**DEPARTMENT OF COMPUTER SCIENCES**

**CSC 431 PROJECT**

**TIME TABLE SCHEDULING SYSTEM**

**NAMES MATRIC NO**

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**CHAPTER 1: BACKGROUND OF STUDY**

**HISTORY**

Educational institutions have been faced with the problem of structuring and allocating courses in such a way that students, venues and lecturers would not have conflicting times in availability. Since the advent of computers, algorithms have been developed to more efficiently allocate courses, some of which are:

**SIGNIFICANCE**

The need for an automated scheduling system for educational development cannot be over emphasized. Manual scheduling of time and venue is confusing and takes a long time to produce an excellent and efficient result that is free from clashes. The time table scheduling system will help correct the errors in the manual scheduling system.

**SCOPE**

For this project, our focus is the Department of Computer Sciences, University of Lagos, Akoka to be handled by the Centre for Information for Technology Systems (CITS). The system handles proper allocation of students, courses, lecturers and venues and ensures that there are no clashes.

**METHODOLOGY**

This system is implemented using the Waterfall Model which entails Requirements Analysis, System Design, Implementation, System Testing, System Deployment and System Maintenance.

**DEFINITION OF TERMS**

**ABBREVIATIONS**

**CHAPTER 2: DESCRIPTION OF THE PROPOSED SYSTEM**

**PROJECT FUNCTIONS**

This system takes in a database containing table of:

* students to courses they are offering
* lecturers to the courses they are taking
* venues to their capacities
* courses taken in the department for the semester, to the number of weekly class hours, regular and lab.

The system also takes in the Days and Time Frame which the classes can be held.

Using the information in the Database, we allocate courses to time slots and venues to create a time table with the following characteristics:

* two different courses will not be assigned to the same time in the same venue.
* two different courses assigned to the same time slot, will not be assigned to the same lecturer.
* no two courses offered by the same students will be given the same time slot.
* no student and lecturer should have excessive consecutive lectures
* the capacity of the venue should be optimal to the number of students taking the course i.e. the number of students taking a course should not be greater than the venue capacity
* the total amount of weekly hours allocated to a course matches the specified input

And the Timetable will be presented in Spreadsheet format as output to the user.

**CONSTRAINTS**

The user must have spreadsheet management knowledge.

Windows OS is required to run the software.

**ASSUMPTIONS**

We assume that:

It is physically possible to allocate all classes without any clashes or overlaps.

All venues will always be available for classes

The number of students taking a course does not change drastically.

Lecturers will always be available.

No student in the system is also a lecturer

**DEPENDENCIES**

The system is dependent on a windows OS

The application must be installed on the user’s computer.

**CHAPTER 3: REQUIREMENTS OVERVIEW**

**INTERFACE REQUIREMENTS**

For the interface to work effectively and efficiently on the user’s system, there should be a functional Windows Operating System(OS) on the system. Also, there should be a form of spreadsheet package i.e. Microsoft Excel in order to view the generated Timetable.

**USER INTERFACE**

The user opens the desktop application that is already installed on the system and is welcomed to an environment which contains textbox where the specified excel workbook with four worksheets will uploaded. A demo of the way the input document should be arranged will be available for the user to download. The workbook will have four worksheets. The worksheets contain the following information:

* Student - to - Courses Offered
* Lecturers - to - Courses Offered
* Venues - to - Capability Offered
* Courses - to-Courses Offered

After this section, a **GENERATE** button which once clicked, a window prompt which allows the user to elect where the timetable to be generated is saved. After the timetable has been generated, the **GENERATE** button changes to ALTERNATE button incase the user wants a different version of the already generated timetable.

**SOFTWARE INTERFACE**

The application interacts majorly with Microsoft excel, the range filed with data is read into the application and the important datum are filtered from it. The result of the computation is also brought in form of a Microsoft Excel Workbook with only a worksheet containing all the courses spread across different times and appropriate venues.

**FUNCTIONAL REQUIREMENTS**

* User class1: The user must install the application on the desktop to be use.
* User class2: the user must be able to format the input data into the required or specified manner for efficient utilization by the application.
* User class3: The user must call the generate option to derive a result from the application.