Solver

- Based on Iterative Forward Search algorithm
  - Gradually extends (partial) feasible assignment
  - Applicable to various constraint satisfaction and optimization problems
  - Able to identify and present to the user any inconsistencies and potential problems in the input data

Student Sectioning

Students request courses, system determines classes (sections), respecting course structure, reservations, and student preferences.

- Batch Sectioning
  - Once a timetable is created, pre-registered students are sectioned and enrolled into classes, wait-lists, etc.

- Online Sectioning
  - Afterwards, all students register for courses online, receiving a new schedule immediately

Timetabling solver can provide a fully automated solution.

However, it also allows for interactive changes while it provides suggestions.
System Highlights

• Publicly available
  o Open source (GNU GPL)
  o Server-client application with web-based interface
  o Platform independent (implemented using Java J2EE)

• Distributed
  o Allows decomposition to several problems if desired
  o Provides coordination among solutions and allows distributed responsibilities
  o Deals with competitive behavior

• Applications
  o The system is being used in practice at Purdue University
    ▪ Large-scale university-wide problem (9,000 classes, 570 rooms, 39,000 students)
  o Allows interactive changes
  o Can be used in modes ranging from manual data entry to fully automated timetabling

• Extensible & Customizable
  o Applicable to a variety of university course timetabling problems

Data Entry

User interface provides an easy and intuitive way for various data entry.

Classes are organized in a visual representation of the course structure, preferences and requirements can be set at multiple levels.

Problem model and constraints consider complexity of all university courses.

For more information...

• Visit our website at http://www.unitime.org

• Software available for download
  o Course Timetabling & Student Sectioning application
  o Constraint Solver library

• Online documentation
• Application demo
• Ongoing research
  o Publications & presentations
• Benchmark data sets
  o Real-life data for course timetabling and student sectioning problems