.exe)
C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\main.cpp
C/C++ Windows (CR+LF) WINDOWS-1252 Line 193, Col 18, Pos 7996 Insert Read/Write default
29°C Mostly cloudy

```



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The screenshot shows a Windows desktop with a Visual Studio IDE. The main window is titled 'main.cpp [Scholarship Office System] - CodeBlocks 20.03'. The console window displays the output of a program that lists students who applied for a scholarship. The output is as follows:

```

.....
                LIST OF STUDENTS THAT APPLIED SCHOLARSHIP
.....
Name:                Christine D. Mendoza
1x1 picture:         y
Student ID with 3 signature: y
Certificate of Registration: y
Report Card:         y
Certificate of Indigency: y
Functionary Parents:  y
.....
Name:                Rafael C. Serrano
1x1 picture:         y
Student ID with 3 signature: y
Certificate of Registration: y
Report Card:         y
Certificate of Indigency: y
Functionary Parents:  y
.....
Name:                MC A. Ciruelas
1x1 picture:         y
Student ID with 3 signature: y
Certificate of Registration: y
Report Card:         y
Certificate of Indigency: y
Functionary Parents:  n
.....

```

At the bottom of the console window, the command prompt shows the execution of the program:

```

Set variables: PATH=C:\Program Files\CodeBlocks\bin\;C:\Program Files\CodeBlocks\bin\;C:\Windows\System32\;C:\Windows\System32\WindowsPowerShell\v1.0\;C:\Windows\System32\OpenSSH\;C:\Program Files (x86)\Windows Corporation\PhysX\Common\;C:\Program Files\WVIDIA Corporation\NVIDIA SHIELD\;C:\Program Files (x86)\dotnet\;C:\Users\Christine\AppData\Local\Microsoft\WindowsAppx\;C:\Users\Christine\AppData\Local\Programs\Microsoft VS Code\bin
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\bin\Debug\Scholarship Office System.exe" (in C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\)

```

The taskbar at the bottom shows the system clock as 7:36 pm on 18/05/2023, and the language is set to ENG US.

The screenshot shows a Windows desktop with a Code::Blocks IDE running a C++ program. The program is a student login system. The main window displays the following text:

```

***** WELCOME TO STUDENT LOG IN PAGE *****

.....

Email: 001
Password: pass1

.....

Login successful!

Press ENTER key to continue.....|

```

The IDE's console window at the bottom shows the execution path and the command used to run the program:

```

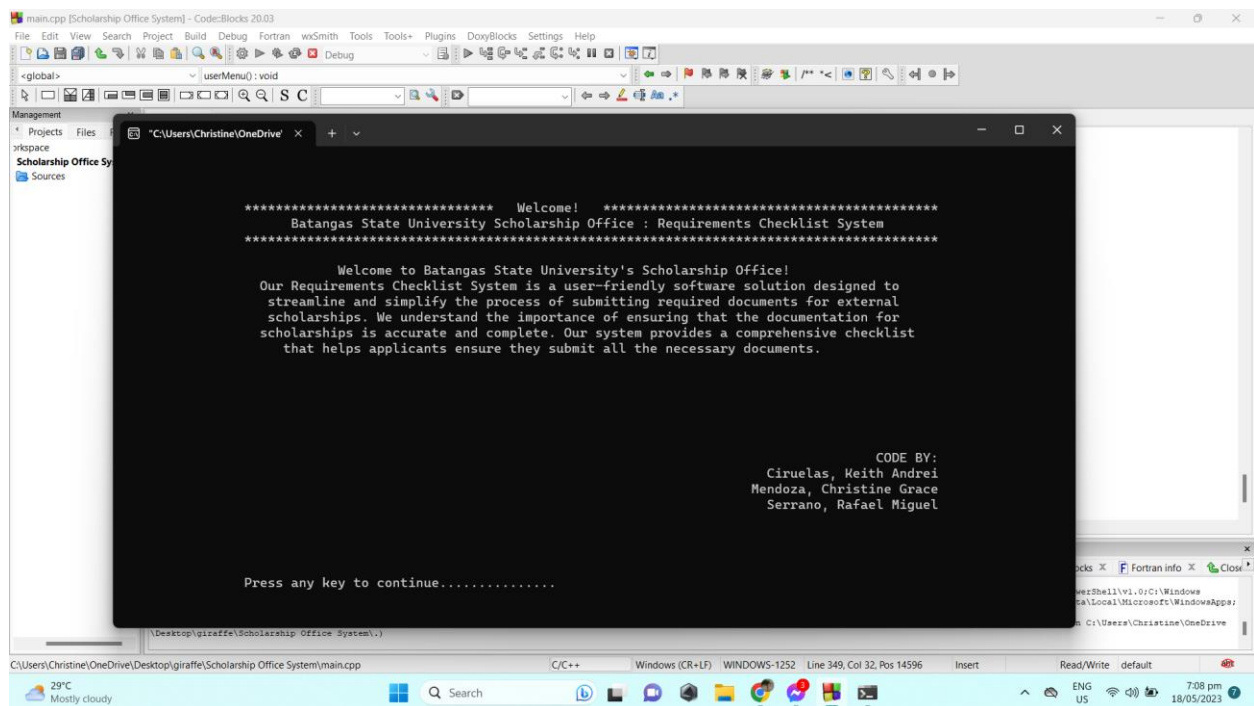
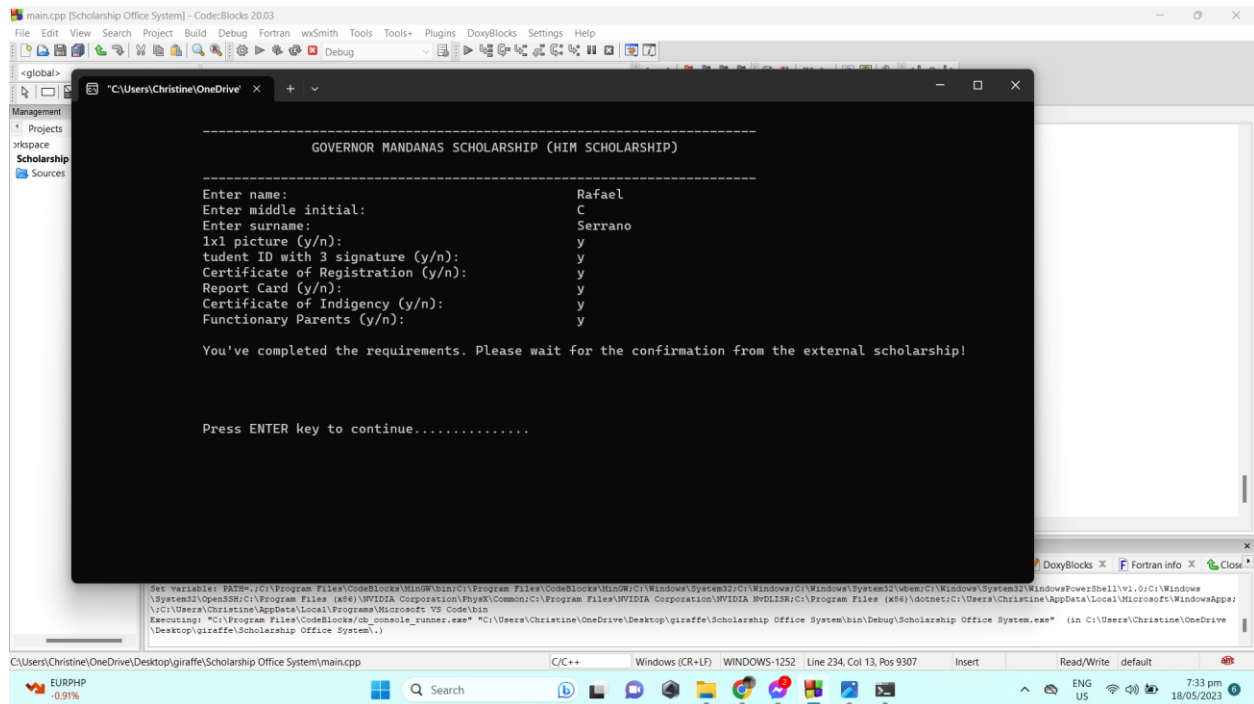
Set variable: PATH=C:\Program Files\CodeBlocks\bin;C:\Program Files\CodeBlocks\bin\WinC\Windows\System32\Windows\System32\cmd.exe;C:\Windows\System32\WindowsPowerShell\v1.0\Windows
\System32\OpenSSH\;C:\Program Files (x86)\NVIDIA Corporation\PhysX\Common;C:\Program Files\NVIDIA Corporation\NVIDIA NVCLINK\;C:\Program Files (x86)\dotnet\;C:\Users\Christine\AppData\Local\Microsoft\WindowsApps
\;C:\Users\Christine\AppData\Local\Programs\Microsoft VS Code\bin
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\Christine\OneDrive\Desktop\giraffe\Scholarship Office System\bin\Debug\Scholarship Office System.exe" (in C:\Users\Christine\OneDrive
\Desktop\giraffe\Scholarship Office System\.)

```

The taskbar at the bottom shows the system clock as 7:36 pm on 18/05/2023, and the weather as 29°C Mostly cloudy.



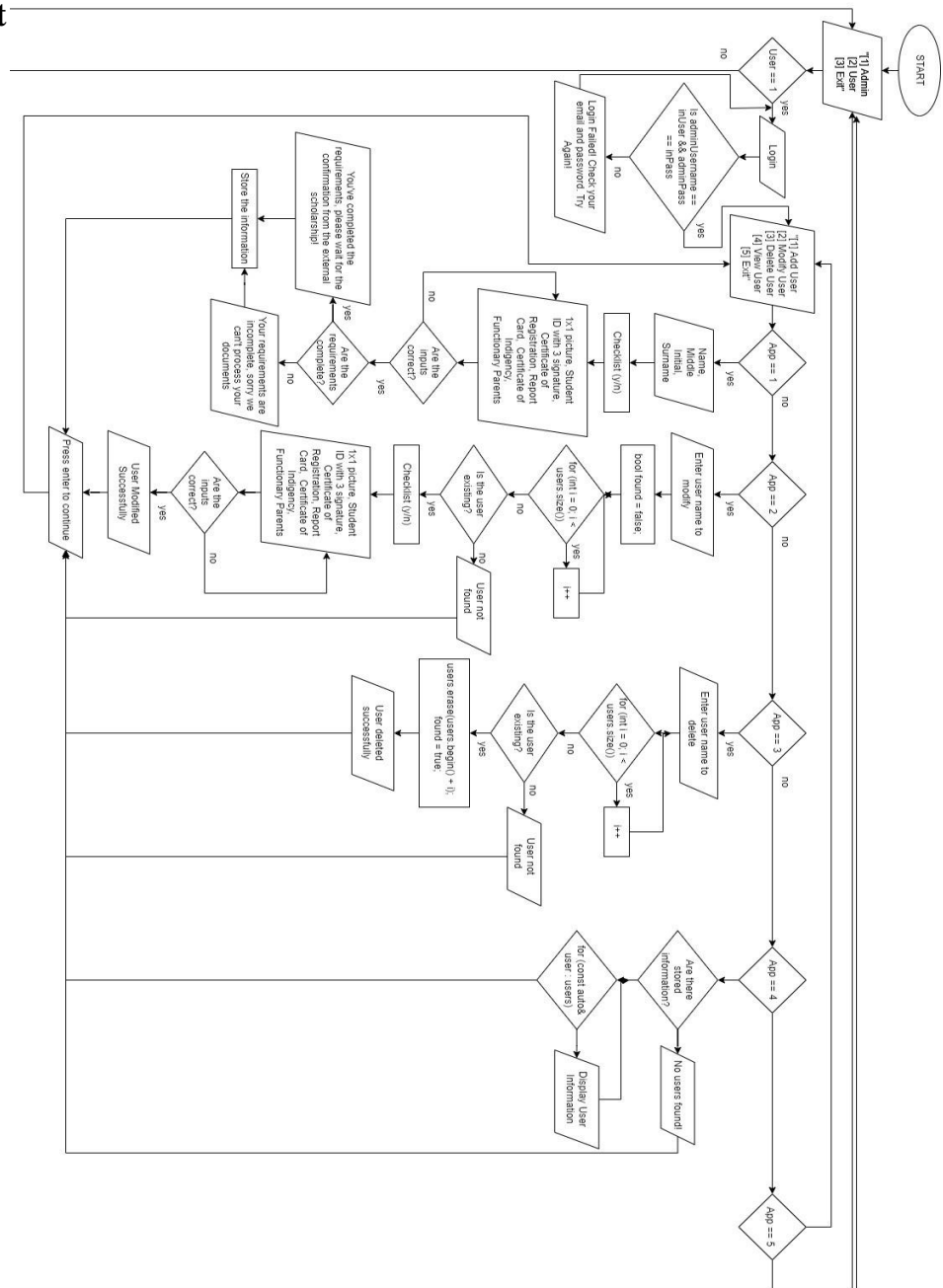
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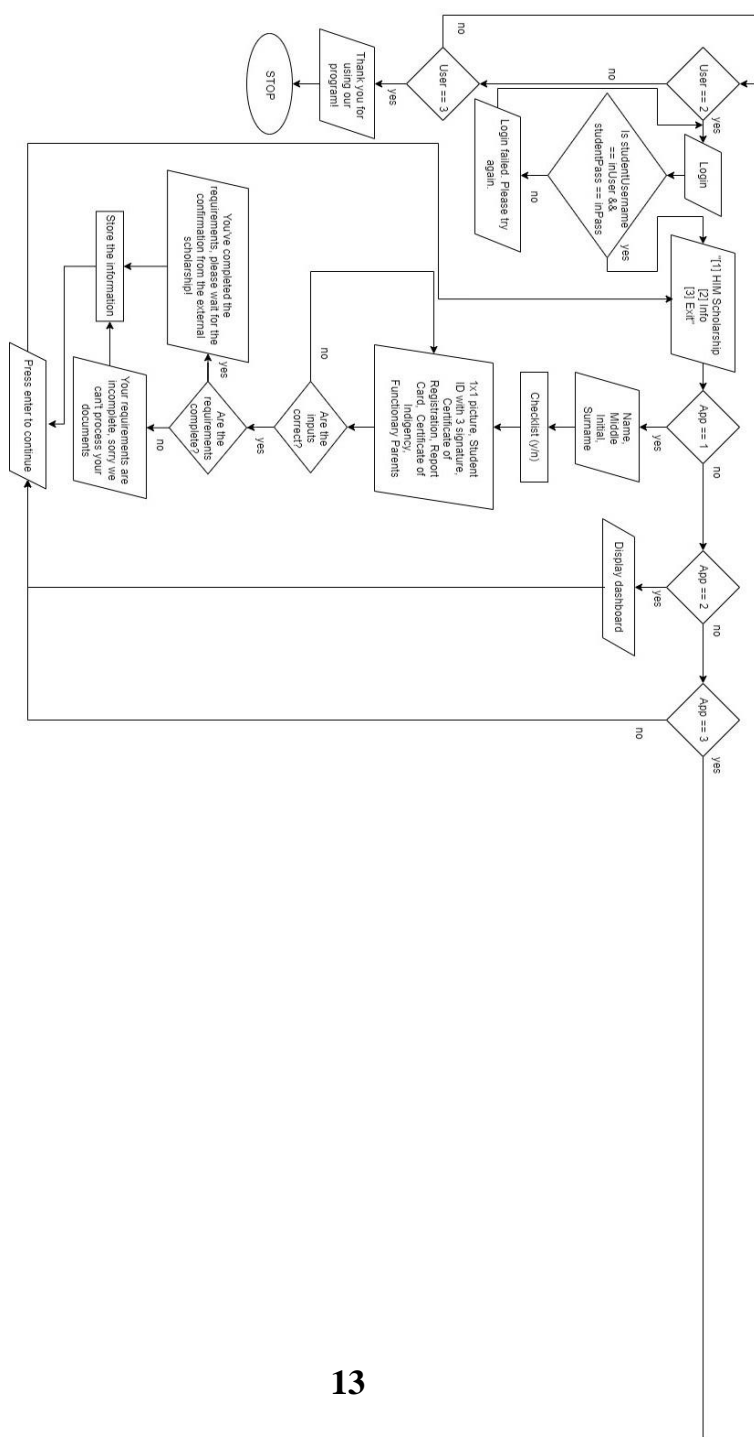




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VI. Flowchart and Procedures

A. Flowchart





**College of Informatics and Computing Sciences****B. Procedures**

1. Start the Program
2. Declare Variables
3. The "User" structure is defined, which contains various attributes such as name, middle initial, surname, picture, signature, cor (Certificate of Registration), grades (Report Card), indigency (Certificate of Indigency), and functionary (Functionary Parents).
4. A vector called "users" is declared to store user data.
5. Function prototypes are declared for displayAdminMenu(), addUser(), modifyUser(), deleteUser(), viewUsers(), adminMenu(), info(), userMenu(), and displayUserMenu().
6. The displayAdminMenu() function is defined to display the admin menu options.
7. The displayUserMenu() function is defined to display the student menu options.
8. The addUser() function is defined to add a user. It prompts the user to enter various details such as name, middle initial, surname, and whether they have provided required documents like a picture,



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9. signature, Certificate of Registration, Report Card, Certificate of Indigency, and Functionary Parents. It stores the user details in the "users" vector and displays a message based on the completeness of requirements.
10. The `modifyUser()` function is defined to modify user details. It prompts the user to enter the name of the user they want to modify and then allows them to update the required documents.
11. The `deleteUser()` function is defined to delete a user. It prompts the user to enter the name of the user they want to delete and removes the user from the "users" vector.
12. The `viewUsers()` function is defined to display all the users and their respective details stored in the "users" vector.
13. The `adminMenu()` function is defined to handle the admin login and display the admin menu. It prompts the admin to enter their username and password and checks if they match the predefined values. If the login is successful, the admin can perform actions such as adding a user, modifying a user, deleting a user, viewing all users, or exiting.



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14. The info() function is defined to display information about the program and its purpose.
15. The userMenu() function is defined to handle the student login and display the student menu. It prompts the student to enter their username and password and checks if they match the predefined values. If the login is successful, the student can choose from available scholarship options, view information, or exit.
16. The main() function begins. It declares an integer variable "user" to store the user's choice.
17. A do-while loop is used to display the main menu and perform the selected action until the user chooses to exit.
18. Inside the loop, the main menu is displayed, and the user's choice is taken as input.
19. If the user chooses 1, the adminMenu() function is called to display the admin menu and perform the selected admin action.
20. If the user chooses 2, the userMenu() function is called to display the student menu and perform the selected student action.
21. If the user chooses 3, the loop is exited, and the program





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terminates.

22. If the user enters an invalid choice, an appropriate message is displayed.
23. After the do-while loop, a closing message is displayed,
24. End the Program

VII. Source Code

<https://drive.google.com/file/d/10h6zb1NQG98X8JUSWo2GuL0OKMINrmFR/view?usp=sharing>

