

# TreeAge Pro Object Interface

TreeAge Software, Inc.



# TreeAge Pro Interfaces

- Graphical User Interface (GUI)
  - Normal human interface for desktop software as viewed on your computer.
- Object Interface
  - Full-featured scripting interface provides access from any program/script/macro.
  - Provides access to many of TreeAge Pro's core functions.
  - Requires the Excel Module.
    - TreeAge Pro Excel or TreeAge Pro Suite



# TreeAge Pro Object Interface

- TreeAge Pro 2007 introduces the TreeAgeProLib library which provides access to TreeAge Pro objects.
  - Application, trees, nodes, etc.
- TreeAgeProLib implements a standard COM interface to create TreeAge Pro objects.
- Any program/script/macro can create TreeAge Pro objects through the COM interface.



# Why Use the Object Interface?

- Automate tasks that are common, repetitive and/or time-consuming.
- Set a tree's data values from outside TreeAge Pro.
- Automatically run a set of analyses.
- Automatically export analysis results.
- Integrate TreeAge Pro functions into another system or application.



# What is an Object?

- An object is a building block for programs usually representing a specific concept (i.e., a tree or node).
- An object contains properties (data) and methods (functions).
- Objects can be instantiated (created) in your scripts to perform functions and set/retrieve data.



# Object Interface Documentation

- Online documentation:

- <http://server.treeage.com/ObjDocs/TP/TOC/ref.php3>

- Includes descriptions of all objects and their properties and methods.
    - Code samples.

- Object browser:

- Included with Microsoft VB editor.
  - Shows object properties and methods.

- For more details and examples:

- <http://www.treeage.com/support/TreeAgeObjects.html>



# Primary TreeAge Pro Objects

- ApplicationObj
- TreeObj
- NodeObj



# ApplicationObj

- Provides access to the TreeAge Pro application.
  - Similar to the GUI's application window.
- Open and save TreeAge Pro documents.
  - Trees
  - Graphs
  - Analysis objects
  - Etc.



# TreeObj

- Provides access to data and functions of a TreeAge Pro tree, including...
  - Get node objects.
  - Get/set tree properties and preferences.
  - Create/update/read variables.
  - Create/update/read tables.
  - Create/update distributions.
  - Create/update bilinks (dynamic links to Excel).
  - Run analyses and get results.



# NodeObj

- Read/update variable definitions.
- Navigate to other nodes.
- Get expected values.
  - Including cost/effectiveness.
- Evaluate variable definitions/formulas.



# Analysis Objects

- CEOutput
  - Output from Cost-Effectiveness Analysis
- MarkovParams/MarkovOutput
  - Input to/Output from Markov Analysis
- MonteParams/MonteOutput
  - Input to/Output from Monte Carlo Simulation



# Other Objects

- GraphObj
  - Graph document object
- TextReportObj
  - Text report document object
- TableObj
  - Table object (data, properties)
- Utility objects
  - CEStrategy, GlobalObj, etc.



# TreeAge Pro Object Interface

## Examples



# Example #1: Variables and Expected Value

- Excel Macro Sample with buttons that...
  - Open a tree
  - Create two variables
  - Update variable definitions with values from Excel worksheet
  - Run rollback and get expected value for tree



# Example #2: Simulation and Nodes

- Excel Macro Sample with buttons that...
  - Open a tree
  - Run a Monte Carlo Simulation
  - Output simulation results
    - Statistics and text report
  - Navigate to node objects
  - Evaluate variable definitions at different nodes

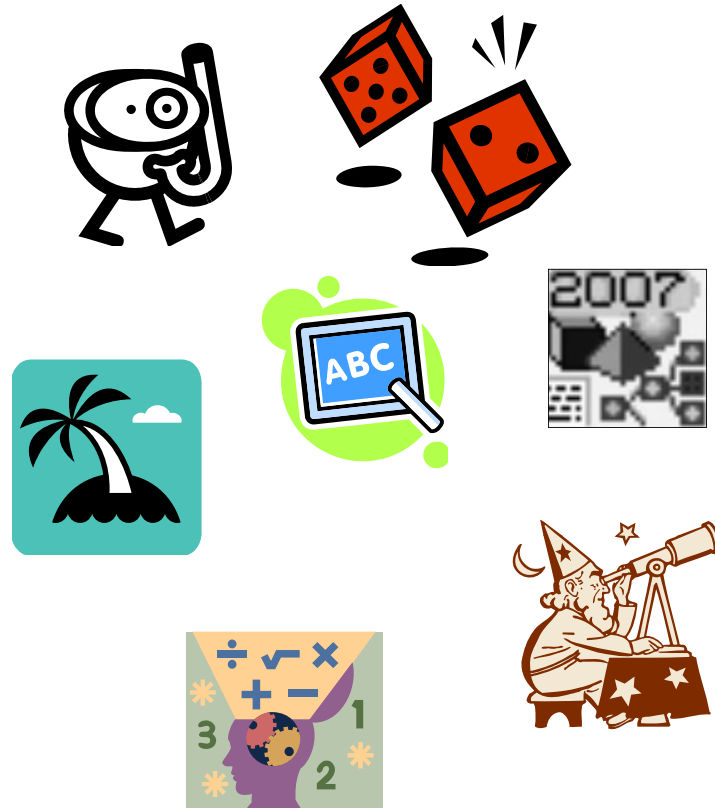


# Example #3: Tree Workbook

- Tree Workbook will be released with TreeAge Pro 2007 v2.0.
- Creates workbook based on data in tree.
- Will execute the code here as to illustrate what can be done with the Object Interface.

# Summary

- Questions?



# TreeAge Pro Interactive

- The TreeAge Pro Object Interface is similar to the interface for TreeAge Pro Interactive (TPI).
- TPI has no GUI and only acts on TreeAge Pro objects via scripts.
- Used by customers to write scripts to use TreeAge Pro functions without requiring a TreeAge Pro license for distribution.
  - License fees apply to a protected package file with unlimited distribution.
- Syntax is slightly different from the TP object interface.
- TPI Documentation:  
<http://server.treeage.com/ObjDocs/TPI/TOC/ref.php3>

# Additional Notes

- ByRef arguments return values
  - <http://server.treeage.com/ObjDocs/TP/MonteOutput/TimeElapsed.php3>
- Monte Carlo Simulation
  - Need to wait for simulation to complete before processing results.
  - <http://server.treeage.com/ObjDocs/TP/MonteOutput/TimeElapsed.php3>
- Need to add reference to the object library to use the TreeAge Pro objects.
  - In VB Editor: Tools > References.
  - Check box for “TreeAge Pro 2007.1.0 Type Library”.
- Occasionally, a script coding issue will cause TreeAge Pro to hang.
  - Close TreeAge Pro via the Task Manager.

# Webinar Series

- TreeAge Software will continue to host Webinars in the future
- Coming soon...
  - Using Python in TreeAge Pro
  - Discrete Event Simulation
- Please provide feedback
  - Via GoToMeeting survey
- Materials available by EOD at
  - <http://server.treeage.com/treeagepro/training/webinars.asp>