

Advanced Xpress Techniques

Course summary

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Introduction

This advanced module extends the two day introductory training course and covers

- using the Mosel modeling language to solve goal programming problems and help analyse infeasible problems;
- using the language to work with all MIP solutions found and show you how you can implement your own solution heuristics;
- advice on advanced modeling techniques and further modeling practice using the Mosel run time library in your own program to obtain all solution values from a Mosel model.

A large part of the day is spent doing practical work to re-inforce the techniques presented.

Requirements

Participants must have taken part in the introductory two day course. Apart from that, the experience and resources required are similar to that of the two day course, although participants are likely to get more out of the day if they already have some experience of using Mosel in their own working environments.

Synopsis

Day 3

9.15 *welcome*

9.30 **Advanced Modeling Topics**

3-1 Introduction to the training course

3-2 Infeasibility and goals

recognising infeasibility - handling infeasibility [P-3.11] - goal programming [P-11]

10.30 **break**

3-3 Using intermediate MIP solutions

multiple MIP solutions - procedures and functions in Mosel - using a MIP solution callback [P-12]

3-4 Implementing heuristics

binary fixing heuristic - performing partial optimizations - fixing variables and changing bounds [P-13] - extended heuristic [P-13]

12.30 **lunch**

3-5 Advanced model development

dynamic arrays - how to avoid using dynamic arrays - how to use dynamic arrays - handling sparse objects [P-3.10]

Further modeling practice [P-4] [P-5] [P-6]

2.30 **break**

Further modeling practice continued

Advanced Embedding Topics

3-6 Running compiled models

loading and running compiled models - setting model parameters [P-10.5]

Accessing the solution

model objects - Mosel sets - Mosel arrays - solution values [P-10.6]

questions

4.30 **close**

[P] indicates practical work, with a reference to the project number in the projects handout.