

A PROJECT REPORT ON

“BONAFIDE CERTIFICATE AUTOMATION”

**SUBMITTED IN PARTIAL FULFILMENT FOR THE CAPSTONE
PROJECT IN**

**DIPLOMA IN
INFORMATION TECHNOLOGY**

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MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION

Certificate

This is to certify that the project entitled “**Bonafide Certificate Automation**” being submitted by members of group of Mrs. Jadhav Vaishnavi(1515),Mandale Nikita(1524),Raut Tejasvi(1532) from Government Polytechnic,Nanded Institute having enrollment number: 2000200358, 2100200409, 2100200408 has completed project of final year having title Bonafide Certificate Automation in java during the academic year 2023-2024 . The project completed by in group consisting of 3 persons under the guidance of the faculty guide.

Place:Nanded

External Examiner

Date:12/04/24

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Guide

Head Of Department

Principal

Acknowledgement

After completing my Final Year Project, I would like to take this chance to express my sincere gratitude to my project supervisor which is **Mr.A.T.Adhave** who has guided us a lot throughout the project development. When we still doing nothing while project due date is getting close, he give us some pressure to complete the system. Without him, we think we can't finish the system on time. In addition, while we meet some logic problem or design problem, he always the one give me useful and logic answer. We would like to thanks **Mr.A.T.Adhave** for one more time because he share his experience with us so that we can get more logic understanding on how to develop a software which suitable for the current society.

Abstract

This paper presents an automated system for generating bonafide certificates, streamlining the often time-consuming and manual process prevalent in educational institutions. The proposed system leverages technology to efficiently verify and authenticate student details, reducing administrative burden and ensuring accuracy. Key components include data integration from student databases, template customization for certificate generation, and authentication protocols to maintain security and integrity. The system aims to enhance productivity, minimize errors, and provide a seamless experience for both administrators and students. Future enhancements and integration possibilities are also discussed to further optimize the certificate issuance process.

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Introduction

The bonafide certificate automation project aims to revolutionize the process of issuing bonafide certificates within educational institutions. By leveraging cutting-edge technology and innovative solutions, the project seeks to streamline administrative workflows, enhance security, and improve the overall user experience for students and staff. Through features such as global accessibility, advanced security measures like blockchain integration, personalized user experiences driven by artificial intelligence, and seamless integration with digital wallets, the project promises to simplify and expedite the certificate issuance process while ensuring authenticity and compliance. With a focus on enhancing efficiency, convenience, and reliability, the bonafide certificate automation project sets out to transform the way educational institutions manage and distribute certificates, ultimately benefiting students, administrative staff, and the institution as a whole.

Literature review

A literature review on bonafide certificate automation projects, focusing on students' benefits, would highlight several key areas. Firstly, it would discuss the increased convenience and accessibility offered to students through online platforms, allowing them to request and receive bonafide certificates from anywhere at any time, reducing the need for physical visits to administrative offices. Secondly, it would address the efficiency gains, with automated systems reducing processing times and administrative burdens on both students and institutions, enabling quicker turnaround for certificate issuance. Thirdly, the review would emphasize the improved accuracy and reliability of automated systems in generating bonafide certificates, minimizing errors and ensuring the authenticity of the documents. Additionally, it would explore how automation can lead to cost savings for students, as online processes often eliminate the need for printing, postage, and other associated fees. Lastly, the review would consider the potential for enhanced data security and privacy protections in automated systems, reassuring students about the confidentiality and integrity of their personal information. Overall, by synthesizing existing literature on bonafide certificate automation projects, the review would underscore the numerous benefits that students stand to gain from the implementation of such systems.

Project Scope

The scope of Bonafide Certificate Automation Includes:

- Streamlined application process for students.
- Quick access to bonafide certificates without physical visits.
- Increased transparency in certificate issuance status.
- Improved efficiency in handling large volumes of requests.
- Enhanced user experience with intuitive online interface.
- Reduced wait times for obtaining necessary documentation.
- Simplified administrative procedures for students.

Objectives:-

- ❖ **Student :** Easily request certificates online, saving time and eliminating the need for in-person visits.
- ❖ **Administrative:** Streamline processes, reduce paperwork, and optimize resource allocation.

Methodology

System Configurations:

Hardware Configuration:

❖ Processor CPU	-	Intel(R) Core(TM) i5-5200U
❖ Memory	-	8 GB RAM
❖ Keyboard	-	102 Keys
❖ Monitor	-	LED
❖ Mouse	-	USB mouse

Software Specification:

❖ Operating System	:	Windows 11
❖ Front End	:	Java
❖ Documentation	:	NetBeans

Introduction to java:

- ❖ Java is general purpose , object oriented programming language developed by Sun Microsystems of USA in 1991 , which was originally called as ‘OAK’ by James Ghosling. The important feature of the language is that it is a platform natural language.
- ❖ Java is the first programming language which is not tied to any particular hardware or opening system. Program developed in java can be executed anywhere on any system.

Feature of Java are listed below:

- ❖ Compiled And Interpreted.
- ❖ Platform Independent And Portable
- ❖ Object Oriented
- ❖ Robust And Secure
- ❖ Distributed
- ❖ Familiar, Simple And Small
- ❖ Multithreaded And Interactive
- ❖ High Performance

Details of Design, Working and Processes

- Usecase Diagram:

A Use case is a description of set of sequence of actions. Graphically it is rendered as an ellipse with solid line including only its name. Use case diagram is a behavioral diagram that shows a set of use cases and actors and their relationship. It is an association between the use cases and actors. An actor represents a real-world object. Primary Actor – Sender, Secondary Actor Receiver.

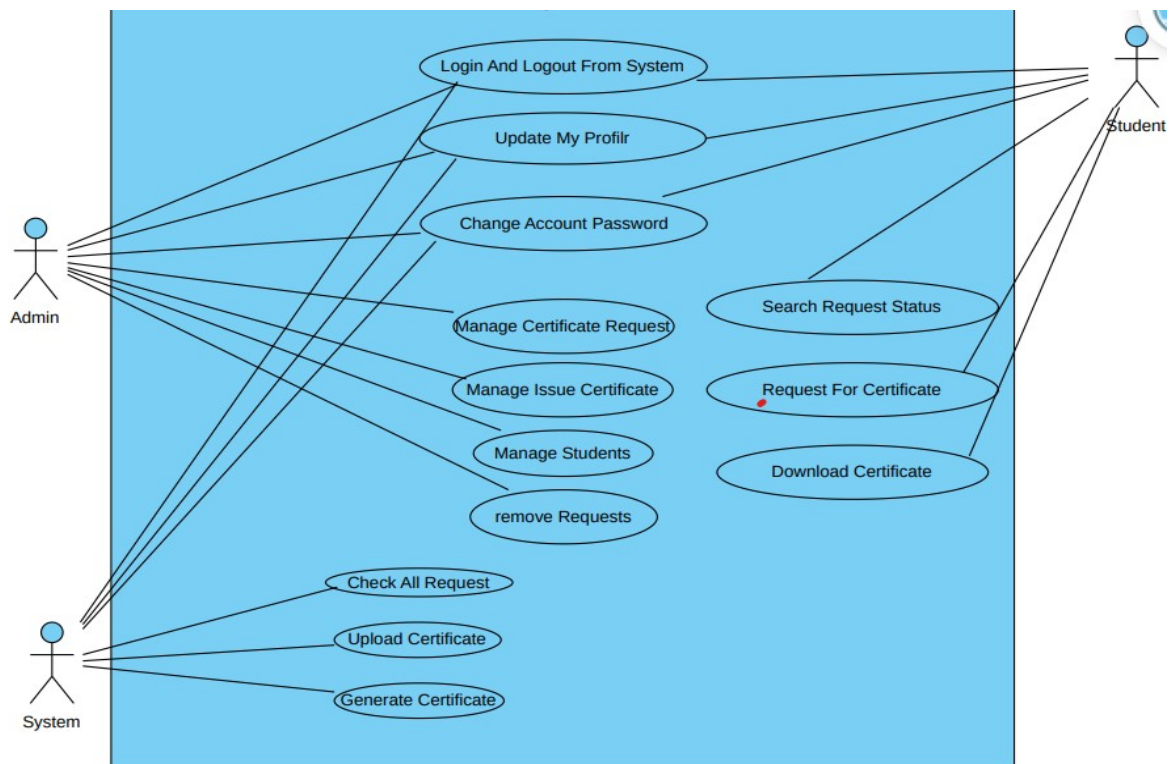
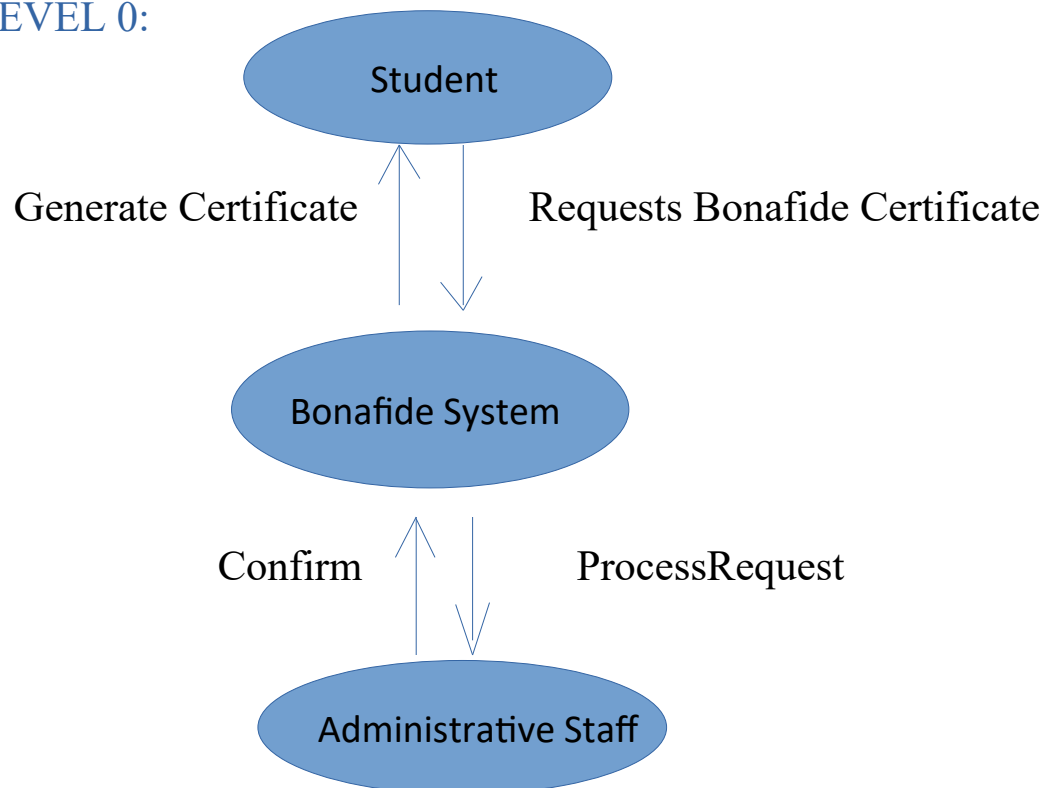


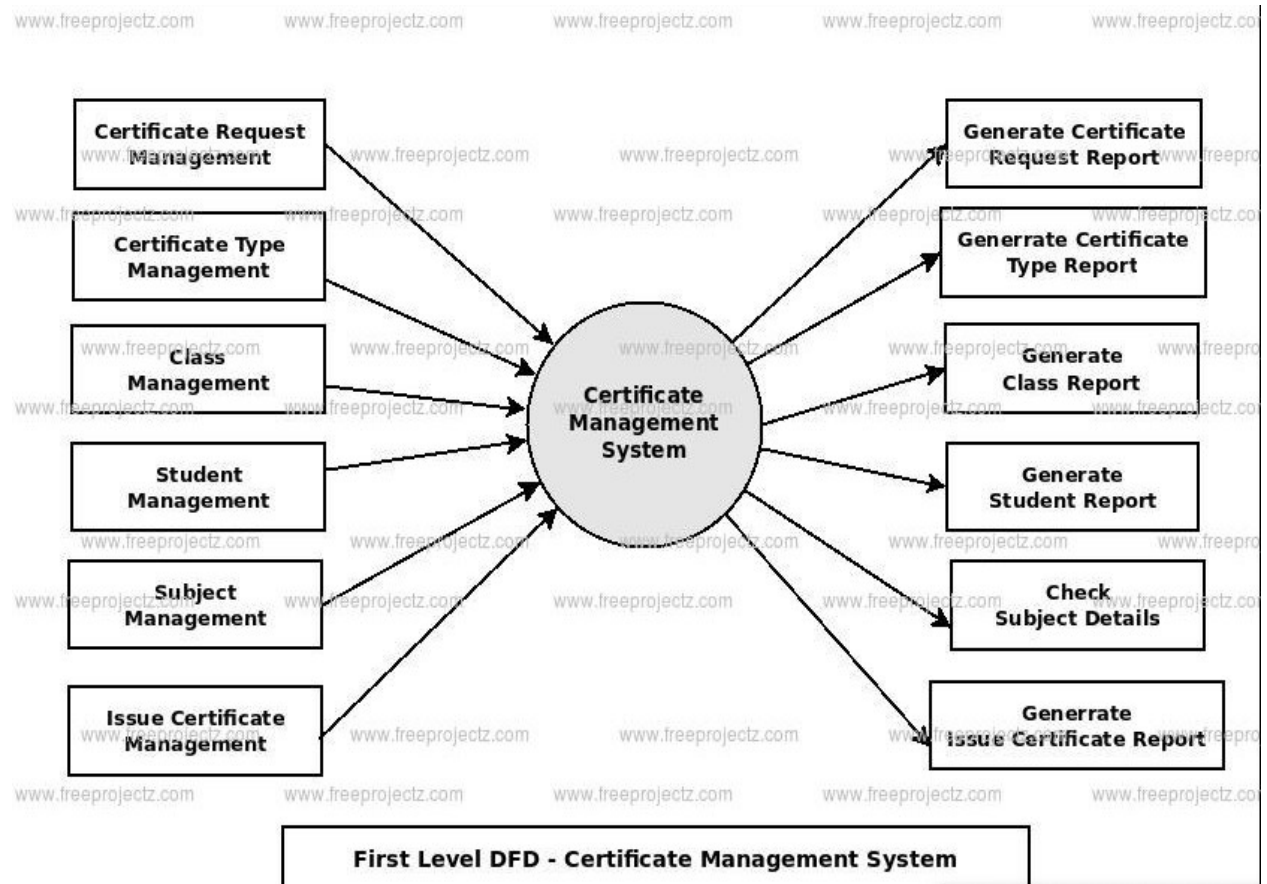
Fig. Use case for Bonafide Certificate Automation

- **Data Flow Diagrams:-**

The DFD takes an input-process-output view of a system i.e. data objects flow into the software, are transformed by processing elements, and resultant data objects flow out of the software. Data objects represented by labeled arrows and transformation are represented by circles also called as bubbles. DFD is presented in a hierarchical fashion i.e. the first data flow model represents the system as a whole. Subsequent DFD refine the context diagram (level 0 DFD), providing increasing details with each subsequent level.

LEVEL 0:

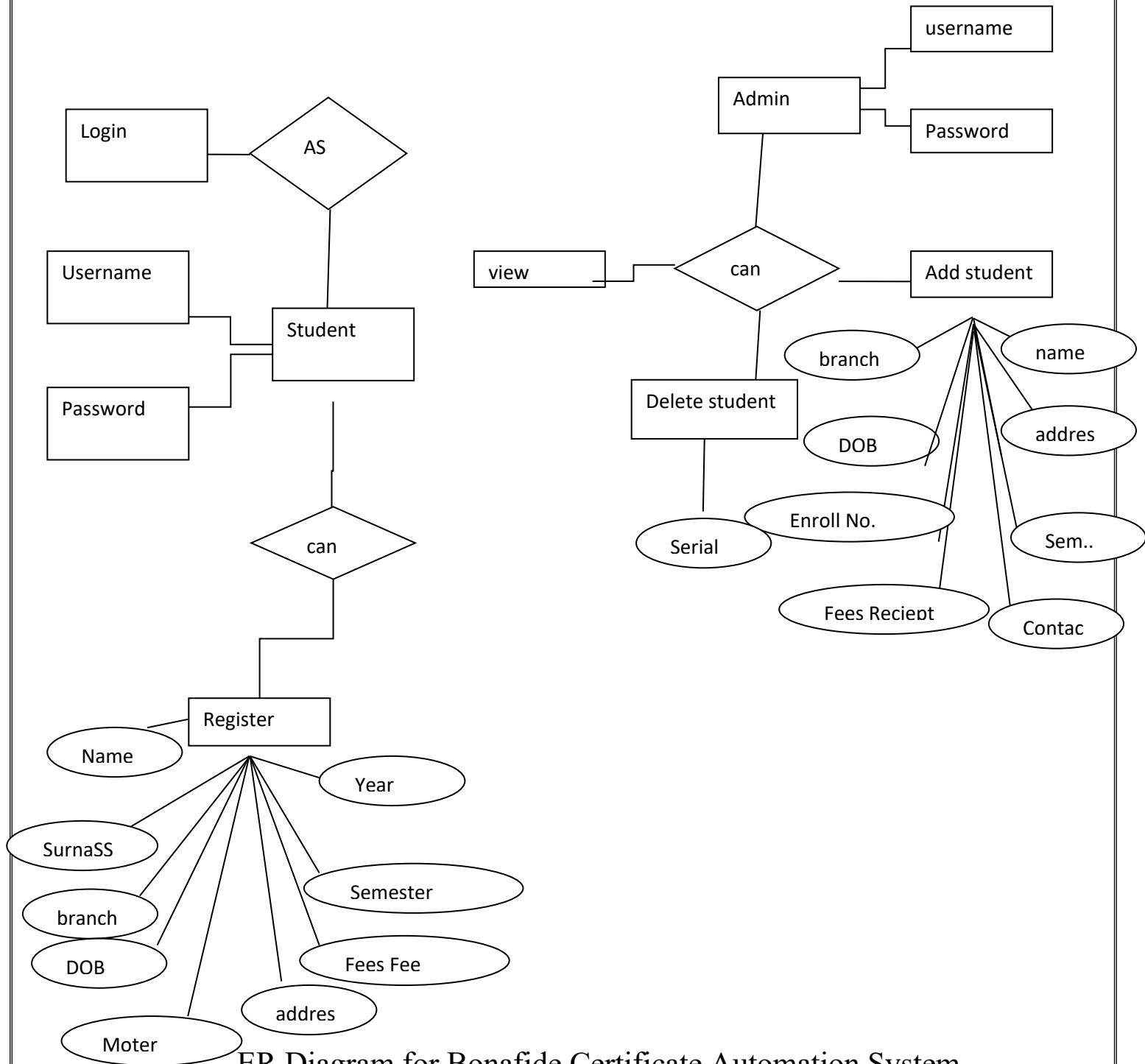




LEVEL 1

DFD Diagram for Bonafide Certificate Automation System

- ER Diagram:



ER Diagram for Bonafide Certificate Automation System

- **Database Tables:**

1. **Student Login table:**

Username	Varchar
Password	Varchar

2. **Admin Login table:**

Username	Varchar
Password	Varchar

3. **Student Registration:**

Sno.	Number
First Second Name	Varchar
Surame	Varchar
Enroll No.	Number
Dob	Number
Address	Varchar
Phone	Number
Email	Varchar
Semester	Number
Date	Number
Branch	Varchar
Password	Varchar

4. Apply For Bonafide:

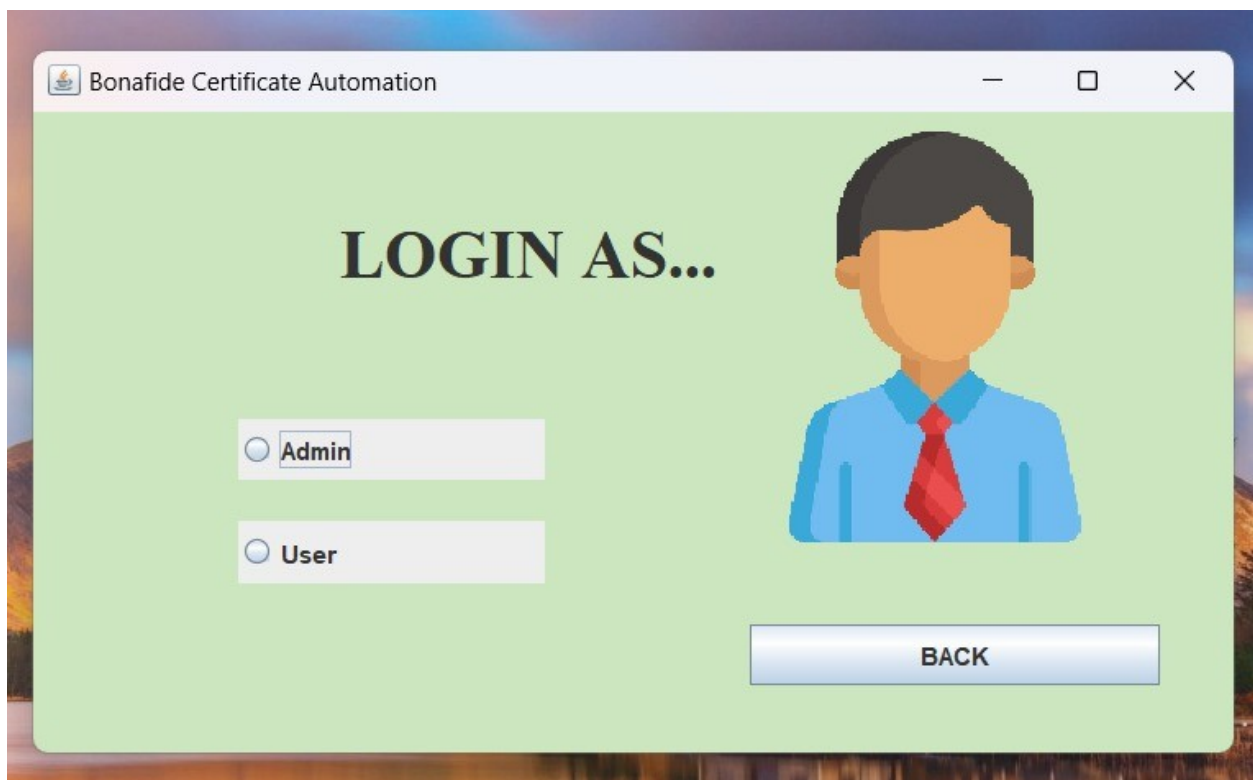
Name	Varchar
Academic Year	Number
Dob	Number
Address	Varchar
Semester	Varchar
Branch	Varchar

Frames:-

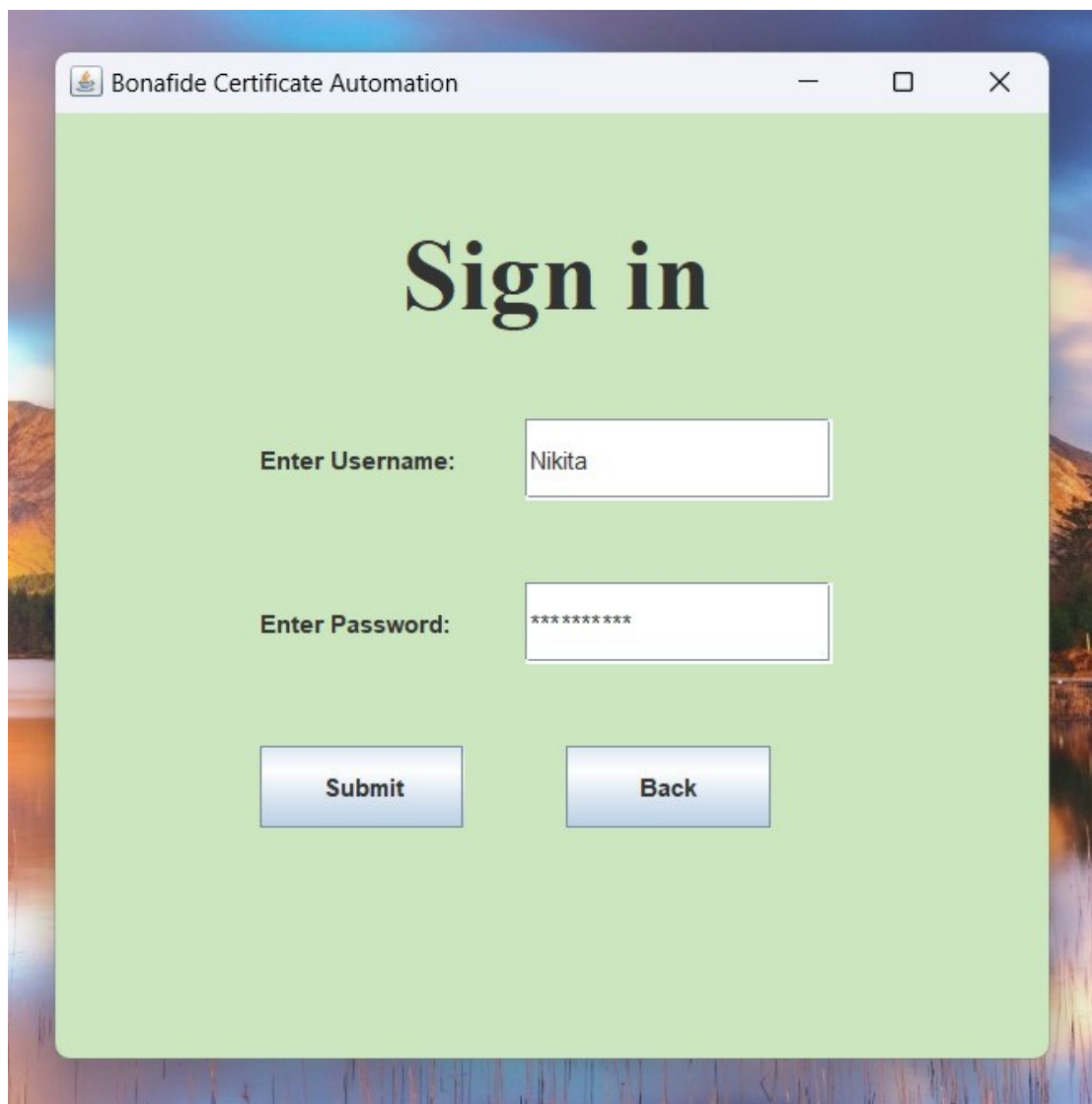
- ❖ This is the first interface with which the user will interact at the very first step as he opens the software. Here he/she may continue the software when they want.



- ❖ When user click on continue button then below Frame will open .here if person is admin then admin will click on admin button otherwise if there is user then he will click on user button.

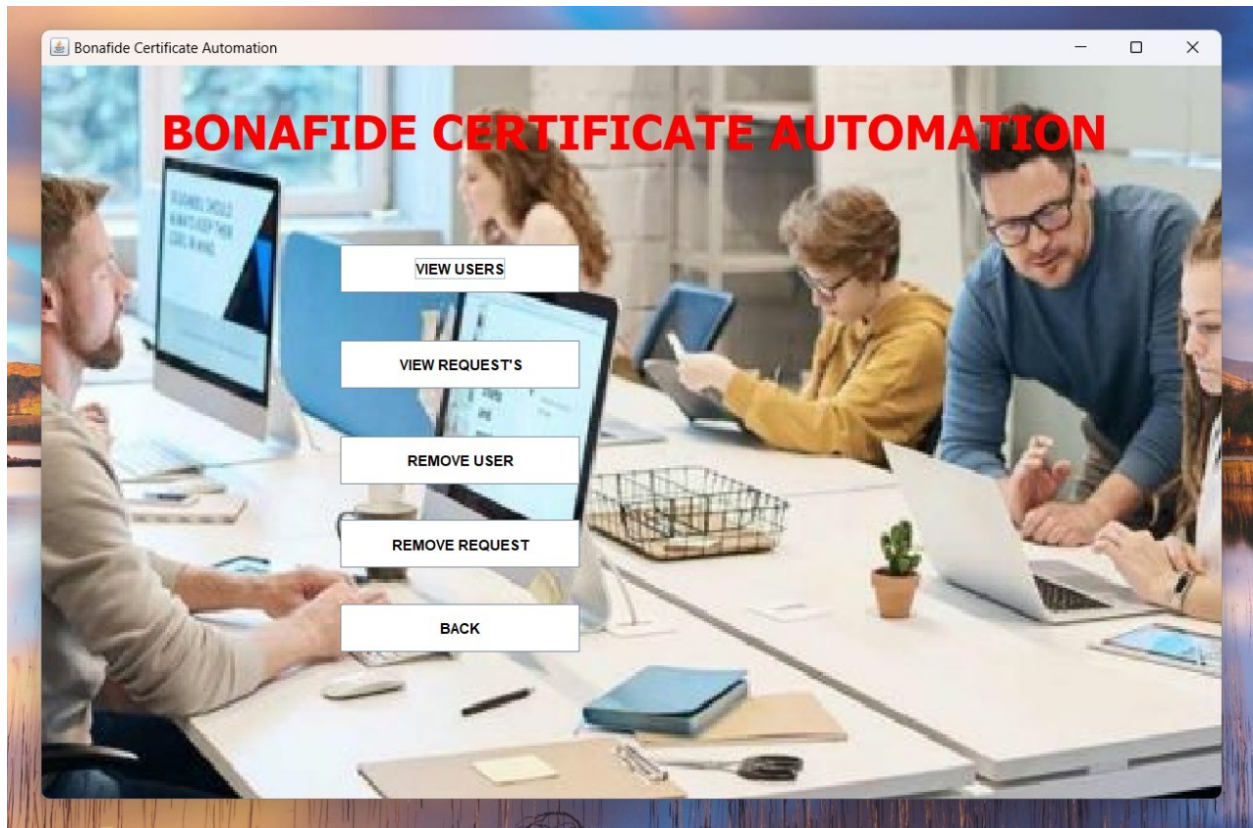


- ❖ When Admin click on admin button then admin get Following Frame.
Here in this Frame Admin need to sign in with their username and password.

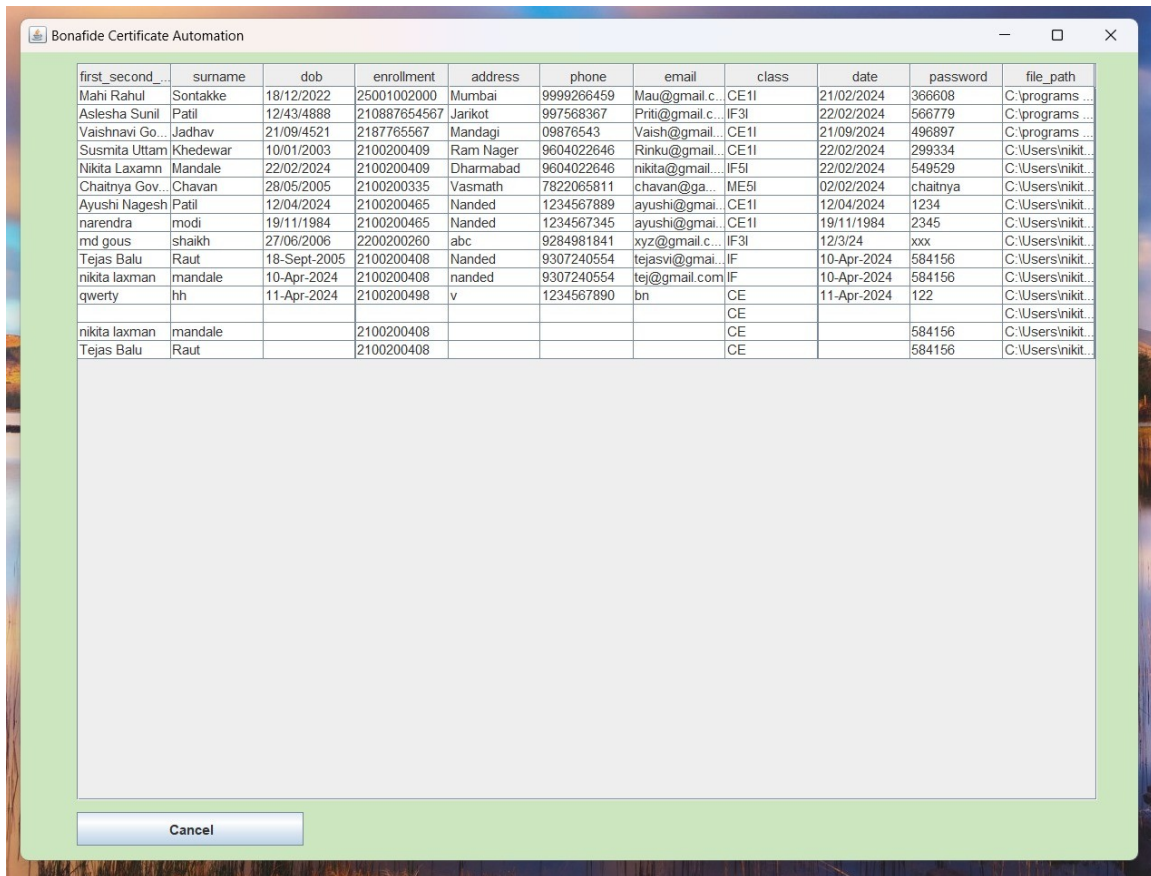


The image shows a screenshot of a web application window titled "Bonafide Certificate Automation". The window has a light green background and a dark blue header bar. The main content area is titled "Sign in" in a large, bold, black serif font. Below the title, there are two input fields. The first field is labeled "Enter Username:" and contains the text "Nikita". The second field is labeled "Enter Password:" and contains a series of asterisks "*****". Below the input fields, there are two buttons: "Submit" and "Back". The "Submit" button is on the left and the "Back" button is on the right. Both buttons are light blue with a slight gradient and a dark blue border. The window is set against a background image of a sunset over a body of water with mountains in the distance.

- ❖ When the admin click on submit button then following Frame will be open. Following Frame is Admin Window that admin can view user,view request,remove user and remove request.



- ❖ When Admin click on View User Button then following frame will be open.in this Frame Admin can View user that who and how many user logged in.

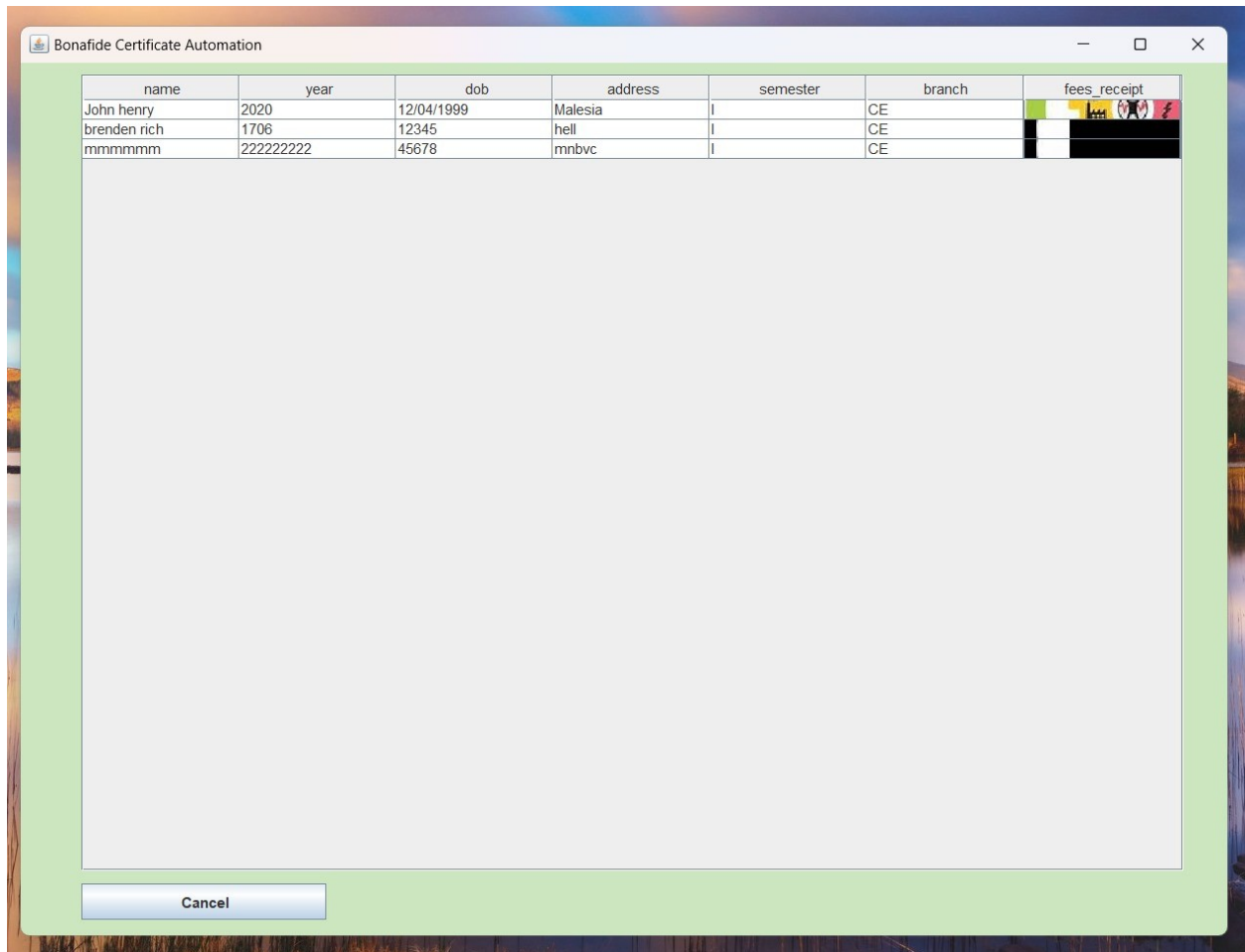


The screenshot shows a window titled "Bonafide Certificate Automation" with a table of user data. The table has 11 columns: first_second_..., surname, dob, enrollment, address, phone, email, class, date, password, and file_path. Below the table is a large empty rectangular area and a "Cancel" button at the bottom left.

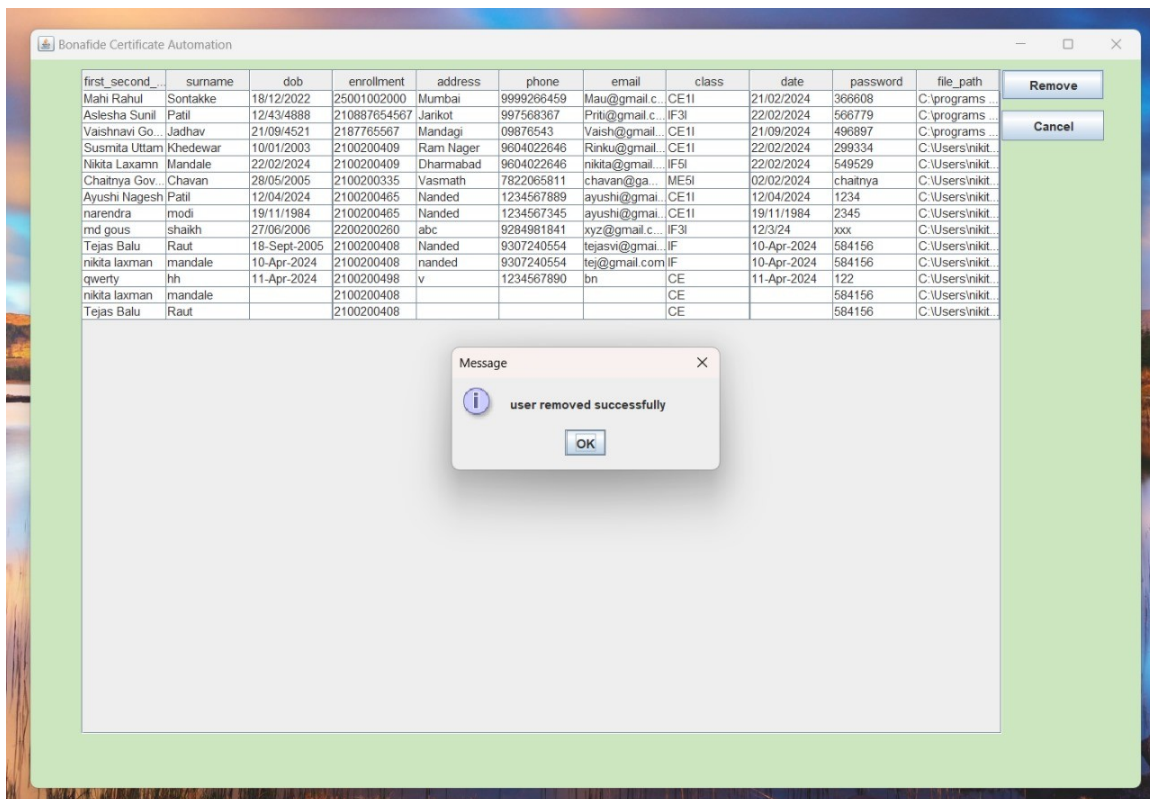
first_second_...	surname	dob	enrollment	address	phone	email	class	date	password	file_path
Mahi Rahul	Sontakke	18/12/2022	25001002000	Mumbai	9999266459	Mau@gmail.c...	CE11	21/02/2024	366608	C:\programs ...
Aslesha Sunil	Patil	12/43/4888	210887654567	Jarikot	997568367	Priti@gmail.c...	IF3I	22/02/2024	566779	C:\programs ...
Vaishnavi Go...	Jadhav	21/09/4521	2187765567	Mandagi	09876543	Vaish@gmail...	CE11	21/09/2024	496897	C:\programs ...
Susmita Uttam	Khedewar	10/01/2003	2100200409	Ram Nager	9604022646	Rinku@gmail...	CE11	22/02/2024	299334	C:\Users\nikit...
Nikita Laxamn	Mandale	22/02/2024	2100200409	Dharmabad	9604022646	nikita@gmail...	IF5I	22/02/2024	549529	C:\Users\nikit...
Chaitnya Gov...	Chavan	28/05/2005	2100200335	Vasmath	7822065811	chavan@ga...	ME5I	02/02/2024	chaitnya	C:\Users\nikit...
Ayushi Nagesh	Patil	12/04/2024	2100200465	Nanded	1234567889	ayushi@gmai...	CE11	12/04/2024	1234	C:\Users\nikit...
narendra	modi	19/11/1984	2100200465	Nanded	1234567345	ayushi@gmai...	CE11	19/11/1984	2345	C:\Users\nikit...
md gous	shaikh	27/06/2006	2200200260	abc	9284981841	xyz@gmail.c...	IF3I	12/3/24	xxx	C:\Users\nikit...
Tejas Balu	Raut	18-Sept-2005	2100200408	Nanded	9307240554	tejasvi@gmai...	IF	10-Apr-2024	584156	C:\Users\nikit...
nikita laxman	mandale	10-Apr-2024	2100200408	nanded	9307240554	tej@gmail.com	IF	10-Apr-2024	584156	C:\Users\nikit...
qwerty	hh	11-Apr-2024	2100200498	v	1234567890	bn	CE	11-Apr-2024	122	C:\Users\nikit...
nikita laxman	mandale		2100200408				CE		584156	C:\Users\nikit...
Tejas Balu	Raut		2100200408				CE		584156	C:\Users\nikit...



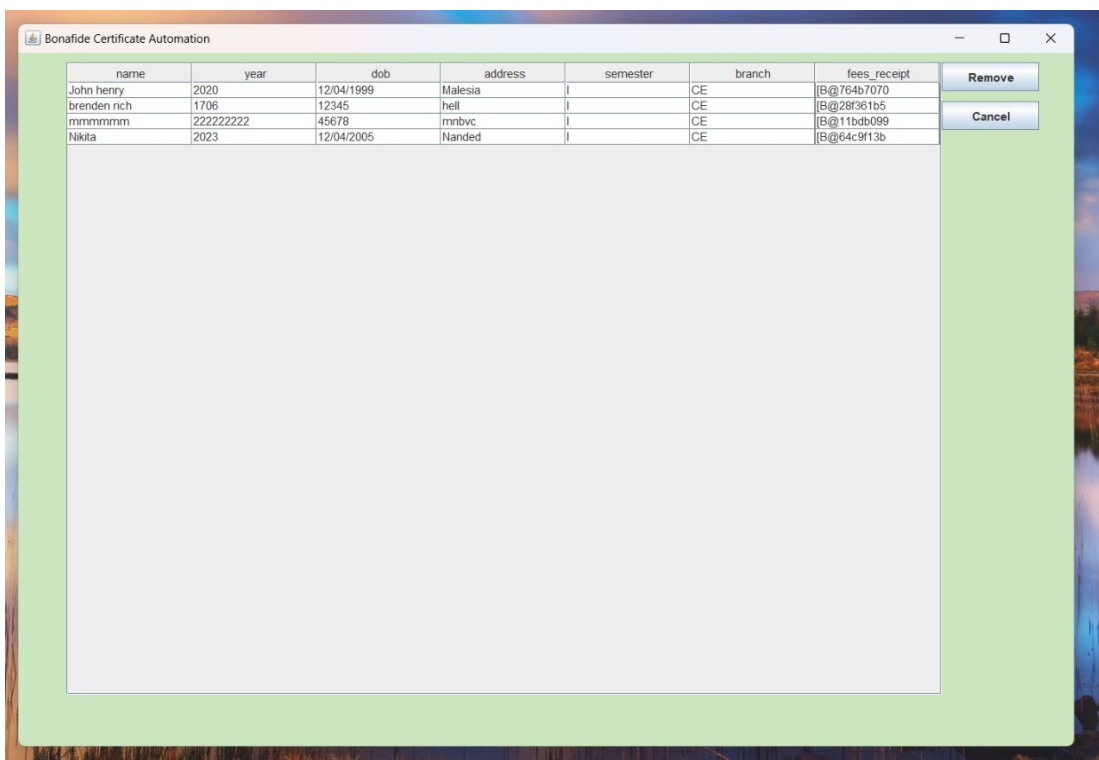
- ❖ When Admin click on View Request Button then following frame will be open.in this Frame Admin can View Request that who and how many user Applied for bonafide.



- ❖ When Admin click on Remove user Button then following frame will be open.in this Frame Admin can Remove user if user is unauthorised. And it will removed from table as well as database table



- ❖ When Admin click on Remove Request Button then following frame will be open.in this Frame Admin can Remove Request if user is unauthorised. And it will removed from table as well as database table



- ❖ when she/he click on Student Button then following Frame will be Appear.in this frame , student Require to fill following details accurately.after filling details,student will register.

The screenshot shows a window titled "Bonafide Certificate Automation" with a green background and a red title "Student Registration". The window contains a registration form with the following fields:

Student Registration	
Name with Middlename	Surname
Date of Birth	Enrollment No.
Address	Phone
Email	Enter your class
Date	Fees Receipt
Enter Password	

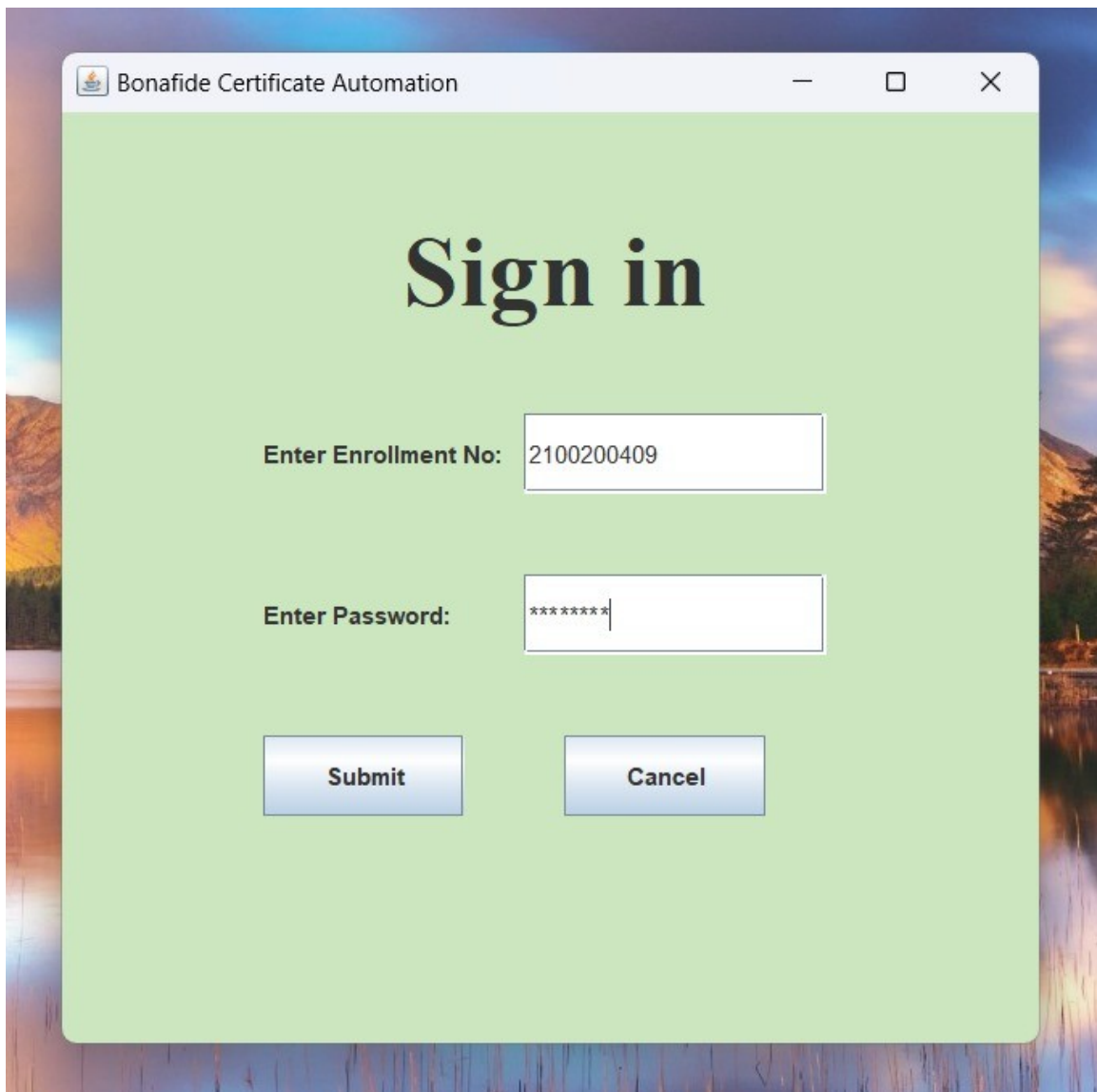
Below the form are three buttons: "Register here", "Sign in", and "Cancel".

On the right side of the window, there is a file explorer panel showing the "Look In:" directory. The list of files and folders includes:

- Custom Office Templates
- NetBeansProjects
- personal documents
- income nikita.jpg

Below the file list, there is a "File Name:" field, a "Files of Type:" dropdown menu set to "All Files", and "Open" and "Cancel" buttons.

- ❖ When Student has already logged in .then that students need sign in.and click on submit button after filling enrollment number and password.



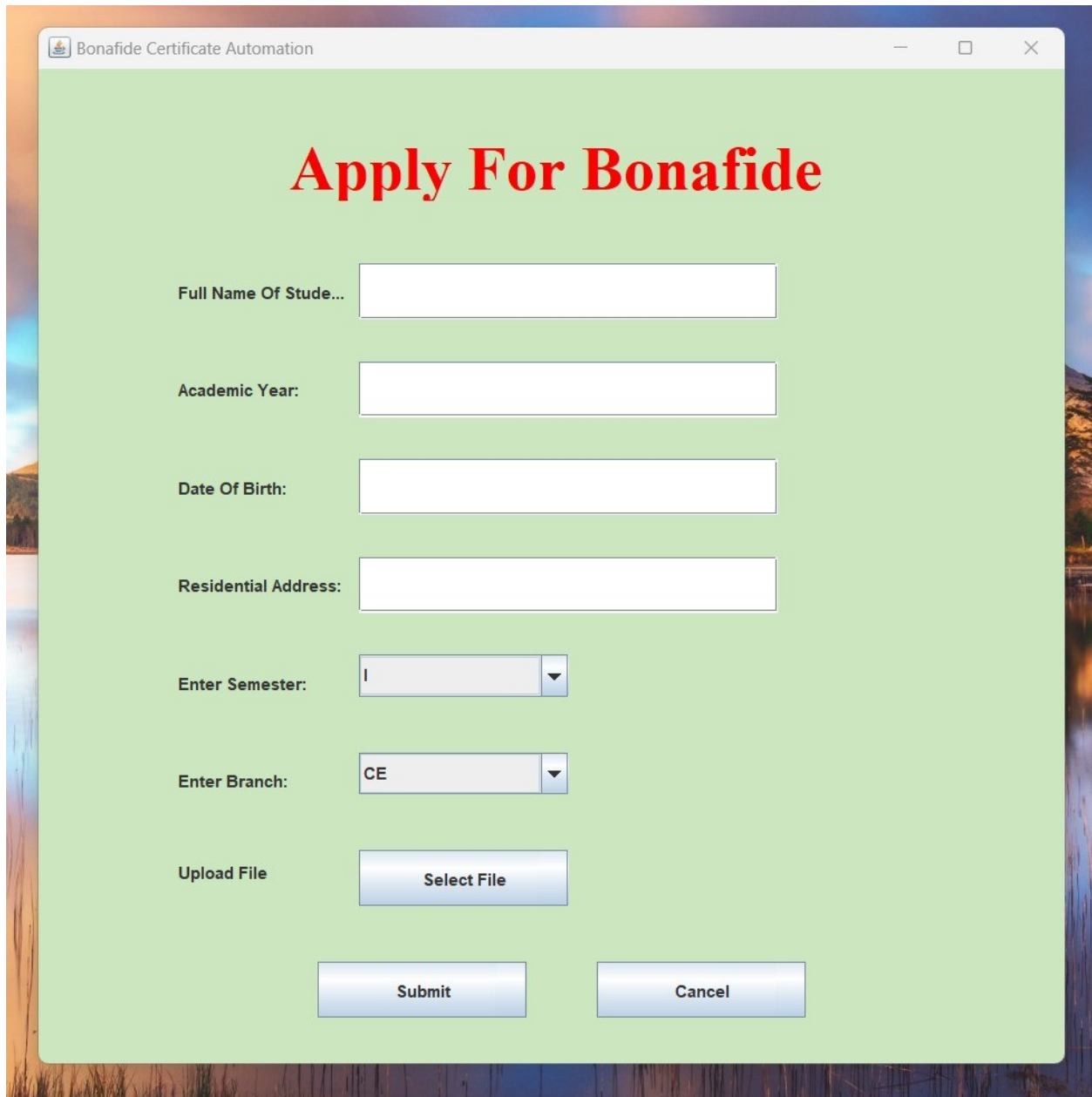
The image shows a screenshot of a web application window titled "Bonafide Certificate Automation". The window has a light green background and a dark blue header bar. The main content area is white and contains the following elements:

- A large, bold, black serif font heading "Sign in" centered at the top.
- A label "Enter Enrollment No:" followed by a text input field containing the value "2100200409".
- A label "Enter Password:" followed by a text input field containing seven asterisks "*****".
- Two buttons at the bottom: "Submit" and "Cancel", both with a blue gradient and white text.

- ❖ When Student click on Submit Button ,then following Frame will open .that user can apply for bonafide Certificate.



- ❖ When user click on apply for Bonafide Button then following Frame will open. student need to fill the information which is required for Bonafide Certificate.



Apply For Bonafide

Full Name Of Stude...

Academic Year:

Date Of Birth:

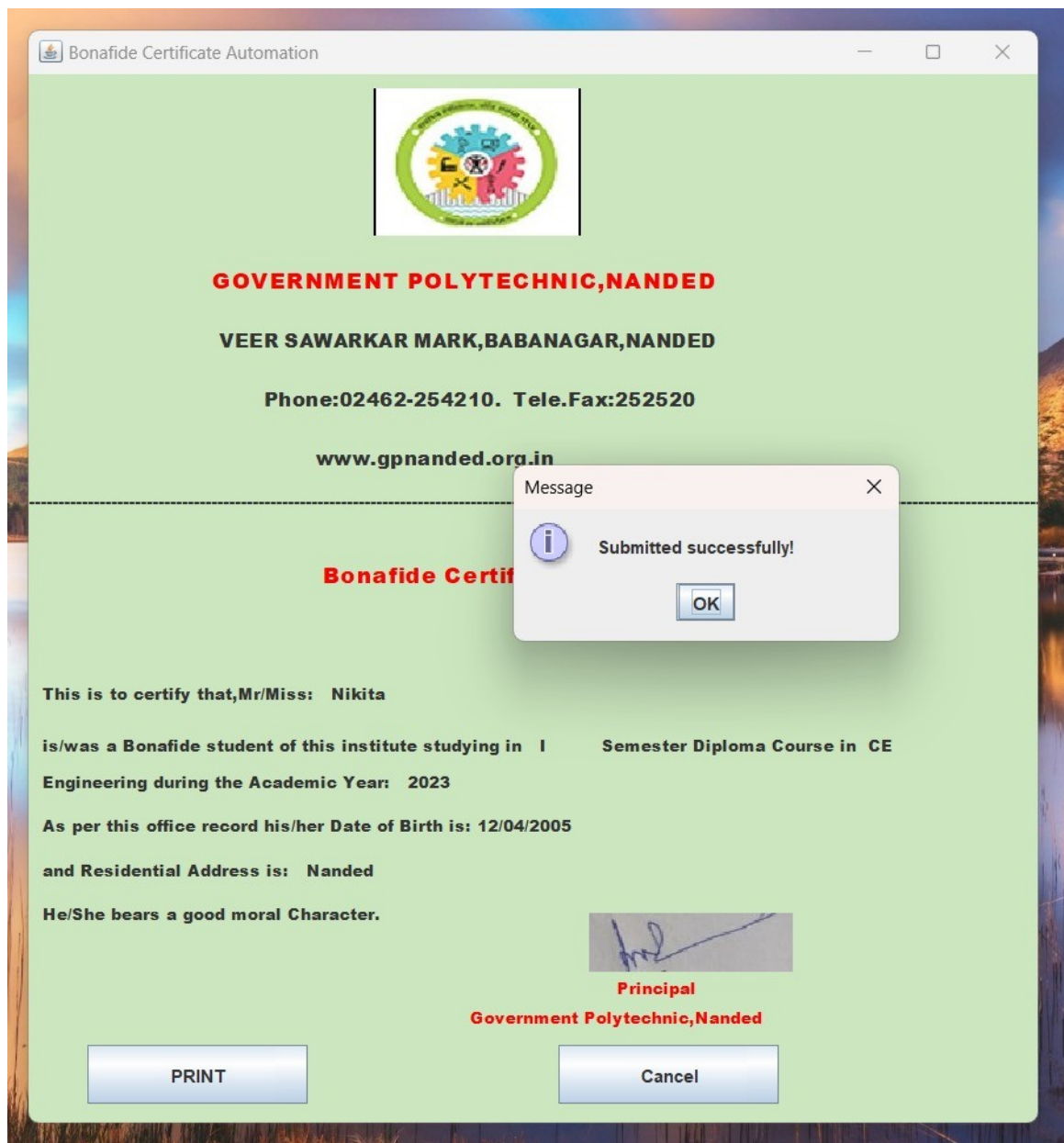
Residential Address:

Enter Semester:

Enter Branch:

Upload File

- ❖ When Student click on submit Button then Following Frame will open. In this Frame there is Bonafide Certificate of applied Student. He/She need to click on Print Button, After Clicking Print Button student Will get His/Her Bonafide Certificate.



The screenshot displays a web application window titled "Bonafide Certificate Automation". The main content area has a light green background and contains the following text:

GOVERNMENT POLYTECHNIC, NANDED
VEER SAWARKAR MARK, BABANAGAR, NANDED
Phone: 02462-254210. Tele. Fax: 252520
www.gpnanded.org.in

Bonafide Certificate

This is to certify that, Mr/Miss: **Nikita**
is/was a Bonafide student of this institute studying in **I** Semester Diploma Course in **CE**
Engineering during the Academic Year: **2023**
As per this office record his/her Date of Birth is: **12/04/2005**
and Residential Address is: **Nanded**
He/She bears a good moral Character.

Below the text is a signature of the Principal, followed by the text "Principal" and "Government Polytechnic, Nanded".

At the bottom of the window are two buttons: "PRINT" and "Cancel".

A "Message" dialog box is overlaid on the certificate, displaying an information icon, the text "Submitted successfully!", and an "OK" button.

Result and Applications

The bonafide certificate automation project aims to revolutionize the process of issuing bonafide certificates by leveraging technology to streamline administrative tasks and enhance the overall experience for students and staff. By automating the issuance process, the project seeks to reduce processing time and administrative burden while improving accuracy and compliance with institutional policies and regulations. Students will benefit from a more convenient and user-friendly system for requesting and obtaining certificates, leading to higher satisfaction and engagement. Additionally, the project will optimize administrative resources, resulting in cost savings for educational institutions. With scalability built into the system, it will be able to handle growing volumes of certificate requests efficiently. Overall, the application of this project will lead to a more efficient, reliable, and user-friendly process for obtaining bonafide certificates, benefiting both students and educational institutions alike.

Conclusion

In conclusion, the bonafide certificate automation project represents a significant step forward in streamlining administrative processes within educational institutions. By harnessing technology to automate the issuance of certificates, the project aims to improve efficiency, accuracy, and the overall experience for students and staff alike. Through convenience, reliability, and cost-effectiveness, the automated system promises to enhance administrative operations while ensuring compliance with institutional policies and regulations. With scalability and adaptability at its core, the project is poised to meet the evolving needs of educational institutions and their stakeholders. Ultimately, the successful implementation of this project will not only transform the way bonafide certificates are obtained but also contribute to the overall efficiency and effectiveness of educational administration.

Further Enhancements

Further enhancements for the bonafide certificate automation project include:

1. Integration with student portals for centralized access.
2. Development of a mobile app for convenient requests.
3. Implementation of AI-driven verification for accuracy.
4. Addition of electronic signatures for digital approval.
5. Creation of an analytics dashboard for insights.
6. Support for multiple languages.
7. Integration with document management systems.
8. Addition of self-service features for students.
9. Implementation of automated reminders.
10. Establishment of a continuous feedback mechanism for refinement.

Future Scope

For the bonafide certificate automation project, future scope includes:

1. Global accessibility for students.
2. Enhanced security measures like blockchain integration.
3. Continuous Support.
4. Seamless integration with digital wallets for portability.
5. Implementation of IoT for robust security.
6. Augmented reality for immersive verification experiences.
7. Offering micro-credentialing options for specialized certificates.
8. Continuous real-time verification mechanisms.
9. Leveraging big data analytics for insights and optimizations.
10. Feedback Mechanism.

References

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- [https://www.researchgate.net/publication/326493698_Design_and_Implementation_of_Bonafide Certificate Automaton HOMASY LASU as Case Study](https://www.researchgate.net/publication/326493698_Design_and_Implementation_of_Bonafide_Certificate_Automaton_HOMASY_LASU_as_Case_Study)