



Automated Timetable Generation – TAG

Mini Project

Disclaimer

This Software Requirements Specification document is a guideline. The document details all the high level requirements. The document should be used as a guideline by the students to design the Solution Architecture for the project. The document also describes the broad scope of the project and high level logical object model. But while developing the solution if the developer has a valid point to add more details being within the scope specified then it can be accommodated after consultation.

INTRODUCTION

The purpose of this document is to define scope and requirements of an Automated Timetable Generation System - TAG for any engineering college. While timetable for any education institution appears to be a simple table outlining a weekly schedule of classes for every subject for a given stream of students, but it's manual development for any reasonable size education institution is a tedious and complex task. The TAG software proposes to address this challenge by automating the process of timetable creation.

This document is the primary input to the development team to architect the solution the project.

System Users

The Head of the Departments and the administrative staff of the engineering college will primarily use the TAG system.

Assumptions

1. The input data will be prepared in spreadsheet software such as IBM Symphony or Microsoft Excel.
2. The output will also be produced in CSV format and spreadsheet software will be used to open the same.

REQUIREMENTS

TAG will compute the *minimum* number of periods required to teach “n” subjects by “m” professors, where the number of periods required to be taught by a professor and every subject is known.

Input

The TAG software will receive the input in a CSV whose format will be as follows:

	S1	S2	S3	S4	...	...	Sj	Sn
P1	0	2	1	3	...	...	...	1
P2	1	1	0	2	...	...	...	0
P3	3	1	0	1	...	...	...	1
.	2	1	0	0	...	...	...	2
Pi	0	3	2	0	...	...	2	3
Pm	0	0	2	1	...	...	...	0

The top row has all the subjects and the left most column has all the professors. A cell at (i, j) contains the number of periods to be taught by the professor “Pi” for the subject “Sj”. For example, professor “1” is required to teach 3 periods of subject “4”.

Output

It will produce the output in a CSV file whose format is outlined below:

	1	2	3	4
S1	P1	P1	P3	Pm
S2	Pm	P4	P5	P1
S3	P1	P3	P3	P3
.	P2	P3	P2	Pj
Si	P4	P4	P1	Pm
Sn	Pm	P4	P4	P1

The top row has the period number and the left most column has subjects. A cell at (i, j) indicates the professor who will teach subject “i” in period “j”. Note the data shown in the above table is only for illustration purpose and does not correspond to the input data given in the previous section on “Input”.

Optional Requirements

You may like to add a constraint where two or more subjects cannot be scheduled together (i.e. in the same period) because they are taken by same set of students. This data may also be input in a suitable CSV format.

DEVELOPMENT ENVIRONMENT

TAG will be developed as a desktop application using Java language. Eclipse will be used as the IDE for the same. Optionally, it may be developed as a web application.