**FEDERAL UNIVERSITY LOKOJA**

**FACULTY OF SCIENCE**

**DEPARTMENT OF COMPUTER SCIENCE**

**PROJECT PROPOSAL**

**TOPIC:**

**AUTOMATED LECTURER ASSISTANT SYSTEM FOR ENHANCED TEACHING AND LEARNING IN HIGHER EDUCATION**

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**SCI18CSC087**

**INTRODUCTION**

The aim of this project is to develop an automated lecturer assistant system that streamlines and enhances teaching and learning in higher education. The system will automate various aspects of a lecturer's work, including computing students' grades, automating essay grading, taking attendance, and other administrative tasks. The project will involve developing a web-based platform that integrates with existing learning management systems, and testing the system with a group of undergraduate students and faculty members.

**STATEMENT OF PROBLEM**

The traditional approach to teaching and learning in higher education often involves manual and time-consuming administrative tasks, such as grading assignments, providing feedback to students, and taking attendance. These tasks can be challenging for lecturers, who often have limited time and resources, and can result in delays and inaccuracies in student assessment. Additionally, traditional methods of assessment may not provide personalized feedback to students or enable them to learn at their own pace. In response to these challenges, the proposed project seeks to develop an automated lecturer assistant system that streamlines administrative tasks, enhances student engagement and motivation, and provides lecturers with more accurate and timely data on student performance.

**OBJECTIVES**

The objectives of this project are:

1. To develop an automated system that streamlines the grading of assignments, essays, and other written work, using machine learning algorithms to provide accurate and consistent evaluation of student performance.
2. To develop an attendance tracking system record students' attendance and provide real-time updates to lecturers.
3. To explore the potential of the system to automate other administrative tasks, such as scheduling office hours, managing course materials, and communicating with students.
4. To evaluate the effectiveness of the automated lecturer assistant system in enhancing teaching and learning, through a series of user tests and surveys with undergraduate students and faculty members.

**METHODOLOGY**

The proposed system will be developed using Python programming language and various machine learning libraries such as Pandas and Scikit-learn and also JavaScript for the we application, MySQL for database. The system will first preprocess the data by cleaning and formatting it for use with machine learning algorithms. Then, it will use algorithms such as linear regression and decision trees to compute a student's grade based on their performance on assignments and tests. The system will also collect students in the classroom and take attendance with just matric number.

Finally, the system's performance will be evaluated in terms of accuracy and efficiency. The accuracy of the automated grading system will be compared to human grading, and the efficiency of the system will be evaluated based on the time and resources required to complete the tasks.

The project will be divided into several phases:

1. **Requirements gathering**: This phase will involve conducting research on existing systems and tools, and collecting feedback from lecturers and students on their needs and preferences.
2. **System design**: This phase will involve designing the architecture and functionality of the automated lecturer assistant system, including the development of machine learning models for grading and feedback.
3. **System implementation**: This phase will involve developing the web-based platform and integrating it with existing learning management systems.
4. **User testing and evaluation**: This phase will involve testing the system with a group of undergraduate students and faculty members, and collecting feedback on their experiences and perceptions of the system.
5. **Data analysis and reporting:** This phase will involve analyzing the data collected from user tests and surveys, and reporting on the effectiveness of the automated lecturer assistant system in enhancing teaching and learning.

**EXPECTED OUTCOMES**

The expected outcomes of this project are:

1. A web-based platform that automates various aspects of a lecturer's work, including grading, attendance tracking, and personalized feedback.
2. An improved teaching and learning experience for undergraduate students and faculty members, through the use of an automated system that streamlines and enhances the assessment and feedback process.
3. A contribution to the field of education technology, through the development and evaluation of an innovative automated lecturer assistant system that uses machine learning algorithms and natural language processing to enhance teaching and learning.

**CONCLUSION**

This project proposes the development of an automated lecturer assistant system for enhancing teaching and learning in higher education, through the automation of various administrative tasks. The project aims to contribute to the field of education technology, by developing and evaluating an innovative system that enhances teaching and learning in higher education.