



NON-ACADEMIC CREDIT CALCULATOR



A DESIGN PROJECT REPORT

submitted by

SRINIVAS J G

SRIRAM G

SUBBIAH KARTHICK S

in partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

K RAMAKRISHNAN COLLEGE OF TECHNOLOGY

(An Autonomous Institution, affiliated to Anna University Chennai, Approved by AICTE, New Delhi)

Samayapuram – 621 112

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K RAMAKRISHNAN COLLEGE OF TECHNOLOGY
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BONAFIDE CERTIFICATE

Certified that this project report titled **“NON-ACADEMIC CREDIT CALCULATOR”** is bonafide work of **SRINIVAS J G (811722104155),SRIRAM G (811722104156),SUBBIAH KARTHICK S (811722104157)** who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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INTERNAL EXAMINER

EXTERNAL EXAMINER

DECLARATION

We jointly declare that the project report on “**NON-ACADEMIC CREDIT CALCULATOR**” is the result of original work done by us and best of our knowledge, similar work has not been submitted to “**ANNA UNIVERSITY CHENNAI**” for the requirement of Degree of Bachelor Of Engineering. This project report is submitted on the partial fulfilment of the requirement of the award of Degree of Bachelor Of Engineering.

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ABSTRACT

The Non-Academic Credit Calculator is a comprehensive platform designed to evaluate and recognize non-academic achievements by assigning credit points based on uploaded certificates for activities such as workshops, seminars, and volunteer work. Tailored for students and professionals, the system streamlines the process by allowing users to submit certificates, which are manually verified by staff to ensure authenticity and accuracy before awarding credits according to predefined criteria. This structured approach promotes transparency and fairness, providing users with a consolidated view of their extracurricular accomplishments. By quantifying diverse skill sets and contributions beyond traditional academics, the platform supports holistic personal and professional development, making it an invaluable tool for institutions and individuals alike in fostering well-rounded growth and acknowledging achievements that contribute to a more dynamic and versatile workforce.

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LIST OF ABBREVIATIONS

ABBREVIATION	FULL FORM
NACC	Non Academic Credit Calculator
NACM	Non Academic Credit Management
NACC-S	Non Academic Credit Calculator System
NACCS	Non Academic Credit Calculator System
NACAP	Non Academic Credit Allocation Platform
NACCM	Non Academic Credit Certification Manager
NACMS	Non Academic Credit Management System
NCCS	Non Academic Credit Certification System
NACP	Non Academic Credit Processing
NACDP	Non Academic Credit Dashboard Platform
NACRS	Non Academic Credit Recognition System
CNCAP	Comprehensive Non Academic Credit Allocation Platform
E-NACC	Electronic Non Academic Credit Calculator
NACC-T	Non Academic Credit Calculator Tool
NACMPS	Non Academic Credit Management and Processing System
NACV	Non Academic Credit Validator

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

The “Non Academic Credit Calculator” project proposes a new technique of awarding credit to students for their extra-curriculum activities and other experiences as well. Unfortunately, in conventional education, there seems to be an overload of emphasis on academic achievements leaving out the vital aspects that students learn beyond the confines of the classroom. Our project seeks to address this concern by establishing a system where students will submit certificates or any other evidence of the participation in the non-academic activities. These submissions are then certified by members of staff who determine the degree and credit points related to the submission, thus making the process open to unlimited understanding. The tutor believes that crediting institutions with the tool will offer a comprehensive perspective on the academic achievements and none of the academic activities of the students. The system employs web technologies and provides secure login, member profiles and a physical data filing system with measures that ensure data confidentiality. This simplicity of the system not only enhances the interest of the students in acquiring additional skills but also equips the students in today’s job market by enhancing their diverse experiences. The project contributes to the advancement of education by providing students with a consequence that allows them to go beyond the incorporation of development.

Registration and Login	Certificate Submission	Certificate Verification	Credit Point Awarding	Credit Management
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Figure 1.1: Flow of Non Academic Credit Calculator

1.2 OVERVIEW

The Non-Academic Credit Calculator is a comprehensive web-based application aimed at recognizing and rewarding students' extracurricular achievements within educational institutions. Recognizing the value of a well-rounded education, this system enables students to submit certificates for activities beyond the classroom, such as sports, arts, cultural engagements, and community service, thus promoting personal growth alongside academic success. Students can log in securely to upload certificates, which are then reviewed by staff members who verify the authenticity and assign credit points based on institution guidelines. The system's structured process ensures a fair assessment and reduces the administrative burden of tracking and verifying non-academic credits manually. Through a centralized, user-friendly dashboard, staff can manage all submissions, oversee student credits, and provide timely feedback, while students receive real-time notifications to track their submission status and accumulated credits.

This transparency motivates students to participate in diverse activities, fostering skills and interests that contribute to their holistic development. Additionally, by storing all data in a unified database, the system ensures data consistency and easy accessibility, allowing institutions to efficiently monitor students' non-academic progress. In nurturing an environment that values diverse achievements, the Non-Academic Credit Calculator supports a comprehensive education model, highlighting students' individual skills and preparing them for success beyond the classroom. By bridging the gap between academic and non-academic achievements, the system prepares students to present a well-rounded profile to the world, enhancing their confidence and readiness to excel in an increasingly competitive global landscape.

1.3 PROBLEM STATEMENT

Current systems for tracking non-academic achievements in educational institutions are inefficient and lack standardization. Students participate in various extracurricular activities and certifications, but there is no effective way to record these accomplishments. This results in missed opportunities for students to gain formal recognition, which could enhance their career prospects. Additionally, the lack of a streamlined process for awarding and validating non-academic credits makes it challenging for institutions to manage and verify certificates. This project aims to provide a centralized platform where students can upload certificates, receive validated credits, and track their progress, fostering a balanced profile that reflects both academic and extracurricular achievements.

1.4 OBJECTIVE

The objective of this project is to create a system that allows students to upload certificates, earn credit points, and track their non-academic achievements. It aims to simplify the validation process for faculty while promoting holistic student development by recognizing both academic and extracurricular accomplishments.

1.5 IMPLICATION

The Non-Academic Credit Calculator system involves the recognition and validation of non-academic achievements through certificate uploads, with faculty verifying and awarding credit points. This process simplifies administrative tasks, ensures transparency, and promotes the recognition of extracurricular activities, enhancing students' profiles and career opportunities. The system fosters a more comprehensive approach to student development by encouraging participation in non-academic activities.

CHAPTER 2

LITERATURE SURVEY

TITLE: Non-Academic Credit Management System for Educational Institutions

AUTHORS: R. Kumar, S. Sharma, P. Patel

YEAR: 2023

This paper explores the development of a comprehensive system designed to track and manage non-academic credits for students in educational institutions. The proposed system allows students to upload certificates from extracurricular activities, workshops, and certifications, which can then be validated by faculty members. The system automates the credit awarding process and provides a digital platform for students to view their progress, ensuring better tracking of non-academic achievements. The study demonstrates how the system fosters a holistic approach to student development by integrating both academic and non-academic achievements.

TITLE: E-Certificate Management and Validation System

AUTHORS: A. Sharma, M. Verma, J. Singh

YEAR: 2022

This paper presents a secure e-certificate management system that facilitates the verification and validation of student certificates in a digital format. The system ensures that certificates uploaded by students are genuine and meet institutional standards. By utilizing a secure database and validation algorithms, the system prevents fraud and provides an efficient method for managing non-academic achievements. The proposed system improves administrative efficiency and enhances the trustworthiness of student certificates, contributing to a more transparent recognition process.

TITLE: Digital Tracking of Extracurricular Achievements in Educational Systems

AUTHORS: T. Gupta, L. Patel, S. Singh

YEAR: 2021

This research highlights the importance of digital systems in tracking students' extracurricular activities and achievements. The paper discusses the challenges faced by educational institutions in managing non-academic data and presents an innovative solution using cloud-based technology to securely store and manage extracurricular achievements. The system automates the calculation of credit points based on predefined criteria, making it easier for institutions to offer recognition for student participation outside of the classroom.

TITLE: Non-Academic Achievement Recognition Using Blockchain Technology

AUTHORS: A. Patel, M. Bhat, R. Pandey

YEAR: 2021

This research investigates the application of blockchain technology in managing and verifying non-academic achievements. The paper proposes a blockchain-based system where students' certificates and non-academic records are securely stored and verified. The use of blockchain ensures that the data is immutable and cannot be tampered with, providing both students and institutions with a reliable way to manage achievements and awards.

TITLE: Automating Student Progress Tracking with Digital Certificates

AUTHORS: P. Sahu, V. Agarwal, M. Bansal

YEAR: 2020

This study examines the automation of student progress tracking using digital certificates. The authors explore how students can upload and manage their

certificates through a centralized platform that automatically awards credit points based on the criteria defined by the institution. The system reduces administrative burden and enhances transparency while ensuring that students' non-academic achievements are given due recognition.

TITLE: Cloud-Based Solution for Non-Academic Credit Point Allocation

AUTHORS: R. Jha, S. Raj, A. Sharma

YEAR: 2019

The paper introduces a cloud-based solution for the management and allocation of non-academic credit points in educational institutions. The system allows students to upload their extracurricular activities, certifications, and achievements, which are then verified by faculty and awarded appropriate credit points. The cloud-based approach ensures that data is stored securely, accessible at any time, and easily updated. The study shows how such a system can be implemented at scale to improve the overall management of student achievements.

TITLE: A Framework for Tracking Non-Academic Achievements in Higher Education

AUTHORS: J. Das, S. Gupta, T. Kumar

YEAR: 2018

This research outlines a framework for tracking non-academic achievements in higher education. It focuses on the development of a digital platform that allows for the systematic recording, validation, and management of non-academic credits. The system aims to provide students with a comprehensive record of their achievements and encourage greater participation in extracurricular activities by offering tangible rewards in the form of credit points.

CHAPTER 3

SYSTEM ANALYSIS

3.1 EXISTING SYSTEM

The existing system is a Leave Management System which focuses on validating and approving leaves within an organization. This system helps in managing leave applications, tracking leave balances, and facilitating approval workflows. While it serves its purpose in leave management, it does not extend to other functionalities such as tracking non-academic credits.

EXISTING SYSTEM COMPONENTS

LEAVE MANAGEMENT

- The system allows employees to request leaves and supervisors to approve or reject the requests.
- It tracks leave balances and provides notifications for leave approval.

LEAVE APPROVAL WORKFLOW

- The system enables managers to review and approve or decline leave requests, maintaining an audit trail of leave approvals.

LEAVE REPORTS

- The system generates reports on leave usage, remaining balance, and approval history.

PROBLEM WITH EXISTING SYSTEM

- The current system does not cater to non-academic credit management and does not provide the ability to upload, validate, or track non-academic certificates.

- It lacks a feature for awarding or managing credits for non-academic achievements like certifications, which is the focus of the new "Non-Academic Credit Calculator" system.

3.2 PROPOSED SYSTEM

The proposed system, Non-Academic Credit Calculator, aims to simplify the process of awarding credit points to students for non-academic activities, such as workshops, internships, and online courses. Students will upload certificates to their profiles, which will then be reviewed and validated by staff members. The system automatically calculates and assigns credit points based on predefined rules, making it easier to track and manage non-academic achievements. The web-based platform allows students and staff to access the system from any location, without the need for additional software or hardware. It will be built using PHP and MySQL for data management, ensuring scalability and security.

The system will provide a streamlined experience for both students and staff, where students can manage their profiles and view their awarded credits, while staff can validate and approve certificates. Additionally, real-time notifications will inform users about the status of certificates and credit points. With its user-friendly interface, the system is designed to be easily accessible and cost-effective, reducing administrative effort and providing a transparent and efficient way to manage non-academic credit points.

3.3 BLOCK DIAGRAM OF PROPOSED SYSTEM

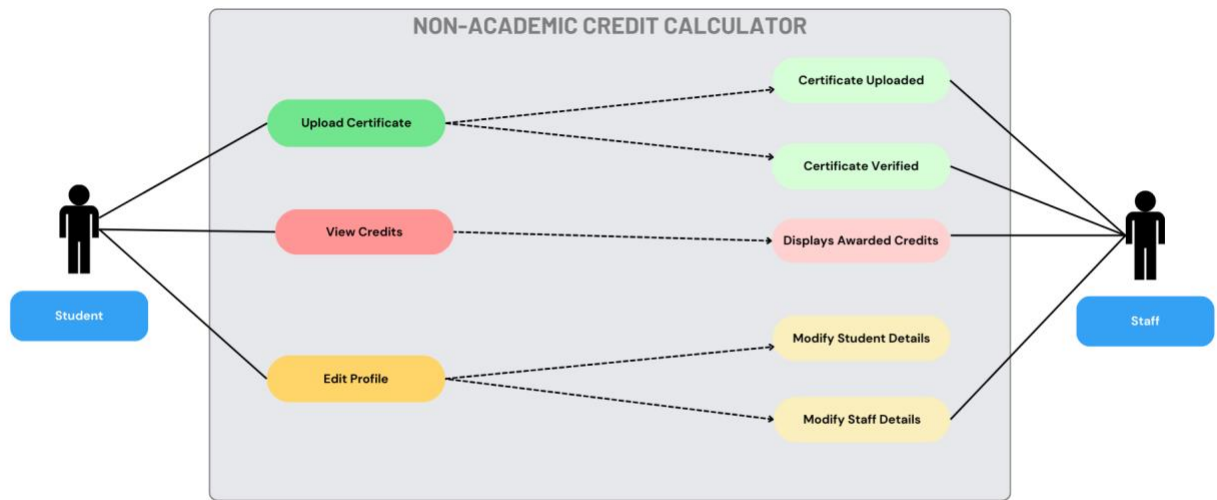


Figure 3.1: Usecase Diagram

3.4 FLOWCHART

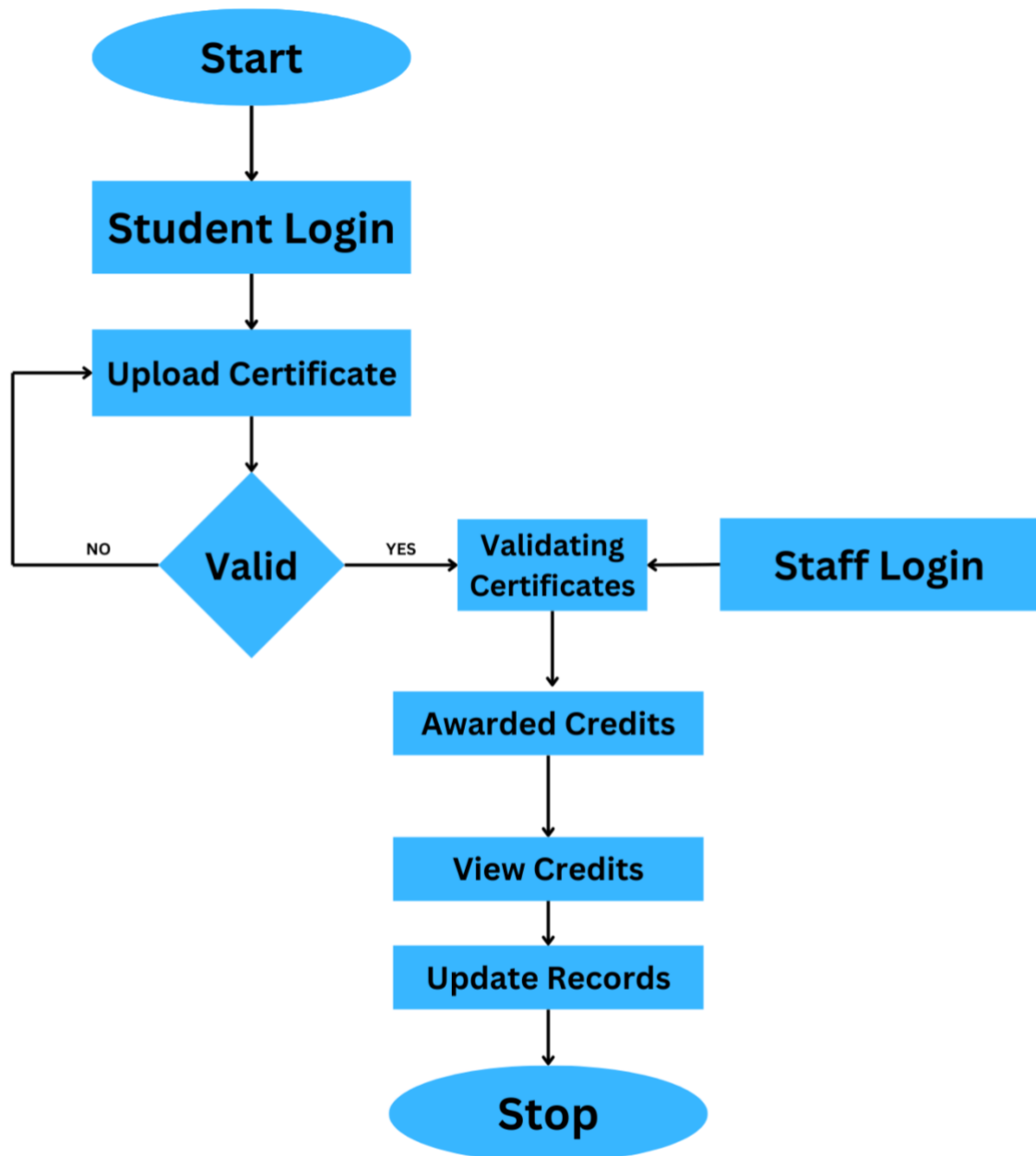


Figure 3.2: Flow of Control

3.5 PROCESS CYCLE

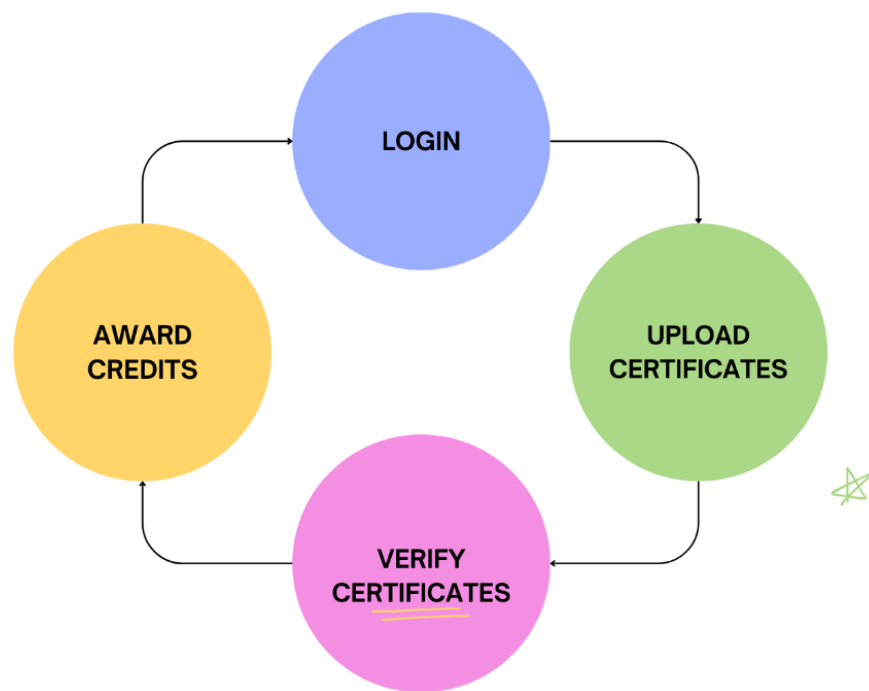


Figure 3.3: Life Cycle of the Process

3.6 ACTIVITY DIAGRAM

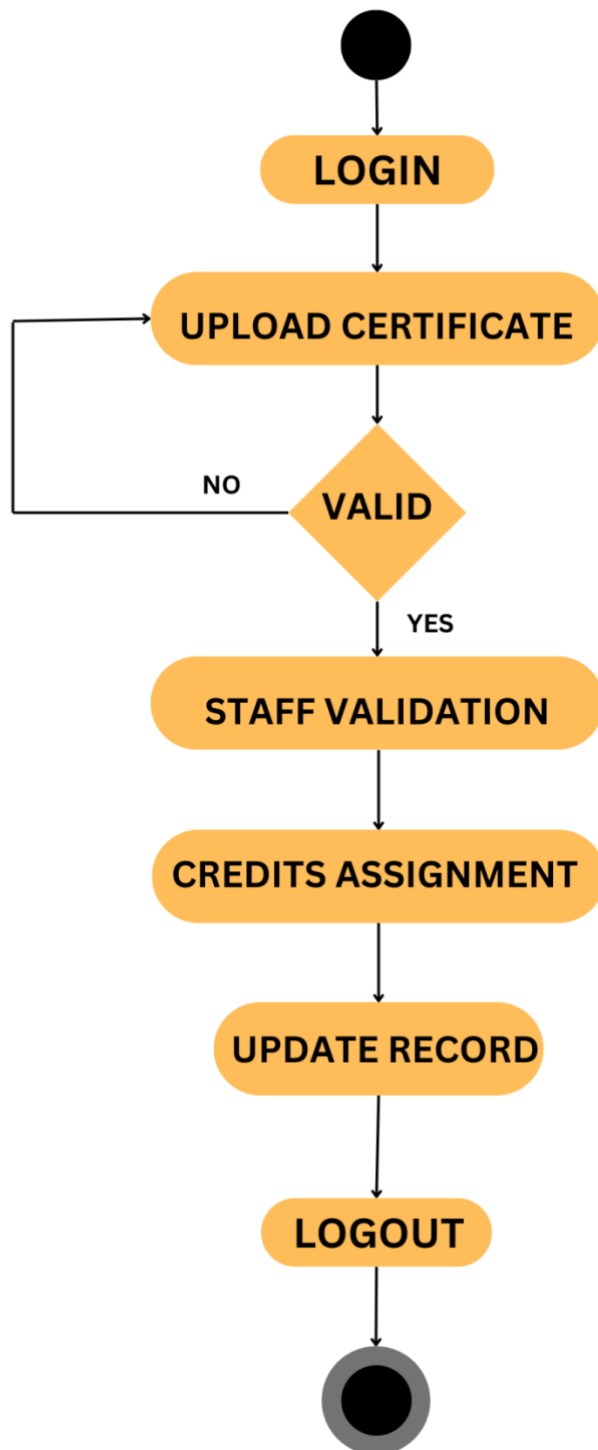


Figure 3.4: Action Sequence Structure of Non Academic Credit Calculator

CHAPTER 4

MODULES

4.1 MODULE DESCRIPTION

- Student Profile Module
- Staff Profile Module
- Certificate Upload and Validation Module
- Credit Calculation Module
- Authentication and Authorization Module
- Database Management Module

4.1.1 STUDENT PROFILE MODULE

The Student Profile Module serves as the foundational component for managing individual student information within the Non-Academic Credit Calculator system. This module captures and stores essential data such as the student's name, email, registration number, and department. Each student can view and edit their profile, upload certificates, and check their credit points, which are awarded based on staff validation. This module ensures that all information is securely stored and is easily accessible, enabling students to track their progress and credit achievements.

This module not only provides a personalized experience but also integrates seamlessly with other system components. The Student Profile Module is essential for certificate upload, credit calculation, and notification management, acting as the main interface for students to interact with the system. It centralizes student data, ensuring that their academic achievements and credit records are consistently and accurately maintained. Key features in this module include:

- Profile Creation and Management
- Certificate Upload Integration
- Student-Specific Credit Display
- Personalized Notifications

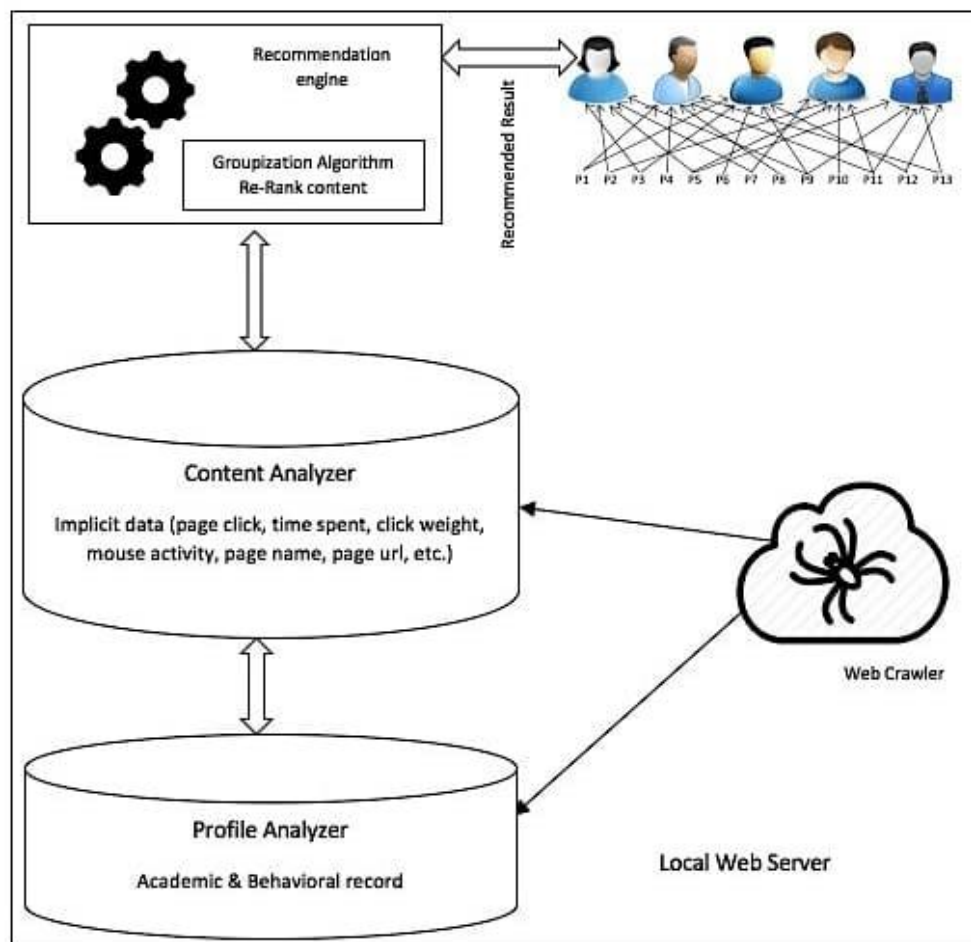


Figure 4.1: Student Profile Module

4.1.2 STAFF PROFILE MODULE

The Staff Profile Module in the Non-Academic Credit Calculator system is designed to manage and maintain detailed information for staff members who oversee the verification and validation processes of student-uploaded certificates. This module enables staff to securely log in, view their profiles, and access key functionalities such as validating certificates and awarding non-academic credit points. The module also integrates options for staff to edit their profile information and manage student credit records efficiently.

The core functionality of this module lies in its structured storage and retrieval of staff data, ensuring that each staff member can personalize their experience and maintain seamless access to the system's tools. It provides a user-friendly interface for managing their profile and ensures the confidentiality of sensitive data. Key features include:

- Profile Information Management
- Certificate Validation Access
- Credit Point Management
- Personalized Notifications



Figure 4.2: Staff Profile Module

4.1.3 CERTIFICATE UPLOAD AND VALIDATION MODULE

The Certificate Upload and Validation Module in the Non-Academic Credit Calculator system is designed to streamline the process of uploading, verifying, and assigning credit points to non-academic achievements. The module facilitates the interaction between students and staff by leveraging a structured validation workflow.

The upload process starts with students submitting their certificates via the system's interface. These certificates are stored securely in the database and are accessible for validation by authorized staff members. The uploaded certificates are then subjected to manual scrutiny by staff, who assess the document's authenticity, relevance, and completeness.

The validation process employs a set of predefined criteria to ensure that only genuine and relevant certificates are approved. If the certificate meets all the requirements, the staff member marks it as valid and assigns credit points. Conversely, if the certificate is found to be incomplete, invalid, or forged, it is rejected, and the student is notified along with the reasons for rejection.

This module ensures that the workflow is transparent, maintains the integrity of the system, and encourages students to provide accurate and valid information. Notifications and logs are maintained for every step, creating an auditable trail of actions for accountability and future reference.

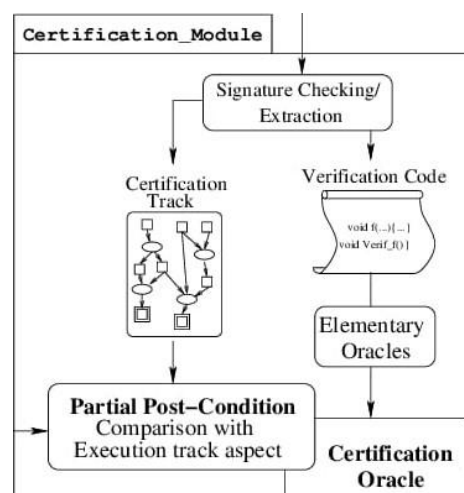


Figure 4.3: Certificate Module

4.1.4 CREDIT CALCULATION MODULE

The Credit Calculation Module is a core component of the Non-Academic Credit Calculator, responsible for determining and assigning credit points based on validated certificates submitted by students. This module automates the process of credit allocation, ensuring consistency, accuracy, and transparency. Credit calculation is governed by a set of predefined rules that align with the institution's policies regarding non-academic achievements.

The process begins with staff manually validating the uploaded certificates. Once a certificate is approved, its associated details, such as achievement type, level, and relevance, are input into the system. The module then analyzes these details against a points matrix, which assigns specific credit values to different types of achievements. The matrix considers parameters such as event importance, student participation level, and any special recognitions or awards.

The system provides real-time feedback to students by updating their credit score profiles as soon as the calculation is completed. Students can view their accumulated credit points through their profiles, ensuring transparency. The module also generates reports summarizing the credit allocation process, which staff can use for auditing or academic recognition purposes.

To ensure adaptability, the module allows administrators to update the points matrix and calculation rules to align with evolving policies. This flexibility ensures the system remains relevant and effective in accommodating various types of non-academic achievements over time.



Figure 4.4: Credit Calculation Module

4.1.5 AUTHENTICATION AND AUTHORIZATION MODULE

The Authentication and Authorization Module is a critical component of the Non-Academic Credit Calculator, ensuring that only verified and authorized users gain access to the system's functionalities. This module involves a robust login mechanism for both students and staff, utilizing secure password storage techniques such as hashing to safeguard user credentials. It also facilitates session management, allowing users to remain logged in securely during their interactions with the system.

Authorization ensures role-based access control, enabling students and staff to access only their respective profiles and actions, such as certificate uploads, credit validation, and profile editing. The system distinguishes user roles to prevent unauthorized access to sensitive features, such as staff-exclusive functionalities like credit validation and student monitoring. Additionally, mechanisms such as CAPTCHA and account lockouts enhance security by mitigating brute force and automated login attempts. This module is pivotal in maintaining data privacy and operational integrity within the system.

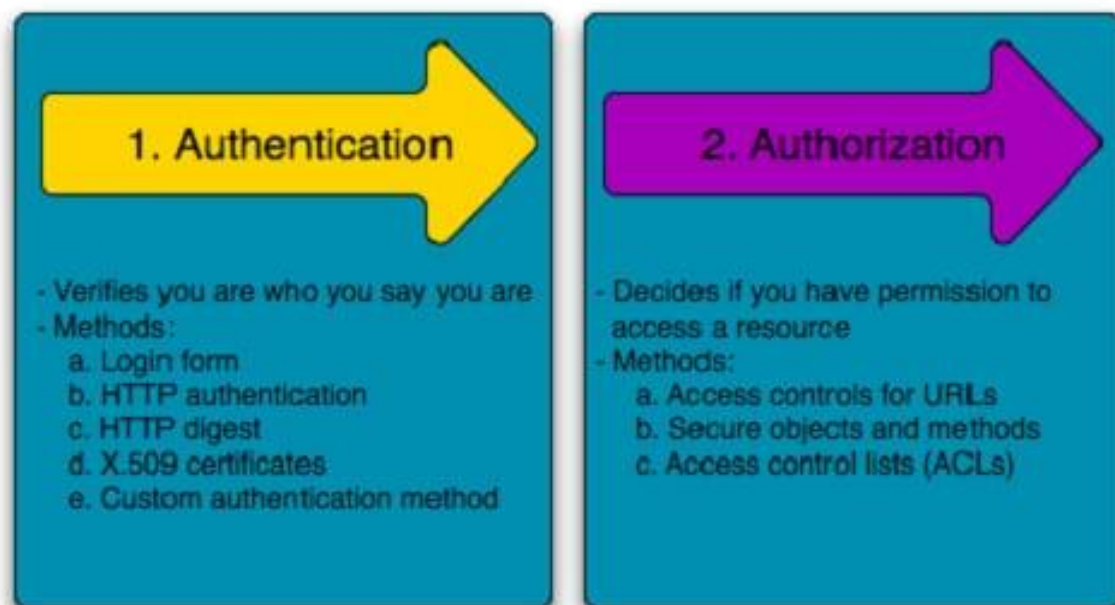


Figure 4.5: Authentication and Authorization Module

4.1.6 DATABASE MANAGEMENT MODULE

The Database Management Module is a core component of the Non-Academic Credit Calculator, ensuring secure and efficient storage, retrieval, and manipulation of data. This module manages critical information, such as student profiles, staff profiles, uploaded certificates, credit points, and session details. The system relies on a structured relational database, leveraging SQL to define, query, and manage data while maintaining its integrity and consistency.

The module incorporates advanced database management techniques to handle large volumes of data seamlessly. It ensures data normalization to eliminate redundancy, improving performance and storage efficiency. Security features, such as role-based access control and encryption, protect sensitive information like login credentials and certificate details. Backup and recovery mechanisms are integrated to safeguard data against potential loss due to hardware failures or cyberattacks.

Moreover, the module supports real-time updates and queries, enabling functionalities like instant certificate validation and immediate credit point allocation. Efficient indexing and optimization techniques are employed to ensure swift access to data, even under heavy user loads. This robust and scalable database management system ensures the smooth operation of the Non-Academic Credit Calculator, providing reliable support for all system functionalities.

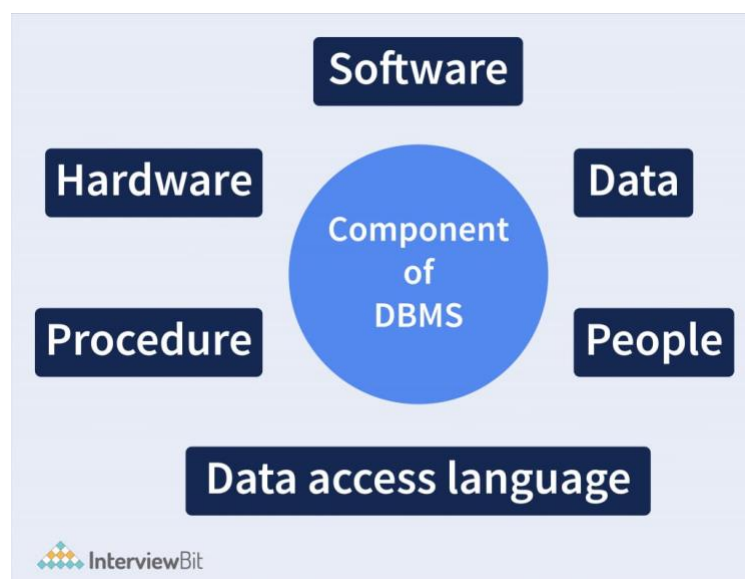


Figure 4.6: Database Management Module

CHAPTER 5

SYSTEM SPECIFICATION

5.1 SOFTWARE REQUIREMENTS

- Operating System - Windows 10/11 or Linux-based system.
- Web Server - WAMP/XAMPP for hosting the application locally.
- Database - MySQL for storing and managing data.
- Frontend - HTML, CSS, and JavaScript for the user interface.
- Backend - PHP for server-side scripting.

5.2 HARDWARE REQUIREMENTS

- Processor: Intel Core i3 or higher
- RAM: 4GB or higher
- Storage: 100GB free space or higher for database and application files.

5.1.1 OPERATING SYSTEM - WINDOWS 10/11 OR LINUX-BASED SYSTEM

The operating system is the core platform on which software applications run, managing hardware resources and providing essential services to support development and deployment. Windows 10/11 is a widely used operating system known for its user-friendly interface and extensive compatibility with software tools. It supports integrated development environments (IDEs) like Visual Studio Code and facilitates local hosting tools such as WAMP and XAMPP, essential for running and testing web applications. With built-in security updates and a stable environment, Windows is an excellent choice for projects requiring a seamless development experience.

Linux-based systems, on the other hand, are favored for their open-source flexibility and robustness. Distributions such as Ubuntu and CentOS are lightweight and provide excellent support for development environments. The command-line interface in Linux is powerful for debugging, automation, and package management. Additionally, Linux-based systems excel in resource optimization, making them ideal for hosting web applications and managing databases. Both Windows and Linux platforms provide the stability and versatility required for developing the Non-Academic Credit Calculator, ensuring a smooth workflow during development, testing, and deployment.

5.1.2 WEB SERVER - WAMP/XAMPP FOR HOSTING THE APPLICATION LOCALLY

WAMP and XAMPP are powerful web server solutions widely used for local hosting and testing of web applications. These platforms provide an all-in-one package comprising Apache, MySQL, and PHP, which are the core technologies needed for developing and running web-based systems. By using WAMP (for Windows) or XAMPP (cross-platform), developers can create a simulated server environment on their personal computers, facilitating the testing and debugging of applications before deployment. These tools offer easy installation, a user-friendly interface, and seamless configuration, making them an essential choice for hosting the Non-Academic Credit Calculator locally.

One of the standout features of WAMP and XAMPP is their ability to manage databases effectively through integrated tools like phpMyAdmin. This simplifies database management tasks such as creating tables, executing queries, and monitoring data integrity. Additionally, the platforms support multi-PHP version switching, providing flexibility to developers to test their applications in diverse environments. The pre-configured servers reduce the complexity of manual setup, enabling a quick start to development. Furthermore, their compatibility with widely used IDEs like Visual Studio Code ensures a smooth development process. WAMP/XAMPP empowers developers to run, test, and refine their web applications efficiently,

ensuring that the Non-Academic Credit Calculator operates seamlessly in both development and production environments.

5.1.3 DATABASE - MYSQL FOR STORING AND MANAGING DATA

MySQL is a powerful and reliable relational database management system (RDBMS) that serves as the backbone for data storage and management in the Non-Academic Credit Calculator. Known for its robustness, scalability, and high performance, MySQL facilitates the seamless organization and retrieval of data, ensuring the efficient functioning of the application. By leveraging MySQL, the system can securely store critical information such as student profiles, staff details, uploaded certificates, and credit points, enabling real-time access and updates. The use of structured query language (SQL) allows for precise data manipulation, empowering developers to implement complex queries and data analytics efficiently.

One of the most significant advantages of MySQL is its compatibility with PHP, the backend scripting language of the project. This ensures a smooth integration of the database with the application, enabling features like dynamic content updates and user authentication. MySQL's robust security measures, such as encryption and access control, safeguard sensitive data, ensuring that information remains secure from unauthorized access. Furthermore, MySQL's ability to handle concurrent users and its support for indexing and normalization enhance the scalability and performance of the application. With its user-friendly management tools, such as phpMyAdmin, MySQL streamlines database operations, making it an ideal choice for managing the data-driven requirements of the Non-Academic Credit Calculator.

5.1.4 FRONTEND - HTML, CSS, AND JAVASCRIPT FOR THE USER INTERFACE

HTML, CSS, and JavaScript form the cornerstone of the user interface in the Non-Academic Credit Calculator, offering a seamless and intuitive experience for students and staff. HTML (HyperText Markup Language) structures the content and layout of web pages, ensuring that the necessary components, such as forms, buttons,

and profile sections, are presented clearly. CSS (Cascading Style Sheets) enhances the visual appeal by providing styling elements, including colors, fonts, and responsive design features, ensuring the application is aesthetically pleasing and accessible on various devices. JavaScript, as a dynamic scripting language, powers interactivity, enabling real-time updates and user-driven functionalities such as toggling password visibility, validating forms, and updating profiles instantly without reloading the page.

This trio of technologies works together to create a highly interactive and user-friendly interface. For instance, JavaScript enhances the responsiveness of the Credit Calculation Module by dynamically displaying uploaded certificates and calculated credit points. CSS frameworks like Bootstrap are utilized to ensure the layout remains consistent and visually appealing across different screen sizes, providing a responsive design that meets modern web standards. By leveraging the combined power of HTML, CSS, and JavaScript, the frontend of the application serves as an engaging platform, seamlessly connecting users with the core functionalities of the Non-Academic Credit Calculator while delivering an optimal user experience.

5.1.5 BACKEND - PHP FOR SERVER-SIDE SCRIPTING

PHP (Hypertext Preprocessor) serves as the backbone of the Non-Academic Credit Calculator, providing robust server-side scripting capabilities essential for managing core functionalities like form submissions, data retrieval, and database operations. As a powerful and widely-used server-side scripting language, PHP enables the creation of dynamic pages, such as login and profile management for students and staff, while supporting features like certificate validation and credit calculation. Its integration with the MySQL database ensures secure and efficient data storage, retrieval, and manipulation, forming the foundation of the application's data-driven operations. PHP excels in session management, allowing secure tracking of user sessions and providing personalized access to functionalities like the Credit Calculation Module and the Certificate Upload and Validation Module. By dynamically generating session tokens after successful login, PHP ensures authenticated access and seamless navigation. This versatility ensures the Non-Academic Credit Calculator delivers a seamless and reliable user experience.

CHAPTER 6

METHODOLOGY

6.1 CERTIFICATE UPLOAD AND VALIDATION PROCESS

The Certificate Upload and Validation Process is a cornerstone of the Non-Academic Credit Calculator system. It ensures a streamlined and secure mechanism for students to upload their certificates, and for staff to validate these submissions efficiently. This process plays a vital role in awarding non-academic credit points accurately based on verified student achievements.

Step 1: Certificate Upload by Students

Students can upload certificates through their profiles. The system provides a user-friendly interface with fields to specify certificate details, such as the event name, category, and level (college, state, or national). The key steps in the upload process are:

- **File Selection:** Students select certificates in allowed formats (PDF, JPEG, PNG).
- **Input Validation:** PHP scripts validate file type, size (e.g., up to 5 MB), and required metadata before proceeding.
- **Server Storage:** Uploaded certificates are stored securely on the server, with unique filenames generated to avoid duplication.

Step 2: Validation by Staff

The validation process begins when staff members access their profiles. All uploaded certificates awaiting validation are listed, along with details such as student name, registration number, and event details. Validation involves:

- **Preview of Certificates:** Staff can view certificates directly from the system without downloading them.
- **Review of Details:** Staff cross-check the provided details against the certificate content for consistency.

- Approval or Rejection: A simple interface allows staff to mark certificates as "Approved" or "Rejected" with optional comments explaining the decision.

Step 3: Automated Status Update

Once a certificate is validated, the system updates the database with the validation status. Key processes include:

- Database Updates: Approved certificates are linked with the corresponding credit rules, and points are assigned to the student's profile.

Therefore, Certificate Upload and Validation Process ensures transparency, accuracy, and efficiency, making it integral to the overall functionality of the Non-Academic Credit Calculator system. It also provides an auditable trail for both students and staff, ensuring accountability in credit allocation.

6.2 CREDIT CALCULATION MECHANISM

6.2.1 CREDIT ALLOCATION FRAMEWORK

The credit allocation framework is the foundation of the Non-Academic Credit Calculator, providing a structured approach to awarding points based on certificates. Each certificate type is categorized into levels such as school-level, district-level, state-level, and national-level achievements. These levels are mapped to predefined credit values stored in the database, ensuring uniformity and fairness in credit allocation. The framework is designed to reward students proportionally for their accomplishments, fostering motivation and participation in extracurricular activities.

The framework employs a dynamic algorithm in the backend, written in PHP, to assign appropriate credit values based on certificate data. Staff members manually validate certificates, ensuring that the awarded credits align with institutional guidelines. This dynamic structure makes the system adaptable to changes in credit policies, allowing administrators to adjust credit values without affecting existing records.

Additionally, the framework promotes transparency by displaying detailed breakdowns of awarded credits on the student's profile. The system records every credit transaction with timestamps, ensuring accountability. This level of transparency enhances trust among users and aligns with academic integrity principles.

6.2.2 CERTIFICATE CATEGORIZATION AND WEIGHTAGE

Certificates are categorized based on their type and relevance to the institution's credit system. Broadly, certificates fall into categories such as academic, sports, cultural, and leadership. Each category has its specific weightage, reflecting its significance in non-academic credit evaluation. For instance, leadership roles in student councils might have higher weightage than participation in local sports events.

The weightage system is meticulously designed to recognize diverse student achievements, encouraging participation across various domains. Certificates submitted by students are tagged with metadata indicating their category, enabling seamless integration with the credit calculation process. This tagging is automated during the upload process, leveraging dropdown selections and backend logic to ensure accuracy.

The weightage system also accounts for overlapping achievements. For example, a student who wins a national-level sports championship while leading a team might earn credits for both the category and level. This dual-credit approach ensures that all aspects of student contributions are acknowledged, making the system holistic and inclusive.

6.2.3 VALIDATION AND APPROVAL WORKFLOW

The validation workflow is a critical step in ensuring the credibility of the credit calculation mechanism. Once a certificate is uploaded, the system performs initial format and content checks. These checks verify the file type, size, and required metadata fields such as event name, date, and issuing authority. Certificates passing these checks are queued for manual validation by staff.

Staff members access the validation interface through their profiles, where they review uploaded certificates. This review involves cross-checking the provided information against institutional criteria and external databases if needed. Certificates that fail to meet these criteria are marked as rejected, with reasons for rejection logged and displayed to the student.

Upon approval, the system triggers the credit calculation module to update the student's credit points. Notifications are sent to the student via the interface, informing them of the validation outcome. This workflow ensures a balance between automation and human oversight, maintaining the integrity of the system.

6.2.4 DYNAMIC CREDIT CALCULATION ALGORITHM

The dynamic credit calculation algorithm is the core component of the system, handling the automated computation of credit points. Written in PHP, this algorithm fetches certificate data, matches it against predefined rules, and calculates credits in real time. The rules consider factors such as event level, category, and weightage to determine the final credit value.

To ensure scalability, the algorithm employs a modular design, enabling administrators to add or modify rules without impacting existing records. For instance, if the institution decides to introduce a new certificate category, it can be seamlessly integrated into the system. This modularity ensures that the system remains future-proof and adaptable to policy changes.

Additionally, the algorithm is optimized for performance, ensuring that credit updates occur instantaneously. Students and staff can view real-time updates on profiles, enhancing user experience. The algorithm's robustness and flexibility make it a reliable backbone for the credit calculation mechanism.

6.2.5 CREDIT HISTORY MANAGEMENT

Credit history management is an essential feature of the system, providing students with a detailed view of their credit transactions. Each transaction is logged

with details such as the certificate name, date of approval, category, and awarded credits. These records are stored in the database, accessible via the student's profile.

This feature promotes transparency, allowing students to track their progress and identify areas for improvement. Staff members also benefit from this functionality, as it enables them to generate reports and provide feedback. Administrators can use these logs to audit the system and ensure compliance with institutional policies.

Furthermore, the credit history feature supports exporting data in formats such as PDF or Excel, facilitating integration with other institutional systems. This capability simplifies processes such as generating cumulative credit reports for awards or scholarships, making the system a valuable tool for academic and administrative purposes.

6.2.6 CREDIT DASHBOARD VISUALIZATION

The credit dashboard is a comprehensive visual tool designed to provide students with a clear and intuitive representation of their credit scores, achievements, and progress in the Non-Academic Credit Calculator. It serves as a centralized hub where students can easily track their overall performance, understand their strengths, and identify areas for improvement. Using visually engaging charts and graphs, the dashboard displays critical data points such as total earned credits, category-wise distribution of credits (e.g., extracurricular activities, professional development), and contributions from specific events or activities. These dynamic visualizations allow students and staff to analyze performance trends at a glance, offering a streamlined way to assess academic and non-academic growth.

The dashboard leverages advanced JavaScript libraries like Chart.js to create interactive and responsive designs, ensuring compatibility across devices and platforms. This responsiveness allows users to interact with the dashboard seamlessly, whether on a desktop, tablet, or smartphone. Students have the ability to customize their views by applying filters based on date ranges, categories, or event levels, providing a tailored analysis that aligns with their specific goals or timeframes. For

instance, a student preparing for a scholarship application can quickly focus on credits earned in professional development activities over a specific academic year. This interactivity fosters deeper engagement by empowering users to explore and understand their data in a meaningful way.

By combining visual appeal, interactivity, and analytical capabilities, the credit dashboard becomes an integral part of the system's user experience. It not only facilitates individual progress tracking but also empowers institutions with actionable insights to enhance the overall impact of non-academic credit systems. This dual utility ensures that the dashboard serves as both a motivational tool for students and a strategic resource for administrators, driving continuous improvement and maximizing the value of the Non-Academic Credit Calculator.

6.2.7 REPORT GENERATION AND EXPORT

The report generation module allows students and staff to create comprehensive reports summarizing credit data. Students can generate personalized reports that detail their credit history, achievements, and cumulative scores. These reports are formatted for official use, such as scholarship applications or extracurricular evaluations.

Staff members can generate reports for groups of students, such as a summary of credits earned by a specific class or batch. This functionality aids in identifying high-performing students and recognizing their achievements during events or ceremonies. Administrators can also use this feature for compliance reporting or accreditation purposes.

The export functionality supports multiple formats, including PDF and Excel, ensuring compatibility with external systems. This flexibility makes the report generation module a valuable tool for documentation and analysis, enhancing the system's usability and effectiveness.

CHAPTER 7

CONCLUSION AND FUTURE ENHANCEMENT

7.1 CONCLUSION

The Non-Academic Credit Calculator system represents a significant step forward in the digitization and automation of non-academic credit allocation. By integrating functionalities such as certificate upload, validation, and credit calculation, this system addresses the need for transparency and efficiency in evaluating student achievements beyond academics. It bridges the gap between manual processes and technology-driven solutions, making it highly relevant for modern educational institutions.

The potential applications of the Non-Academic Credit Calculator extend beyond its current implementation. With continuous technological advancements, the system can be adapted to support additional functionalities like automated event registrations, inter-institutional credit transfers, and real-time reporting dashboards for administrators. As educational institutions increasingly recognize the importance of non-academic achievements in holistic development, tools like this will play a crucial role in shaping a more inclusive and comprehensive educational evaluation system.

In conclusion, the Non-Academic Credit Calculator is not just a project but a foundation for further exploration and innovation in educational technology. With sustained development and integration of emerging technologies, the system has the potential to redefine how non-academic contributions are recognized and rewarded, fostering a culture of all-around excellence in education.

7.2 FUTURE ENHANCEMENT

The Non-Academic Credit Calculator system holds immense potential for future enhancements that can elevate its functionality and usability. Advanced automation technologies, such as Artificial Intelligence (AI) and Machine Learning (ML), can be integrated to streamline certificate validation. AI-powered systems could verify uploaded certificates by recognizing patterns, extracting data, and cross-referencing it with predefined standards, significantly reducing manual verification

time and enhancing accuracy. Moreover, predictive analytics could be introduced to provide insights into students' non-academic contributions, enabling institutions to tailor developmental programs based on emerging trends and achievements.

The system could also expand its scope by incorporating multi-institutional support, enabling students to transfer non-academic credits between institutions seamlessly. A centralized database or blockchain-based solution could ensure secure and tamper-proof storage of student achievements, fostering trust and transparency. Additionally, integrating the system with existing Learning Management Systems (LMS) would provide a unified platform for academic and non-academic data management, enhancing the overall user experience for both students and staff. Incorporating mobile-friendly features and developing a dedicated mobile application could improve accessibility, allowing students and staff to interact with the system on the go. Notifications, updates on certificate approvals, and real-time credit calculations could be delivered directly to users' devices, ensuring timely communication. Furthermore, gamification elements, such as badges or rankings for non-academic contributions, could boost student engagement and motivation.

Looking ahead, the system could support diverse non-academic activities, such as internships, workshops, and volunteering programs, by creating comprehensive profiles of students' overall achievements. Integration with national or global educational credit frameworks could standardize non-academic credit allocation across institutions, benefiting students in their future endeavors. By embracing these enhancements, the Non-Academic Credit Calculator can evolve into a robust, all-encompassing platform that not only simplifies credit calculation but also inspires students to engage actively in extracurricular and non-academic activities, thereby fostering holistic

APPENDIX – 1

SOURCE CODE

awardcredits.php

```
<?php

session_start();

if (!isset($_SESSION['staff_email'])) {

    header("Location: stafflogin.php");

    exit();

}

$staff_email = $_SESSION['staff_email'];

$servername = "localhost";

$username = "root";

$password = "";

$dbname = "non_academic_credit";

$conn = new mysqli($servername, $username, $password, $dbname);

if ($conn->connect_error) {

    die("Connection failed: " . $conn->connect_error);

}

$sql = "SELECT staff_id FROM staff WHERE email = ?";

$stmt = $conn->prepare($sql);
```

```

$stmt->bind_param("s", $staff_email);

$stmt->execute();

$stmt->bind_result($staff_id);

$stmt->fetch();

$stmt->close();

$sql = "SELECT s.register_no, s.name, s.department

        FROM students s

        LEFT JOIN certificates c ON s.register_no = c.register_no

        GROUP BY s.register_no";

$result = $conn->query($sql);

if ($result->num_rows > 0) {

    $students = [];

    while ($row = $result->fetch_assoc()) {

        $students[] = [

            'name' => $row['name'],

            'register_no' => $row['register_no'],

            'department' => $row['department']

        ];

    }
}

```

```

} else {

    $students = [];

}

$conn->close();

return [

    'staff_id' => $staff_id,

    'students' => $students

];

?>

```

Viewstudentcredits.php

```

<?php

session_start()

if (!isset($_SESSION['staff_email'])) {

    header("Location: stafflogin.php");

    exit();

}

$staff_email = $_SESSION['staff_email'];

$servername = "localhost";

$username = "root";

```

```

$password = "";

$dbname = "non_academic_credit";

$conn = new mysqli($servername, $username, $password, $dbname);

if ($conn->connect_error) {

    die("Connection failed: " . $conn->connect_error);

}

$sql = "SELECT staff_id FROM staff WHERE email = ?";

$stmt = $conn->prepare($sql);

$stmt->bind_param("s", $staff_email);

$stmt->execute();

$stmt->store_result();

$stmt->bind_result($staff_id);

$stmt->fetch();

$stmt->close();

$sql = "SELECT

    students.name AS student_name,

    students.department AS student_department,

    students.year AS student_year,

    students.section AS student_section,

```

```

        students.register_no AS student_register_no,

        SUM(certificates.credits_awarded) AS total_credits

FROM students

LEFT JOIN certificates ON students.register_no = certificates.register_no

GROUP BY students.register_no";

$result = $conn->query($sql);

?>

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>View Student Credits</title>

    <style>

        body {

            font-family: Arial, sans-serif;

            background-color: lightblue;

            padding: 20px;

        }

```



```
table {  
  
    width: 100%;  
  
    border-collapse: collapse;  
  
    margin-bottom: 20px;  
  
}  
  
th, td {  
  
    border: 1px solid #ddd;  
  
    padding: 8px;  
  
    text-align: left;  
  
}  
  
th {  
  
    background-color: #f2f2f2;  
  
}  
  
td {  
  
    text-align: center;  
  
}  
  
.container {  
  
    max-width: 1000px;  
  
    margin: auto;
```

```
background-color: white;

padding: 20px;

border-radius: 10px;

box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);

}

button {

background-color: #4CAF50;

color: white;

border: none;

padding: 10px 20px;

font-size: 16px;

border-radius: 5px;

cursor: pointer;

}

button:hover {

background-color: #45a049;

}

</style>

</head>
```

```
<body>
```

```
<div class="container">
```

```
<h2>Student Credits Overview</h2>
```

```
<table>
```

```
<thead>
```

```
<tr>
```

```
<th>S.No</th>
```

```
<th>Student Name</th>
```

```
<th>Department</th>
```

```
<th>Year</th>
```

```
<th>Section</th>
```

```
<th>Register No</th>
```

```
<th>Total Credits Awarded</th>
```

```
</tr>
```

```
</thead>
```

```
<tbody>
```

```
<?php
```

```
if ($result->num_rows > 0) {
```

```
    $sno = 1;
```

```

while ($row = $result->fetch_assoc()) {

    $total_credits = $row['total_credits'] ?? 0;

    echo "<tr>

        <td>{ $sno}</td>

        <td>" . htmlspecialchars($row['student_name']) . "</td>

        <td>" . htmlspecialchars($row['student_department']) . "</td>

        <td>" . htmlspecialchars($row['student_year']) . "</td>

        <td>" . htmlspecialchars($row['student_section']) . "</td>

        <td>" . htmlspecialchars($row['student_register_no']) . "</td>

        <td>" . htmlspecialchars($total_credits) . "</td>

    </tr>";

    $sno++;

}

} else {

    echo "<tr><td colspan='7'>No students found</td></tr>";

}

?>

</tbody>

</table>

```

```
<button onclick="window.location.href='staffprofile.php'">Back to Staff
```

```
Profile</button>
```

```
</div>
```

```
</body>
```

```
</html>
```

```
<?php
```

```
$conn->close();
```

```
?>
```

APPENDIX – 2

SCREENSHOTS

Sample Output

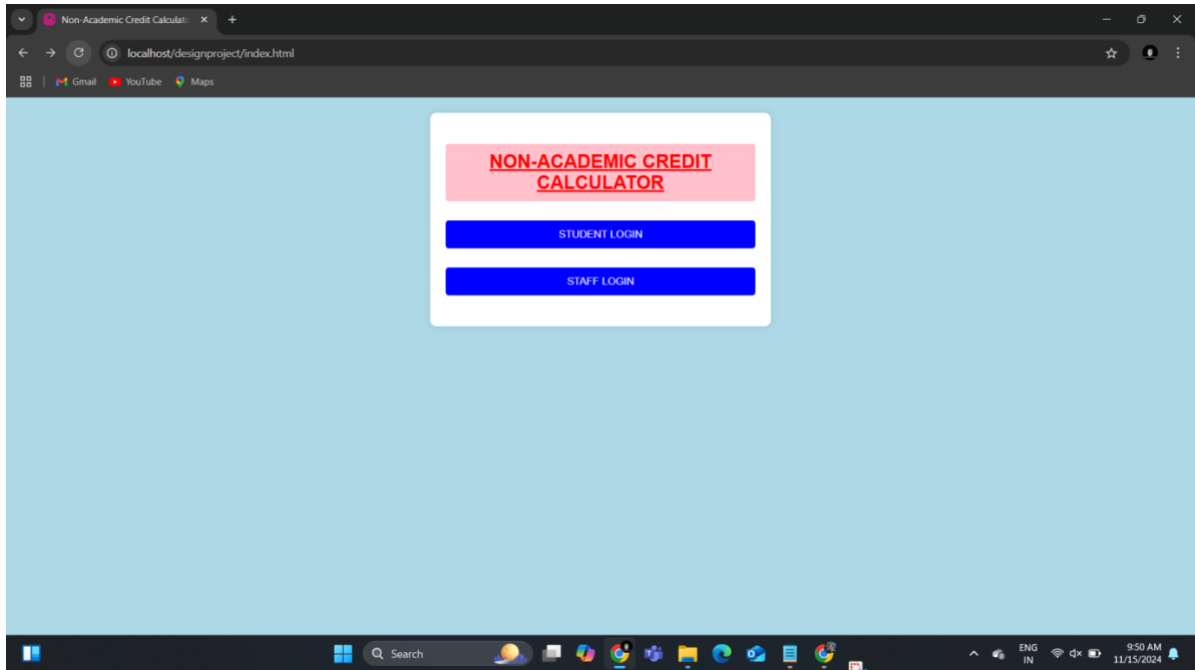


Figure 2.1: Login

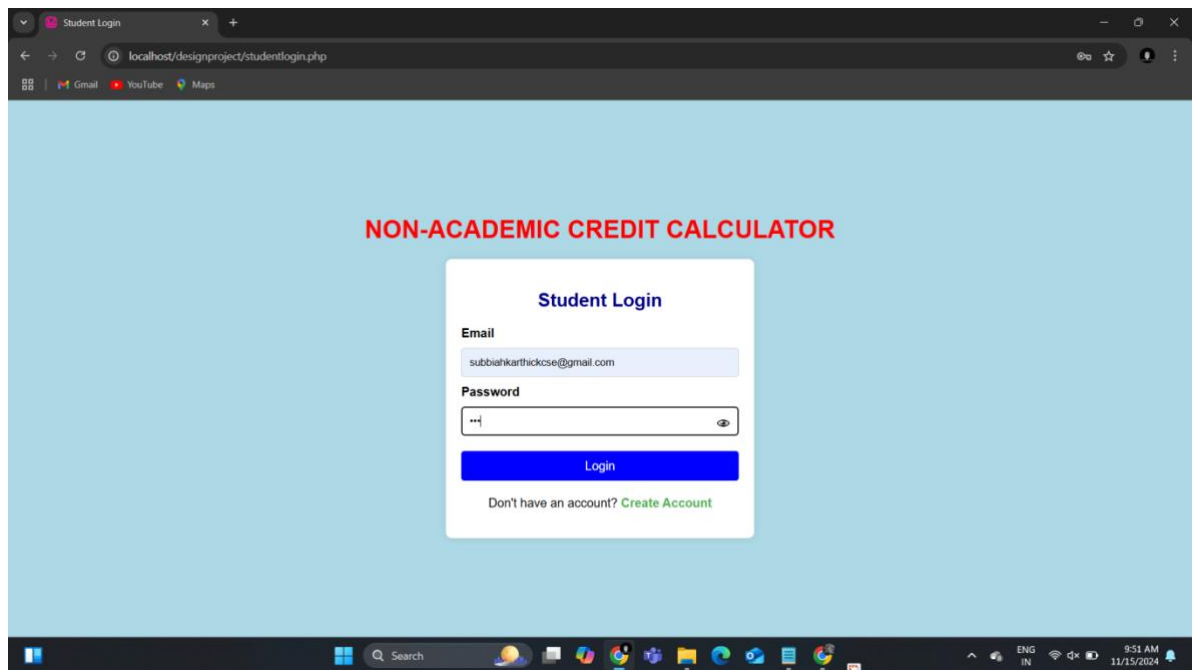


Figure 2.2: Student Login

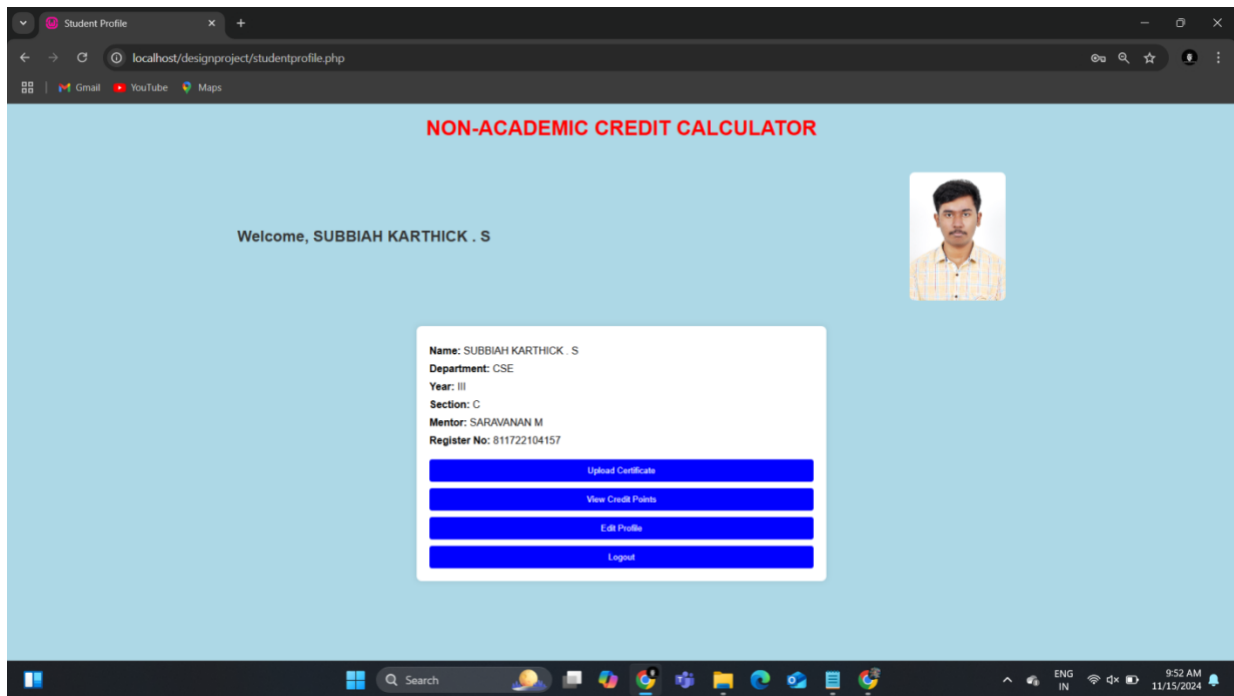


Figure 2.3: Student Profile

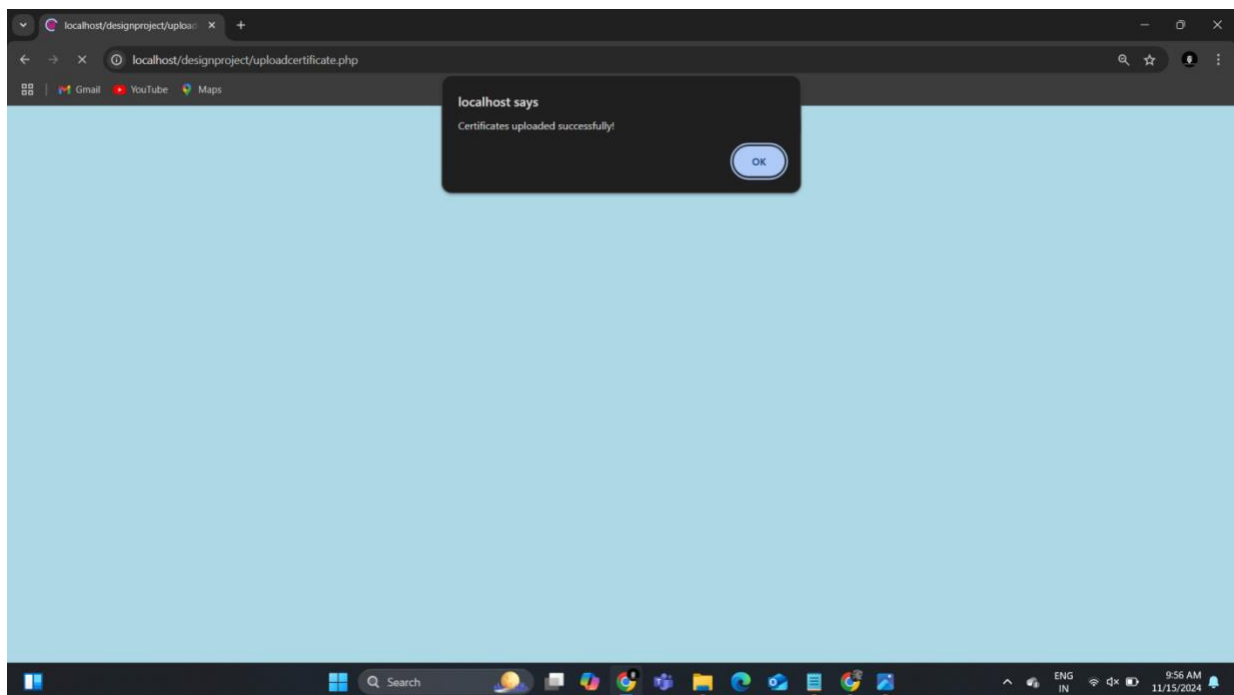


Figure 2.4: Certificate Uploaded

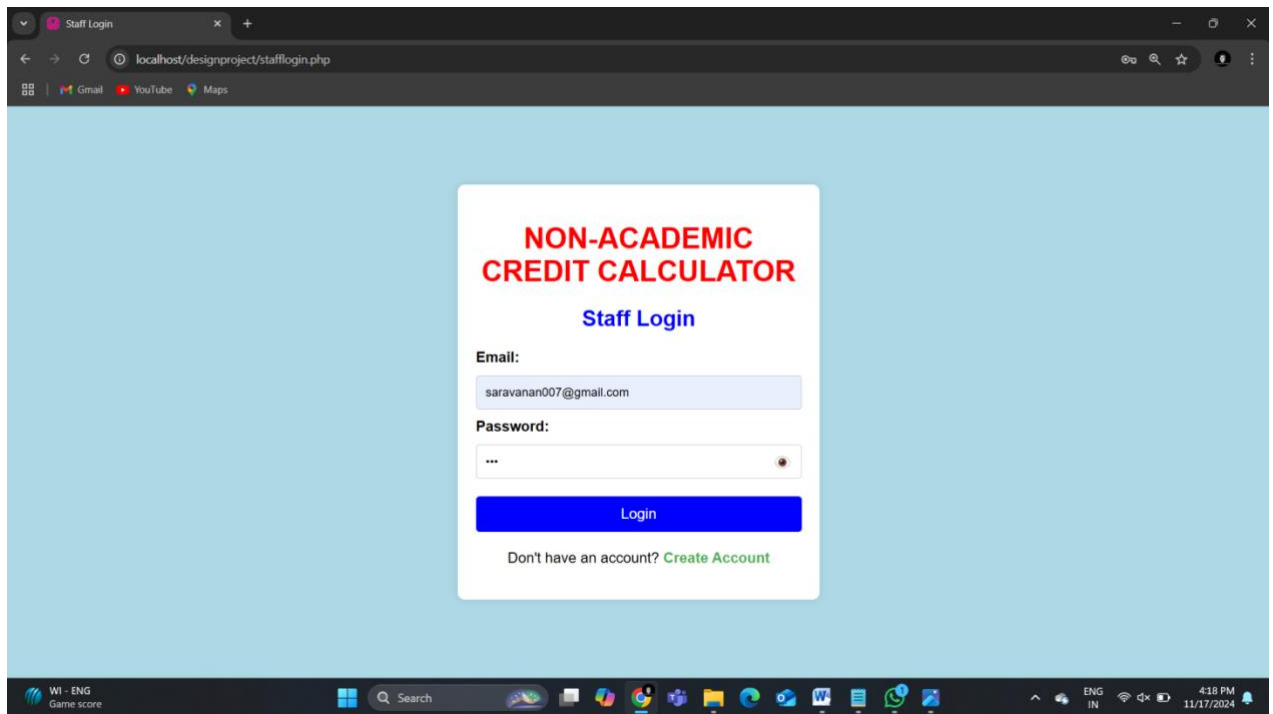


Figure 2.5: Staff Login

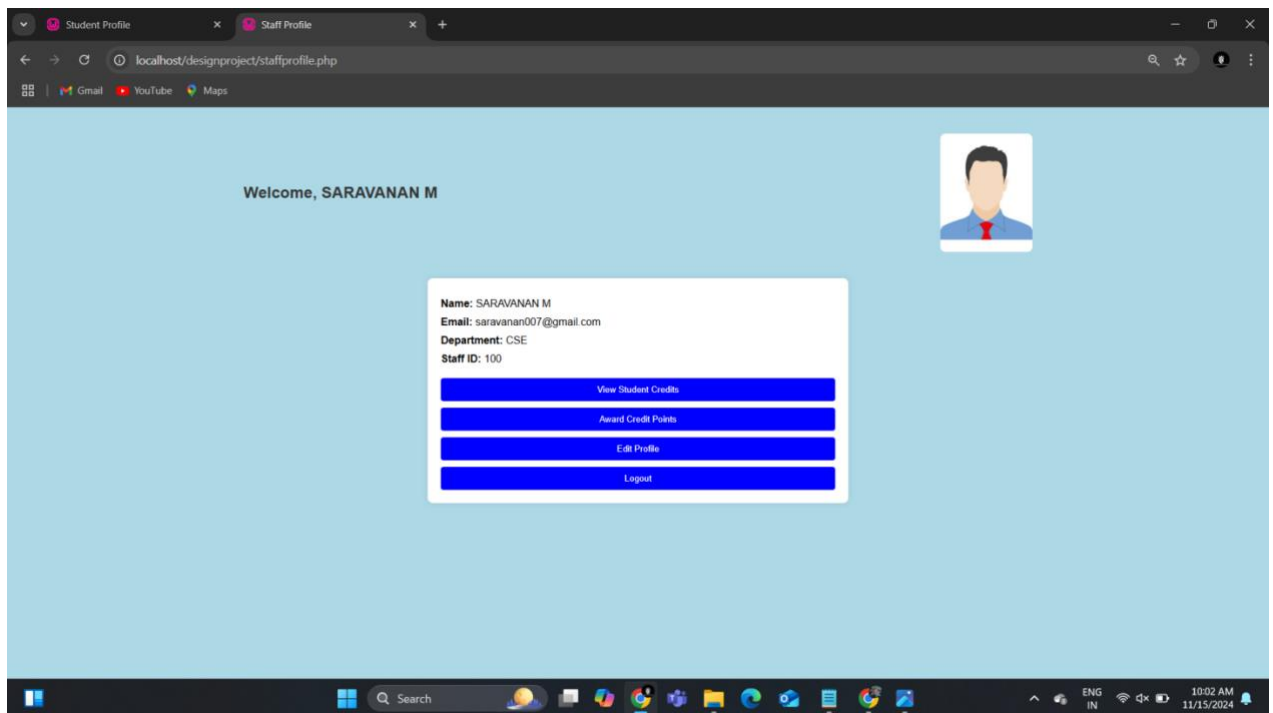


Figure 2.6: Staff Profile

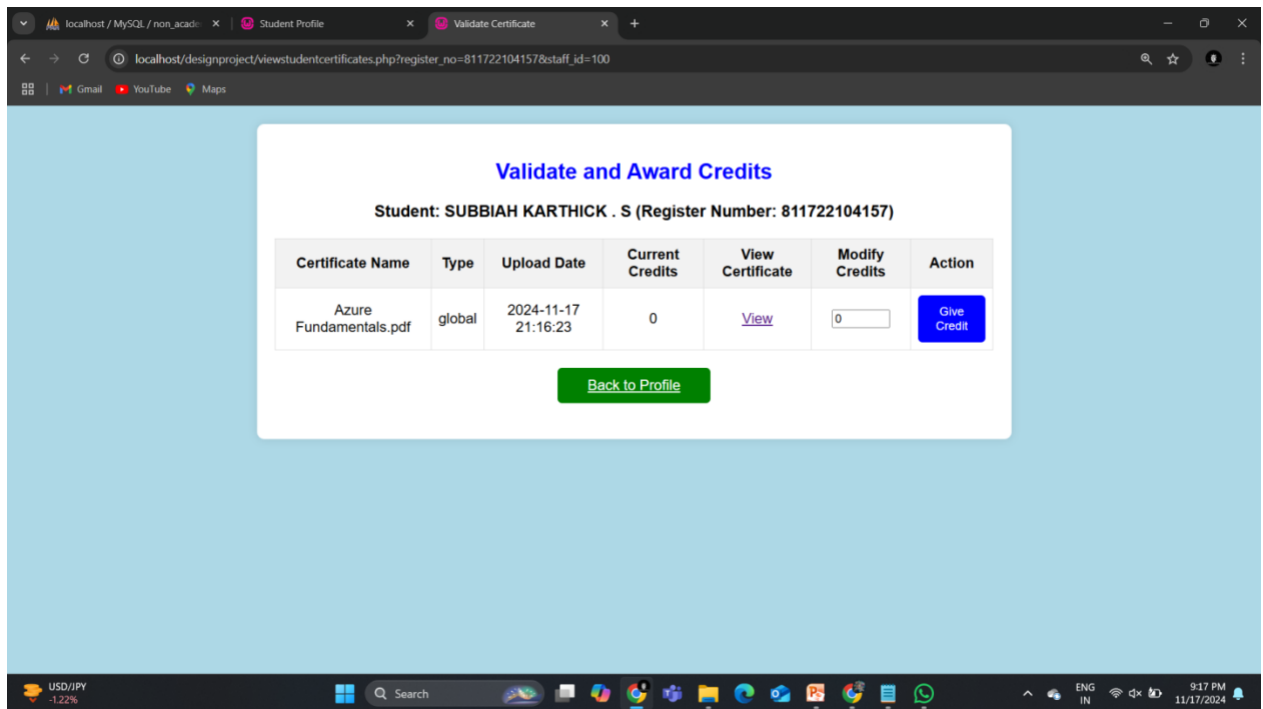


Fig 2.7: Validate Certificate

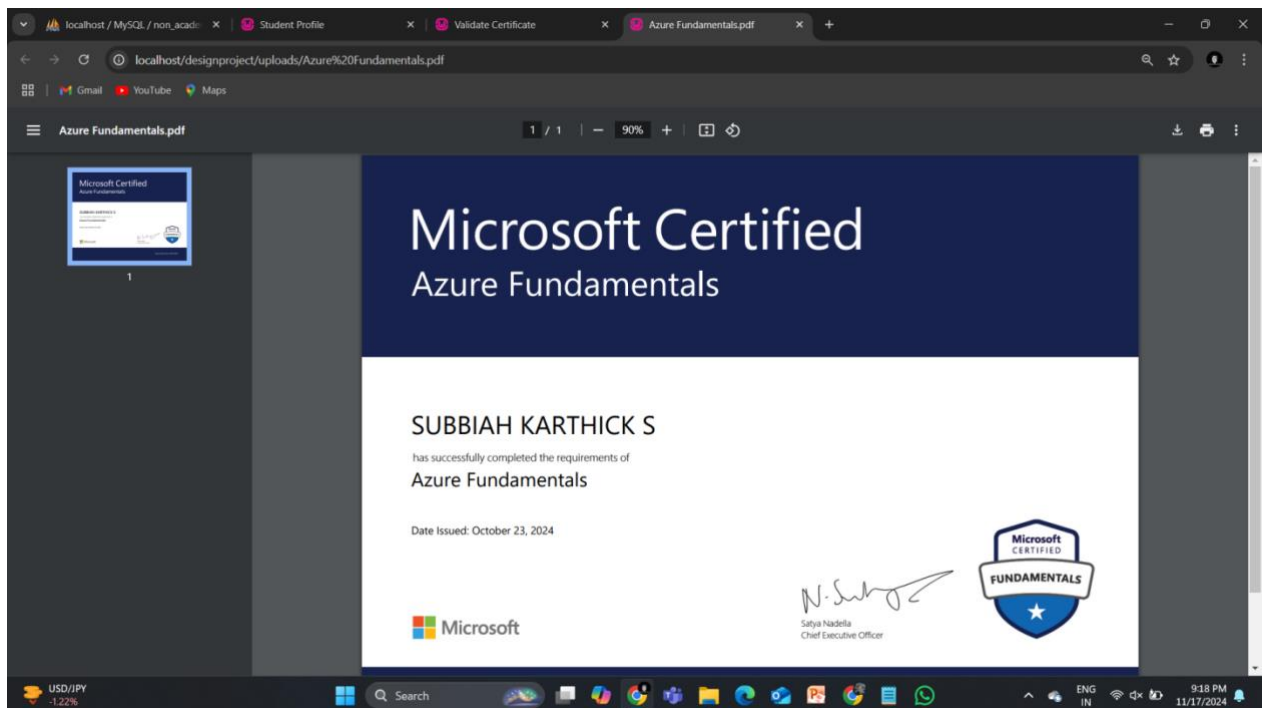


Fig 2.8: Viewing and Verifying Certificate

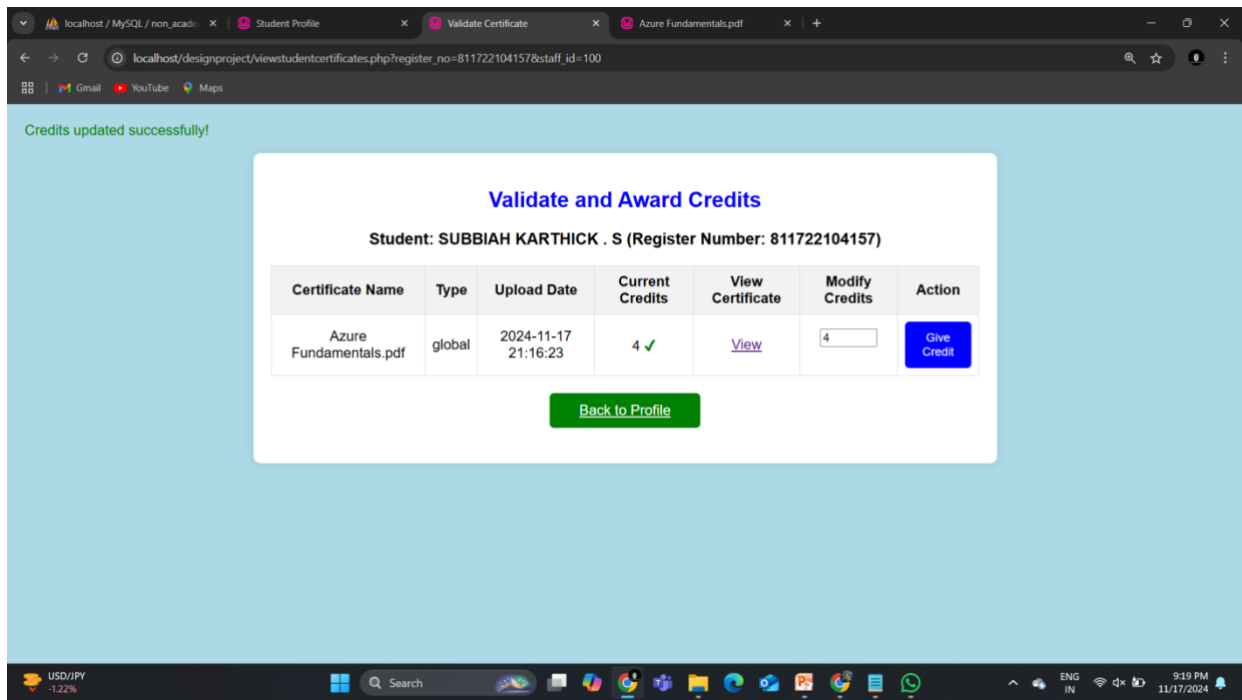


Fig 2.9: Credits Awarded

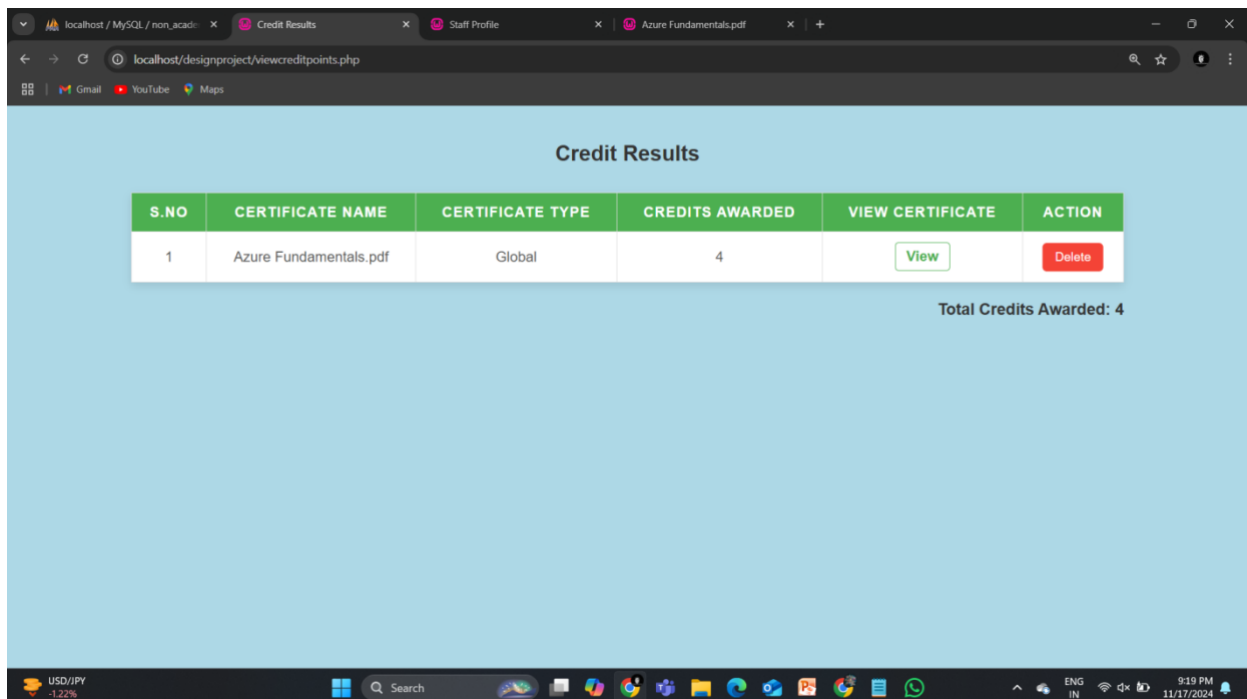


Fig 2.10: Received Credits

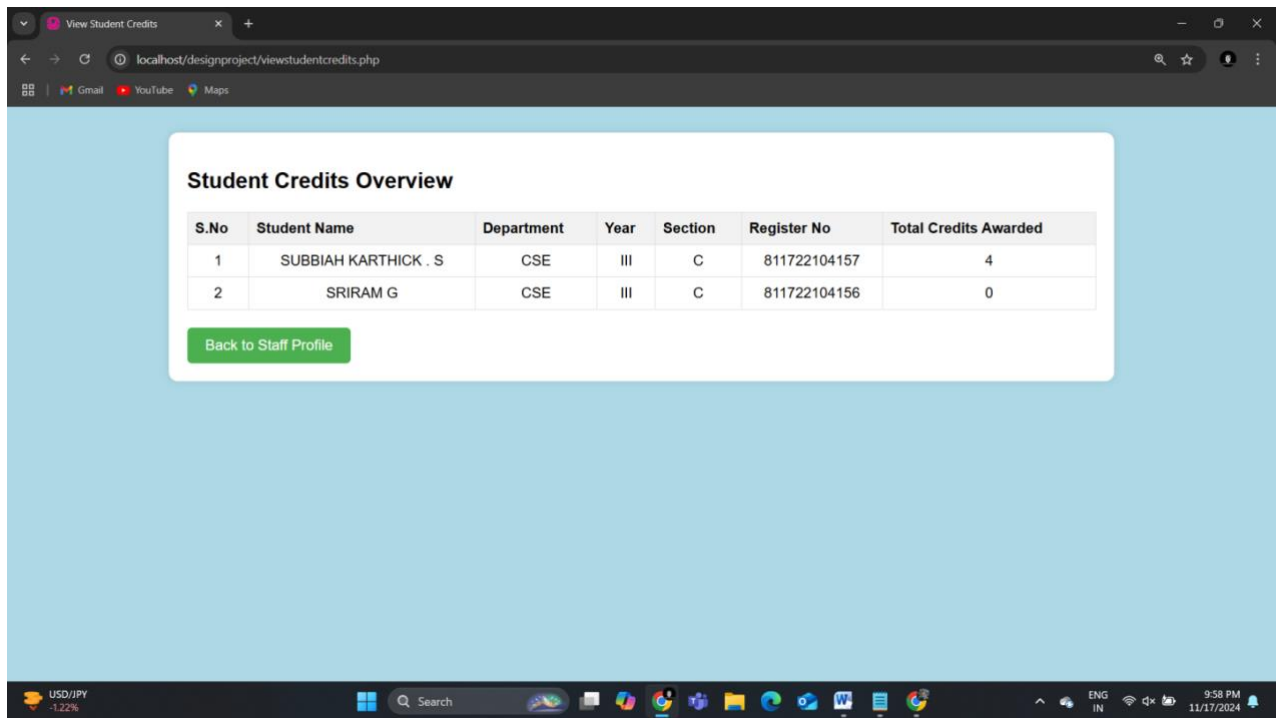


Fig 2.11: Student Credits Overview

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