**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**KUMASI-GHANA**

**COLLEGE OF SCIENCE**

**DEPARTMENT OF COMPUTER SCIENCE**

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**FINAL YEAR PROJECT PROPOSAL**

**AUTOMATIC CLASS SCHEDULING APPLICATION WITH KNAPSACK ALGORITHM**

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**BACKGROUND OF THE STUDY**

 In a school or college, a class schedule is a list that shows the times in the week at which particular subjects are taught, the range of subjects that a student learns, or the classes that a teacher teaches. In times gone by, the scheduling procedure was done manually. Facilitators had to painstakingly put the right subjects in the right timeframe, mapping that to the right teachers, and double-checking for clashes or redundancies. This was a foundation for stress and delayed productivity.

Software applications were later developed to minimize the pain endured during scheduling. These software applications served their purposes by doing the majority of the work. The role of these facilitators was now immensely reduced, from carrying the entire load of work to providing the software application with the required parameters and the software outputting a scheduled timetable.

As one climbs up the educational ladder, one realizes that the curriculum for each level is quite different, hence the need for more specific software directed at meeting the requirements of a particular education level.

This opportunity persists in the Kwame Nkrumah University of Science and Technology where the Examination Officer, responsible for the class schedule, struggles to fully rely on the software in place. He does most of his work manually due to the failure of the software to meet the changing needs and requirements of the University.

**PROBLEM STATEMENT:**

The Population of students admitted to the Kwame Nkrumah University of Science and Technology has doubled tremendously in the last decade with little or no addition of facilities or lecturers.

This presented the significance of the optimization of these limited resources. The software in use falls short of appropriating the right sized classes to the right lecture halls to properly accommodate all students.

It also fails to check the instance of a lecturer being assigned to two or more immediate class sessions which majorly accounts for the physical and mental weariness of these lecturers. Their weariness in turn affects their mode of lecturing which in the long run affects the students, defeating the whole purpose of quality education.

**MOTIVATION:**

The Exams officers are burden with doing most of the class schedule work manually, even with the aid of the current software application in use. This software application was not built to accommodate the changing needs and requirements of the university hence, the importance of one which does.

The software application required is needed to:

* Effectively and efficiently use the limited resources.
* Lessen the burden on the examination officer.
* Increase overall productivity on the part of the examination officers, lecturers, and students.

**OBJECTIVES**

The overall objective of this project is to develop a software system that does most of the work in class scheduling optimally, demanding little effort from the Examination officers.

The software system is to fulfill the following purposes:

1. Assign lecturers to classes
2. Assign courses to lecture rooms.
3. Assign class sessions effectively, taking into consideration the class size to lecture hall ratio.
4. Check redundancy and the assignment of lecturers to two or more immediate class sessions.
5. May be used to schedule mid-semester and end-of-semester Examinations.

**SCOPE & LIMITATION**

Purpose:

Population or sample: College of Science

Duration of study:  
Topics or Theories Discussed:

Geographical Location:

**PROJECT ACTIVITY PLANNING**

PERT Diagram of Gannt Chart

**RESEARCH Benefits**

* Optimizing the resources of the college
* **…** Reference from top Points

**CONCLUSION**

Proper class scheduling is a very essential tool in the setting of every academic institution. For this reason, we propose a system to efficiently schedule classes which will be at the convenience of both the student and the lecturers.

**REFERENCES**

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