**Comprehensive University Timetabling System**

**This system is educational scheduling system that will help to create course and test schedules and handling changes and overlabing between timetables,** **and allocating students to certain classes**

**enables various university and departmental schedule managers to collaborate in order to create and change a schedule that satisfies their various organizational needs while minimizing student course conflicts.**

**It can be interfaced with an existing student information system or used independently**

* **Course Timetabling :**

**The main goal of course scheduling is to schedule each course at a time or a set of times without conflicting or overlabing between them ,it will be easy if there is a few course combinations but it will increase if the number of courses increased because the lack of the faculty ,rooms ,time and variety of another constraints**

**student conflicts are balanced against faculty preferences for time and space as well as other desired relationships between classes.**

**The most recent developments in solution algorithms are incorporated into UniTime to effectively address challenging timetabling issues.**

**Additionally, it offers a course structure model that makes it simple to establish the connections between elements of courses with various forms of instruction (such as lectures, discussions, and laboratories) and various meeting time specifications.**

**UniTime offers a centralized, distributed, and hybrid approaches to building a schedule based on the student need.**

* **Course Management :**

**Ant timetable may need modification for a lot of reasons like lack of resources like rooms teachers or changing the room or time of the course or an increase demand happened to a specific course ,the system allow the users to modify their timetables and look for different timetables to find the least impact of them**

**An interactive solver will help when classes need to change it will suggest a limited size set of alternatives that will enable this change ,the user will choose the best set of changes,** **Each choice details any more student conflicts that might have arisen as well as any additional preferences that might have been disregarded.**

* **Examination Timetabling :**

**Each term, UniTime creates a complete exam schedule that reduces the amount of conflicting exam times for all students.**

**Additionally, it can reduce the incidence of back-to-back exams or a students that will have 2 exams in a single day .**

* **Event Management :**

   Universities use their campus for another reasons than lectures or exams like events , guest talking ,club meeting ,study session

Events can be added to rooms used by classes or any other campus facility used by the system

The system will use ( the web-based Events interface ) , this interface will help to request an event or searching for available time and locations by student or staff

* **Student Scheduling :**

**it can be challenging for students who are not at the front of the queue to discover the practical combinations of classes they need.**

**In order to ensure that every student's educational needs are addressed, or as many as possible, the scheduling procedure for students involves matching the sets of classes that each student needs to their class spaces. Individual student preferences for class times may cause an issue. The easiest way to guarantee that every student can attend all of their courses is to create the class schedule after gathering all of the student course requirements. a demand-based timetable can be created using UniTime, which will maximise the number of students taking the required courses. However, this is frequently not feasible, so it is preferred to accommodate as many demands of students as possible within an already established timetable.**

**The real challenge in real time individual student scheduling to a pre existing timetable is ensuring that decisions made by the first students do not unnecessarily make a bad effect on the later students from completing their needed courses.**

**UniTime is able to calculate the expected need of individual course sections using information based on curricular course requirements or past course demands and the current timetable. These spots will be kept for students who need that class to provide a conflict-free schedule if the anticipated need for a particular class section exceeds the number of student spaces available.**

**This will make restrictions about the class time choice for some students, but only enough to ensure that later students can complete all of their needed classes.**

* **Code Comprehension :**

**We will use bottom up, because we are unfamiliar with the code**

**We will look recognisable idioms like ( swaps) and will search for Combine recognised units for understanding larger sections of the code**