**CHAPTER ONE: INTRODUCTION**

**1.0 BACKGROUND OF THE STUDY**

Automated project supervisor allocation systems are computerized systems designed to streamline the process of assigning students to available supervisors. These systems ensure an efficient and fair distribution of students by considering their CGPA points, prioritizing those with higher CGPAs. Such systems replace traditional, manual methods that can be labor-intensive and prone to bias. Modern allocation systems often utilize algorithms to facilitate random distribution while adhering to predefined academic performance criteria.

**1.1 HISTORICAL BACKGROUND**

The concept of automated allocation systems has evolved alongside advancements in educational technology. Traditionally, student-supervisor pairings were managed manually by academic departments, a method fraught with inefficiencies and potential biases. The transition to computerized systems began with simple database management solutions and has progressed to sophisticated, algorithm-driven platforms. These systems not only enhance the fairness and transparency of the allocation process but also significantly reduce the administrative burden on educational institutions.

**1.2 PROBLEM STATEMENT**

In many educational institutions, the allocation of students to supervisors remains a manual and often inefficient process. This approach can lead to several issues:

* Inequitable distribution of students to supervisors, sometimes resulting in overburdened supervisors and underutilized ones.
* Time-consuming manual processes that delay the allocation and project commencement.
* Potential biases in allocation, leading to dissatisfaction among students and supervisors.
* Difficulty in tracking and managing allocations, especially in large institutions with many students and supervisors.

Specific problems associated with the current manual allocation system include:

* Ineffective management and processing of student-supervisor pairings.
* Time wastage in matching students with appropriate supervisors.
* Lack of transparency and potential bias in the allocation process.
* Challenges in maintaining and updating records of allocations and student performance.

**1.3 OBJECTIVES OF THE PROJECT**

The main objective of this research is to design an automated project supervisor allocation system. To achieve this, the following goals will be considered:

1. Review and analyze the current methods of student-supervisor allocation.
2. Identify the issues inherent in the manual allocation system.
3. Design a computerized system that will:
   * Automatically allocate students to supervisors based on their CGPA, starting with those having the highest CGPA.
   * Ensure a balanced distribution of students among supervisors.
   * Maintain comprehensive records of allocations and provide easy access to this information.
   * Enhance transparency and fairness in the allocation process.

**1.4 SIGNIFICANCE OF THE STUDY**

The significance of the study includes:

1. Enabling efficient and fair allocation of students to supervisors based on academic performance.
2. Reducing the administrative burden and time required for the allocation process.
3. Enhancing transparency and eliminating potential biases in supervisor assignments.
4. Providing a robust and easily accessible record management system for student-supervisor allocations.
5. Contributing to the modernization and efficiency of academic management systems.
6. Offering a benchmark for other educational institutions seeking to improve their allocation processes.

**1.5 SCOPE AND LIMITATION OF THE PROJECT**

The **Scope** of this research includes the development of an automated allocation system that will:

* Register students and supervisors with relevant details.
* Allocate students to supervisors based on their CGPA, starting with the highest.
* Include features for generating reports on allocations

**Limitations** may include:

* The initial setup and integration with existing academic systems.
* Ensuring the system accommodates all potential variables and edge cases in allocation.

**1.6 DEFINITION OF TERMS**

* **Allocation**: The process of assigning students to supervisors.
* **CGPA (Cumulative Grade Point Average)**: A measure of a student's academic performance, calculated as the average of grade points obtained across all courses.
* **Supervisor**: A faculty member assigned to guide and oversee a student's project work.
* **Algorithm**: A step-by-step procedure used for calculations, data processing, and automated reasoning tasks.
* **Bias**: An inclination or prejudice for or against one person or group, especially in a way considered to be unfair.