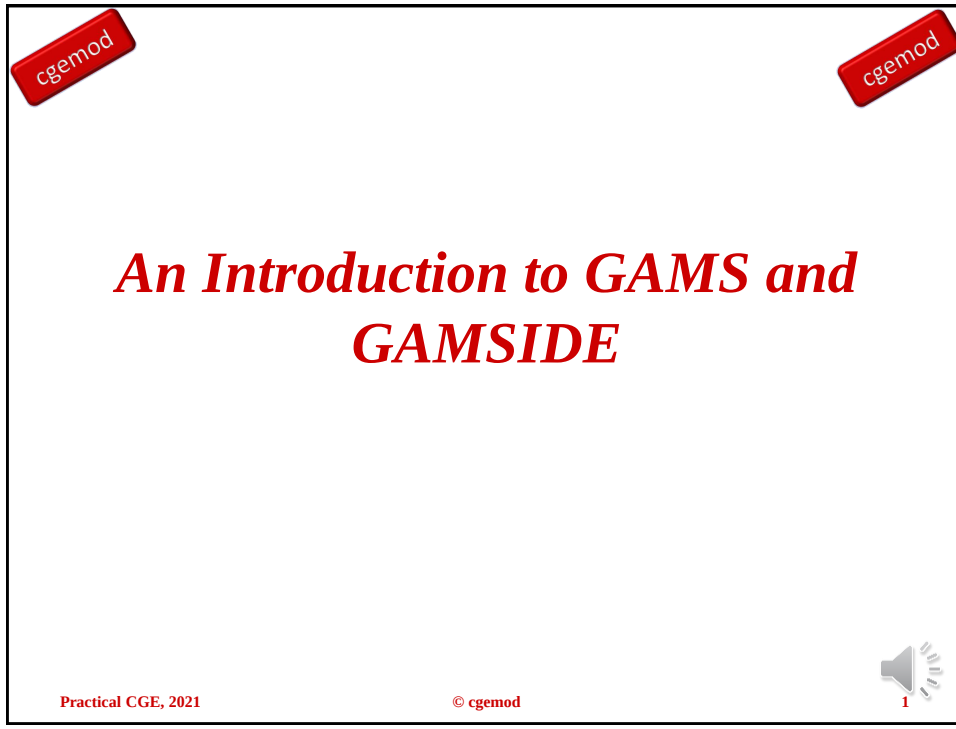
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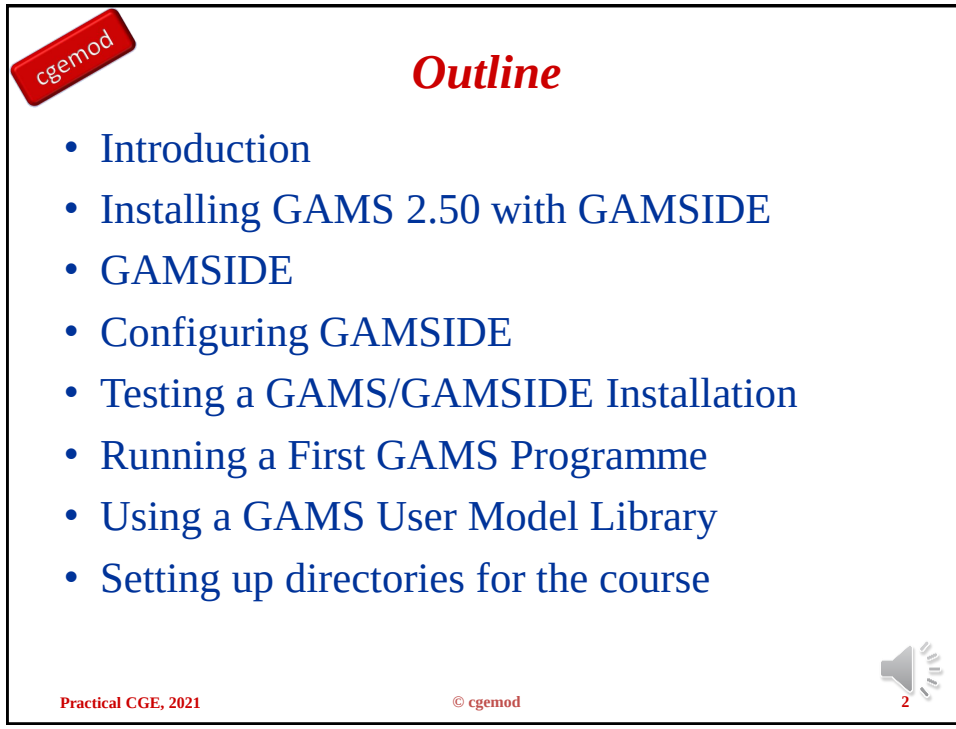
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Outline
• Introduction
• Installing GAMS 2.50 with GAMSIDE
• GAMSIDE
• Configuring GAMSIDE
• Testing a GAMS/GAMSIDE Installation
• Running a First GAMS Programme
• Using a GAMS User Model Library
• Setting up directories for the course
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Introduction

- General Algebraic Modeling System (GAMS)
  - High level programming language
  - Mostly used to solve optimisation problems
  - Allows preparation of transparent programmes
- GAMS consists of
  - Base Module
  - Series of solvers
  - GAMS Integrated Development Environment

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Introduction

- GAMS
  - allows use of specialised solvers without knowledge their syntax;
  - separates data and the logic of a problem;
  - a GAMS programme is its own documentation; and
  - looks after a number of common programming problems, e.g., dimensionality.
- "GAMS was developed to [overcome a series of mathematical programming problems] by
  - Providing a high-level language for the compact representation of large and complex models
  - Allowing changes to be made in model specifications simply and safely
  - Allowing unambiguous statements of algebraic relationships
  - Permitting model descriptions that are independent of solution algorithms" (Brooke et al., 1998, p1).

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Introduction

- This course
  - Requires the demo/student version of GAMS that is free from the GAMS website;
  - Uses GAMSIDE as the editor programme; and
  - The documentation assumes the user is using a PC with the Windows operating system

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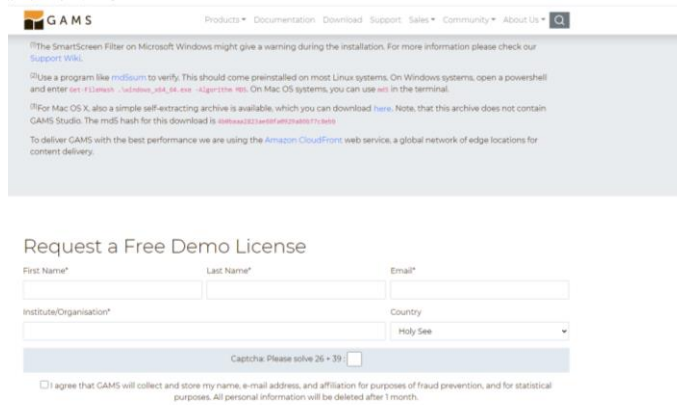
GAMS Demo Licence

Go to: www.gams.com/download



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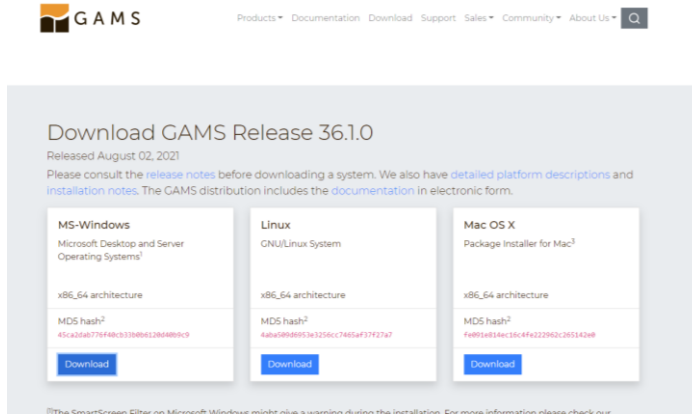

1. Get the GAMS programme from the GAMS web site
   - Save the file (e.g., windows_x64_64.exe) on your PC
2. The Linux and Mac OS X versions to do support GAMS IDE
3. The instructions in this presentation refer to the Windows version and GAMS IDE.

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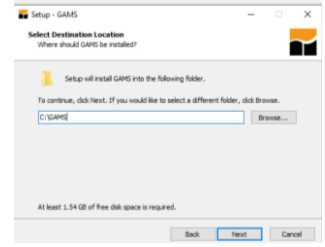
Installing GAMS

1. Run the GAMS installer file

2. Select the directory in which GAMS will be installed
3. We recommend using C:\GAMS – this is not the default



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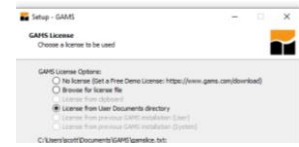
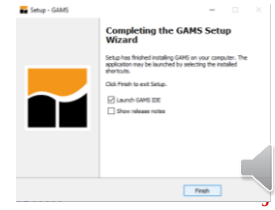
Installing GAMS 2

4. Select GAMS IDE as the editor

5. Select 'Browse for license file



6. Complete the GAMS Setup Wizard choose - 'Launch GAMS IDE'



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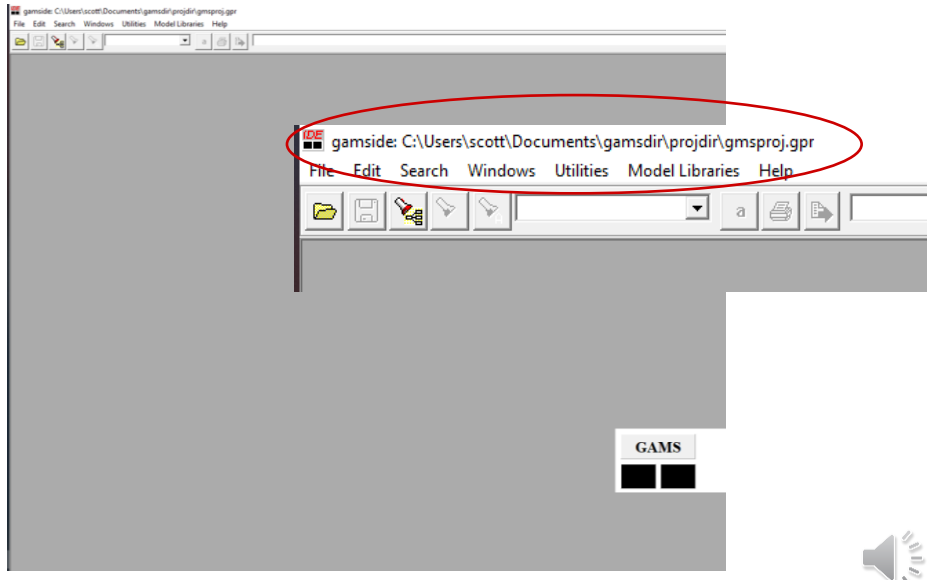
Using GAMSIDE: Project File



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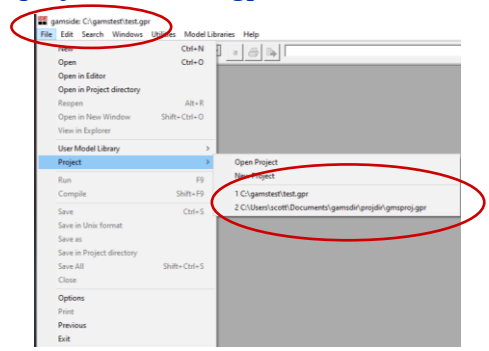
Test Directory

1. Create a directory called 'gamstest' on the top level of your 'C' drive (or default data drive)
   - This directory is temporary and will only be used to test GAMS
2. In 'gamstest' create a project file 'test.gpr'



This can all be done in GAMSIDE by selecting `File>Project>New Project`

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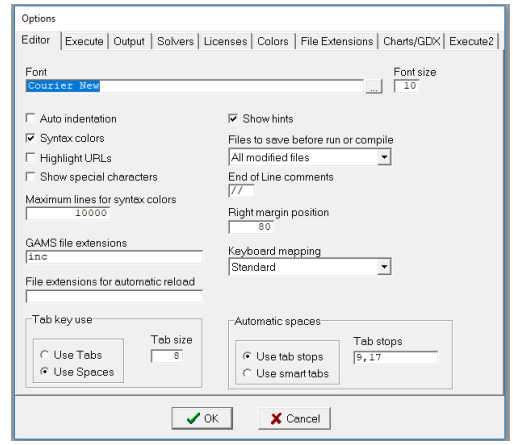
Configuring GAMSIDE

1. **Choose Options from the File menu in GAMSIDE**
2. **Choose Editor page**
3. **Set font to** Courier New
4. **Set the font size**
5. **Add 'inc' in the GAMS file extensions box**
6. **Leave the other setting for now**
7. **We will use these settings during the online course**



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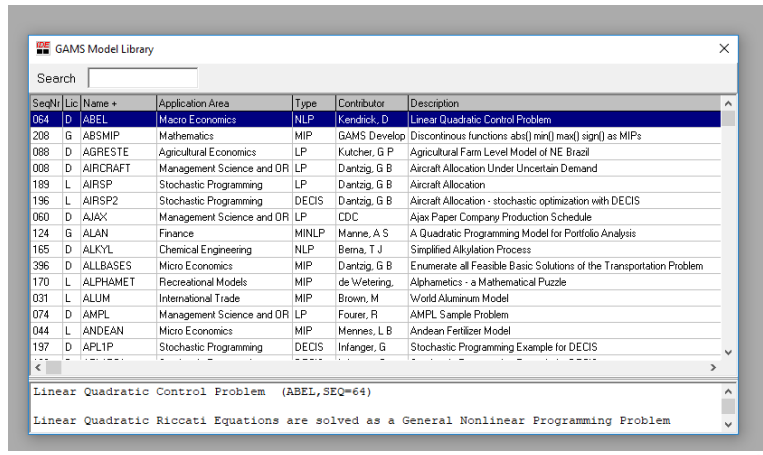
Model Library

In GAMSIDE select `Model Libraries>GAMS Model Library`



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Testing GAMS and GAMSIDE

Six programmes from the GAMS Model Library used

1. `trnsport` (LP :objective value: 153.675)
2. `chenery` (NLP: objective value: 1058.9)
3. `bid` (MIP: optimal solution: 15210109.512)
4. `procsel` (MINLP: optimal solution: 1.9231)
5. `scarfmcp` (MCP: no objective function)
6. `scarfmge` (MPSGE: no objective function)

Run programme button GAMSIDE menu bar

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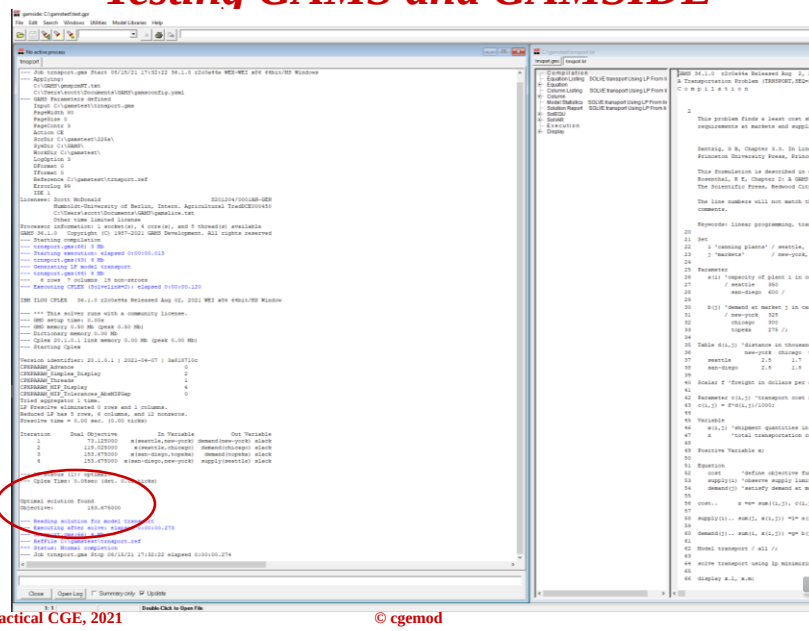
Testing GAMS and GAMSIDE



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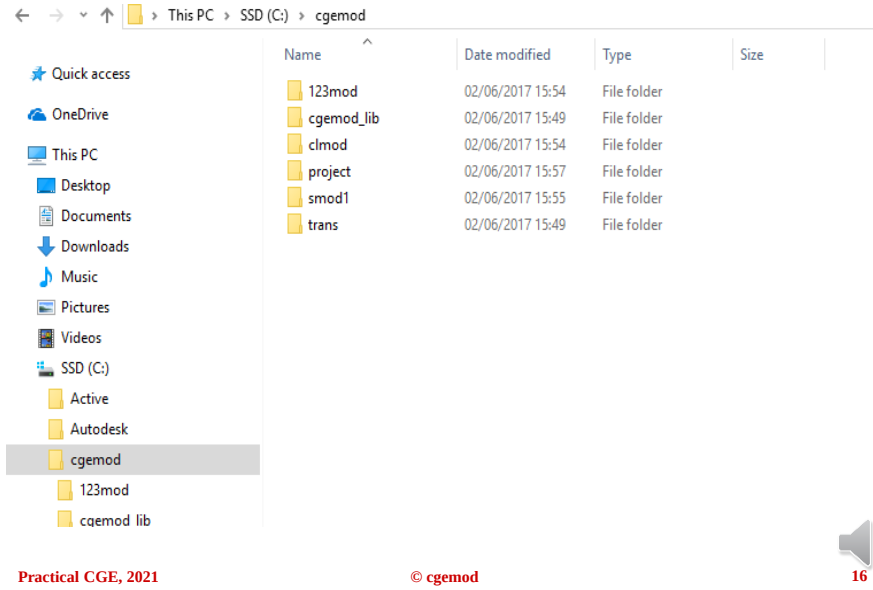

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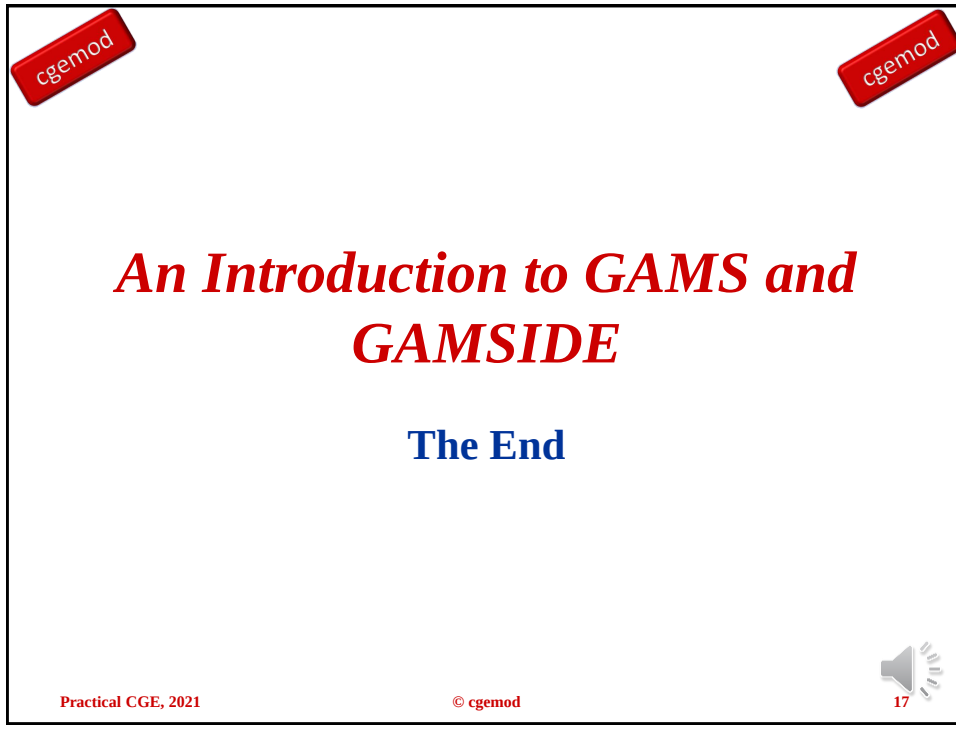
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