

EventMAP – A workable solution

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EventMAP Limited is a newly formed software development company, based in Northern Ireland. The focus of the company is to develop, market and sell event scheduling software into the Higher Education Sector in Europe, Australia and America. EventMAP Limited was formed in May 2002 and is a joint spin out from the School of Computer Science at the Queen's University of Belfast and the Automated Scheduling and Planning Group (ASAP) at the University of Nottingham. The decision to form a company followed the identification of the obvious market need for a high quality software solution to the scheduling difficulties experienced within the educational sector.

With the introduction of modular course structures by many UK Universities, the central production and coordination of the course timetable is essential as more modules have to be timetabled and in such a manner as to offer students maximum flexibility of choice while ensuring teaching space is used effectively. Universities, struggling with rising student numbers have increasingly relied upon automation of this task to produce efficient timetables which satisfy these constraints [1]. Unfortunately, the software assistance currently available is often not in general use because many systems are specifically designed for the institution in which they were developed [2,3]. Consequently this process often involves significant human interaction. Therefore, within the majority of Universities which use automated systems, the process of the production of a workable timetable remains firmly with a combination of lecturing and administrative staff. It is argued here that this situation has come about due to incomplete investigation of methodologies used by expert timetablers and inadequate representation and utilisation of the knowledge available to automate the process of production of a lecture timetable. However, it is acknowledged that different institutions have varying constraints[2,3] which make a general applicable solution to this complex problem difficult.

In the design phase, the problem with using existing data sources is the fact that there may be a wide range of varying schemas, and multiple heterogeneous data sources. Different problems will require the representation of a wide range of potential resources and attributes. To address this, 'eventmap' will use XML in combination with the Microsoft® .NET development framework. XML will enable the modelling of events and resources and their attributes for a particular problem, and allow them to be mapped onto database tables. The .NET framework has been chosen due to its inherent modularity, the flexible network remoting functionality and the language and platform independence it provides. It is also Microsoft's preferred method of application development and will enjoy continued support over the long term.

Ultimately, it is the intention within EventMAP to automatically vary the problem solving techniques based on the characteristics of the problem to be solved. EventMAP draws on previous research into automated timetabling [4-7] for its automated timetabling engine. As eventMAP implements a modular system it is possible to select from a wide choice of algorithmic methods to best match a particular problem combined with the user's preference for superior quality or fast generation times.

The product to be developed, 'eventmap' will offer the target market a sophisticated and integrated planning tool for the scheduling of academic activities and exams making most effective use of the available time, space and resources. It is readily identifiable that there is a strong need to produce a flexible and user friendly academic scheduling tool which is underpinned with the most up to date technology and design for the resolution of, what effectively is, an age old challenge. The collective experience of the people involved in the development and delivery of the product will provide significant competitive advantage in the markets targeted. The product's design is based around a modular structure with flexible data access. This enables the system to be configured to map onto data in pre-existing information systems. The modular structure enables additional functionality to be easily added to existing installations. Such additional functionality could be optional add-ons, custom projects or be produced by 3rd parties. Examples could include: specialised schedule viewing/editing tools, alternative automated scheduling algorithms etc.

References

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