Interger Program COMP 567
Chose Course Problem

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Introduction

Students need to choose courses at the beginning of each term. But, some times we find that the course we wanted has some pre-requisites which students haven't taken. Or two courses have conflicting time. In order to avoid these problems, this project tries to compute the optimal course schedule for the entire study period.

Problem Statement

The student gives his preferred parameters for each course. The project returns a course schedule to the student. Maximize the sum of prefer-parameter of chosen courses.

Constraints

Study duration:
The number of terms that student staying at school.

Required credit:
Each course has a credit. The sum of all the courses credit must be bigger than the required credits.

Time-conflict:
The chosen courses can't have any conflicting time if they are in the same term.

Pre-required course:
Some courses have pre-requistes. The student must first take the pre-requistes, then take the advanced course.

Max course number taken per term:
The maximum number of courses taken per term. (e.g. 3 course at 2010 winter term)

Min course number taken per term:
The minimum number of courses taken per term. (e.g. 1 course at 2010 winter term)

Data
The data of the courses schedule is available on McGill web-page. And the preferred parameters for each course can be decided by program user.