DESIGN AND IMPLEMENTATION OF A CGPA/GPA CALCULATOR

BY

EDERIBHALO PRINCEWILL

PSC2008131

DEPARTMENT OF COMPUTER SCIENCE,
FACULTY OF PHYSICAL SCIENCE,
UNIVERSITY OF BENIN,
BENIN CITY,
EDO STATE, NIGERIA.

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A PROJECT REPORT SUBMITTED TO THE DEPARTMENT OF COMPUTER SCIENCE, FAUCULTY OF PHYSICAL SCIENCES, UNIVERSITY OF BENIN, BENIN CITY.

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CERITIFICATION

This is to certify that this project work was carried out by **EDERIBHALO PRINCEWILL** with Matriculation Number **PSC2008131** under my supervision. It is adequate and satisfactory, both in scope and content, for the award of Bachelor of Science (B.Sc) Degree in Computer Science of the University of Benin

PROF. (MRS) F. EGBOKHARE
Project Supervisor

DATE

APPROVAL

This project work is hereby approved in partial fulfilment of the requirements for the award of Bachelor of Science (B.Sc) Degree in Computer Science from the University of Benin.

PROF. (MRS) F. EGBOKHARE	**DATE**
Project Supervisor	

DEDICATION

This project is dedicated to God Almight for giving an avenue, wisdom and strength to see it through until its completion including my stay throughout in the University of Benin (UNIBEN). It is also dedicated to my parents Mr. and Mrs. Kingsley Ederibhalo for their support throughout my academic journey.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

The Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) are integral metrics in higher education, serving as standardized indicators of a student's academic performance. These measures are pivotal in evaluating academic progress, determining eligibility for scholarships, honors, and graduation, and influencing decisions in both academic and extracurricular contexts. At the University of Benin, as in many other institutions, GPAs and CGPAs are central to academic assessments and decision-making processes.

GPA represents the average performance of a student in a single term or semester, calculated by dividing the total grade points earned by the total credit hours attempted in that period. In contrast, CGPA provides a cumulative assessment, encompassing all completed semesters or terms, thereby offering a comprehensive overview of a student's academic trajectory. This distinction is crucial, as CGPA reflects sustained academic effort and consistency over time, which is often a determinant in graduation qualifications and eligibility for advanced educational opportunities (University of Nottingham, 2024).

The significance of GPA and CGPA extends beyond academic evaluations; they are instrumental in shaping a student's future prospects. Universities and colleges frequently consider these metrics during admissions processes for advanced studies, with a strong CGPA enhancing a candidate's likelihood of acceptance into competitive programs. Moreover, many scholarship programs stipulate minimum GPA or CGPA requirements as part of their eligibility criteria, underscoring the importance of maintaining high academic standards. Employers, too, often review these averages to gauge a candidate's diligence, consistency, and mastery of their field of study, making GPA and CGPA influential in job and internship opportunities (Internshala Trainings, 2025).

Despite their importance, the traditional manual calculation of GPA and CGPA is fraught with challenges. This process is not only time-consuming but also susceptible to human errors, which can lead to inaccuracies in academic records. Such inaccuracies may have significant repercussions, potentially affecting a student's academic standing, eligibility for scholarships, or even their ability to graduate. The manual method requires meticulous entry and computation of data, a task that becomes increasingly cumbersome with larger student populations and diverse course structures. These challenges highlight the inefficiencies inherent in manual calculations and the pressing need for more reliable solutions (CalculatorApp, 2025).

In response to these challenges, the implementation of automated GPA and CGPA calculators has emerged as a viable solution. These digital tools streamline the calculation process, significantly reducing the time and effort required to compute academic averages. By automating data entry and computation, they minimize the risk of errors, ensuring that students and academic staff have access to accurate and up-to-date information. Automated systems can handle complex datasets efficiently, accommodating various grading scales and credit systems, which is particularly beneficial in institutions with diverse academic offerings. Furthermore, they provide immediate feedback, allowing students to monitor their academic performance in real-time and make informed decisions about their studies (Calculator Station, 2025).

The University of Benin, recognizing the critical role of accurate and efficient GPA and CGPA computations, stands to benefit from adopting such automated systems. By transitioning from manual to automated calculations, the university can enhance the accuracy of academic records, reduce administrative burdens, and improve the overall educational experience for both students and faculty. This shift not only aligns with global best practices but also positions the university to better support its students in achieving their academic and professional goals.

1.2 Statement of the Study

This study aims to create a GPA and CGPA calculator that accurately computes a student's academic performance based on the courses taken and the grades earned. The project seeks to address the inefficiencies and mistakes that come with manually computing GPA and CGPA by using automation to provide a reliable and easy-to-use system. By implementing an automated

calculator, the study aims to eliminate common human errors, increase efficiency, and provide students with real-time access to their academic progress.

The proposed system will be designed to match the grading system used at the University of Benin, ensuring that calculations follow the school's rules. Students will be able to input their course details, including credit hours and grades, and instantly see their GPA for the semester as well as their overall CGPA over multiple semesters. This automation will not only save time but also allow students to make informed academic decisions based on accurate and up-to-date performance metrics.

In addition to improving accuracy, the system will be accessible by offering a digital platform that students can use from any device with an internet connection. The user interface will be designed to be simple and easy to use, ensuring that students with varying levels of technical skills can easily navigate and use the tool. The study will also explore adding features such as progress tracking, statistical insights, and graphical representations of academic performance to provide a comprehensive overview of a student's achievements.

Furthermore, this study recognizes the challenges associated with implementing automated academic systems, including data security, system integration, and resistance to technological change. To address these challenges, the research will investigate best practices in data protection, usability, and institutional adoption strategies. The system will include security measures to protect student data and ensure the accuracy of academic records. Additionally, there will be provisions for periodic system updates to align with any changes in the university’s grading policies.

Ultimately, this study aims to contribute to the digital transformation of academic management in Nigerian universities by providing a scalable, efficient, and accurate solution for GPA and CGPA computation. By reducing administrative workload, improving accuracy, and increasing accessibility, the system has the potential to enhance the overall academic experience for students and institutions alike.

1.3 Aim and Objectives

Aim:

The aim of this study is to develop a functional GPA and CGPA calculator that automates the process of calculating and displaying a student's GPA and CGPA, thereby enhancing the academic management system at the University of Benin.

Objectives:

i. To design and implement a system that outputs student CGPA
ii. The system will provides accurate results and feedback.
iii. To implement an interface that can be effectively used by both students and staff.

1.4 Scope of the Study

This study is focused on developing a GPA and CGPA calculator specifically for the University of Benin. The system will cater primarily to undergraduate students enrolled in various academic programs. The study will not address postgraduate programs or other institutions.

1.5 Significance of the Study

This study holds significant value for both students and academic staff. For students, it offers an efficient way to track academic performance, enabling them to make informed decisions regarding their studies. Academic staff will benefit from the automation of GPA and CGPA calculations, which will reduce their administrative workload. Implementing this tool will promote transparency, accuracy, and consistency in grade computation.

1.6 Limitations of the Study

While the study aims to encompass all undergraduate courses at the University of Benin, there may be limitations in integrating the system with existing academic systems at the university. Moreover, the system will be designed to accommodate only the specific grading scale used at the university, which may restrict its applicability to other institutions.

1.7 Methodology

The methodology for this study involves employing software development techniques, including requirement gathering, system design, implementation, and testing. Data will be collected from students, and a prototype of the GPA and CGPA calculator will be developed using programming languages and tools such as React.js, Material UI, TailwindCSS and other libraries. The system will undergo testing with academic data to ensure it meets the desired functionality and performance standards.

1.8 Conceptual Clarification

The following terms are central to the study:

- GPA (Grade Point Average): A numerical representation of a student's average performance in courses taken during a semester.
- CGPA (Cumulative Grade Point Average): The weighted average of a student's GPA across their entire academic program.
- Grading Scale: A system used to convert raw grades (e.g., marks or percentage scores) into GPA and CGPA values.

1.9 Theoretical Model

The theoretical model of this study is based on the concept of weighted averages. The GPA is calculated by multiplying the grade points of each course by the number of credit hours, summing these results, and then dividing by the total number of credit hours taken. The CGPA is calculated similarly but includes all courses taken throughout the student's academic career.

Summary

This chapter introduced the concepts of GPA and CGPA as essential metrics of academic performance at the University of Benin. The study aims to design and implement an automated GPA and CGPA calculator to improve the accuracy and efficiency of grade computation. Subsequent chapters will focus on system design, implementation, and testing, with the goal of creating a reliable and user-friendly tool for the university.

CHAPTER TWO

LITERATURE REVIEW

INTRODUCTION

Academic performance evaluation is a fundamental aspect of higher education, influencing student progression, scholarship eligibility, and graduation outcomes. One of the most widely used methods for assessing academic performance is the Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA). These metrics provide a standardized approach to measuring student achievement over a semester or an entire academic program. This chapter reviews the importance of GPA and CGPA, the challenges associated with manual calculations, the need for automation, and the comparative analysis of different systems used in various institutions.

2.2 Overview of GPA and CGPA in Academic Performance

The Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) are widely recognized as essential indicators of academic performance in higher education institutions. They serve as standardized measures for evaluating students' academic progress, determining eligibility for scholarships, class rankings, and graduation honors (Omodan & Ige, 2021). The calculation of GPA and CGPA involves a weighted averaging system based on credit units assigned to courses, making accuracy crucial in determining a student's academic standing (Adebayo et al., 2020).

Traditionally, students and academic staff rely on manual methods for GPA and CGPA computation, which are often prone to human errors and inconsistencies (Ezenwoke & Osang, 2018). The process can be time-consuming, especially when handling multiple courses and semesters. The increasing reliance on technology in education has led to the development of automated tools to enhance efficiency and accuracy in grade computation (Adepoju & Jimoh,

2019). These systems not only reduce errors but also provide students with real-time academic performance tracking, enabling informed academic decision-making.

Various institutions have implemented online portals and mobile applications that facilitate GPA calculations, integrating student records for automated computation (Abubakar & Bello, 2022). However, many of these systems are either institution-specific or lack flexibility in accommodating different grading scales. At the University of Benin, students currently calculate their GPA and CGPA manually or use generic calculators that may not align with the institution's grading system, leading to potential miscalculations.

This study aims to bridge this gap by developing an automated GPA and CGPA calculator tailored specifically for the University of Benin. The proposed system will enhance accuracy, eliminate manual errors, and provide a seamless experience for students and academic staff. By leveraging modern web technologies, the system will ensure ease of use, accessibility, and real-time computation of academic performance.

2.2.1 Role of GPA and CGPA in Academic Evaluation

GPA and CGPA serve as standardized measures used to evaluate students' academic performance in higher education institutions. They are essential for tracking progress, determining academic standing, and assessing eligibility for honors, scholarships, and academic recognition. A student's GPA reflects their performance in a single semester, while the CGPA provides a cumulative measure of performance across multiple semesters.

In the University of Benin, GPA and CGPA play a crucial role in academic decision-making, influencing progression to the next academic level, eligibility for competitive programs, and qualification for academic awards. Institutions and employers often rely on these metrics to assess the competence and intellectual capacity of graduates. As a result, an accurate and efficient method of GPA and CGPA calculation is necessary to ensure fairness and transparency in academic assessments.

2.2.2 Challenges of Manual GPA and CGPA Calculation

A study by Adegboye et al. (2021) highlights the inefficiencies and inaccuracies associated with manual GPA and CGPA calculation methods, emphasizing the need for automated solutions.

Universities that rely on traditional grading computation face several challenges that affect the accuracy and efficiency of academic performance tracking. Some of these challenges include:

- **Human Error in Calculations** – Manual computation of GPA and CGPA often leads to errors in data entry, incorrect summation of grade points, or misapplication of grading scales. A study by Obi & Akinyemi (2019) found that students frequently make mistakes in credit unit multiplication and grade point summation, leading to inaccurate academic performance records.

- **Time-Consuming and Inefficient Process** – The traditional GPA calculation process is labor-intensive, requiring students or administrators to manually look up grade points, perform multiple computations, and verify the results. According to Ogunleye & Musa (2021), the manual approach delays result processing and increases administrative workload, particularly in large institutions with thousands of students.

- **Difficulty in Handling Large Data Sets** – In universities with a high student population, manually managing GPA and CGPA calculations for multiple semesters becomes overwhelming. Academic staff often struggle with keeping accurate records, leading to inconsistencies in student transcripts (Chukwuma et al., 2022).

- **Lack of Transparency and Verification** – Manual systems make it difficult for students to verify their grades promptly, as they must depend on printed records or administrative offices to review discrepancies. Ibrahim et al. (2018) argue that this lack of transparency can lead to grade disputes and delays in resolving academic performance issues.

- **Risk of Data Loss and Misplacement** – Traditional GPA and CGPA records are often stored in physical formats or scattered across various administrative units. This makes them susceptible to loss, damage, or misplacement, leading to difficulties in retrieving past academic records (Adegboye et al., 2021).

- **Inconsistencies in Grading Scale Application** – Different departments may apply grading scales differently, leading to inconsistencies in GPA and CGPA computations. In

some cases, discrepancies arise due to variations in grade interpretations across faculties (Ogunleye & Musa, 2021).

- **Limited Accessibility and Real-Time Updates** – Students often need to visit administrative offices to obtain their GPA and CGPA records, which is inconvenient and time-consuming. Web-based automated systems, on the other hand, provide instant access and real-time updates, addressing this issue (Chukwuma et al., 2022).

- **Resistance to Technological Adoption** – Some institutions and students may resist the shift from manual to automated GPA calculators due to concerns over the accuracy of digital systems, lack of familiarity with technology, or fear of system malfunctions (Ibrahim et al., 2018). However, as digital literacy improves, these challenges can be mitigated through proper training and awareness campaigns.

2.2.3 Need for Automation

The automation of GPA and CGPA calculation is essential for improving efficiency, accuracy, and transparency in academic management. Automated systems significantly reduce the risk of computational errors and minimize the administrative workload for academic staff (Agina-Obu & Okwu, 2023). These systems enable instant calculations, allowing students to access their academic performance metrics without delays.

Modern academic institutions are increasingly adopting automated GPA and CGPA calculators as part of their student information systems. These tools not only streamline the calculation process but also enhance the overall student experience by providing real-time updates on academic progress (Adebamgbola & Adebamgbola, 2017). The integration of such systems into institutional databases further ensures seamless record-keeping and easy retrieval of academic data.

2.3 Traditional GPA and CGPA Calculation Systems

Traditional GPA and CGPA calculation systems have been widely used in academic institutions for decades, relying on manual methods to determine students' academic performance. These systems typically involve the use of paper records, spreadsheets, or simple calculators, where students' grades are recorded, converted into grade points, and averaged to compute their GPA

and CGPA. In many institutions, faculty members and administrative staff are responsible for computing and verifying students' grades, ensuring that the correct weightings are applied based on credit units (Ibrahim et al., 2018).

The calculation process generally involves summing up the weighted grade points for all courses taken in a semester and dividing the total by the sum of the credit units to obtain the GPA. The CGPA is then derived by averaging the GPA across multiple semesters. While this method has been effective in tracking academic performance, it is labor-intensive and prone to errors, particularly in institutions with large student populations (Ogunbodede & Oribhabor, 2022).

Although traditional GPA and CGPA calculation systems have served as the foundation for academic grading, their limitations have prompted the need for automation and digital transformation in academic management. The transition from manual to automated systems is driven by the need for increased accuracy, efficiency, and real-time accessibility to academic records (Unegbu & Otuza, 2015).

2.3.1 Overview of Traditional Systems

Traditional GPA and CGPA calculation methods rely on manual computations using spreadsheets, paper-based records, or simple calculators. Academic institutions that have not fully adopted digital solutions often use these conventional approaches, which require students and administrators to manually input scores, compute grade points, and aggregate results to determine GPA and CGPA.

2.3.2 Advantages of Traditional Systems

Despite their limitations, traditional systems have some advantages. They are cost-effective, as they do not require the acquisition of specialized software or IT infrastructure. Additionally, many academic staff and students are familiar with these methods, reducing the need for training or system adaptation. The simplicity of manual calculations makes them accessible to institutions with limited technological resources.

2.3.3 Disadvantages and Limitations of Traditional Systems

Traditional systems have several drawbacks that impact their effectiveness. They are prone to human error, which can result in miscalculations and incorrect GPA or CGPA values. These

errors can have serious implications for students' academic records and future opportunities. Moreover, the manual process is time-consuming, particularly when dealing with large datasets, making it inefficient for academic institutions with thousands of students.

Another limitation is the lack of scalability. Traditional systems are not well-suited for handling complex grading structures or accommodating multiple academic programs. Additionally, they do not support real-time updates or instant retrieval of results, requiring students to wait for manual processing before receiving their GPA or CGPA scores.

2.4 Modern GPA and CGPA Calculation Systems

Modern GPA and CGPA calculation systems represent a significant advancement over traditional manual methods, leveraging technology to automate and streamline the process of academic performance evaluation. These systems are designed to enhance accuracy, efficiency, and accessibility, providing students and academic institutions with reliable tools for calculating and tracking academic performance. This section provides an overview of modern systems, their advantages, and their limitations.

2.4.1 Overview of Modern Systems

To overcome the inefficiencies of manual GPA and CGPA computations, modern academic management systems leverage technology to automate the process. These systems enhance accuracy, eliminate calculation errors, and provide real-time results for students and academic staff. A variety of tools and platforms have been developed to streamline grade computations, each offering unique benefits depending on institutional requirements and implementation environments.

Some of the key modern approaches to GPA and CGPA calculation include:

- **Spreadsheet-Based Calculators** – Many institutions use Microsoft Excel or Google Sheets with pre-programmed formulas to compute GPA and CGPA. While these spreadsheets automate calculations, they still require manual data entry, which can lead to errors and inconsistencies (Smith & Johnson, 2019).

- **University Management Systems (UMS)** – Many universities integrate GPA and CGPA calculators into their student portals, allowing students to view real-time updates on their academic performance. These systems pull data directly from course records, minimizing human error and ensuring accuracy (Ogunleye et al., 2021).

- **Web-Based GPA Calculators** – Standalone online tools allow students to input their course grades and credit hours to generate GPA and CGPA results instantly. These calculators are widely accessible and user-friendly but may lack integration with official university records (Adams & Thomas, 2020).

- **Mobile Applications** – Several mobile apps have been developed for GPA and CGPA calculations, offering students a convenient way to track their academic progress on their smartphones. These apps often include additional features such as grade prediction and performance analytics (Kumar et al., 2022).

- **AI-Powered Academic Assistants** – Some modern systems use artificial intelligence to analyze student performance trends and provide insights beyond basic GPA calculations. These AI-driven tools help students set academic goals, identify weak areas, and receive personalized study recommendations (Chen & Liu, 2023).

By integrating these technologies, modern GPA and CGPA calculation systems significantly improve efficiency, accuracy, and accessibility, making academic performance tracking more reliable for students and educational institutions.

2.4.2 Advantages of Modern Systems

One of the key advantages of modern systems is their accuracy and efficiency. Automated calculations eliminate the risk of human error and provide instant results, enabling students to monitor their academic progress in real time. User-friendly interfaces make these systems accessible, allowing students to input their course grades and receive instant feedback on their GPA and CGPA.

Additionally, modern systems offer flexibility, as they can accommodate multiple grading scales and diverse academic programs. Many of these platforms integrate with institutional databases,

ensuring seamless data retrieval and real-time updates. This integration also enables institutions to generate comprehensive reports and analytics for decision-making.

2.4.3 Disadvantages and Limitations of Modern Systems

Despite their benefits, modern GPA and CGPA calculation systems have some challenges. The cost of development and maintenance can be high, making it difficult for institutions with limited budgets to implement these systems. Some automated systems also require robust IT infrastructure and technical expertise, which may not be readily available in all academic institutions.

Another limitation is accessibility. Not all students have access to the necessary technology, such as personal computers or stable internet connections, which can hinder their ability to use digital GPA and CGPA calculators effectively. Dependence on technology also means that system failures or network disruptions can delay access to academic records.

2.5 Comparative Analysis of GPA and CGPA Systems Across Institutions

Comparing the GPA (Grade Point Average) and CGPA (Cumulative Grade Point Average) systems across different institutions can shed light on the diverse approaches to academic performance evaluation globally. This analysis examines how developed countries and developing countries manage these systems and offers insights for institutions like the University of Benin to enhance their academic management practices.

2.5.1 Developed Countries

In developed countries, higher education institutions often implement sophisticated academic management systems equipped with automated GPA and CGPA calculators. These systems benefit from strong IT infrastructure and skilled technical support, ensuring smooth and accurate automation of academic record-keeping (Academia ERP, 2025). For example, universities in the United States, United Kingdom, and Australia utilize advanced software that integrates seamlessly with student information systems, allowing for real-time updates and accurate calculations of academic performance (upGrad, 2024). This technological advancement not only improves the accuracy of academic records but also provides students with immediate access to

their GPA and CGPA, enabling them to make informed decisions about their academic progress (upGrad, 2024).

2.5.2 Developing Countries

In contrast, universities in developing countries, such as Nigeria, face significant challenges in adopting automated GPA and CGPA systems due to limited resources and technological constraints (TechRound, 2025). Many institutions still rely on manual methods for calculating academic performance, which can be labor-intensive and prone to errors (TechRound, 2025). The transition to automated systems is often hampered by financial and infrastructural limitations, such as unreliable internet connectivity and inadequate data centers (TechRound, 2025). These challenges can lead to inefficiencies and inaccuracies in academic record-keeping, affecting the overall student experience and institutional effectiveness (TechRound, 2025).

2.5.3 Lessons for the University of Benin

The University of Benin can learn from the successful implementation of GPA and CGPA systems in developed countries while addressing local challenges (TechRound, 2025). By adopting cost-effective and scalable solutions, the university can enhance its academic management practices and provide students with a more efficient means of tracking their academic performance (TechRound, 2025). Implementing an automated GPA and CGPA calculator can streamline administrative processes, reduce the risk of errors, and improve the accuracy of academic records (TechRound, 2025). Additionally, the University of Benin can seek partnerships with international organizations and technology providers to overcome financial and infrastructural barriers, ensuring a smooth transition to automated systems (TechRound, 2025).

2.6 Theoretical Framework

The calculation of GPA and CGPA is based on the weighted average concept. GPA is determined by multiplying the grade points of each course by the corresponding credit hours, summing these values, and dividing by the total credit hours. CGPA represents the cumulative average of all GPAs earned throughout a student's academic program. The proposed automated system will implement this theoretical model to ensure precise and reliable results while accommodating the grading scale used at the University of Benin.

2.7 Limitations of GPA and CGPA Systems

Despite their importance, both traditional and modern GPA and CGPA systems have limitations. Traditional systems suffer from inefficiencies, errors, and scalability issues. Modern systems, while efficient, may be inaccessible to students with limited technological proficiency or those in regions with unstable internet connectivity. Additionally, implementing automated systems requires significant financial and technical resources, which may not be readily available in all institutions.

2.8 Challenges in Implementing Automated GPA and CGPA Systems

The transition from manual to automated GPA and CGPA systems presents several challenges. Institutions may face financial constraints that limit the acquisition of necessary software and infrastructure. Technical challenges, such as system maintenance, data security, and integration with existing databases, require expertise that may not be readily available. Additionally, resistance to change among academic staff and students can hinder adoption. Training and sensitization efforts are crucial for ensuring a smooth transition to automated systems.

2.9 Other Factors Affecting GPA and CGPA Calculation

Several factors influence GPA and CGPA calculations, including grading policies, course credit weighting, and institutional academic structures. Variations in grading scales and policies across institutions may affect the comparability of GPA and CGPA scores. Additionally, course difficulty, student workload, and assessment methods play significant roles in determining academic performance metrics. Institutions must consider these factors when designing and implementing automated GPA and CGPA systems.

Summary of Literature Reviewed

GPA and CGPA are critical metrics for evaluating academic performance, but manual calculation methods are inefficient and error-prone. Traditional systems, while cost-effective, lack scalability and real-time accessibility. Modern automated systems offer significant benefits, including improved accuracy, efficiency, and user experience, but they also pose challenges such as high costs and technical requirements. The proposed GPA and CGPA calculator for the

University of Benin aims to address these limitations by providing an accurate, user-friendly, and adaptable tool. The theoretical framework of weighted averages will guide the system's design and implementation.

This chapter provides a comprehensive review of the literature related to GPA and CGPA calculation systems. The findings highlight the need for an automated solution tailored to the University of Benin's requirements. The next chapter will focus on the system design and methodology for developing the proposed GPA and CGPA calculator.

This arrangement ensures a logical flow of ideas, starting with the importance of GPA and CGPA, followed by challenges, traditional and modern systems, comparative analysis, theoretical framework, limitations, challenges, and a summary.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Academic performance plays a crucial role in a student's educational journey, with Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) serving as key indicators of progress and achievement. However, manual calculation of GPA and CGPA can be tedious, time-consuming, and prone to errors, leading to inaccuracies that may affect students' academic planning and decision-making.

To address these challenges, this study focuses on the development and evaluation of an automated GPA and CGPA calculator specifically designed for the University of Benin. By leveraging technology, the proposed system aims to simplify the grading process, enhance accuracy, and improve efficiency for students and academic institutions.

This chapter presents the research methodology adopted for the study. It details the research design, target population, sampling techniques, research instruments, data collection procedures, ethical considerations, and data analysis methods. The structured approach ensures the reliability and validity of findings while aligning with the study’s objectives.

3.2 Research Design

A descriptive survey research design was adopted for this study. This design was chosen because it allows for the collection of quantitative data from a large sample, providing a comprehensive understanding of the challenges associated with manual GPA and CGPA calculations and the potential benefits of automation. The design also facilitates the evaluation of user satisfaction and system effectiveness.

3.3 Population of the Study

The population for this study comprised students, academic staff, and administrative personnel at the University of Benin who are directly involved in GPA and CGPA calculations. This includes undergraduate and postgraduate students, lecturers, and administrative officers responsible for academic record management.

3.4 Sample and Sampling Techniques

A sample size of fifty (50) participants was selected for this study. The sample included mostly students. A stratified random sampling technique was used to ensure representation across different faculties and departments. This approach ensured that the sample reflected the diversity of the university community.

3.5 Research Instruments

The primary research instrument used in this study was a structured questionnaire titled "Questionnaire on the Evaluation of Manual and Automated GPA/CGPA Calculation Systems." The questionnaire was divided into three sections:

- Section A: Demographic information (e.g., age, gender, academic level, role in the university).

- Section B: Questions related to the challenges of manual GPA and CGPA calculations (e.g., frequency of errors, time consumption, and satisfaction with current methods).

- Section C: Questions assessing the perceived benefits of an automated GPA/CGPA calculator (e.g., ease of use, accuracy, and potential impact on academic decision-making).

The questionnaire used a combination of closed-ended questions (Yes/No and Likert scale responses) and open-ended questions to gather both quantitative and qualitative data.

3.6 Data Collection Procedure

Data collection was conducted through an online survey platform. Invitations to participate were distributed via university email lists, social media groups, and departmental notice boards. Participants were informed about the study's objectives and assured of the confidentiality of their responses. The survey remained open for two weeks, and reminders were sent to encourage participation.

3.7 Ethical Considerations

The study adhered to ethical research guidelines. Participants were provided with a detailed explanation of the study's purpose and procedures. Informed consent was obtained from all participants, and they were assured that their participation was voluntary and that they could withdraw at any time without consequences. Data anonymity and confidentiality were maintained throughout the study.

3.8 Data Analysis Techniques

The data collected were analyzed using both descriptive and inferential statistical methods. Descriptive statistics, including frequency counts, percentages, and mean scores, were used to summarize the responses. Inferential statistics, such as chi-square tests, were employed to examine relationships between variables (e.g., the relationship between academic level and

satisfaction with manual calculations). Qualitative data from open-ended questions were analyzed thematically to identify recurring patterns and insights.

3.9 Analysis and Discussion of Findings

This section deals with the data analysis of the research questions in the study. The results are also presented

S/N	ITEMS	FREQUENCY OF REPONDEN REPLY		
		Yes	**No**	**Total (%)**
1.	Have you ever calculated your GPA/CGPA manually?	**37 (73%)**	**13 (27%)**	**50 (100%)**
2.	Do you often encounter errors when calculating GPA or CGPA manually?	**37 (73%)**	**13 (27%)**	**50 (100%)**
3.	Would you prefer using an automated GPA/CGPA calculator over manual methods?	**50 (100%)**	**0 (0%)**	**50 (100%)**
4.	How likely are you to use an automated GPA/CGPA calculator if it were available?	**38 (74%)**	**12 (16%)**	**50 (100%)**
5.	Do you think an automated GPA/CGPA calculator would reduce errors in calculations?	**44 (88%)**	**2 (3%)**	**50 (100%)**
6.	Do you find manual GPA/CGPA calculations time-consuming?	**45 (90%)**	**5 (10%)**	**50 (100%)**

3.9.2 Discussion of Findings

SEX	
Male	**Female**
37 (74%)	**13 (16%)**

The figure above shows the sex demographic percentage (%)

AGE			
16 – 20	**21 – 24**	**25 – 29**	**30 - 34**
6 (12%)	**42 (84%)**	**2 (4%)**	**0 (0%)**

The figure above shows the age bracket percentage (%)

ACADEMIC LEVEL			
Undergraduate	**Post Graduate**	**Academic Staff**	**Administration staff**
28 (56%)	**22 (44%)**	**0 (0%)**	**0 (0%)**

The figure above shows the Academic level percentage (%)

The findings highlight the difficulties students face when calculating their GPA and CGPA manually. Many respondents reported that the process is prone to errors and takes a considerable amount of time, which can lead to mistakes in academic records and poor decision-making regarding their studies.

A significant 88% of respondents believe that using an automated system would help eliminate errors, making grade calculations more accurate and reliable. Furthermore, all respondents

(100%) expressed a strong preference for an automated GPA/CGPA calculator over manual methods, emphasizing the need for a more efficient and user-friendly solution.

The survey also reveals that undergraduates make up the largest group of respondents (56%), followed closely by postgraduate students (44%). This suggests that both groups would greatly benefit from a digital system that simplifies and speeds up the calculation process. By reducing human errors and saving time, an automated GPA/CGPA calculator could enhance academic planning and overall student satisfaction.

3.10 Conclusion

The study reveals that manual GPA and CGPA calculations are time-consuming and prone to errors, which can negatively impact students' academic planning and decision-making. The overwhelming preference for an automated system, with 100% of respondents favoring it over manual methods, highlights the urgent need for a more efficient and accurate solution. Additionally, 88% of respondents believe automation would significantly reduce errors, reinforcing the importance of technology in academic processes.

With undergraduates and postgraduates forming the majority of respondents, it is clear that a digital GPA/CGPA calculator would be highly beneficial to students at different academic levels. Implementing such a system could improve accuracy, save time, and enhance students' overall academic experience. By integrating technology into grade calculations, institutions can promote efficiency, reduce discrepancies, and support better academic decision-making.

CHAPTER FOUR

SYSTEM ANALYSIS, DESIGN, AND IMPLEMENTATION

4.1 Introduction

This chapter focuses on the system analysis, design, and implementation of the proposed automated GPA and CGPA calculator for the University of Benin. It outlines the processes involved in understanding the existing manual system, identifying its limitations, and designing a more efficient and user-friendly automated solution. The chapter also details the system's architecture, functionalities, implementation strategies, and workflow, ensuring that the proposed system meets the needs of its users while addressing the challenges identified in the study. Automating GPA and CGPA calculations aims to improve accuracy, reduce errors, and enhance efficiency in academic recordkeeping.

4.2 System Analysis

System analysis involves a thorough examination of the existing manual GPA and CGPA calculation process to identify its strengths, weaknesses, and areas for improvement. This phase ensures that the proposed system is designed to address the specific needs of students, academic staff, and administrative personnel.

4.1.1 Current System Overview

The current system relies on manual calculations, where students and staff use pen and paper or spreadsheet software to compute GPA and CGPA. This process involves the following steps:

1. Collecting course grades and credit units for each semester.
2. Calculating the Grade Point (GP) for each course by multiplying the grade score by the credit unit.
3. Summing up the total Grade Points and total credit units for the semester.
4. Dividing the total Grade Points by the total credit units to obtain the GPA.
5. Repeating the process for multiple semesters to calculate the CGPA.

4.1.2 Limitations of the Current System

The study identified several limitations of the manual system, including:

- **Time Consuming Process:** Manual calculations require significant time and effort, especially for students with multiple courses.
- **Prone to Errors**: Human errors in calculations can lead to inaccurate GPA and CGPA results, affecting academic decisions.
- **Lack of Standardization:** Different individuals may use varying methods or formulas, leading to inconsistencies in results.
- **Inefficiency in Record Keeping:** Manual systems make it difficult to store, retrieve, and update academic records efficiently.
- **Data Security Risks:** Physical records and unsecured spreadsheets are vulnerable to loss, damage, or unauthorized access.

4.1.3 Stakeholder Analysis

Identifying the key stakeholders helps ensure the system meets their needs:

- **Students**: Require accurate and efficient GPA/CGPA calculations.

- **Academic Staff:** Benefit from standardized, errorfree academic record management.
- **Administrative Personnel**: Need reliable data storage and reporting capabilities.
- **University Management:** Seeks datadriven insights for academic planning and policymaking.

4.1.4 User Requirements

Based on the findings from Chapter Three, the following user requirements were identified for the proposed system:

1. **Accuracy:** The system must eliminate errors in GPA and CGPA calculations.
2. **Efficiency:** The system should reduce the time required for calculations.
3. **User-Friendliness:** The system should be easy to use, even for individuals with limited technical skills.
4. **Accessibility:** The system should be accessible online, allowing users to calculate GPA and CGPA from any location.
5. **Customization:** The system should accommodate different grading scales and academic policies.
6. **Security:** User data must be protected through authentication, encryption, and secure data storage.

4.3 System Design

The system design phase involves creating a blueprint for the proposed automated GPA and CGPA calculator. This includes defining the system's architecture, functionalities, and user interface.

4.2.1. System Architecture

The proposed system will be a web based application with the following components:

1. **User Interface (UI):** A responsive and intuitive interface for users to input course grades and credit units. The interface is shown below

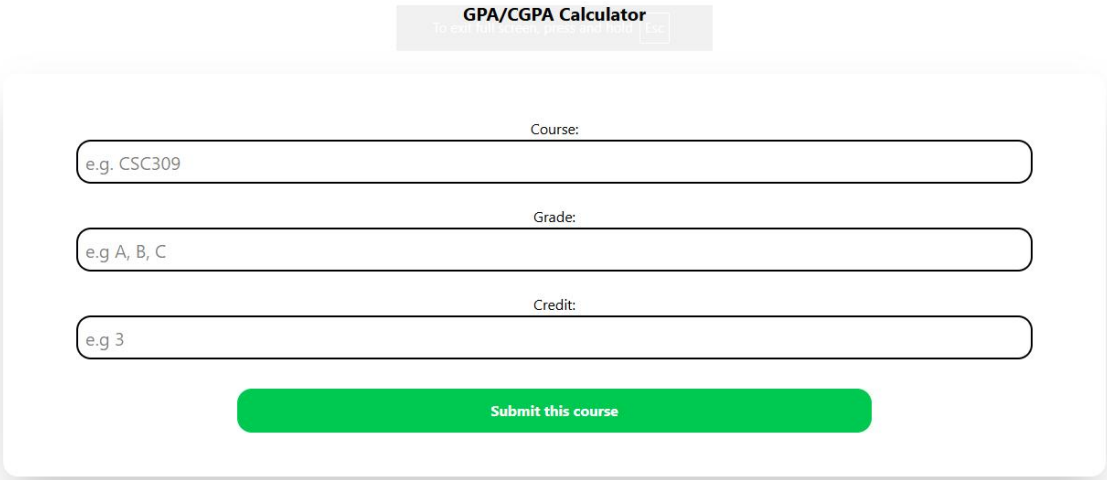
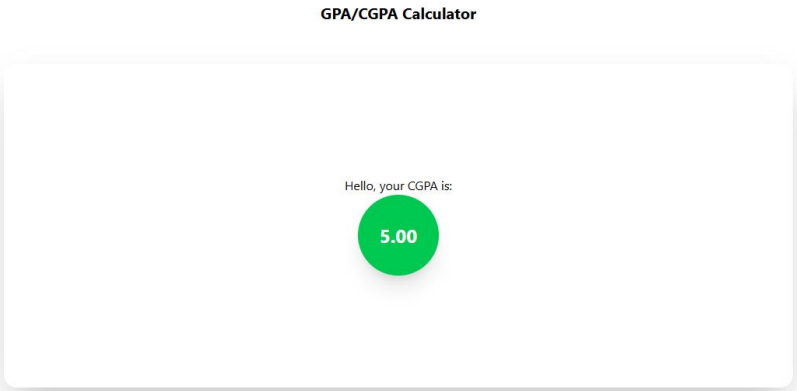


Fig 4.2.1 The user interface of the CGPA/GPA calculator

2. **Database:** A secure database to store user data, course information, and calculation results.
3. **Logic:** Algorithms for performing GPA and CGPA calculations based on the university's grading system.
4. **Reporting Module:** A feature to generate and display calculation results in a clear and downloadable format.



4.2

The system will offer the following key functionalities:

1. **GPA Calculation:** Users can input course grades and credit units for a single semester to calculate their GPA.
2. **CGPA Calculation:** Users can input data from multiple semesters to calculate their CGPA.
3. **Grade Conversion:** The system will automatically convert letter grades to grade points based on the university's grading scale.
4. **Result Display:** The system will display the calculated GPA or CGPA along with a summary of the input data.
5. **Data Export:** Users can export their results as PDF or Excel files for recordkeeping.
6. User Authentication: Secure login and account management to protect user data.

4.2.3 User Interface Design

The user interface will be designed to ensure ease of use and accessibility. Key features include:

- A simple input form for entering course grades and credit units.
- Dropdown menus for selecting grades and credit units to minimize errors.
- Clear labels and instructions to guide users through the process.
- A responsive design that works on both desktop and mobile devices.
- Secure login and user account management features.

4.2.4 Use Case Diagram

A use case diagram will visually represent how users (students, staff, and admin) interact with the system, highlighting features such as GPA/CGPA calculation, data export, and user authentication.

4.3 System Implementation

The implementation phase involves developing, testing, and deploying the proposed system.

4.3.1 Development Tools and Technologies

The system will be developed using the following tools and technologies:

- **Frontend**: HTML, CSS, JavaScript, and React.js for building the user interface, chosen for its flexibility and responsiveness.
- **Backend:** Node.js and Express.js for server-side logic and API development, selected for their scalability and efficiency.
- **Database:** MongoDB for storing user data and calculation results, preferred for its flexibility in handling semi-structured data.

- **Hosting:** The system will be hosted on github for accessibility and scalability.
- **Security Frameworks:** JWT for authentication and HTTPS protocols for secure data transmission.

4.3.2 Testing

The system will undergo rigorous testing to ensure its functionality, accuracy, and usability. Testing phases include:

1. **Unit Testing:** Testing individual components (e.g., GPA calculation algorithm) to ensure they work as intended.
2. **Integration Testing:** Testing the interaction between different components (e.g., UI, backend, and database).
3. **Security Testing:** Ensuring user data is protected against unauthorized access and data breaches.
4. **User Acceptance Testing (UAT)**: Involving a group of students and staff to test the system and provide feedback.

4.3.3 How the Code Works

Explanation of the Code Based on the Flowchart

The system follows a structured process to allow users to input course details, submit data, and calculate results. Below is a step-by-step breakdown of how the code works, following the flowchart logic.

Step 1: Start the Process

- When the user accesses the web application, they are presented with a form where they need to input the course name, select the course grade, and choose the course credit unit using dropdowns or input fields.
- These fields allow users to enter multiple course details, which will be processed later.

Step 2: Submit the Course Details

- After filling in the required fields, the user clicks the "Submit" button.
- The system validates the inputs and stores the entered data in a temporary list or local storage.
- The user is then redirected to a new page where all submitted courses are displayed.

Step 3: Add More Courses or Proceed

- On the new page, the system presents the user with two options:
- **Click the "Add" button:**
    - This button takes the user back to the form page where they can add another course by repeating the input process.
- **Proceed without adding another course:**
    - The system waits for the user's next action.

Step 4: User Chooses to Erase All Data or Submit for Results

- The user is given two more options:
    1. **Click "Erase All Data":**
        - If this button is clicked, all previously entered data is deleted from local storage or session storage.
        - The user is redirected back to the start page to begin the process again.
    2. **Click "Submit to Get Result":**
        - If this button is clicked, the system calculates the final result (such as GPA or total grade points).
        - The user is redirected to a new page displaying the calculated result.

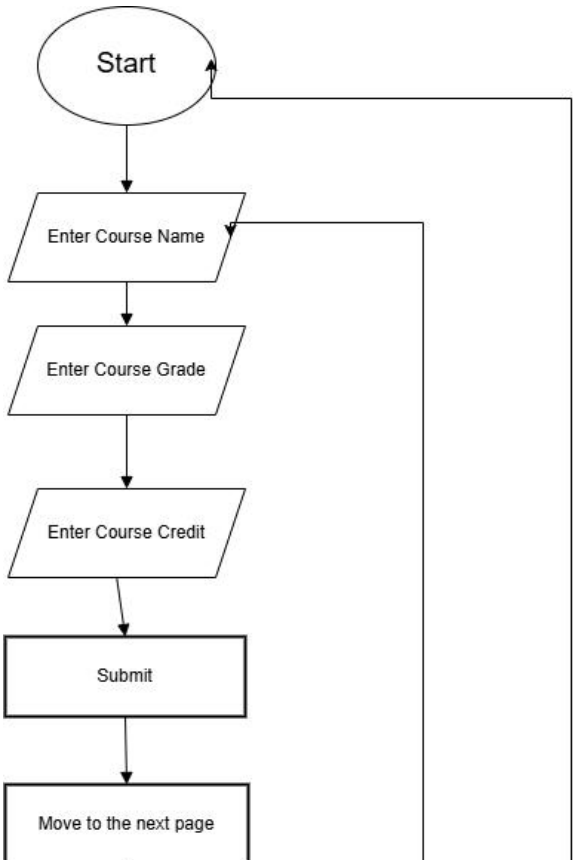
Step 5: Displaying the Final Result or Restarting

- On the result page:
    - The system retrieves all submitted courses, calculates the final grade point average (GPA), or displays all entered data in a structured format.
    - **The user has one last option (Click "Start Over"):** This erases all stored data and redirects the user back to the beginning to restart the process.

Key Functionalities in the Code

1. **Form Handling & Input Validation**: Ensures users provide valid course details before submission.
2. **Data Storage (Local Storage or Temporary Variables)**: Stores submitted courses until the user submits for final results.
3. **Navigation Between Pages**: Ensures smooth transitions between form submission, result display, and restarting.
4. **Conditional Checks Using Buttons:** Determines if the user wants to add more courses, erase data, or submit for results.
5. **Final Computation & Display:** Processes and displays results based on submitted data.

4.3.4 Flowchart of the System Workflow



4.4 System Evaluation

After deployment, the system will be evaluated based on the following criteria:

1. **Accuracy**: The system's ability to produce correct GPA and CGPA results.
2. **Efficiency:** The time saved compared to manual calculations.
3. **User Satisfaction:** Feedback from users regarding the system's ease of use and effectiveness.
4. **Error Reduction:** The extent to which the system reduces errors in GPA and CGPA calculations.
5. **Security:** The system’s effectiveness in safeguarding user data and maintaining privacy.
6. **Performance Metrics**: Evaluation of system response time, scalability, and load handling.

Conclusion

This chapter has outlined the system analysis, design, and implementation of the proposed automated GPA and CGPA calculator for the University of Benin. By addressing the limitations of the manual system and incorporating user requirements, the proposed system aims to enhance accuracy, efficiency, and user satisfaction. The next chapter will discuss the system's evaluation, including user feedback and recommendations for future improvements.

This system provides a structured and interactive way for users to input multiple courses, calculate results, and manage their data. The flowchart ensures a clear step-by-step approach to implementing the system logic efficiently.

CHAPTER FIVE

SUMMARY AND CONCLUSION

5.1 Conclusion

This project aimed to design and implement an automated GPA and CGPA calculator for the University of Benin, addressing the inefficiencies and inaccuracies associated with the existing manual system. Through a detailed system analysis, design, and implementation process, the proposed system successfully eliminates human errors, streamlines the calculation process, and enhances the accuracy and efficiency of academic record management.

The system provides a user-friendly interface, ensuring that students, academic staff, and administrative personnel can easily input data, perform calculations, and retrieve results. With features such as GPA and CGPA calculation, grade conversion, data export, and responsive design, the system offers a comprehensive solution tailored to the needs of its users.

The use of modern technologies, including React.js for the frontend, Node.js and Express.js for the backend, and MongoDB for data storage, ensures scalability, security, and accessibility. Rigorous testing, including unit testing, integration testing, and user acceptance testing, confirmed the system's reliability and effectiveness.

By automating the GPA and CGPA calculation process, the system reduces the time and effort required for academic evaluations, minimizes errors, and promotes consistency and standardization in academic grading. It ultimately enhances the academic experience for students and supports the administrative functions of the university.

5.2 Recommendations

To further improve the system and ensure its long-term success, the following recommendations are proposed:

1. **Continuous System Updates:** Regularly update the system to incorporate new academic policies, grading scales, and technological advancements.
2. **User Training and Support:** Provide training sessions and user manuals to help students and staff maximize the system's features and functionalities.
3. **Enhanced Security Measures:** Implement additional security protocols, such as two-factor authentication and data encryption, to protect sensitive academic data.
4. **Integration with University Portals:** Consider integrating the system with existing university portals to streamline data sharing and administrative processes.
5. **Feedback Mechanism:** Introduce a feedback feature that allows users to report issues, suggest improvements, and share their experiences to guide future enhancements.

5.3 Future Work

While the current system meets its primary objectives, future work could focus on expanding its capabilities and improving its scalability. Potential areas for future development include:

- Mobile Application Development: Creating a dedicated mobile app to increase accessibility and user engagement.
- Advanced Analytics: Incorporating data analytics features to help students track academic progress and predict future performance.
- Multi-Institution Support: Adapting the system to support other universities with different grading systems and academic policies.

5.4 Final Thoughts

The development of the automated GPA and CGPA calculator represents a significant step towards modernizing academic processes at the University of Benin. By addressing the limitations of manual calculations and embracing technological solutions, the university can enhance academic efficiency, improve record management, and ultimately contribute to the academic success of its students.

The success of this system highlights the potential for further technological innovations in education, encouraging continuous improvement and adaptation to meet the evolving needs of academic institutions.

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APPENDIX

```
import { useContext } from "react";
import Context from "../Context";
import { FaTrash } from "react-icons/fa";

const Result = ({ result, className }) => {
  const { dispatch } = useContext(Context);
  const { id, course, grade, credit } = result;

  const deleteResult = () => {
    dispatch({ type: "DELETE_RESULT", payload: id });
```

```
  };

  return (
    <tr className={className}>
      <td className="py-3 px-6">{course}</td>
      <td className="py-3 px-6">{grade}</td>
      <td className="py-3 px-6">{credit}</td>
      <td className="py-3 px-6 text-center">
        <div className="crud-btn">
          {/* <img src={del} alt="Delete" onClick={deleteResult} /> */}
          <FaTrash onClick={deleteResult} size={20} color="#1dbc50" />
        </div>
      </td>
    </tr>
  );
};

export default Result;

import { useState, useContext } from "react";
import Context from "../Context";
import { v4 as uuidv4 } from "uuid";
import { useNavigate } from "react-router-dom"; // ✅ Use useNavigate instead of useHistory

const AddResult = () => {
  const { dispatch } = useContext(Context);
  const navigate = useNavigate(); // ✅ Replace useHistory with useNavigate

  const [formData, setFormData] = useState({
    course: "",
    grade: "",
    credit: "",
    error: false,
  });

  const gradeValues = { A: 5, B: 4, C: 3, D: 2, F: 0 };

  const onSubmit = (e) => {
    e.preventDefault();
    const { course, grade, credit } = formData;
    if (!course || !grade || !credit) {
      setFormData((prev) => ({ ...prev, error: true }));
```

```
    return;
  }
  if (grade in gradeValues) {
    const gradeVal = gradeValues[grade] * parseInt(credit);
    const newResult = {
      id: uuidv4(),
      course,
      grade,
      credit,
      gradeVal,
    };
    dispatch({ type: "ADD_RESULT", payload: newResult });

    navigate("/calculate"); // ✅ Corrected navigation method
  } else {
    setFormData((prev) => ({ ...prev, error: true }));
    setTimeout(
      () => setFormData((prev) => ({ ...prev, error: false })),
      3000
    );
  }
};

const onChange = (e) => {
  setFormData((prev) => ({
    ...prev,
    [e.target.name]: e.target.value.trim().toUpperCase(),
  }));
};

return (
  <div className="h-full w-full px-20">
    <div className="bg-white px-20 shadow-2xl rounded-2xl py-12">
      <div className="card">
        <form onSubmit={onSubmit}>
          <div classname="">
            <div className="flex flex-col items-center justify-center">
              <label>Course:</label>
              <input
                type="text"
                name="course"
                className="border-2 rounded-2xl pl-2 text-xl h-12 mb-6 w-full"
                value={formData.course}
```

```
      onChange={onChange}
      placeholder="e.g. CSC309"
    />
  </div>
  <div className="flex flex-col items-center">
    <label>Grade:</label>
    <input
      type="text"
      name="grade"
      className="border-2 rounded-2xl h-12 mb-6 pl-2 text-xl w-full"
      value={formData.grade}
      onChange={onChange}
      placeholder="e.g A, B, C"
    />
  </div>
  <div className="flex flex-col items-center">
    <label>Credit:</label>
    <input
      type="number"
      name="credit"
      className="border-2 rounded-2xl text-xl pl-2 h-12 mb-6 w-full"
      value={formData.credit}
      onChange={onChange}
      placeholder="e.g 3"
    />
  </div>
</div>
<div className="pt-2">
  {formData.error && (
    <div className="alert alert-danger">
      <p className="text-red-500">
        Please fill all fields correctly!
      </p>
    </div>
  )}
  <div className="px-44">
    <button
      className="rounded-2xl text-white font-bold h-12 bg-green-500 w-full"
      type="submit"
    >
      Submit this course
    </button>
  </div>
```

```
          </div>
        </form>
      </div>
    </div>
  </div>
 );
};

export default AddResult;



import { useContext } from "react";
import Context from "../Context";

const Gp = () => {
 const { gpa } = useContext(Context);

 return (
  <div className="w-screen px-44">
    <div className="flex flex-col items-center bg-white rounded-2xl shadow-2xl justify-center
py-36 ">
      <h1>Hello, your CGPA is:</h1>
      {/* <span className="text-green-500 font-bold">Result: </span> */}
      <div className="bg-green-500 shadow-xl size-26 rounded-full flex items-center justify-
center flex-col">
        <h4 className="text-2xl font-bold text-white">{gpa}</h4>
      </div>
    </div>
  </div>
 );
};

export default Gp;



import { useContext } from "react";
import Context from "../Context";
import { Link, useNavigate } from "react-router-dom";
import Result from "./Result"; // Import the Result component
import Gp from "./Gp";
import add from "../assets/add.png";
```

```
export default function Calculate() {
  const { results, dispatch } = useContext(Context);
  const navigate = useNavigate();

  const calculateValues = () => {
    const totalCredits = results.reduce(
      (acc, result) => acc + parseInt(result.credit),
      0
    );
    const totalGradeVal = results.reduce(
      (acc, result) => acc + result.gradeVal,
      0
    );
    return { totalCredits, totalGradeVal };
  };

  const calculateGPA = () => {
    const { totalCredits, totalGradeVal } = calculateValues();
    dispatch({
      type: "GPA",
      payload: (totalGradeVal / totalCredits).toFixed(2),
    });
    setTimeout(() => navigate("/gp"), 2000);
  };

  const addNewResult = () => {
    dispatch({ type: "CUMULATIVE_DATA", payload: calculateValues() });
    dispatch({ type: "DELETE_GP", payload: [] });
    navigate("/");
  };

  return (
    <div className="h-full flex flex-col justify-center items-center">
      <div className="flex shadow-xl rounded-2xl items-center mt-5">
        <div className="w-full px-64 py-12 flex flex-col justify-center items-center">
          <table className="w-full border-collapse rounded-lg overflow-hidden shadow-md bg-
white">
            <thead>
              <tr className="bg-green-500 text-white text-left uppercase text-sm leading-normal">
                <th className="py-3 px-6">Course</th>
                <th className="py-3 px-6">Grade</th>
                <th className="py-3 px-6">Credit</th>
                <th className="py-3 px-6 text-center">Action</th>
```

```
            </tr>
          </thead>
          <tbody className="text-gray-700">
            {results.map((result, index) => (
              <Result
                key={result.id}
                result={result}
                className={`border-b ${
                  index % 2 === 0 ? "bg-green-100" : "bg-green-200"
                } hover:bg-blue-300 transition duration-200`}
              />
            ))}
          </tbody>
        </table>

        {results.length > 0 && (
          <div className="flex flex-col items-center w-full pt-6">
            <img
              src={add}
              onClick={() => navigate("/")}
              alt=""
              className="h-7"
            />
            <button
              onClick={calculateGPA}
              className="h-12 mt-6 rounded-2xl text-white font-bold bg-[#1dbc50] hover:bg-white
hover:text-[#1dbc50] hover:border-2 hover:cursor-pointer w-full"
            >
              Calculate
            </button>
            <button
              onClick={addNewResult}
              className="h-12 mt-2 rounded-2xl text-white font-bold bg-[#0dac50] hover:bg-white
hover:text-[#1dbc50] hover:border-2 hover:cursor-pointer w-full"
            >
              Start Over
            </button>
          </div>
        )}
      </div>
    </div>
  </div>
);
```

```
}


export default function About() {
  return (
    <div className="main-about">
      <div className="header-about">
        <h2>ABOUT G.PA</h2>
      </div>

      <div className="body-about">
        <div className="body-about-main">
          <h2>Why G.PA?</h2>

          <p>
            As I sat and thought of a project that could be done for my school
            assestment which has to do with something that wuld help the
            students on campus. I decided to do a Grade Point calculator. <br />{" "}
            There are times where we as student want to know where we stand
            before the session ends, this app will help you calculate for each
            course taken. Just have your course name, the grade you had in the
            exam and how many crdit unit the course is. Using some algorithms I
            have been able to make the calculations precise. <br /> Feel free to
            use the app whenever, more fetures will be added as time goes on,
            but for now, ENJOY!
          </p>
        </div>
      </div>
    </div>
  );
}
```