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Introduction

ProModel's ActiveX Components

ProModel's ActiveX Automation capability allows you to use any ActiveX-enabled language (e.g. Microsoft Visual Basic, VBA, or Visual C++) to:

- Build customized user interfaces for ProModel
- Add, Change or Delete model data from external data sources, such as spreadsheets, databases or ASCII text files
- Control ProModel from another application
- Extract output data and place it in a spreadsheet or database

The intent of this manual is to give you information that is specific to the ActiveX components automatically installed with your PROMODEL product. We have included plenty of examples to help you understand how to use these powerful tools. All of the examples that follow use Visual Basic commands and syntax. The variable names used in this manual are merely examples, you will want to replace them with names that are meaningful to you.

ProModel Objects

All of the Type Libraries have an Application object, a Data object and a Runtime object. Each object gives you access to different parts of ProModel. The following is a brief description of these objects:

- Application – gives you operational control of ProModel. For example, using this object you can load a model or start a simulation.
- Data – allows you to access to model information (like Locations or Processing records).
- Runtime – gives you methods that can update or capture the values of statistics while a simulation is running.

When you declare object variables, we recommend that you use the ProModel object types. Here are examples of how to declare and create an instance of each of the ProModel objects.

ProModel Type Library

```
Dim ObjVarName as ProModel.CProModel
Set ObjVarName = CreateObject("ProModel")

Dim ObjVarName as ProModel.CProModelData
Set ObjVarName = CreateObject("ProModelData")

Dim ObjVarName as ProModel.CRuntime
Set ObjVarName = CreateObject("ProModel.CRuntime")
```

ProModelPM Type Library (ProModel product)

Dim *ObjVarName* as PromodelPM.Application
Set *ObjVarName* = CreateObject("PromodelPM.Application")

Dim *ObjVarName* as PromodelPM.Data
Set *ObjVarName* = CreateObject("PromodelPM.Data")

Dim *ObjVarName* as PromodelPM.Runtime
Set *ObjVarName* = CreateObject("PromodelPM.Runtime")

PromodelMM Type Library (MedModel product)

Dim *ObjVarName* as PromodelMM.Application
Set *ObjVarName* = CreateObject("PromodelMM.Application")

Dim *ObjVarName* as PromodelMM.Data
Set *ObjVarName* = CreateObject("PromodelMM.Data")

Dim *ObjVarName* as PromodelMM.Runtime
Set *ObjVarName* = CreateObject("PromodelMM.Runtime")

PromodelSM Type Library (ServiceModel product)

Dim *ObjVarName* as PromodelSM.Application
Set *ObjVarName* = CreateObject("PromodelSM.Application")

Dim *ObjVarName* as PromodelSM.Data
Set *ObjVarName* = CreateObject("PromodelSM.Data")

Dim *ObjVarName* as PromodelSM.Runtime
Set *ObjVarName* = CreateObject("PromodelSM.Runtime")

Other Objects

ProModel also provides a few other objects that will enable you to:

- Access the data found in the classic output statistics files (*.rdb, *.rdt).
- Capture and respond to events that take place in ProModel

There are three files that allow you to work with the classic output statistics. They are:

- Rdbsrv.exe – gives you access to the data contained in the General Statistics report. This has been included with previous versions of ProModel.
- Rdbsvr.dll – This DLL gives you access to the General Statistics, but does it much faster than rdbsrv.exe.
- Rdtdata.dll – This DLL gives you access to the Time Series data.

The "ProModel Events 2.0 Type Library" (pmcp53.dll) gives you a way to control things that happen (events) in ProModel. With it, you can:

- Trap and respond to errors without user intervention

- Hide informational messages
- Get information about changes the user makes during simulation, such as changing the animation speed or the view.
- Handle ProModel "Prompt" dialogs or replace them with your own dialogs

Methods

Each ProModel ActiveX ***Object*** has one or more ***methods*** (actions it can perform).

Each method may or may not have ***Parameters*** (details that you provide or that ProModel returns).

Syntax

Most methods can be used in two different ways. The first example shown below does not have a variable to receive the result code. The second example uses a slightly different syntax that will enable you to determine whether or not the method executed successfully.

Syntax 1

If you don't need to know whether the method succeeded or failed, use the method name, followed by a space, then each parameter. Use a comma to separate the parameters.

```
Sub FindRecord()
   Dim pmObject As ProModel.CProModel
   Dim pmDataObject As ProModel.CProModelData

   Set pmObject = CreateObject("ProModel")
   Set pmDataObject = CreateObject("ProModelData")
   pmDataObject.Populate

   pmDataObject.SelectMainRecordByName 1, "MyLocation"

   Set pmObject = Nothing
   Set pmDataObject = Nothing
End Sub
```

Syntax 2:

When you use this syntax, you can determine what happened when the method was executed. You will need to declare a variable to hold the result code returned by ProModel. In the method call, start with that variable, then an equals (=) sign, followed by the method name and a left parenthesis. As with Syntax 1, the parameters are listed in order, separated by commas. Finally, a right parenthesis closes the method call.

```
Sub FindRecord()
   Dim pmObject As ProModel.CProModel
   Dim pmDataObject As ProModel.CProModelData
   Dim vResultCode as Long

   Set pmObject = CreateObject("ProModel")
   Set pmDataObject = CreateObject("ProModelData")
   pmDataObject.Populate

   vResultCode = pmDataObject.SelectMainRecordByName (1, "MyLocation")

   If vResultCode <> 0 Then
```

```
    MsgBox “Record Not Found”
  End If

  Set pmObject = Nothing
  Set pmDataObject = Nothing
End Sub
```

Result Codes

Almost all of the methods in the ProModelData object may optionally be written to return a result code. Result codes help you know if the execution of the method was succesdsful. For a list of result codes, see “Result Codes (Errors)” on page 118.

Definitions

Record Type = Table Number

Record = Row

Record Index = Row Number

Field = Column

Field Index = Column Number

Parameters

ProModel has two kinds of parameters: Input Parameters and Output Parameters. Each parameter has a specific data type. In this document, the data types shown are Visual Basic data types. If you are programming in another ActiveX enabled language, you will need to use the equivalent types in that language.

For input parameters, you may place a value of the correct type directly in the method call, or place the value into a variable of the appropriate type, then use the variable to satisfy the parameter requirements. For output parameters you must supply a variable of the appropriate type to receive the values returned by ProModel.

For output parameters, you must use a variable.

Although some programming languages will automatically convert one data type to another, you may need to use variables to work with some numbers. In the example for the Zoom method, shown on page 37, you will notice that a variable of type Double is declared, then the numeric value is placed in that variable, and the variable is used in the method call. If the Zoom method is executed with a number as the parameter, an error is raised, because Visual Basic automatically converts the number, but not to the correct type. So, by placing the number in a variable explicitly defined as a Double, the problem of incorrect conversion is avoided. Other languages may have similar limitations.

PM Constants

You may have noticed that the first parameter in the “SelectMainRecordByName” method used in the code sample in the Syntax section contains a number. This number references the Locations table. Because it can be difficult to remember the number codes associated with so many tables, fields, status codes, etc. we have developed text values that you may use in place of the numbers. To use the pre-defined constants, simply include the PMConstants.bas in one of your program modules. Whether you use the pre-defined constants, your own constants or the numbers in your code makes no difference to ProModel. You can even use constants and numbers in the same method call. See the PM Constants chapter for a complete list of pre-defined constants, their values and descriptions.

Working with Data

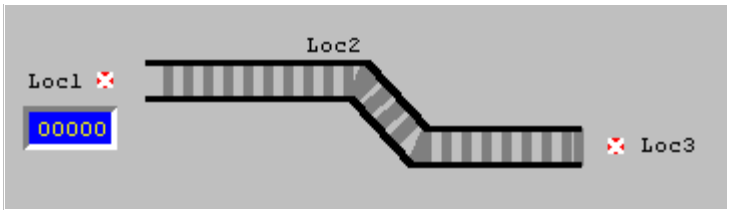
When you create a model, what you are actually doing is recording information about your business processes. When you run a simulation, ProModel takes that information and uses it to display an animated representation of your processes and to generate the statistical information about your processes.

You can think of each model you create as a database. Within each model database there are many tables, such as Locations, Path Networks, and Processing. ProModel's ActiveX uses numbers to reference each table. In the appendix, you will find a list of tables and their corresponding numbers.

Each table contains one or more fields. You may have records in many of these tables, with information in some of the fields. If you are accustomed to spreadsheets, each model would be a workbook, each table a sheet. Fields would correspond to columns and records would be the rows. Fields and records are also referenced by number. A complete list of tables and fields, along with their reference numbers, can be found in Appendix A on page 91.

With a database, you have an element that is not as easy to create in a spreadsheet, the parent-child relationship. Since ProModel is a database environment, there are many tables that have that type of relationship. Let's look at something a little more concrete.

Suppose you have just started a new model and have defined the locations shown below:



For each of these three locations, there is more that one graphic icon. In addition, the conveyor for Loc2 has a couple of joints (bends) in it. So, your Locations table would have three records. Each of these records would have more than one graphic. Information about the graphics is stored in a different table, which is a child of the Locations table. The child table (Location Graphics) also has a child of its own, the Q/Conveyor Joints table. A diagram of the table relationships would look something like this:

Locations	Location Graphics	Q/Conveyor Joints
1. Loc1	1. Part Spot	
	2. Text Box	
	3. Counter	
2. Loc2	1. Conveyor	1. Start Point
		2. First Bend
		3. Second Bend
		4. End Point
	2. Text Box	
3. Loc3	1. Part Spot	
	2. Text Box	

If we want to change the name of Loc1 to "EntryPoint", we would need to make that change in the first record of the Locations table (table number 1). So, we would select record one in table one.

If we want to move Loc3 to a different place in the layout, we would first need to select the Loc3 record in the parent table (Locations). Then we can select records in the child table (Location Graphics – table 45) and change the X and Y values of each.

Now, if we want to move the end of the Loc2 conveyor closer to our new Loc3 position, we first need to select Loc2 in the parent table (Locations). Then, we would select Conveyor in the child table (Location Graphics) for Loc2. Finally, we can select the End Point record in the second level child table (Q/Conveyor Joints – table 61) and change its X and Y values.

You may have realized from the description above that you must always select a record before you can work with any of the information in that record. This holds true for all of the data tables in ProModel. Records can be selected either by name (if it has one) or by index number. The index number is the number in the upper right corner of the data window in ProModel and represents the record's position in the table (its row number). When a new record is added to a table in ProModel, that record is automatically selected. If a record is deleted from a table, the index numbers of following records will be changed to close the gap.

The fields (columns) are also numbered, from left to right. One caveat: the first field is not always the one you might think it is. For example, the Name field in the Locations table is actually number two. Field one is no longer used.

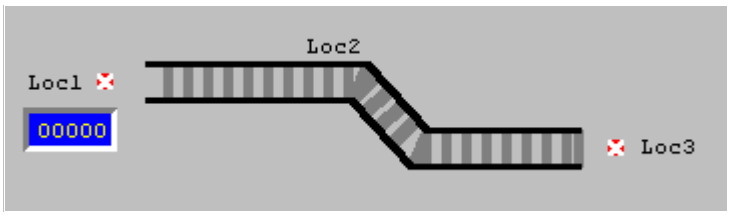
Working with Graphics

Though the basic principles for working with data in the graphics tables are the same as working with any other data table in ProModel, there are some things that work a bit differently. This section covers those differences.

We have already indicated that the Location Graphics table is a child of the Locations table. Entities and Resources also have their own graphics tables. The graphics information for the Path Networks table are actually included in the parent table (it has other children).

With most data tables in ProModel, there are two methods available for adding new records – the AppendRecord and InsertRecord methods. When working with any of the Graphics child tables, only the AppendRecord() is used, InsertRecord() will return an error.

Because there are many types of graphics associated with locations, working with the Location Graphics table can be a bit tricky at first. Let's look at the example we used previously:



Suppose that we want to add a Counter graphic to Loc3.

First, we must select the record for Loc3 in the Locations table. Then, we would use the AppendRecord method with the Location Graphics table. A library graphic is automatically created. However, we don't want a Library graphic, so we must use the SetIntFieldValue method to change the value in the Type field to 4 (Counter).

With other data tables, the SetIntFieldValue method would simply replace the value in the specified field. Not so in the Location Graphics table. When using this method on the Type field, it actually deletes the library graphic record, then appends a new record (counter graphic) and sets the value of the Type field to 4. This is fine if you have just appended a new record, but what if you want to change the Type of an existing graphic?

Unless the graphic you wish to change is the last record in the table, the index number will change (because the record is deleted and then a new record added to the end of the table). This also means that the index number of other graphics may change, as outlined earlier.

Changing the graphic type also modifies the apparent structure of the Location Graphics table itself. Each graphic type has different fields associated with it. (see “Location Graphics (45): pmdTblLocGraphic” on page 107). A field by the same name may have different numeric values for different graphic types. The one constant is the Type field, it is always field 1.

What if we create a location, then we append a graphic and we want to change it to a Queue? When we change the value in the Type field to 2, the same process as above takes place, but a few more things happen as well. The Graphic Style field will have the default value of 2 (Line style), and two records will be added to the next level child table (Q Joints table, #61). The first record in the Q Joints table will have the X Position and Y Position both set to zero (0), indicating that the queue starts at the top left corner of the layout. The second record will have default X and Y values of 100, indicating that the queue ends 100 pixels to the right and 100 pixels down from there.

After that, you may work with the other fields of the Location Graphics table to further define how the Queue or Conveyor will look and function. You may also change the X and Y position values of the two records in the Queue/Conveyor Joints table, or add more joints by appending records. However, you cannot delete the two default records, since you cannot have a queue or conveyor with only one end. To delete the queue or conveyor, you must delete the record in the Location Graphics table.

You may notice as you work with Library Graphics that there is no easy way to determine what the Graphic ID number is for any given graphic icon. However, the Graphic ID is a required field when the graphic type is 1. The Graphic Editor is an application that is included with ProModel for your convenience. Unfortunately, as you add, change and delete icons in your graphics libraries, you may end up with numbers out of sequential order or missing altogether.

The following chapters will give you detailed information and examples for each of the objects and methods available with your installation of ProModel.

Chapter 1:
The ProModel Application Object

The ProModel Application object is found in pm.exe, mm.exe, and sm.exe as "*ProModel"*, *"ProModel Type Library"*, *"ProModelPM",*or *"ProModel PM Type Library"*. If one or more of these libraries are not available in your References list, run PM.EXE (found in your ProModel folder) with the " /regserver" command line option.

The ProModel Application object may be used with Runtime versions of ProModel. The ProModel Application object has methods that control all the commonly used functions of ProModel, as well as the method used to initialize the Events object. The available methods are listed below, grouped by area of functionality.

- EndReplication
- EndSimulation
- GetEventsObject
- GetSimTime
- GetStatus
- GetVersion
- LoadDefaults
- LoadModel
- MenuCommand
- MergeModel
- MsgBox
- New
- OpenModule
- Quit
- RedrawLayout
- RedrawTables
- RunScenarios
- Save
- SaveAs
- SetMacro
- SetMenus
- SetMessageModes
- SetPan
- SetView
- SetViewRect
- SetWindowPos
- ShowTranslationDlg
- Simulate
- Zoom

EndReplication

Syntax: EndReplication

Description: Terminates a Replication before completion. Simulation will then proceed to the next replication. If EndReplication is called during the final replication, the simulation will end.

Parameters: None

Returns: Nothing

Example: This example loads a model, runs simulation for 30 minutes (1800 seconds), then terminates the current replication.

```
Sub QuitSimEarly()
   Dim pmObject As ProModel.CProModel
   Dim CurSimTime AS Double

   CurSimTime = 0
   Set pmObject = CreateObject(“ProModel”)
   pmObject.LoadModel ("C:\ProModel 2001\Models\Demos\mfg_cost.mod")
   pmObject.Simulate

   Do While CurSimTime < 1800
      pmObject.GetSimTime CurSimTime
      DoEvents
   Loop

   pmObject.EndReplication

   Set pmObject = Nothing
End Sub
```

EndSimulation

Syntax: EndSimulation

Description: Terminates a simulation run before completion. The EndSimulation method will have no effect if called when there is no simulation running. If running multiple replications, the entire simulation will end (remaining replications will not be run).

Parameters: None

Returns: Nothing

This example loads a model, runs it for 30 minutes (1800 seconds), then terminates the simulation.

```
Sub QuitSimEarly()
  Dim pmObject As ProModel.CProModel
  Dim CurSimTime AS Double

  CurSimTime = 0
  Set pmObject = CreateObject(“ProModel”)
  pmObject.LoadModel ("C:\ProModel 2001\Models\Demos\mfg_cost.mod")
  pmObject.Simulate

  Do While CurSimTime < 1800
    pmObject.GetSimTime CurSimTime
    DoEvents
  Loop

  pmObject.EndSimulation

  Set pmObject = Nothing
End Sub
```

GetEventsObject

Syntax: GetEventsObject

Description: Use this method to initialize the ProModel Events object. For further instructions see the Events Handler section.

Parameters: None

Returns: Event Handler object.

Example: This example is incomplete, but the code given shows how to use the GetEventsObject method. This must be executed before using the Events Handler.

```
Sub GenericSub()
   Dim pmObject As ProModel.CProModel
   Dim pmEventObject As PMCPLib.PMEvents

   Set pmObject = CreateObject("ProModel")
      Set pmEventObject = pmObject.GetEventsObject
      **More Code…
End Sub
```

GetSimTime

Syntax: GetSimTime (Seconds)

Description: Gets the current simulation time in seconds.

Parameters:

Seconds (Double) Output parameter that receives return value.

Returns: (Double) Current simulation clock time in seconds.

Example: This example loads a model, runs it for 30 minutes (1800 seconds), then terminates the simulation.

```
Sub QuitSimEarly()
  Dim pmObject As ProModel.CProModel
  Dim CurSimTime AS Double

  CurSimTime = 0
  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel ("C:\ProModel 2001\Models\Demos\mfg_cost.mod")
  pmObject.Simulate

  Do While CurSimTime < 1800
    pmObject.GetSimTime CurSimTime
    DoEvents
  Loop

  pmObject.EndSimulation
  Set pmObject = Nothing
End Sub
```

GetStatus

Syntax: GetStatus

Description: Gets the current state of a loaded model. Use this method to trap events triggered by Pro-Model or the user. Note: This method is easier to use than the Events Handler, but less robust and reliable For instance, the GetStatus method will work fine for simple applications, but for more complicated situations, such as running a series of models, it would work better to use the event handler approach to avoid problems with timing issues.

Parameters: None

Returns: Long. Status code (0 – 9) of the loaded model.

Status Codes:

0. Status unknown
1. No model loaded
2. Loading a model
3. Model loaded
4. Load error
5. Translating model
6. Simulation in progress
7. Simulation or translation terminated pre-maturely
8. Simulation completed
9. Simulation frozen

Example: This example starts the simulation for the loaded model and continuously checks the status. Then, when the status changes to 8 (normal completion), shows a message to let the user know it's done.

```
Sub WhatsUp()z
   Dim pmObject As ProModel.CProModel
   Dim vStatus As Long

   Set pmObject = CreateObject("ProModel")
   pmObject.Simulate
   vStatus = pmObject.GetStatus

   Do
      DoEvents
      vStatus = pmObject.GetStatus
   Loop Until vStatus = 8

   MsgBox "I'm done."
   Set pmObject = Nothing
End Sub
```

GetVersion

Syntax: GetVersion

Description: Returns the version of the product you are using. This could be used to make certain that the user's version of ProModel is recent enough to contain certain features.

Parameters: None.

Returns: (String) Version number and build number shown in the 'Help > About' dialog box in ProModel.

Example: This example opens ProModel then returns the version information to the variable.

```
Sub VerNum()
  Dim pmObject As ProModel.CProModel
  Dim pmVersion As String

  Set pmObject = CreateObject("ProModel")
  pmVersion = pmObject.GetVersion
  MsgBox "You are using version " & pmVersion
  Set pmObject = Nothing
End Sub
```

LoadDefaults

Syntax: LoadDefaults ININame

Description: Reloads the INI file, which contains the ProModel defaults. The INI name is ingnored.

Parameters:

ININame	The name of the INI file with the desired defaults.

LoadModel

Syntax: LoadModel FileName

Description: Loads the specified model.

Parameters:

FileName (String) Any valid path and model filename. Model files must have a .mod extension.

Returns: Nothing

Example: This example loads a model, runs it for 30 minutes (1800 seconds), then terminates the simulation.

```
Sub QuitSimEarly()
  Dim pmObject As ProModel.CProModel
  Dim CurSimTime AS Double

  CurSimTime = 0
  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel ("C:\Program Files\ProModel\Models\Demos\mfg_cost.mod")
  pmObject.Simulate

  Do While CurSimTime < 1800
    pmObject.GetSimTime CurSimTime
    DoEvents
  Loop

  pmObject.EndSimulation

  Set pmObject = Nothing
End Sub
```

MenuCommand

Syntax: MenuCommand CmdNum, lParam

Description: Executes a specified menu option (as if the user had selected it).

Parameters:

CmdNum	(Long) The ID number of the menu command you wish to use. See “Menu Ids” on page 121.
lParam	(Long) For almost all MenuIDs, Parameter has no meaning, so a zero should be passed. For #4825 (Interactive Subroutine), Parameter will activate a specific subroutine. The number in Parameter refers to the order of the subroutine in the “Interact” list available during simulation, not it’s index number in the Subroutine table.

Returns: Nothing

Example: The following example loads a model, then opens the General Information dialog.

```
Sub ChangeView()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject(“ProModel”)
  pmObject.LoadModel ("C:\Program Files\ProModel\Models\Demos\mfg_cost.mod")
  pmObject.MenuCommand 2863, 0

  Set pmObject = Nothing
End Sub
```

MergeModel

Syntax: MergeModel FileName, Xpos, Ypos, Tag, Flags

Description: Merges the specified model into the currently loaded model. Model merging is useful when you wish to join sub models or fragmented model components to the original model.

Parameters:

FileName	(String) The name of the file you wish to merge.
Xpos	(Double) Horizontal placement of submodel (number of pixels over from left margin).
Ypos	(Double) Vertical placement of submodel (number of pixels down from the top margin)
Tag	(String) A label attached to the beginning or end of every identifier in the merged model.
Flags	(Long) You can use flags to specify merge options such as whether to attach a tag to the beginning or end of identifiers, or whether or not to merge graphics libraries. Flags should be combined using the “Or” operator.

Returns: (Long) Result of the merge operation (whether it was successful or not).

Flags: When using more than one flag, use the keyword “Or” to connect, or simply add the values of the flags together, and enter that value for all flags.

2 Don’t prompt
8 Prefix tag (default is suffix)
16 Merge new model’s graphic library into the current model and save with original name
32 Merge new model’s graphic library into the current model and save as the original name plus the model tag
64 Just use the original model’s graphic library

Example: This example loads a model, then merges in 24hrclok.mod at an offset of 20x20 pixels from the upper-left corner of the layout. All identifiers associated with the 24 hr. clock will have “sub_” added to the beginning.

```
Sub AddClock()
  Dim pmObject As ProModel.CProModel
  Dim MySubMod As String

  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel "C:\Program Files\ProModel\Models\Demos\mfg_cost.mod"
  MySubMod = "C:\Program Files\ProModel\Models\Demos\mfg_cost.mod"
  pmObject.MergeModel MySubMod, 175, 125, "sub_", 8 Or 64

  Set pmObject = Nothing
End Sub
```

MsgBox

Syntax: MsgBox Message

Description: Displays a message box containing the indicated text. The message box will display in ProModel. If you wait for a response from within Excel or a custom VB interface, you may not see the message box. This may delay operations while the dialog awaits a response.

Parameters:

Message (String) The message you wish to display.

Returns: Nothing

Example: This example loads a model, then sends a message to the ProModel window that the user must clear before the next line of code will be executed.

```
Sub Hal()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
  pmObject.MsgBox "Good Morning, Dave."

  Set pmObject = Nothing
End Sub
```

New

Syntax: New

Description: Invokes the File/New command without launching the General Information Dialog.

Parameters: None

Returns: Nothing

Example: This example opens ProModel and loads a new (empty) model.

```
Sub NewMod()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
  pmObject.New

  Set pmObject = Nothing
End Sub
```

OpenModule

Syntax: OpenModule Module

Description: Opens a specific build module. A module is a table in the ProModel Build menu. Passing a zero (0) value will close any open modules.

Parameters:

Module (Long) A module ID number from the list below.

Returns: Nothing

Module ID Numbers:

0 No modules open
1 Locations
2 Arrivals
5 Entities
6 Resources
10 Variables
11 Attributes
12 Arrays
15 Function tables
16 Distribution tables
17 Cycle tables
18 Subroutines
19 Processing
24 Path Networks
25 Macros
26 Streams
27 External Files
34 Shift Assignments
36 Background Graphics (Behind grid)
37 Background Graphics (Front of grid)

Example: This example loads a model, then opens the Entities module, as if the user had selected Build >> Entities.

```
Sub OpenEntMod()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel "C:\Program Files\ProModel\Models\Demos\mfg_cost.mod"
  pmObject.OpenModule 5

  Set pmObject = Nothing
End Sub
```

Quit

Syntax: Quit

Description: Closes ProModel. The “Save Changes?” prompt will appear, if applicable.

Parameters: None

Returns: Nothing

Example: This example opens ProModel, then closes it.

```
Sub ClosePM()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
  pmObject.Quit

  Set pmObject = Nothing
End Sub
```

RedrawLayout

Syntax: RedrawLayout

Description: Refreshes the layout window. Useful when you add graphical objects via the ProModelData interface.

Parameters: None

Returns: Nothing

Example: The following examples loads a model, adds a location record, attaches a library graphic to the location , and redraws the layout.

```
Sub AddLoc()
   Dim pmObject As ProModel.CProModel
   Dim pmDataObject As ProModel.CProModelData
   Dim Xpos As Double
   Dim Ypos As Double

   Set pmObject = CreateObject("ProModel")
   Set pmDataObject = CreateObject("ProModelData")
   Xpos = 20
   Ypos = 20

   pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
   pmDataObject.Populate
   pmDataObject.AppendRecord pmdTblLocation
   pmDataObject.AppendGraphicIcon pmdTblLocation, 1, 1, Xpos, Ypos
   pmObject.RedrawLayout

   Set pmDataObject = Nothing
   Set pmObject = Nothing
End Sub
```

RedrawTables

Syntax: RedrawTables

Description: Refreshes any open tables. When using the ProModel Data Object to update model data, if the table being update is open, the screen will not show the changes until RedrawTables is executed or the module is closed and re-opened.

Parameters: None

Returns: Nothing

Example: This example loads a model, adds a new record to the Entities table, then refreshes the table to show the new record.

```
Sub AddEnt()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")

  pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
  pmObject.OpenModule 5
  pmDataObject.Populate
  pmDataObject.AppendRecord pmdTblEntity
  pmDataObject.SetStringFieldValue pmdTblEntity, pmdFldEntName, "MyNewEntity"
  pmObject.RedrawTables

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

RunScenarios

Syntax: RunScenarios

Description: Runs scenarios defined in the model.

Parameters: None

Returns: Nothing

Example: This example loads a model, then runs the defined simulation scenarios.

```
Sub MfgScenarios()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel ("c:\promodel 2001\models\demos\mfg_cost.mod")
  pmObject.RunScenarios

  Set pmObject = Nothing
End Sub
```

Save

Syntax: Save

Description: Saves any changes to the loaded model (to the same file).

Parameters: None

Returns: Nothing

Examle: This example loads a model, adds a new record to the Entities table, then saves the changes.

```
Sub AddEnt()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")

  pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
  pmDataObject.Populate
  pmDataObject.AppendRecord 2
  pmDataObject.SetStringFieldValue 2, 2, "MyNewEntity"
  pmObject.Save

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

SaveAs

Syntax: SaveA*s* ModelName

Description: Saves the loaded model to a specified file.

Parameters:

ModelName (String) Any valid model path & filename.

Returns: Nothing

Example: This example loads a model, adds a record to the Entities table, then saves the changes to a new file.

```
Sub SaveModAs()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")

  pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
  pmDataObject.Populate
  pmDataObject.AppendRecord 2
  pmDataObject.SetStringFieldValue 2, 2, "MyNewEntity"
  pmObject.SaveAs "c:\temp\mfg_cost_new.mod"

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

SetMacro

Syntax: SetMacro Macro Name, Macro Value

Description: Sets the value of a ProModel macro.

Parameters:

MacroName (String) ID of any defined macro in loaded model.

MacroValue (String) New value for specified macro.

Returns: Nothing

Example: This example loads a model, changes a macro value, then runs the simulation with the new value.

```
Sub Use3Ops()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
  pmObject.SetMacro "Number_of_Operators", 3
  pmObject.Simulate

  Set pmObject = Nothing
End Sub
```

SetMenus

Syntax: SetMenus MenuSet, MenuOptions

Description: Modifies the menu display within ProModel. Currently, only the options used in the example are implemented.

Parameters:

MenuSet	(Long)	1 = Edit Menu Set, 2 = Simulation Menu
MenuOptions	(Long)	1 = Minimal

Returns: Nothing

Example: The following example loads the mfg_cost.mod, sets the Simulation menu to minimal, then runs the simulation. This will cause the menu during the simulation to show only “Simulation >> Pause/ Resume” and “Help” options.

```
Sub RunMinMenu()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
  pmObject.SetMenus 2, 1
  pmObject.Simulate

  Set pmObject = Nothing
End Sub
```

SetMessageMode

Syntax: SetMessageMode Flags

Description: This method only applies to standard message boxes, it will have no effect on error messages, translation dialog or data dialogs accessed from the menu. With this method you can control what types of messages to display or not to display. Types are based on which control buttons are shown in the message box. The type(s) included in the *Flags* parameter will be the only types shown, all others will execute the default option, without showing the message box. If you wish to execute a non-default option without showing the message box, you can do so through the ProModel Event Handler.

Parameters:

Flags	(Long)	See list of flags below.

Returns: Nothing

Flags: Flags can be combinged using "+" or "OR", except for values 0 and 1.

0	Do not display any messages
1	Show Information messages
2	Show messages with OK button
4	Show messages with OK & Cancel buttons
8	Show messages with Retry & Cancel buttons
16	Show messages with Yes & No buttons
32	Show messages with Yes, No & Cancel buttons
64	Show messages with Abort, Retry and Ignore buttons
-1	Show All messages

Example: This example runs a simulation, then opens the output statistics module without prompting the user.

```
Sub SkipMessages()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
  pmObject.SetMessageMode 0
  pmObject.Simulate

  Set pmObject = Nothing
End Sub
```

SetPan

Syntax: SetPan x, y

Description: Moves the layout view so that the x-y coordinates specified are at the top left corner of the layout window (as if the user had moved the scroll bars).

Parameters:

x	(Double) Horizontal shift in pixels.
y	(Double) Vertical shift in pixels.

Returns: Nothing

Example: This example loads a model, then scrolls right 100 pixels and down 100 pixels.

```
Sub AutoScroll()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
  pmObject.SetPan 100, 100

  Set pmObject = Nothing
End Sub
```

SetView

Syntax: SetView ViewName

Description: Sets the layout window to display a specific view.

Parameters:

ViewName (String) The name of the view you wish to display.

Returns: Nothing

Example: This example loads a model, then switches to the defined view.

```
Sub ShowFull()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
  pmObject.SetView "Full View"

  Set pmObject = Nothing
End Sub
```

SetViewRect

Syntax: SetViewRect Left, Top, Right, Bottom

Description: Zooms and pans the layout to allow the rectangle defined by the input coordinates to fill the layout window. Note: The x,y dimensions are always scaled equally.

Parameters:

Left	(Double) The left boundary.
Top	(Double) The top boundary.
Right	(Double) The right boundary.
Bottom	(Double). The bottom boundary.

Example: This example loads a model, then sets the layout window to show the section from x-y coordinates (30, 40) to (100, 200).

```
Sub NewPosition()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
  pmObject.SetViewRect 30, 40, 100, 200

  Set pmObject = Nothing
End Sub
```

SetWindowPos

Syntax: SetWindowPos Window, xPos, yPos, xSize, ySize, Flags

Description: Defines the position, size and style of the application window or the layout window. The application window position is relative to the screen, other layout window is relative to the application window.

Parameters:

Window	(Long) Identifies the window (1 = layout window, 2 = application window).
xPos, yPos	(Long) Determine the position of the window.
xSize, ySize	(Long) Determine the size of the window.
Flags	(Long) If xSize or ySize is zero, SetWindowPos calls the Windows API function ShowWindow and passes the flags.

Window Types:

1 Layout window
2 Application window

Flags:

-1 Original Style
0 Hide
1 Normal
2 Minimize
3 Maximize
9 Restore

Returns: Nothing

Example: This example loads a model, ensures that ProModel is running maximized, then moves the layout window near the top left corner of the ProModel screen.

```
Private Sub CommandButton2_Click()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
  pmObject.SetWindowPos 2, 0, 0, 0, 0, 3
  pmObject.SetWindowPos 1, 10, 10, 700, 500, 0

  Set pmObject = Nothing
End Sub
```

ShowTranslationDlg

Syntax: ShowTranslationDlg Status

Description: Shows or hides the translation dialog.

Parameters:

Status	(Boolean) True displays the dialog, False hides the dialog.

Returns: Nothing

Example: This example loads a model, sets the option to hide the Translation dialog, then runs the simulation.

```
Sub HideIt()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
  pmObject.ShowTranslationDlg False
  pmObject.Simulate

  Set pmObject = Nothing
End Sub
```

Simulate

Syntax: Simulate

Description: Starts the simulation.

Parameters: None

Returns: Nothing

Example: This example loads a model, runs it for 30 minutes (1800 seconds), then terminates the simulation.

```
Sub SimIt()
  Dim pmObject As ProModel.CProModel
  Dim CurSimTime AS Double

  Set pmObject = CreateObject(“ProModel”)
  pmObject.LoadModel ("C:\ProModel 2001\Models\Demos\mfg_cost.mod")
  pmObject.Simulate
  CurSimTime = 0
  Do While CurSimTime < 1800
    pmObject.GetSimTime CurSimTime
    DoEvents
  Loop
  pmObject.EndSimulation

  Set pmObject = Nothing
End Sub
```

Zoom

Syntax: Zoom PercentZoom

Description: Sets the zoom percentage of the model. Passing a zero (0) in the *PercentZoom* parameter shrinks or expands the model to fit the layout window.

Parameters:

PercentZoom (Double) 1 = 100%, 0.75 = 75%, etc.

Returns: Nothing

Example: This example loads a model, then shows the layout 90 % of the original size.

```
Sub ShrinkIt()
  Dim pmObject As ProModel.CProModel
  Dim ZoomPercent As Double

  ZoomPercent = 0.9
  Set pmObject = CreateObject("ProModel")
  pmObject.LoadModel "c:\promodel 2001\models\demos\mfg_cost.mod"
  pmObject.Zoom ZoomPercent

  Set pmObject = Nothing
End Sub
```

Chapter 2:
The ProModel Events Object

The PMEvents object is found in the *ProModel Events 2.0 Type Library.* This object provides methods for trapping and responding to certain events that happen in ProModel. The PMEvents object must be initialized by the GetEventsObject method found in the ProModel object. In Visual Basic, you must declare this object variable using the WithEvents keyword. When this is done, Visual Basic will automatically create a new entry in the Object drop-down list box in the module where the object variable was declared (you do not need to manually declare the Event Handler function). Within the Event Handler function, you will place code to respond to events returned by ProModel to your application. You may modify the default behavior of some events by returning 'True' from your Event Handler method.

- PmEventsHandler

- AnimSpeedChange
- InputTextPrompt
- ListSelectPrompt
- RunError
- TranslationError
- UserZoom

PMEventsHandler

To use the ProModel Events Handler, add a reference to the ProModel Events 2.0 Type Library (**pmcp53.dll** typically found in your "C:\Program Files\Common Files\PROMODEL Shared\Components" folder). Then, add the following to the Class Module[1] where you will be calling the GetEvents method of the ProModel Object.

Private WithEvents pmEventsObject As PMCPLib.PmEvents

That will place a **pmEventsObject** variable in the Object drop-down list, and a procedure called **PmEventsHandler** in the Procedure/Events drop-down list at the top of the Code Window.

When you select the object variable (pmEventsObject) from the Object drop-down list and PmEventsHandler from the Procedure/Events drop-down list, it will create a function called **pmEventsObject_PmEventsHandler** in your Code Window. In this function, you will create "If…Then" or "Select Case" statements to handle event codes returned to your program by ProModel.

A list of Events that the PMEventsHandler handles can be found on page 119.

Example:

```
Private Function pmEventsObject_PmEventsHandler(ByVal PmEventID As Long, ByVal Description As
String) As Long
  Select Case PmEventID
    Case 2:  'PmEvtSaveBeforeQuit
      pmEventsObject_PmEventsHandler = True skip save
    Case Else:
      Debug.Print PmEventID & " " & Description show event in immediate ‘window
  End Select

End Function
```

To activate the event handler in your program, include the ProModel Object GetEvents method at the beginning of your code.

Example:

```
Private Sub CommandButton1_Click()
  Dim pmObject As ProModel.CProModel

  Set pmObject = CreateObject("ProModel")
Set pmEventsObject = pmObject.GetEventsObject
…
```

1. class module: A module that contains the definition of a class, including its property and method definitions.

Once the Events Object has been “Set”, as above, it will work on it’s own. So, any event that you want to “handle” differently than the default ProModel action, you will place the code for it in the pmEventsObject_PmEventsHandler function.

AnimSpeedChange

Syntax: *ObjectVariable*_AnimSpeedChange(ByVal Speed As Long) As Long

Description: This event occurs whenever animation speed is changed by the user, by ANIMATE command encountered in model code, or via COM interface (VB program code).

Parameters:

Speed	(Long) – Integer from 0 through 100 representing the relative setting of the animation speed control. This number corresponds to the values used in ANIMATE statements in models and the values set and returned by SetAnimationSpeed and GetAnimation-Speed methods of the Runtime object.

Returns: Not used yet.

Example: The code below will place descriptive text and the new animation speed into a textbox each time the animation speed is changed (e.g. – “Animation speed changed to 39”).

```
Private Function pmEventsObject_AnimSpeedChange(ByVal Speed As Long) As Long
   Textbox1.Text = Textbox1.Text & "Animation speed changed to " & Speed & VBCRLF
End Function
```

InputTextPrompt

Syntax: *ObjectVariable*_InputTextPrompt(ByVal Message As String, ByVal Default As String, Value As String, ByVal Flags As Long) As Long

Description: The PROMPT statement in ProModel can be defined either as a simple prompt/response dialog box or as a list of options to choose from. This event fires whenever a simple PROMPT statement is encountered in the model logic. Use the ListSelectPrompt event to handle PROMPT statements defined as choice lists.

Parameters:

Message	(String) – Message to the user, describing the meaning and asking for a value
Default	(String) – Text shown in the edit field of the dialog (before user changes it)
Value	(String) – Variable to hold value given by user
Flags	(Long) – Not Used

Returns:

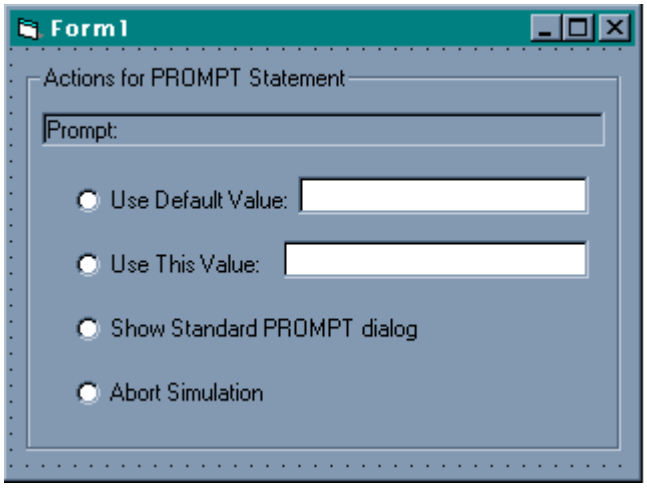
0 = Use the default value

1 = Set the variable to the value in *Value* parameter

2 = Show the prompt dialog and let the user enter a value

3 = Abort the simulation

Example: In the following example we start with the form shown below:




```
Private Function pmEventsObject_InputTextPrompt(ByVal Message As String, _
ByVal Default As String, Value As String, ByVal Flags As Long) As Long
  Label1.Caption = "Prompt: " & Message
  Textbox1.Text = Default
  If OptionButton(0).Value = True Then
    pmEventsObject_InputTextPrompt = 0     'Use default
  ElseIf OptionButton(1).Value = True Then
    Value = Textbox2.Text
    pmEventsObject_InputTextPrompt = 1     'Use value from textbox2
  ElseIf OptionButton(2).Value = True Then
    pmEventsObject_InputTextPrompt = 2     'Show standard prompt
  Else
    pmEventsObject_InputTextPrompt = 3    'Abort simulation
```

```
    End If
End Function
```

ListSelectPrompt

Syntax: *ObjectVariable*_ListSelectPrompt(ByVal Message As String, ByVal MenuItemCount As Long, psaLabels() As String, psaValues() As Double, Choice As Long, ByVal Flags As Long) As Long

Description: The PROMPT statement in ProModel can be defined either as a simple prompt/response dialog box or as a prompt dialog with a list of options to choose from. This event fires whenever a PROMPT statement defined as a choice list is encountered in the model logic. Use the InputTextPrompt event to handle simple PROMPT statements.

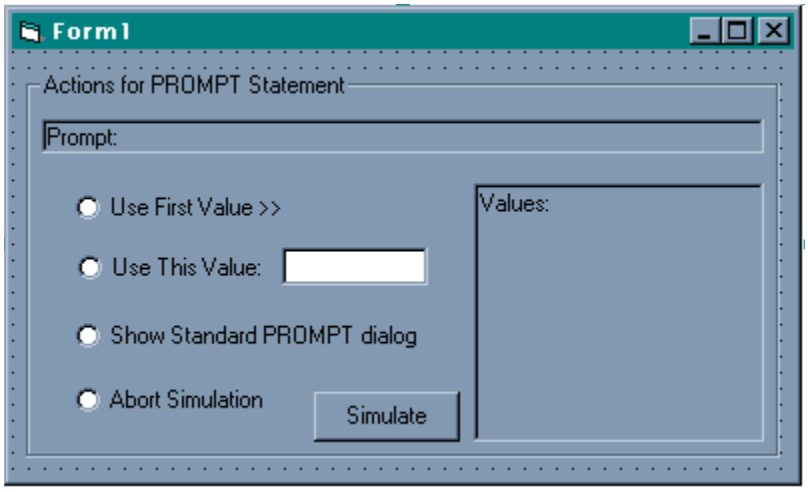
Parameters:

Message	(String) – Message to the user, describing the meaning of parameter being prompted for, values provided, etc.
MenuItemCount	(Long) – Number of items in menu
psaLabels	– array of strings representing menu items
psaValues	– array of real numbers (double) representing values that correspond to each menu item
Choice	– zero-based index of the menu item to return to application
Flags	(Long) – Not Used

Returns:

0 = Use the first value
1 = Set the variable to the value in *Choice* parameter
2 = Show the prompt dialog and let the user enter a value
3 = Abort the simulation

Example: In the following example we start with the form shown below:




```
Private Function pmEventsObject_ListSelectPrompt(ByVal Message As String, _
        ByVal MenuItemCount As Long, psaLabels() As String, _
        psaValues() As Double, Choice As Long, ByVal Flags As Long) As Long
  Dim i As Integer

  Label1.Caption = "Prompt: " & Message
  Textbox1.Text = ""
  For i = 0 To MenuItemCount - 1
    Textbox1.Text = Textbox1.Text & i & ") " & psaLabels(i) & " = " & _
        psaValues(i) & vbCrLf
```

```
  Next i

  If OptionButton(0).Value = True Then
    pmEventsObject_ListSelectPrompt = 0  'Use first value
  ElseIf OptionButton(1).Value = True Then
    Choice = Textbox2.Text
    pmEventsObject_ListSelectPrompt = 1  'Use value from textbox2
  ElseIf OptionButton(2).Value = True Then
    pmEventsObject_ListSelectPrompt = 2  'Show standard prompt
  Else
    pmEventsObject_ListSelectPrompt = 3  'Abort simulation
  End If

End Function
```

RunError

Syntax: *ObjectVariable*_RunError(ByVal ErrorID As Long, ByVal Description As String, ByVal Flags As Long) As Long

Description: This event fires whenever an error is encountered during simulation. This allows you to handle specific types of errors in different ways.

Parameters:

ErrorID	(Long) – error code generated by ProModel
Description	(String) – text description of error generated by ProModel
Flags	(Long) – Type of error: 1 = Recoverable, 2 = Fatal

Returns:

0 = Ignore & continue with simulation, if possible
1 = Abort simulation
2 = Show error message & allow user to determine how to handle error

Example:

```
Private Function pmEventsObject_RunError(ByVal ErrorID As Long, ByVal Description As String, ByVal
Flags As Long) As Long

  Select Case Flags
    Case 1:
pmEventsObject_RunError = 2
    Case 2:
pmEventsObject_RunError = 1
  End Select

End Function
```

TranslationError

Description: This event occurs whenever an error is encountered during model translation (just before simulation begins).

Syntax: *ObjectVariable*_TranslationError(ByVal ErrorID As Long, ByVal Description As String, ByVal Flags As Long) As Long

Parameters:

ErrorID (Long) – error code generated by ProModel

Description **(String) – text description of error generated by ProModel**

Flags (Long) – Type of error: 1 = Recoverable, 2 = Fatal

Returns:

0 = Ignore & continue with translation

1 = Abort translation

2 = Show translation status dialog & allow user to determine how to handle error

Example:

```
Private Function PMEventObj_TranslationError(ByVal ErrorID As Long, ByVal
  Description As String, ByVal Flags As Long) As Long


  Select Case Flags

     Case 1:

        pmEventsObject_RunError = 2

     Case 2:

        pmEventsObject_RunError = 1

   End Select


End Function
```

UserZoom

Description: Fired when zoom setting of the layout window is changed, either by explicit zoom or by changing views.

Syntax: *ObjectVariable*_UserZoom (ByVal ZoomPercent As Double) As Long

Parameters:

ZoomPercent (Double) – Factor by which the layout is magnified, 1 = 100%

Returns: Not used

Example:

```
Private Function PMEventObj_UserZoom(ByVal ZoomPct As Double) As Long
MsgBox("Zoomed to " & ZoomPct * 100 & "%")
End Function
```

Chapter 3:
The ProModel Runtime Object

(ProModel.CRuntime)

The ProModel Runtime object is found in the *ProModel Type Library.* If you do not see this library in your references list, you will need to run PM.exe with the "/regserver" command line option.

Using the ProModel Runtime object you can access the statistics generated while a simulation is running, similar to using the Dynamic Plots from the ProModel interface. The methods for this object not only allow you to get the statistics values, but you can set new values for variables while the simulation is running.

The Runtime object has the following methods:

- GetAnimationState
- GetAnimationSpeed
- GetStatValue
- SetAnimationState
- SetAnimationSpeed
- SetStatValue

GetAnimationState

Syntax: GetAnimationState State

Description: Gets the current state of the animation, whether ON or OFF.

Parameters:

State (Long) Zero (0) if animation is off, one (1) if animation is on.

Returns: Long - Zero (0) if animation is off, one (1) if animation is on.

Example:

```
Dim AnimState as Long
Dim pmRun as Promodel.CRuntime

pmObj.Simulate
pmRun.GetAnimationState AnimState
MsgBox "Animation is " & IIF(AnimState = 0, "off", "on")

Set pmObj = nothing
Set pmRun = nothing
```

GetAnimationSpeed

Syntax: GetAnimationSpeed Speed

Description: Gets the current value … When using GetAnimationSpeed and SetAnimationSpeed, the numeric value of a given speed may be slightly different for each method (because of rounding).

Parameters:

Speed	(Long) Numeric value representing animation speed (1 to 100).

Returns: Long - Numeric value representing animation speed (1 to 100).

Example:

```
Dim AnimSpeed as Long
Dim pmRun as Promodel.CRuntime

pmObj.Simulate
pmRun.GetAnimationState AnimSpeed
MsgBox "Animation Speed is " & AnimSpeed

Set pmObj = nothing
Set pmRun = nothing
```

GetStatValue

Syntax: GetStatValue TableID, RecordNum, StatID, SubRec, Value

Description: Gets the current value for the specified statistics element.

Parameters:

TableID	(Long) Table (Section) Number containing the data element you wish to retrieve.
RecordNum	(Long) Record (Row) Number containing the data element you wish to retrieve.
StatID	(Long) Statistic element you wish to retrieve.
SubRec	(Long) For Resource Stats > Unit Number (0 = parent); For Node Entry Stats > Node Index; For Failed Arrivals > RecordNum = Entity Index, SubRec = Location Index
Value	(Double) Variable or object in which to place the statistics value retrieved.

Returns: The numeric value of the statistic element at the moment the method is executed. The value will be placed in the variable or object specified in the *Value* parameter.

Example: This example loads Receive.mod, runs the simulation, then pauses 3 times at 30 minute intervals and displays the Current Contents of the Pallet_Storage location, then ends the simulation.

```
Sub ShowSomeStats()
  Dim pmObject As ProModel.CProModel
  Dim pmRuntime As ProModel.CRuntime
  Dim CurSimTime As Double
  Dim MyStatVal As Double

  CurSimTime = 0
  Set pmObject = CreateObject("ProModel")
  Set pmRuntime = CreateObject("Promodel.CRuntime")
  pmObject.LoadModel ("C:\ProModel 2001\Models\Demos\receive.mod")
  pmObject.Simulate

  Do While CurSimTime < 1800
    pmObject.GetSimTime CurSimTime
    DoEvents
  Loop

  pmObject.MenuCommand 4816, 0
  pmRuntime.GetStatValue 1, 21, 5, MyStatVal
  pmObject.MsgBox MyStatVal
  pmObject.MenuCommand 4816, 0

  Do While CurSimTime < 3600
    pmObject.GetSimTime CurSimTime
    DoEvents
  Loop

  pmObject.MenuCommand 4816, 0 'Pauses Simulation
  pmRuntime.GetStatValue 1, 21, 5, MyStatVal
  pmObject.MsgBox MyStatVal
  pmObject.MenuCommand 4816, 0 'Resumes Simulation

  Do While CurSimTime < 5400
    pmObject.GetSimTime CurSimTime
    DoEvents
```

```
  Loop

  pmObject.MenuCommand 4816, 0
  pmRuntime.GetStatValue 1, 21, 5, MyStatVal
  pmObject.MsgBox MyStatVal
  pmObject.MenuCommand 4816, 0

  pmObject.EndSimulation
  Set pmObject = Nothing
End Sub
```

SetAnimationState

Syntax: GetStatValue State

Description: Gets the current value …

Parameters:

State (Long) …

Returns: Long - Zero (0) if animation is off, one (1) if animation is on.

Example:

SetAnimationSpeed

Syntax: GetStatValue Speed

Description: Gets the current value … When using GetAnimationSpeed and SetAnimationSpeed, the numeric value of a given speed may be slightly different for each method.

Parameters:

Speed (Long) …

Returns: Long - Numeric value representing animation speed (1 to 100).

Example:

SetStatValue

Syntax: SetStatValue TableID, RecordNum, StatID, SubRec, NewVal

Description: Changes the current value for the specified statistics element. To set variable values, use TableID 12, StatID 5.

Parameters:

TableID	(Long) Table (Section) Number containing the data element you wish to set.
RecordNum	(Long) Record (Row) Number containing the data element you wish to set.
StatID	(Long) Statistic element you wish to set.
SubRec	(Long) For Resource Stats > Unit Number (0 = parent); For Node Entry Stats > Node Index; For Failed Arrivals > RecordNum = Entity Index, SubRec = Location Index
NewVal	(Double) New value for the specified statistics element.

Returns: Nothing.

Example: This example loads Receive.mod, runs the simulation, sets the value variable 1 to zero after 30, 60 and 90 minutes of simulation, then ends the simulation.

```
Sub ResetStats()
  Dim pmObject As ProModel.CProModel
  Dim pmRuntime As ProModel.CRuntime
  Dim CurSimTime As Double

  CurSimTime = 0
  Set pmObject = CreateObject("ProModel")
  Set pmRuntime = CreateObject("Promodel.CRuntime")
  pmObject.LoadModel ("C:\ProModel 2001\Models\Demos\receive.mod")
  pmObject.Simulate

  Do While CurSimTime < 1800
    pmObject.GetSimTime CurSimTime
    DoEvents
  Loop
  pmRuntime.SetStatValue 1, 12, 5, 0

  Do While CurSimTime < 3600
    pmObject.GetSimTime CurSimTime
    DoEvents
  Loop
  pmRuntime.SetStatValue 1, 12, 5, 0

  Do While CurSimTime < 5400
    pmObject.GetSimTime CurSimTime
    DoEvents
  Loop
  pmRuntime.SetStatValue 1, 12, 5, 0

  pmObject.EndSimulation
  Set pmObject = Nothing
End Sub
```

Chapter 4:
The ProModel Data Object

(ProModel.CProModelData)

The ProModelData object is found in the *ProModel Type Library*. If you do not see this library in your references list, you will need to run PM.exe with the "/regserver" command line option.

This object provides access to your model data, such as Locations, Subroutines, etc. The ProModelData object must be initialized by the *Populate* method. With the methods listed below, you can read your model information, change it, even delete it. This is a powerful tool and must be used with caution. It is a good idea to always make a backup copy of your original model before using the ProModelData object to make changes.

- AddBackgroundBitmap
- AppendEntitySpot
- AppendGraphicIcon
- AppendGraphicIconSize
- AppendRecord
- AppendRoutingPoint
- DeleteRecord
- GetIntFieldValue
- GetRealFieldValue
- GetRecordCount
- GetSelectedsFromType
- GetStringFieldValue
- InsertRecord
- Populate
- SelectMainRecordByIndex
- SelectMainRecordByName
- SetIntFieldValue
- SetRealFieldValue
- SetStringFieldValue

AddBackgroundBitmap

Syntax: AddBackgroundBitmap RecordType, Filename, Xpos, Ypos, Percent

Description: Adds the bitmap in the specified file to the background of the current model. When adding more than one bitmap, they are placed one on top of the other, so be sure to add the one(s) in back first. It is best to use the ProModel object's Zoom method to set the zoom to 100% before adding any graphics. You may also want to use the RedrawLayout method after adding new graphics (they may not show until you do).

Parameters:

RecordType	(Long) **49 -** Background Graphics Table, is the only value allowed.
Filename	(String) Path & filename of Bitmap, Windows Metafile or Enhanced Metafile.
Xpos	(Double) How far (in pixels) from the left margin of the layout to place the left edge of the bitmap.
Ypos	(Double) How far (in pixels) from the top margin of the layout to place the top edge of the bitmap
Percent	(Double) Factor by which bitmap will be compressed or expanded from its original size. (1.0 = 100%)

Example: The following example creates a new model, ensures that the zoom is set to 100%, then adds a background bitmap.

```
Sub AddGfx()

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")
  pmDataObject.Populate
  pmObject.Zoom

  pmDataObject.AddBackgroundBitmap 49, "C:\ProModel 2001\Models\Training\pm_prac.bmp", 3,
    3, 1
  pmObject.RedrawLayout

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

AppendEntitySpot

Syntax: AppendRecord RecordIndex, XPosition, YPosition

Description: Appends an Entity Spot graphic to an existing Location record.

Parameters:

RecordIndex	(Long) The Record Index (Row Number) of the Location you wish to add an Entity Spot to.
XPosition	(Double) Number of pixels over from the left margin of the layout to place the entity spot.
YPosition	(Double) Number of pixels down from the top margin of the layout to place the entity spot.

Example: This example loads the mfg_cost model, adds a record to the Locations table, names the new location & gives it an Entity Spot graphic icon.

```
Sub AddGfx()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData
  Dim recnum As Long
  Dim fieldnum As Long
  Dim subtable As Long

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")

  pmObject.LoadModel "C:\ProModel 2001\Models\Demos\mfg_cost.mod"
  pmDataObject.Populate

  pmDataObject.AppendRecord 1
  pmDataObject.GetRecordCount 1, recnum
  pmDataObject.SetStringFieldValue 1, 2, "My_New_Loc"
  pmDataObject.AppendEntitySpot recnum, 45, 90

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

Note: An entity spot can also be added by appending a location graphic record and changing the type field to Enitity Spot (type 7). See “Working with Graphics” on page 6.

AppendGraphicIcon

Syntax: AppendGraphicIcon RecordType, RecordIndex, GraphicNumber, XPos, YPos

Description: Appends a graphic to an existing Location, Entity or Resource record, without changing its size.

Parameters:

RecordType (Long) The Record Type (Table Number) of the table you wish to work with.

RecordIndex (Long) The Record Index (Row Number) of the Location, Entity or Resource you wish to add a graphic icon to.

GraphicNumber (Long) Index number of a graphic icon in the Graphics Library specified in the General Information dialog of the loaded model. Keep in mind that the numbers are not necessarily sequential, there may be gaps.

XPos (Double) Number of pixels from the left margin to place the graphic icon.

YPos (Double) Number of pixels from the top margin to place the graphic icon.

Example: This example loads a model, adds a record to the Locations table, then appends a graphic icon to the new record.

```
Sub AddGfx()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData
  Dim recnum As Long

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")
  pmDataObject.Populate


  pmObject.LoadModel ("C:\ProModel 2001\Models\Demos\mfg_cost.mod")
  pmDataObject.AppendRecord 1
  pmDataObject.GetRecordCount 1, recnum
  pmDataObject.SetStringFieldValue 1, 2, "My_New_Loc"
  pmDataObject.AppendGraphicIcon 1, recnum, 10, 100, 50

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

AppendGraphicIconSize

Syntax: AppendGraphicIconPercent RecordType, RecordIndex, GraphicNumber, Xpos, Ypos, Xsize, Ysize

Description: Appends a graphic to an existing Location, Entity or Resource record. This method lets you specify the size of the graphic as a percentage of its original size.

Parameters:

RecordType	(Long) The Record Type (Table Number) of the table you wish to work with.
RecordIndex	(Long) The Record Index (Row Number) of the Location, Entity or Resource you wish to add a graphic icon to.
GraphicNumber	(Long) Index number of a graphic icon in the Graphics Library specified in the General Information dialog of the loaded model. Keep in mind that the numbers are not necessarily sequential, there may be gaps.
Xpos	(Double) Number of pixels from the left margin to place the graphic icon.
Ypos	(Double) Number of pixels from the top margin to place the graphic icon.
Xsize	(Double) Width in pixels.
Ysize	(Double) Height in pixels.

Example: This example loads a model, adds a record to the Locations table, then appends a graphic icon to the new record and makes it 50 x 50 pixels.

```
Sub AddGfx()
  Dim pmObject As ProModel.CProModel
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData
  Dim recnum As Long

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")
  pmDataObject.Populate

  pmObject.LoadModel ("C:\ProModel 2001\Models\Demos\mfg_cost.mod")
  pmDataObject.AppendRecord 1
  pmDataObject.GetRecordCount 1, recnum
  pmDataObject.SetStringFieldValue 1, 2, "My_New_Loc"
  pmDataObject.AppendGraphicIconSize 1, recnum, 10, 100, 50, 50, 50

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

AppendRecord

Syntax: AppendRecord RecordType

Description: Adds a new record to the **end** of the specified table. When using AppendRecord, you may use the *Set…FieldValue* methods without first calling the *SelectRecordBy…* method. However, if you are using a method that requires the Record Index number as a parameter, you will need to get that number with the *GetRecordCount* method (or any other method that returns that information).

Parameters:

RecordType (Long) The Record Type (Table Number) of the table you wish to add a record to.

Example: This example loads the mfg_cost model, adds a new record to the Locations table, and then changes the location name to My_New_Loc.

```
Sub AppRec()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")

  pmObject.LoadModel ("C:\ProModel 2001\Models\Demos\mfg_cost.mod")
  pmDataObject.Populate
  pmDataObject.AppendRecord 1
  pmDataObject.SetStringFieldValue 1, 2, "My_New_Loc"

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

AppendRoutingPoint

Syntax: AppendRoutingPoint XPosition, Yposition

Description: Adds a new Routing Point and connects the previous end point to the new point. You must first select the Processing and Routing records you wish to append the new Routing Point to.

Parameters:

Xposition	(Double) Number of pixels from the left margin of the layout to place the Routing Point.
Yposition	(Double) Number of pixels from the top margin of the layout to place the Routing Point.

Example: The following example loads the mfg_cost model, selects the first processing record, then selects the second routing record for that process and adds a new point.

```
Sub AddAPoint()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")

  PmObject.LoadModel “C:\ProModel 2001\Models\Demos\mfg_cost.mod”
  pmDataObject.Populate

  pmDataObject.SelectMainRecordByIndex 19, 1
  pmDataObject.SelectMainRecordByIndex 20, 2
  pmDataObject.AppendRoutingPoint 125, 90

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

DeleteRecord

Syntax: DeleteRecord RecordType

Description: Deletes the currently selected record from the specified table. Be very careful when using this method, because it will delete records without any data integrity checking. This means that even if the record is referenced by a record in another table, it will be deleted and make the other record invalid.

Parameters:

RecordType	(Long) The Record Type (Table Number) of the table you wish to delete a record from.

Example: The following example deletes all records from the Locations table in the mfg_cost model. Be careful with this one, or you could disable the mfg_cost demo model if you then save it.

```
Sub EmptyLocs()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData
  Dim rec_count As Long

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")
  pmObject.LoadModel ("C:\ProModel 2001\Models\Demos\mfg_cost.mod")
  pmDataObject.Populate

  pmDataObject.GetRecordCount 1, rec_count
  For x = 1 To rec_count
    pmDataObject.SelectMainRecordByIndex 1, 1
    pmDataObject.DeleteRecord 1
  Next x

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

GetIntFieldValue

Syntax: GetIntFieldValue RecordType, FieldNumber, FieldValue

Description: Returns the value of the specified integer field from the selected record.

Parameters:

RecordType	(Long) The Record Type (Table Number) of the table you wish to work with.
FieldNumber	(Long) The field (column) number in the specified table from which you want to return a value.
FieldValue	(Long) Data value contained in the specified field for the selected record. This must be a variable.

Example: The following example gets the value of the Default Time units from the mfg_cost model, then displays a message with that information.

```
Sub GetTimeUnits()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData
  Dim TimeUnit As Long

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")
  pmObject.LoadModel "C:\ProModel 2001\Models\Demos\mfg_cost.mod"
  pmDataObject.Populate

  pmDataObject.SelectMainRecordByIndex 18, 1
  pmDataObject.GetIntFieldValue 18, 2, TimeUnit

  Select Case TimeUnit
    Case 1:
      pmObject.MsgBox ("Default Time Units:  Seconds")
    Case 2:
      pmObject.MsgBox ("Default Time Units:  Minutes")
    Case 3:
      pmObject.MsgBox ("Default Time Units:  Hours")
    Case 4:
      pmObject.MsgBox ("Default Time Units:  Days")
    Case Else:
      pmObject.MsgBox ("Error")
  End Select


  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

GetRealFieldValue

Syntax: GetIntFieldValue RecordType, FieldNumber, FieldValue

Description: Returns the value of the specified real number field from the selected record.

Parameters:

RecordType	(Long) The Record Type (Table Number) of the table you wish to work with.
FieldNumber	(Long) The field (column) number in specified table from which you want to return a value.
FieldValue	(Long) Data value contained in the specified field for the selected record. This must be a variable.

Example: The following example selects the second routing record (not necessarily the second routing block) of the first processing record, gets the Probability value and displays it in a message box.

```
Sub SetRoutingProbability()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData
  Dim ProbValue As Double

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")
  pmObject.LoadModel "C:\ProModel 2001\Models\Demos\Orders.mod"
  pmDataObject.Populate

  pmDataObject.SelectMainRecordByIndex 19, 1
  pmDataObject.SelectMainRecordByIndex 20, 2
  pmDataObject.GetRealFieldValue 20, 13, ProbValue
  pmObject.MsgBox "Probability = " & ProbValue

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

GetRecordCount

Syntax: GetRecordCount RecordType, Count

Description: Returns the current number of records in the specified table. This is very useful in looping through each record in a table of unknown size.

Parameters:

RecordType	(Long)	The Record Type (Table Number) for which you want the record count.
Count	(Long)	Returns the number of records in the specified table.

Example: The following example loads the mfg_cost model, gets the record count from the Locations table, then displays a message telling the user how many locations there are.

```
Sub HowManyLocs()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData
  Dim rec_count As Long

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")
  pmObject.LoadModel ("C:\ProModel 2001\Models\Demos\mfg_cost.mod")
  pmDataObject.Populate

  pmDataObject.GetRecordCount 1, rec_count

  If rec_count = 1 Then
      pmObject.MsgBox "There is 1 location in this model"
    Else
       pmObject.MsgBox "There are " & rec_count & " locations in this model"
  End If

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

GetSelectedsFromType

Syntax: GetSelectedsFromType RecordType, MainIndex, Field, SubIndex

Description: Returns record index values for the currently selected main and sub records.

Parameters:

RecordType	(Long)	The Record Type (Table Number) of the table you want to work with.
MainIndex	(Long)	Returns Record Index (row number) of the currently selected record.
Field	(Long)	Although this parameter is no longer used, it is still required. It returns -1.
SubIndex	(Long)	Although this parameter is no longer used, it is still required. It returns -1.

Example: The following example loads the mfg_cost model, finds the “Inspect” location and displays a message telling the user what the index number is for that record.

```
Sub WhatsMyIndex()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData
  Dim recnum As Long
  Dim fieldnum As Long
  Dim subrec As Long

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")

  pmObject.LoadModel "C:\ProModel 2001\Models\Demos\mfg_cost.mod"
  pmDataObject.Populate

  pmDataObject.SelectMainRecordByName 1, "Inspect"
  pmDataObject.GetSelectedsFromType 1, recnum, fieldnum, subrec
  pmObject.MsgBox "Location <Inspect> is Record Index #" & recnum

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

GetStringFieldValue

Syntax: GetStringFieldValue RecordType, FieldNumber, FieldValue

Description: Returns the value of the specified string field from the selected record.

Parameters:

RecordType	(Long) The Record Type (Table Number) of the table you want to work with.
FieldNumber	(Long) The field (column) number in specified table from which you want to return a value.
FieldValue	(Long) Data value contained in the specified field for the selected record. This must be a variable.

Example: The following example steps through the Macros table, gets the name and value of each macro, then displays a message with that information.

```
Sub GetMacros()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData
  Dim i As Integer
  Dim RecCount As Long
  Dim MacName As String
  Dim MacText As String

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")
  pmObject.LoadModel "C:\ProModel 2001\Models\Demos\mfg_cost.mod"
  pmDataObject.Populate

  pmDataObject.GetRecordCount 11, RecCount

  For i = 1 To RecCount
    pmDataObject.SelectMainRecordByIndex 11, i
    pmDataObject.GetStringFieldValue 11, 1, MacName
    pmDataObject.GetStringFieldValue 11, 2, MacText
    pmObject.MsgBox (MacName & ":  " & MacText)
  Next i

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

InsertRecord

Syntax: InsertRecord RecordType

Description: Inserts a new record **before** the selected record in the table. The newly inserted record will already be selected, so there is no need to use the *SelectMainRecordBy…* methods before populating the data.

Parameters:

RecordType	(Long) The Record Type (Table Number) of the table you wish to insert the record into.

Example: The following example loads the mfg_cost model, finds the “Inspect” location and inserts a new record before it, then selects the new record & gives it a name.

```
Sub AddALoc()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")

  pmObject.LoadModel "C:\ProModel 2001\Models\Demos\mfg_cost.mod"
  pmDataObject.Populate

  pmDataObject.SelectMainRecordByName 1, "Inspect"
  pmDataObject.InsertRecord 1
  pmDataObject.SetStringFieldValue 1, 2, "My_New_Loc"
  pmObject.MsgBox "Done"

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

Populate

Syntax: Populate

Description: Populates the ProModelData object with the current, loaded model data. Call this method before using the data object. You must call the *Populate* method to initialize the ProModelData object with the model's current information. Use *Populate* each time you open or close a model, or if you add or remove records.

Example: This example loads the mfg_cost model and populates the ProModelData object.

```
Sub AddALoc()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")

  pmObject.LoadModel "C:\ProModel 2001\Models\Demos\mfg_cost.mod"
  pmDataObject.Populate
  pmObject.MsgBox "ProModelData object populated"

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

SelectMainRecordByIndex

Syntax: SelectMainRecordByIndex RecordType, RecordIndex

Description: Selects a record by its Record Index (row number). This method is very useful in looping through all the records in a table.

Parameters:

RecordType (Long) The Record Type (Table Number) of the table you wish to work with.

RecordIndex (Long) The Record Index (Row Number) of the record you wish to select.

Example: The following example steps through the Macros table, selecting each record by Index Number, then gets the name and value of each macro, then displays a message with that information.

```
Sub GetMacros()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData
  Dim i As Integer
  Dim RecCount As Long
  Dim MacName As String
  Dim MacText As String

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")
  pmObject.LoadModel "C:\ProModel 2001\Models\Demos\mfg_cost.mod"
  pmDataObject.Populate

  pmDataObject.GetRecordCount 11, RecCount

  For i = 1 To RecCount
    pmDataObject.SelectMainRecordByIndex 11, i
    pmDataObject.GetStringFieldValue 11, 1, MacName
    pmDataObject.GetStringFieldValue 11, 2, MacText
    pmObject.MsgBox (MacName & ":  " & MacText)
  Next i

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

SelectMainRecordByName

Syntax: SelectMainRecordByName RecordType, RecordName

Description: Selects a record by its Name or ID value. This method can only be used with record types that have a name or ID field. If the table does not have a Name or ID field, you must use the *SelectMain-RecordByIndex* method.

Parameters:

RecordType (Long) The Record Type (Table Number) of the table you wish to work with.

RecordName Long) The Name or ID field value for the record (row) you wish to select.

Example: The following example loads the mfg_cost model, selects the location record by the name "Inspect", inserts a new record before it, and gives it a name.

```
Sub AddALoc()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")

  pmObject.LoadModel "C:\ProModel 2001\Models\Demos\mfg_cost.mod"
  pmDataObject.Populate

  pmDataObject.SelectMainRecordByName 1, "Inspect"
  pmDataObject.InsertRecord 1
  pmDataObject.SetStringFieldValue 1, 2, "My_New_Loc"
  pmObject.MsgBox "Done"

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

SetIntFieldValue

Syntax: SetIntFieldValue RecordType, FieldIndex, FieldValue

Description: Changes the value for the specified integer field of the selected record.

Parameters:

RecordType	(Long)	The Record Type (Table Number) of the table you wish to work with.
FieldIndex	(Long)	The Field Index (Column Number) of the field you wish to make changes to.
FieldValue	(Long)	The integer (long) value you want to place in the specified field.

Example: The following example loads the mfg_cost model, then sets its default time unit to Hours (it was Minutes).

```
Sub Time2Hours()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData
  Dim TimeUnit As Long

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")
  pmObject.LoadModel "C:\ProModel 2001\Models\Demos\mfg_cost.mod"
  pmDataObject.Populate

  TimeUnit = 3   '(Hours)
  pmDataObject.SelectMainRecordByIndex 18, 1
  pmDataObject.SetIntFieldValue 18, 2, TimeUnit

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

SetRealFieldValue

Syntax: SetRealFieldValue RecordType, FieldIndex, FieldValue

Description: Changes the value for the specified real field of the selected record. When setting values for real fields, it is best to place the number into a variable of the correct type, then use the variable in the method call. This will avoid incorrect numeric conversions.

Parameters:

RecordType	(Long) The Record Type (Table Number) of the table you wish to work with.
FieldIndex	(Long) The Field Index (Column Number) of the field for which you want to change the value.
FieldValue	(Double) The real number value you wish to place in the specified field for the selected record.

Example: The following example loads the Orders model, selects the third processing record, then changes the probabilities for the routing records to 70/30. Be cautious with using this method to set probabilities or percentages that must total 100 (make sure the records still have the correct total after changes).

```
Sub GetRoutingProbability()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData
  Dim ProbVal1 As Double
  Dim ProbVal2 As Double

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")
  pmObject.LoadModel "C:\ProModel 2001\Models\Demos\Orders.mod"
  pmDataObject.Populate

  ProbVal1 = 0.7
  ProbVal2 = 0.3
  pmDataObject.SelectMainRecordByIndex 19, 3
  pmDataObject.SelectMainRecordByIndex 20, 1
  pmDataObject.SetRealFieldValue 20, 13, ProbVal1
  pmDataObject.SelectMainRecordByIndex 20, 2
  pmDataObject.SetRealFieldValue 20, 13, ProbVal2
  pmObject.MsgBox ("Done")

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

SetStringFieldValue

Syntax: SetStringFieldValue RecordType, FieldIndex, FieldValue

Description: Changes the value for the specified string field of the selected record.

Parameters:

RecordType	(Long) The Record Type (Table Number) of the table you wish to work with.
FieldIndex	(Long) The Field Index (Column Number) of the field in which you want to place the new value.
FieldValue	(String) The value you wish to place in the specified field for the selected record.

Example: The following example loads the mfg_cost model, finds the “Inspect” location and inserts a new record before it, then selects the new record & gives it a name.

```
Sub AddALoc()
  Dim pmObject As ProModel.CProModel
  Dim pmDataObject As ProModel.CProModelData

  Set pmObject = CreateObject("ProModel")
  Set pmDataObject = CreateObject("ProModelData")

  pmObject.LoadModel “C:\ProModel 2001\Models\Demos\mfg_cost.mod”
  pmDataObject.Populate

  pmDataObject.SelectMainRecordByName 1, “Inspect”
  pmDataObject.InsertRecord 1
  pmDataObject.SetStringFieldValue 1, 2, “My_New_Loc”

  Set pmDataObject = Nothing
  Set pmObject = Nothing
End Sub
```

Chapter 5:
The RDBDataServer Object

To use the RDBDataServer object, you will first need to register the RDBDataServer. This is done by running the RDBSRV.EXE found in your ProModel folder. If you do not have this file in your ProModel folder, contact ProModel Technical Support. You will not find a library for this object listed in the references in your VB Editor.

As you work with the RDBDataServer, keep in mind that you are working with a database, not a text file or spreadsheet. This means that there is some information that you cannot get directly from the .rdb file. For example, when you have multiple replications, periods, or scenarios, you can't get the averages, standard deviations or totals using only the RDBDataServer methods. You must get the same data elements from each replication, period or scenario, then perform the calculations in your spreadsheet or other program.

When talking about tables, each section of the standard output statistics report corresponds to a table in the .rdb file. There are some tables that may or may not be available, depending upon whether that type of data is collected for the specific model (like Logs). However, the table numbers are pre-defined, so each number will always reference the same table, whether or not it is in use.

If you want to get the names of the records (i.e. – Location or Resource Names), you will need to get the data for field number 0 (zero). The zero column in each table has the Record ID from the model.

The RDBDataServer uses the following methods:

- CloseFile
- FieldName
- GetPositionInfo
- GetValue
- OpenFile
- PeriodName
- PositionIsValid
- RecordName
- ReplicationNumber
- ScenarioName
- SelectData
- TableName

CloseFile

Syntax: CloseFile

Description: Closes the previously opened RDB file.

Parameters: None

Returns: Nothing

Example: This example opens the mfg_cost.rdb, selects data, displays it, then closes the file.

```
Sub Get_Data()
  Dim RDBObj As Object
  Dim x

  Set RDBObj = CreateObject("RDBDataServer")
  RDBObj.OpenFile "C:\ProModel 2001\Output\mfg_cost.rdb"

  RDBObj.SelectData 1, 1, 1, 1, 1, 1
  x = RDBObj.GetPositionInfo
  MsgBox (x)

  RDBObj.CloseFile
  Set RDBObj = Nothing
End Sub
```

FieldName

Syntax: FieldName

Description: Returns the name of the current field.

Parameters: None

Returns: The name of the specified field (column), or “invalid” if the SelectData specifications are not valid.

Example: This example opens the mfg_cost.rdb, displays some of the data, then closes the file.

```
Sub Get_Data()
  Dim RDBObj As Object
  Dim MyField As String

  Set RDBObj = CreateObject("RDBDataServer")
  RDBObj.OpenFile("C:\ProModel 2001\Output\mfg_cost.rdb")

  RDBObj.SelectData 1, 1, 1, 1, 1, 1
  If RDBObj.PositionIsValid = True Then
    MyField = RDBObj.FieldName
    MsgBox ("Field (Column): " & MyField)
  Else
    MsgBox ("Data Selection Invalid")
  End If

  RDBObj.CloseFile
  Set RDBObj = Nothing
End Sub
```

GetPositionInfo

Syntax: GetPositionInfo

Description: Returns the scenario, period, replication, table, field, record and data value of the current selection. This can be useful in loops.

Returns: Details of current data selection, as follows:

Scenario: *Scenario Name*
Replication: *Replication Number*
Period: *Period Name*
Table: *Table Name*
Field: *Field Name*
Record: *Record Name*
Value: *Data Value*

Parameters: None

Example: This example opens the mfg_cost.rdb, selects data, then displays the details of the selection.

```
Sub Get_Data()
  Dim RDBObj As Object
  Dim x

  Set RDBObj = CreateObject("RDBDataServer")
  RDBObj.OpenFile "C:\ProModel 2001\Output\mfg_cost.rdb"

  RDBObj.SelectData 1, 1, 1, 1, 1, 1
  x = RDBObj.GetPositionInfo
  MsgBox (x)

  RDBObj.CloseFile
  Set RDBObj = Nothing
End Sub
```

GetValue

Syntax: GetValue

Description: Returns the data value for the current data selection.

Parameters: None

Returns: The data value of the current position (or zero if the current selection is not valid).

Example: This example opens the mfg_cost.rdb, gets and displays some of the data, then closes the file.

```
Sub Get_Data()
  Dim RDBObj As Object
  Dim MyDataVal As String

  Set RDBObj = CreateObject("RDBDataServer")
  RDBObj.OpenFile("C:\ProModel 2001\Output\mfg_cost.rdb")

  RDBObj.SelectData 1, 1, 1, 1, 1, 1
  If RDBObj.PositionIsValid = True Then
    MyDataVal = RDBObj.GetValue
    MsgBox ("Data Value =  " & MyDataVal)
  Else
    MsgBox ("Data Selection Invalid")
  End If

  RDBObj.CloseFile
  Set RDBObj = Nothing
End Sub
```

OpenFile

Syntax: OpenFile FileName

Description: Call this function first to open and load the proper .RDB file.

Parameters:

FileName (String) Path and filename of any valid .rdb file.

Returns: Nothing

Example: This example opens the mfg_cost.rdb, gets and displays some of the data, then closes the file.

```
Sub Get_Data()
  Dim RDBObj As Object
  Dim x

  Set RDBObj = CreateObject("RDBDataServer")
  RDBObj.OpenFile "C:\ProModel 2001\Output\mfg_cost.rdb"

  RDBObj.SelectData 1, 1, 1, 1, 1, 1
  x = RDBObj.GetPositionInfo
  MsgBox (x)

  RDBObj.CloseFile
  Set RDBObj = Nothing
End Sub
```

PeriodName

Syntax: PeriodName

Description: Returns the name of the Period in the current data selection.

Parameters: None

Returns: The current period name, or “invalid” if the current selection is not valid.

Example: This example opens the mfg_cost.rdb, gets and displays some of the data, then closes the file.

```
Sub Get_Data()
  Dim RDBObj As Object
  Dim MyPeriod As String

  Set RDBObj = CreateObject("RDBDataServer")
  RDBObj.OpenFile("C:\ProModel 2001\Output\mfg_cost.rdb")

  RDBObj.SelectData 1, 1, 1, 1, 1, 1
  If RDBObj.PositionIsValid = True Then
    MyPeriod = RDBObj.PeriodName
    MsgBox ("Selected Period =  " & MyPeriod)
  Else
    MsgBox ("Data Selection Invalid")
  End If

  RDBObj.CloseFile
  Set RDBObj = Nothing
End Sub
```

PositionIsValid

Syntax: PositionIsValid

Description: Check the data for the most recent data selection & return “True” if it is valid, “False” if it is not. This method is a little tricky, because it really doesn’t do much unless it is used in an “If…Then” or “Select Case” statement (the ‘x = RDBObj.PositionIsValid’ format is not allowed)

Parameters: None

Returns: TRUE if the last SelectData function points to valid data. FALSE if it does not.

Example: This example opens the mfg_cost.rdb, selects data, checks to see if selection is valid, displays the data or an error message, then closes the file.

```
Sub Get_Data()
  Dim RDBObj As Object
  Dim MyPeriod As String

  Set RDBObj = CreateObject("RDBDataServer")
  RDBObj.OpenFile("C:\ProModel 2001\Output\mfg_cost.rdb")

  RDBObj.SelectData 1, 1, 1, 1, 1, 1
  If RDBObj.PositionIsValid = True Then
    MyPeriod = RDBObj.PeriodName
    MsgBox ("Selected Period =  " & MyPeriod)
  Else
    MsgBox ("Data Selection Invalid")
  End If

  RDBObj.CloseFile
  Set RDBObj = Nothing
End Sub
```

RecordName

Syntax: RecordName

Description: Returns the name of the Record in the current data selection.

Parameters: None

Returns: The current record name, or “invalid” if the current selection is not valid.

Example: This example opens the mfg_cost.rdb, gets and displays some of the data, then closes the file.

```
Sub Get_Data()
  Dim RDBObj As Object
  Dim MyRecord As String

  Set RDBObj = CreateObject("RDBDataServer")
  RDBObj.OpenFile("C:\ProModel 2001\Output\mfg_cost.rdb")

  RDBObj.SelectData 1, 1, 1, 1, 1, 1
  If RDBObj.PositionIsValid = True Then
    MyRecord = RDBObj.RecordName
    MsgBox ("Selected Record =  " & MyRecord)
  Else
    MsgBox ("Data Selection Invalid")
  End If

  RDBObj.CloseFile
  Set RDBObj = Nothing
End Sub
```

ReplicationNumber

Syntax: ReplicationNumber

Description: Returns the number of the Replication in the current data selection.

Parameters: None

Returns: The current replication number, or “invalid” if the current selection is not valid.

Example: This example opens the mfg_cost.rdb, gets and displays some of the data, then closes the file.

```
Sub Get_Data()
  Dim RDBObj As Object
  Dim RepNum As String

  Set RDBObj = CreateObject("RDBDataServer")
  RDBObj.OpenFile("C:\ProModel 2001\Output\mfg_cost.rdb")

  RDBObj.SelectData 1, 1, 1, 1, 1, 1
  If RDBObj.PositionIsValid = True Then
    RepNum = RDBObj.ReplicationNumber
    MsgBox ("Selected Replication =  " & RepNum)
  Else
    MsgBox ("Data Selection Invalid")
  End If

  RDBObj.CloseFile
  Set RDBObj = Nothing
End Sub
```

ScenarioName

Syntax: ScenarioName

Description: Returns the name of the Scenario in the current data selection.

Parameters: None

Returns: The current scenario name, or “invalid” if the current selection is not valid.

Example: This example opens the mfg_cost.rdb, gets and displays some of the data, then closes the file.

```
Sub Get_Data()
  Dim RDBObj As Object
  Dim MyScenario As String

  Set RDBObj = CreateObject("RDBDataServer")
  RDBObj.OpenFile("C:\ProModel 2001\Output\mfg_cost.rdb")

  RDBObj.SelectData 1, 1, 1, 1, 1, 1
  If RDBObj.PositionIsValid = True Then
    MyScenario = RDBObj.ScenarioName
    MsgBox ("Selected Scenario =  " & MyScenario)
  Else
    MsgBox ("Data Selection Invalid")
  End If

  RDBObj.CloseFile
  Set RDBObj = Nothing
End Sub
```

SelectData

Syntax SelectData Scenario, Replication, Period, Table, Field, Record

Description: Retrieves the specified data element from the .rdb file. All of the parameters must be specified, even if there is only one scenario, replication or period.

Parameters:

Scenario	(Long)	Scenario number containing the data you wish to select.
Replication	(Long)	Replication number containing the data you wish to select.
Period	(Long)	Period number containing the data you wish to select.
Table	(Long)	Table (report section) number containing the data you wish to select.
Field	(Long)	Field (column) number containing the data you wish to select.
Record	(Long)	Record (row) number containing the data you wish to select.

Returns: TRUE if there is valid data corresponding to the parameters.

Example: This example opens the mfg_cost.rdb, gets and displays the Scheduled Hours for the first listed location in the Locations section of the statistic report (first scenario, replication & period), then closes the file.

```
Sub Get_Data()
  Dim RDBObj As Object
  Dim MyScenario As String

  Set RDBObj = CreateObject("RDBDataServer")
  RDBObj.OpenFile("C:\ProModel 2001\Output\mfg_cost.rdb")

  RDBObj.SelectData 1, 1, 1, 1, 1, 1
  If RDBObj.PositionIsValid = True Then
    MyScenario = RDBObj.ScenarioName
    MsgBox ("Selected Scenario =  " & MyScenario)
  Else
    MsgBox ("Data Selection Invalid")
  End If

  RDBObj.CloseFile
  Set RDBObj = Nothing
End Sub
```

TableName

Syntax: TableName

Description: Returns the name of the Table in the current data selection.

Parameters: None

Returns: The current table name, or “invalid” if the current selection is not valid.

Example: This example opens the mfg_cost.rdb, gets and displays some of the data, then closes the file.

```
Sub Get_Data()
  Dim RDBObj As Object
  Dim MyTable As String

  Set RDBObj = CreateObject("RDBDataServer")
  RDBObj.OpenFile("C:\ProModel 2001\Output\mfg_cost.rdb")

  RDBObj.SelectData 1, 1, 1, 1, 1, 1
  If RDBObj.PositionIsValid = True Then
    MyTable = RDBObj.TableName
    MsgBox ("Selected Table =  " & MyTable)
  Else
    MsgBox ("Data Selection Invalid")
  End If

  RDBObj.CloseFile
  Set RDBObj = Nothing
End Sub
```

Appendix: Table Definitions

ProModelData Table Definitions

To help you determine the RecordType values, the **pmconst.bas** file defines the constants used in the examples. The following is a list of RecordType values, Visual Basic record type constants, and field types for all data tables.

Table Name	Visual Basic Constant	Value	Location of Table in ProModel
Locations	pmdTblLocation	1	Build > Locations
Entities	pmdTblEntity	2	Build > Entities
Path Networks	pmdTblPathNet	3	Build > Path Networks
Resources	pmdTblResource	4	Build > Resources
Arrivals	pmdTblArrival	6	Build > Arrivals
Shift Assignment	pmdTblShift	7	Build > Shifts > Assign
Attributes	pmdTblAttribute	8	Build > Attributes
Variables	pmdTblVariable	9	Build > Variables
Arrays	pmdTblArray	10	Build > Arrays
Macros	pmdTblMacro	11	Build > Macros
Subroutines	pmdTblSubroutine	12	Build > Subroutines
Arrival Cycles	pmdTblArrivalCycle	13	Build > More Elements > Arrival Cycles
Table Functions	pmdTblTableFunction	14	Build > More Elements > Table Functions
User Distributions	pmdTblUserDistrib	15	Build > More Elements > User Distributions
External Files	pmdTblExternalFile	16	Build > More Elements > External Files
Streams	pmdTblStream	17	Build > More Elements > Streams
General Information	pmdTblGenInfo	18	Build > General Information
Processing	pmdTblProcessing	19	Build > Processing
Routings	pmdTblRouting	20	Build > Processing
Model Parameters	pmdTblModelParam	21	Simulation > Model Parameters
Scenarios	pmdTblScenario	22	Simulation > Scenarios
Simulation Options	pmdTblSimOption	23	Simulation > Options
Location Clock Downtimes	pmdTblLocClockDT	25	Build > Locations > DTs… > Clock
Location Entry Downtimes	pmdTblLocEntryDT	26	Build > Locations > DTs… > Entry
Location Usage Downtimes	pmdTblLocUsageDT	27	Build > Locations > DTs… > Usage
Location Setup Downtimes	pmdTblLocSetupDT	28	Build > Locations > DTs… > Setup
Resource Clock Downtimes	pmdTblResClockDT	31	Build > Resources > DTs… > Clock

Resource Usage Downtimes	pmdTblResUsageDT	32	Build > Resources > DTs… > Usage
Resource Work Search	pmdTblResWorkSearch	33	Build > Resources > Search… > Work
Resource Park Search	pmdTblResParkSearch	34	Build > Resources > Search… > Park
Resource Node Logic	pmdTblResNodeLogic	35	Build > Resources > Logic…
Resource Points	pmdTblResPoint	36	Build > Resources > Pts…
Shift Assignment Locations	pmdTblShiftLocation	38	Build > Shifts > Assign > Locations
Shift Assignment Resources	pmdTblShiftResource	39	Build > Shifts > Assign > Resources
Shift Assignment Files	pmdTblShiftFile	40	Build > Shifts > Assign > Shift Files
Subroutine Parameters	pmdTblSubRtnParam	41	Build > Subroutines > Parameters…
Arrival Cycles Values	pmdTblArrivalCycData	42	Build > More Elements > Arrival Cycles > Table…
Table Functions Values	pmdTblFunctionData	43	Build > More Elements > Table Functions > Table…
User Distributions Values	pmdTblUserDistribData	44	Build > More Elements > User Distributions > Table…
Location Graphics	pmdTblLocGraphic	45	Not Visible
Resource Graphics	pmdTblResGraphic	46	Not Visible
Entity Graphics	pmdTblEntGraphic	47	Not Visible
Background Graphics	pmdTblBackGraphic	49	Build > Background Graphics
Model Defaults	pmdTblModelDefaults	50	Simulation > Model Parameters
Path Networks Segments	pmdTblPathSegment	51	Build > Path Networks > Paths…
Path Networks Interfaces	pmdTblPathInterface	52	Build > Path Networks > Interfaces…
Path Networks Mapping	pmdTblPathMapping	53	Build > Path Networks > Mapping…
Path Networks Nodes	pmdTblPathNode	54	Build > Path Networks > Nodes…
Views	pmdTblView	55	View > Views > Define
Scenario Parameters	pmdTblScenParam	56	Simulation > Scenarios > (Add/Edit)
Path Networks Mapping Destinations	pmdTblPathMapDest	57	Build > Path Networks > Mapping… > Dest.
Work Search Locations	pmdTblWorkSearchLoc	58	Build > Resources > Search… > Work > Location List
Park Search Nodes	pmdTblParkNode	59	Build > Resources > Search… > Park > Parking Node List
Variable Graphics	pmdTblVarGraphic	60	Build > Variables
Queue / Conveyor Joints	pmdTblQJoint	61	Build > Locations > {Right-click on Queue} > Add Joint
Routing Points		62	Build > Processing > {Right-click on Routing} > Add Joint

Table Field Types

Key:
I = Integer
S = String
R = Real

Locations Table (1): pmdTblLocation

Field	Type	Constant	Description or Location in ProModel
2	S	pmdFldLocName	Build > Locations > Name
3	S	pmdFldLocCapacity	Build > Locations > Capacity
4	I	pmdFldLocUnits	Build > Locations > Units
9	I	pmdFldLocStats	Build > Locations > Stats
		Stats Rule 1 = None 2 = Basic or Summary 3 = Time Series or By Unit	 pmdStatsTypeNone pmdStatsTypeBasicSum pmdStatsTypeTSUnit
10	I	pmdFldLocIncoming	Build > Locations > Rules > Select Incoming Entities
		Incoming Rule 1 = Oldest by priority 2 = Not usedt 3 = Least available capacity 4 = Random 5 = Last selected location 6 = Minimum attribute value 7 = Maximum attribute value	 pmdRuleInEntOldest pmdRuleInEntLeastAvail pmdRuleInEntRandom pmdRuleInEntLastLoc pmdRuleInEntMinAttrib pmdRuleInEntMaxAttrib
11	S	pmdFldLocIncAttrib	Build > Locations > Rules > Select Incoming Entities > Attribute
12	I	pmdFldLocQOutput	Build > Locations > Rules > Queuing For Output
		Queue Rule 1 = No queuing 2 = Firsit in, First out 3 = Last in, First out 4 = Maximum attribute value 5 = Minimum attribute value 6 = By type	 pmdRuleQOutNone pmdRuleQOutFIFO pmdRuleQOutLIFO pmdRuleQOutMaxAttrib pmdRuleQOutMinAttrib pmdRuleQOutByType
13	S	pmdFldLocQOutAttrib	Build > Locations > Rules > Queuing For Output > Attribute
14	I	pmdFldLocSelectUnit	Build > Locations > Rules > Selecting A Unit
		Unit Selection Rule 1 = Longest empty 2 = Random 3 = By turn 4 = Most available capacity 5 = Fewest entries 6 = First available	 pmdRuleUSelLongestEmpty pmdRuleUSelRandom pmdRuleUSelByTurn pmdRuleUSelMostAvail pmdRuleUSelLeastEntries pmdRuleUSelFirstAvail
15	S	pmdFldLocNotes	Build > Locations > Notes
16	S	pmdFldLocCostRate	Operation cost per time unit in field 20. Build > Cost > Locations > Operation Rate
20	I	pmdFldLocCostTimeUnits	Build > Cost > Locations > Per
		Time Units Rule 1 = Seconds 2 = Minutes 3 = Hours 4 = Days	 pmdTimeUnitSec pmdTimeUnitMin pmdTimeUnitHr pmdTimeUnitDay

Location Clock Downtimes Subtable (25): pmdTblLocClockDT

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldDTFrequency	Frequency
2	S	pmdFldDTFirstTime	First Time
3	S	pmdFldDTPriority	Priority
4	I	pmdFldDTScheduled	Scheduled
5	S	pmdFldDTLogic	Logic
6	I	pmdFldDTDisable	Disable

Location Entry Downtimes Subtable (26): pmdTblLocEntryDT

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldDTFrequency	Frequency
2	S	pmdFldDTFirstTime	First Time
5	S	pmdFldDTLogic	Logic
6	I	pmdFldDTDisable	Disable

Location Usage Downtimes Subtable (27): pmdTblLocUsageDT

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldDTFrequency	Frequency
2	S	pmdFldDTFirstTime	First Time
3	S	pmdFldDTPriority	Priority
5	S	pmdFldDTLogic	Logic
6	I	pmdFldDTDisable	Disable

Location Setup Downtimes Subtable (28): pmdTblLocSetupDT

Field	Type	Constant	Description or Location in ProModel
5	S	pmdFldDTLogic	Logic
6	I	pmdFldDTDisable	Disable
7	S	pmdFldDTEntity	Entity
8	S	pmdFldDTPriorEnt	Prior Entity

Entities Table (2): pmdTblEntity

Field	Type	Constant	Description or Location in ProModel
2	S	pmdFldEntName	Build > Entities > Name
3	S	pmdFldEntSpeed	Build > Entities > Speed
4	I	pmdFldEntStats	Build > Entities > Stats
		Stats Rule 1 = None 2 = Basic or Summary 3 = Time Series or By Unit	 pmdStatsTypeNone pmdStatsTypeBasicSum pmdStatsTypeTSUnit
5	S	pmdFldEntNotes	Build > Entities > Notes
8	S	pmdFldEntInitCost	Build > Cost > Entities > Initial Cost

Path Networks (3): pmdTblPathNet

Field	Type	Constant	Description or Location in ProModel
1	I	pmdFldPathColor	Build > Path Networks > Graphics > Color
2	I	pmdFldPathVisible	Build > Path Networks > Graphics > Visible
3	S	pmdFldPathName	Build > Path Networks > Name
4	I	pmdFldPathType	Build > Path Networks > Type
		Type Rule 0 = No Passing 1 = Speed 2 = Crane	 pmdPathTypeNoPass pmdPathTypePass pmdPathTypeCrane
5	I	pmdFldPathBasis	Build > Path Networks > T/S
		Basis Rule 0 = Time 1 = Speed & Distance	 pmdPathBasisTime pmdPathBasisSpeedDist

Path Segments Subtable (51): pmdTblPathSegment

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldPathSegFrom	Build > Path Networks > Paths… > From
2	S	pmdFldPathSegTo	Build > Path Networks > Paths… > To
3	I	pmdFldPathSegBiDi	Build > Path Networks > Paths… > BI
4	S	pmdFldPathSegSpeedFactor	Build > Path Networks > Paths… >
5	S	pmdFldPathSegDistance	Build > Path Networks > Paths… > Distance
6	S	pmdFldPathSegTime	Build > Path Networks > Paths… > Time

Interfaces Subtable (52): pmdTblPathInterface

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldPathXfaceNode	Build > Path Networks > Interfaces… > Node
2	S	pmdFldPathXfaceLoc	Build > Path Networks > Interfaces… > Location

Mappings Subtable (53): pmdTblPathMapping

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldPathMapFromNode	Build > Path Networks > Mapping… > From
2	I	pmdFldPathMapSegNum	Not Visible (references Path Networks Segment record number)

Mapping Destinations Subtable (57): pmdTblPathMapDest

Field	Type	Constant	Description or Location in ProModel
3	S	pmdFldPathMapDestNode	pmMapDestSNode

Nodes Subtable (54): pmdTblPathNode

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldPathNodeName	Build > Path Networks > Nodes > Node
2	S	pmdFldPathNodeCapacity	Build > Path Networks > Nodes > Limit
3	I	pmdFldPathNodeXPos	Not Visible (number of pixels from left)
4	I	pmdFldPathNodeYPos	Not Visible (number of pixels from top)

Resources Table (4): pmdTblResource

Field	Type	Constant	Description or Location in ProModel
2	S	pmdFldResName	Build > Resources > Name
3	S	pmdFldResUnits	Build > Resources > Units
6	I	pmdFldResStats	Build > Resources > Stats…
		Stats Rule 1 = None 2 = Basic or Summary 3 = Time Series or By Unit	 pmdStatsTypeNone pmdStatsTypeBasicSum pmdStatsTypeTSUni
7	S	pmdFldResNetwork	Build > Resources > Specs… > Path Network
8	I	pmdFldResSearch	Build > Resources > Specs… > Resource Search

		Resource Search Rule 1 = Closest Rresource 2 = Longest Idle 3 = Least Utilized	 pmdResSrchClosest pmdResSrchLongestIdle pmdResSrchLeastUsed
9	I	pmdFldResEntSearch	Build > Resources > Specs… > Entity Search
		Entity Search Rule 1 = Longest Waiting 2 = Closest Entity 3 = Minnimum Attribut Value 4 = Maximum Attribute Value	 pmdEntSrchOldest pmdEntSrchClosest pmdEntSrchMinAttrib pmdEntSrchMaxAttrib
10	S	pmdFldResEntSrchMinAttrib	Build > Resources > Specs… > Entity Search > Min Attribute
11	S	pmdFldResEntSrchMaxAttrib	Build > Resources > Specs… > Entity Search > Max Attribute
12	S	pmdFldResSpeedEmpty	Build > Resources > Specs… > Motion > Speed (Empty)
13	S	pmdFldResSpeedFull	Build > Resources > Specs… > Motion > Speed (Full)
14	S	pmdFldResAccel	Build > Resources > Specs… > Motion > Accelerate
15	S	pmdFldResDecel	Build > Resources > Specs… > Motion > Decelerate
16	S	pmdFldResPickupTime	Build > Resources > Specs… > Motion > Pick-up Time
17	S	pmdFldResDepositTime	Build > Resources > Specs… > Motion > Deposit Time
18	S	pmdFldResHomeNode	Build > Resources > Specs… > Nodes > Home
19	I	pmdFldResHomeIfIdle	Build > Resources > Specs… > Nodes > Return Home If Idle
20	S	pmdFldResOffShiftNode	Build > Resources > Specs… > Nodes > Off-Shift
21	S	pmdFldResBreakNode	Build > Resources > Specs… > Nodes > Break
26	S	pmdFldResNotes	Build > Resources > Notes
27	S	pmdFldResCost	Build > Cost > Resources > Regular Rate
29	S	pmdFldResCostPerUse	Build > Cost > Resources > Cost Per Use
30	I	pmdFldResCostTimeUnit	Build > Cost > Resources > Per
31	R		Build > Resources > Resource Graphics > Graphic Size

Clock Downtimes Subtable (31): pmdTblResClockDT

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldDTFrequency	Frequency
2	S	pmdFldDTFirstTime	First Time
3	S	pmdFldDTPriority	Priority
4	I	pmdFldDTScheduled	Scheduled
5	S	pmdFldDTLogic	Logic
6	I	pmdFldDTDisable	Disable
9	S	pmdFldDTList	List
10	S	pmdFldDTNode	Node

Usage Downtimes Subtable (32): pmdTblResUsageDT

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldDTFrequency	Frequency
2	S	pmdFldDTFirstTime	First Time
3	S	pmdFldDTPriority	Priority
5	S	pmdFldDTLogic	Logic
6	I	pmdFldDTDisable	Disable
9	S	pmdFldDTList	List
10	S	pmdFldDTNode	Node

Work Search Subtable (33): pmdTblResWorkSearch

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldResWorkSrchNode	Build > Resources > Search… >Work > Node
2	I	pmdFldResWorkSrchType	Build > Resources > Search… > Work > Type
		Resource Work Search Type Rule 1 = Exclusive pmdWSrchTypeExclusive 2 = Non-Exclusive pmdWSrchTypeNonExclusv	

Search Locations Subtable (58): pmdTblWorkSearchLoc

Field	Type	Constant	Description or Location in ProModel
3	S	pmdFldWorkSrchLocName	Build > Resources > Search… > Work > Location List

Park Search Subtable (34): pmdTblResParkSearch

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldResParkSrchNode	Build > Resources > Search… > Park > Node

Park Nodes Subtable (59):pmdTblParkNode

Field	Type	Constant	Description or Location in ProModel
2	S	pmdFldResParkNodeName	Build > Resources > Search… > Park > Parking Node List

Node Logic Subtable (35): pmdTblResNodeLogic

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldResNLogicNode	Build > Resources > Logic… > Node
2	S	pmdFldResNLogicEntry	Build > Resources > Logic… > Entry Logic
3	S	pmdFldResNLogicExit	Build > Resources > Logic… > Exit Logic

Resource Points Subtable (36): pmdTblResPoint

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldPointsNode	Build > Resources > Pts… > Node
2	I	pmdFldPointsXPos	Build > Resources > Pts… > Points (before comma)
3	I	pmdFldPointsYPos	Build > Resources > Pts… > Points (after comma)

Arrivals Table (6): pmdTblArrival

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldArrivalEntName	Build > Arrivals > Entity…
2	S	pmdFldArrivalLocName	Build > Arrivals > Location…
3	S	pmdFldArrivalQtyEach	Build > Arrivals > Qty Each… > Quantity
4	S	pmdFldArrivalCycle	Build > Arrivals > Qty Each… > Arrival Cycle
5	S	pmdFldArrivalFirstTime	Build > Arrivals > First Time
6	S	pmdFldArrivalOccur	Build > Arrivals > Occurrences
7	S	pmdFldArrivalFrequency	Build > Arrivals > Frequency
8	S	pmdFldArrivalLogic	Build > Arrivals > Logic…
9	I Bool	pmdFldArrivalDisable	Build > Arrivals > Disable
10	I	pmdFldArrivalTimeBasis	Build > Arrivals > First Time > Define Arrival By
11	I	pmdFldArrivalMinute	Build > Arrivals > First Time > Edit Arrival Time > Min
12	I	pmdFldArrivalHour	Build > Arrivals > First Time > Edit Arrival Time > Hr
13	I	pmdFldArrivalWeekDay	Build > Arrivals > First Time > Edit Arrival Time > Day
14	I	pmdFldArrivalMonthDay	Build > Arrivals > First Time > Edit Arrival Time > Day
15	I	pmdFldArrivalWeek	Build > Arrivals > First Time > Edit Arrival Time > Week
16	I	pmdFldArrivalMonth	Build > Arrivals > First Time > Edit Arrival Time > Month
17	I	pmdFldArrivalYear	Build > Arrivals > First Time > Edit Arrival Time > Year
18	S	pmdFldArrivalVariation	Build > Arrivals > First Time > Scheduling Options > Variation
19	S	pmdFldArrivalOffset	Build > Arrivals > First Time > Scheduling Options > Offset
20	I	pmdFldArrivalRepeatType	Build > Arrivals > First Time > Scheduling Options > Repeat (Daily/Weekly)
		Arrival Repeat Type Rule 1 = No Selection 2 = Repeat Daily 3 = Repeat Weekly	 pmdRepeatNone pmdRepeatDaily pmdRepeatWeekly

Shift Assignment Table (7): pmdTblShift

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldShiftPriority	Build > Shifts > Assign > Priorities… > Priority for ending shift
2	S	pmdFldShiftOffShiftPri	Build > Shifts > Assign > Priorities… > Off-shift priority
3	S	pmdFldShiftStartBreakPri	Build > Shifts > Assign > Priorities… > Priority for starting break
4	S	pmdFldShiftBreakPri	Build > Shifts > Assign > Priorities… > Break priority
5	S	pmdFldShiftPreOffShiftLogic	Build > Shifts > Assign > Logic > Pre-Off Shift
6	S	pmdFldShiftOffShiftLogic	Build > Shifts > Assign > Logic > Off Shift
7	S	pmdFldShiftPreBreakLogic	Build > Shifts > Assign > Logic > Pre-Break
8	S	pmdFldShiftBreakLogic	Build > Shifts > Assign > Logic > Break
9	I Bool	pmdFldShiftDisable	Build > Shifts > Assign > Disable

Location Index Subtable (38): pmdTblShiftLocation

Field	Type	Constant	Description or Location in ProModel
10	I	pmdFldShiftLocNum	Build > Shifts > Assign > Locations

Resource Index Subtable (39): pmdTblShiftResource

Field	Type	Constant	Description or Location in ProModel
11	I	pmdFldShiftResNum	Build > Shifts > Assign > Resources
12	S	pmdFldShiftResUnits	Build > Shifts > Assign > Resources > Units

Shift File Index Subtable (40): pmdTblShiftFile

Field	Type	Constant	Description or Location in ProModel
13	I	pmdFldShiftFileNum	Build > Shifts > Assign > Shift Files > Selected Files
14	S	pmdFldShiftStartTime	Build > Shifts > Assign > Shift Files > Start

Attributes Table (8): pmdTblAttribute

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldAttribID	Build > Attributes > ID
2	I	pmdFldAttribType	Build > Attributes > Type…
		Type Rule 2 = Integer 4 = Real	 pmdDataTypeInteger pmdDataTypeReal
3	I	pmdFldAttribClass	Build > Attributes > Classification…
		Classification Rule 1 = Entity 2 = Location	 pmdAttribClassEnt pmdAttribClassLoc
4	S	pmdFldAttribNotes	Build > Attributes > Notes…

Variables Table (9): pmdTblVariable

Field	Type	Constant	Description or Location in ProModel
2	S	pmdFldVarID	Build > Variables > ID
3	I	pmdFldVarType	Build > Variables > Type…
		Type Rule 2 = Integer 4 = Real	 pmdDataTypeInteger pmdDataTypeReal
4	S	pmdFldVarInitValue	Build > Variables > Initial Value
		Stats Type 1 = None 2 = Basic or Summary 3 = Time Series or By Unit	 pmdStatsTypeNone pmdStatsTypeBasicSum pmdStatsTypeTSUni
5	I	pmdFldVarStatsType	Build > Variables > Stats… > (None/Basic/Time Series)
6	I	pmdFldVarStatsBasis	Build > Variables > Stats… > (Time-weighted/Observation-based)
		Statistics Basis Rule 1 = Time Weighted 2 = Observation Based	 pmdStatsBasisTime pmdStatsBasisObserv
7	S	pmdFldVarNotes	Build > Variables > Notes…

Arrays Table (10): pmdTblArray

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldArrayID	Build > Arrays > ID
2	S	pmdFldArrayDimens	Build > Arrays > Dimensions
3	I	pmdFldArrayType	Build > Arrays > Type…
4	S	pmdFldArrayNotes	Build > Arrays > Notes…
5	S	pmdFldArrayImportPath	Build > Arrays > Import File… > Import File
6	S	pmdFldArraySheetName	Build > Arrays > (Import) File… > Sheet Name
8	S	pmdFldArrayStartCell	Build > Arrays > (Import) File… > (Import) Start Cell
9	S	pmdFldArrayEndCell	Build > Arrays > (Import) File… > (Import) End Cell
10	S	pmdFldArrayExportPath	Build > Arrays > Export File… > Export File
11	S	pmdFldArrayExSheetName	Build > Arrays > (Export) File… > Sheet Name
12	S	pmdFldArrayExStartCell	Build > Arrays > (Export) File… > (Export) Start Cell
13	S	pmdFldArrayExEndCell	Build > Arrays > (Export) File… > (Export) End Cell
14	S	pmdFldArrayImDBConnect	Build > Arrays > (Import) File… > (Import) DB Connection String
15	S	pmdFldArrayImDBQueryProc	Build > Arrays > (Import) File… > (Import) DB Query or Stored Procedure
17	I	pmdFldArrayImportType	Build > Arrays > (Import) File… > (Import) Type (0=Excel, 1=Database)
20	I	pmdFldArrayPersistData	Build > Arrays > Persist (0=Clear, 1=Keep)
21	I	pmdFldArrayExportLastRep	Build > Arrays > (Export) File… > Export after final replication only (0=no, 1=yes)
22	I	pmdFldArrayDisImport	Build > Arrays > Disable (Import) (0=no, 1=yes)
23	I	pmdFldArrayDisExport	Build > Arrays > Disable (Export) (0=no, 1=yes)

Macros Table (11): pmdTblMacro

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldMacroID	Build > Macros > ID
2	S	pmdFldMacroText	Build > Macros > Text…
4	I	pmdFldMacroGroup	Build > Macros > Options… > Resource Group
5	S	pmdFldMacroRTIName	Build > Macros > Options… > RTI > Define > Parameter Name
6	S	pmdFldMacroRTIPrompt	Build > Macros > Options… > RTI > Define > Prompt
7	S	pmdFldMacroRTIMinValue	Build > Macros > Options… > RTI > Define > From
8	S	pmdFldMacroRTIMaxValue	Build > Macros > Options… > RTI > Define > To
9	I	pmdFldMacroRTIType	Build > Macros > Options… > RTI > Define > (type selections)
		Type Rule 2 = Range 3 = Unrestrictedr	

Subroutines Table (12):pmdTblSubroutine

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldSubRtnID	Build > Subroutines > ID
2	S	pmdFldSubRtnLogic	Build > Subroutines > Logic…
4	I	pmdFldSubRtnType	Build > Subroutines > Type…
		Type Rule 0 = None 2 = Integer 4 = Real 8 = Interactive	 pmdDataTypeNone pmdDataTypeInteger pmdDataTypeReal pmdDataTypeInteract

Parameters Subtable (41): pmdTblSubRtnParam

Field	Type	Constant	Description or Location in ProModel
5	S	pmdFldSubRtnParamName	Build > Subroutines > Parameters… > ID
6	I	pmdFldSubRtnParamType	Build > Subroutines > Parameters… > Type…
		Parameter Type Rule 2 = Integer 4 = Real	 pmdDataTypeInteger pmdDataTypeReal

Arrival Cycles Table (13): pmdTblArrivalCycle

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldArrCycID	Build > More Elements > Arrival Cycles > ID
2	I	pmdFldArrCycType	Build > More Elements > Arrival Cycles > Qty/%
		Quantity Rule 0 = Percent 1 = Quantity	 pmdArvCycPercent pmdArvCycQuant
3	I	pmdFldArrCycCumulative	Build > More Elements > Arrival Cycles > Cumulative…

Arrival Cycle Values Subtable (42): pmdTblArrivalCycData

Field	Type	Constant	Description or Location in ProModel
5	S	pmdFldArrCycTime	Build > More Elements > Arrival Cycles > Table… > Time
6	S	pmdFldArrCycQtyPercent	Build > More Elements > Arrival Cycles > Table… > Qty/%

Table Functions Table (14): pmdTblTableFunction

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldTableFunID	Build > More Elements > Table Functions > ID

Function Values Subtable (43): pmdTblFunctionData

Field	Type	Constant	Description or Location in ProModel
3	S	pmdFldTableFunIndepVal	Build > More Elements > Table Functions > Table… > Independent Value
4	S	pmdFldTableFunDepVal	Build > More Elements > Table Functions > Table… > Dependent Value

User Distributions Table (15): pmdTblUserDistrib

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldUserDistID	Build > More Elements > User Distributions > ID
2	I	pmdFldUserDistType	Build > More Elements > User Distributions > Type…
		Type Rule 1 = Discrete 2 = Continuous	 pmdUDistDiscrete pmdUDistContinuous
3	I	pmdFldUserDistCumulative	Build > More Elements > User Distributions > Cumulative…

User Distributions Values Subtable (44): pmdTblUserDistribData

Field	Type	Constant	Description or Location in ProModel
4	S	pmdFldUserDistPercentage	Build > More Elements > User Distributions > Table… > Percentage
5	S	pmdFldUserDistValue	Build > More Elements > User Distributions > Table… > Value

External Files Table (16): pmdTblExternalFile

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldXfilesID	Build > More Elements > External Files > ID
2	I	pmdFldXfilesType	Build > More Elements > External Files > Type…
		Type Rule 1 = General Read 2 = General Write 3 = Entity Location 4 = Arrival 5 = Shift 6 = DLL 7 = Excel	 pmdFileTypeGenRead pmdFileTypeGenWrite pmdFileTypeEntLoc pmdFileTypeArrival pmdFileTypeShift pmdFileTypeDLL pmdFileTypeExcel

3	S	pmdFldXfilesPath	Build > More Elements > External Files > File Name…
4	S	pmdFldXfilesPrompt	Build > More Elements > External Files > Prompt
5	S	pmdFldXfilesNotes	Build > More Elements > External Files > Notes…

Streams Table (17): pmdTblStream

Field	Type	Constant	Description or Location in ProModel
1	I	pmdFldStreamNum	Build > More Elements > Streams > Stream #
2	I	pmdFldStreamSeedNum	Build > More Elements > Streams > Seed #
3	I	pmdFldStreamReset	Build > More Elements > Streams > Reset…
		Reset Rule 0 = No 1 = Yes	

General Information Table (18): pmdTblGenInfo

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldGenInfoTitle	Build > General Information > Title
2	I	pmdFldGenInfoDefTimeUnits	Build > General Information > Time Units
		Default Time Units Rule 1 = Seconds pmdTimeUnitSec 2 = Minutes pmdTimeUnitMin 3 = Hours pmdTimeUnitHr 4 = Days pmdTimeUnitDay	
3	I	pmdFldGenInfoDefDistUnits	Build > General Information > Distance Units
		Default Distance Units Rule 1 = Feet pmdDistUnitFeet 2 = Meters pmdDistUnitMeters	
4	S	pmdFldGenInfoGLibFile	Build > General Information > Graphic Library File…
5	S	pmdFldGenInfoInitLogic	Build > General Information > Initialization Logic…
6	S	pmdFldGenInfoTermLogic	Build > General Information > Termination Logic…
7	S	pmdFldGenInfoNotes	Build > General Information > Model Notes…
8	I		Has the model been modified?
		Modified Rule 0 = No 1 = Yes	
9	I	pmdFldGenInfoModFile	Path of the .MOD file.
10	R	pmdFldGenInfoZoomPct	Layout zoom percentage.

Process Table (19): pmdTblProcessing

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldProcEntName	Build > Processing > Entity…
2	I Bool	pmdFldProcPreempt	Build > Processing > Entity… > Preemption Process
3	S	pmdFldProcLocName	Build > Processing > Location…
4	S	pmdFldProcOpLogic	Build > Processing > Operation…

Routing Subtable (20): pmdTblRouting

Field	Type	Constant	Description or Location in ProModel
6	S	pmdFldRtgEntName	Build > Processing > Output…
7	S	pmdFldRtgLocName	Build > Processing > Destination…
8	S	pmdFldRtgPriority	Build > Processing > Destination… > Priority
9	I	pmdFldRtgNewBlock	Build > Processing > Rule… > New Block
10	I	pmdFldRtgNewEntity	Build > Processing > Rule… > New Entity
11	S	pmdFldRtgQuantity	Build > Processing > Rule… > Quantity
12	I	pmdFldRtgRoutingRule	Build > Processing > Rule… > (choice list)
		Routing Rules 1 = First Available 2 = Most Available 3 = By Turn 4 = If Join Request 5 = If Load Request 6 = If Send 7 = Until Full 8 = As Alternate 9 = Probability 10 = User Condition 11 = Random 12 = Longest Unoccupied 13 = If Empty 14 = Continue 15 = As Backup 16 = Dependent	 pmdRtgFirstAvail pmdRtgMostAvailCap pmdRtgByTurn pmdRtgJoinRequest pmdRtgLoadRequest pmdRtgIfSend pmdRtgUntilFull pmdRtgAsAlt pmdRtgProb pmdRtgCond pmdRtgRandom pmdRtgLongestEmpty pmdRtgIfEmpty pmdRtgContinue pmdRtgAsBackup pmdRtgDependent
13	R	pmdFldRtgProbability	Build > Processing > Rule… > Probability
14	S	pmdFldRtgCondition	Build > Processing > Rule… > User Condition
15	S	pmdFldRtgMoveLogic	Build > Processing > Move Logic…

Model Parameters Table (21): pmdTblModelParam

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldModParamValue	Simulation > Model Parameters > Change

Scenarios Table (22): pmdTblScenario

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldScenName	Simulation > Scenarios
2	I	pmdFldScenDisable	Simulation > Scenarios > Disable (toggles on/off for selected record)

Scenario Parameter Subtable (56): pmdTblScenParam

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldScenParamValue	Simulation > Scenarios > (Add/Edit) > Change

Simulation Options (23): pmdTblSimOption

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldSimOptOutPath	Simulation > Options > Output Path
2	I	pmdFldSimOptTimeBasis	Simulation > Options > Define run length by
		Time Basis Rule 0 = Time Only 1 = Calendar Date 2 = Weekly Time **Note:** Values 3 & 4 are used only if Time Basis = 0.	 pmdTimeBasisTimeOnly pmdTimeBasisCalDate pmdTimeBasisWeeklyTime
3	S	pmdFldSimOptRunHours	Simulation > Options > Run Hours (Time Only)
4	S	pmdFldSimOptWarmPeriod	Simulation > Options > Warmup Hours (Time Only)
5	I	pmdFldSimOptWarmMonCal	Simulation > Options > Warmup Start > Month (Calendar)
6	I	pmdFldSimOptWarmDayCal	Simulation > Options > Warmup Start > Day (Calendar)
7	I	pmdFldSimOptWarmYrCal	Simulation > Options > Warmup Start > Year (Calendar)
8	I	pmdFldSimOptWarmHr	Simulation > Options > Warmup Start > Hour (Weekly, Calendar)
9	I	pmdFldSimOptWarmMin	Simulation > Options > Warmup Start > Min (Weekly, Calendar)
10	I	pmdFldSimOptBegMonCal	Simulation > Options > Sim. Begin > Month (Calendar)
11	I	pmdFldSimOptBegDayCal	Simulation > Options > Sim. Begin > Day (Calendar)
12	I	pmdFldSimOptBegYrCal	Simulation > Options > Sim. Begin > Year (Calendar)
13	I	pmdFldSimOptBegHr	Simulation > Options > Sim. Begin > Hour (Weekly, Calendar)
14	I	pmdFldSimOptBegMin	Simulation > Options > Sim. Begin > Min (Weekly, Calendar)
15	I	pmdFldSimOptEndMonCal	Simulation > Options > Sim. End > Month (Calendar)
16	I	pmdFldSimOptEndDayCal	Simulation > Options > Sim. End > Day (Calendar)
17	I	pmdFldSimOptEndYrCal	Simulation > Options > Sim. End > Year (Calendar)
18	I	pmdFldSimOptEndHr	Simulation > Options > Sim. End > Hour (Weekly, Calendar)
19	I	pmdFldSimOptEndMin	Simulation > Options > Sim. End > Min (Weekly, Calendar)
20	I	pmdFldSimOptRptMethod	Simulation > Options > Output Reporting
		Output Report Method Rule 0 = Standard 1 = Batch Mean 2 = Periodic	 pmdSimRptStandard pmdSimRptBatchMean pmdSimRptPeriodic
21	S	pmdFldSimOptRptIntLength	Simulation > Options > Output Reporting > Interval Length
22	S	pmdFldSimOptNumReps	Simulation > Options > Output Reporting > Number of Replications
23	I	pmdFldSimOptClockPrecision	Simulation > Options > Clock Precision > (drop-down list)

		Clock Precision Rule 0 = No Clock Precision Chosen 1 = 1 2 = .1 3 = .01 4 = .001 5 = .0001 6 = .00001	 pmdSimClockPrecNone pmdSimClockPrec1 pmdSimClockPrec10 pmdSimClockPrec100 pmdSimClockPrec1000 pmdSimClockPrec10000 pmdSimClockPrec100000
24	I	pmdFldSimOptClockPrecUnits	Simulation > Options > Clock Precision > (selection list)
		Clock Precision Units Rule 1 = Seconds 2 = Minutes 3 = Hours 4 = Days	 pmdTimeUnitSec pmdTimeUnitMin pmdTimeUnitHr pmdTimeUnitDay
25	I Bool	pmdFldSimOptDisTimeSeries	Simulation > Options > Disable Time Series
26	I Bool	pmdFldSimOptDisAnimation	Simulation > Options > Disable Animation
27	I Bool	pmdFldSimOptDisCost	Simulation > Options > Disable Cost
28	I Bool	pmdFldSimOptPause	Simulation > Options > Pause at Start
29	I Bool	pmdFldSimOptDisplayNotes	Simulation > Options > Display Notes
30	I Bool	pmdFldSimOptEnableWarmup	Simulation > Options > Warmup Period
31	I Bool	pmdFldSimOptWarmDayWk	Simulation > Options > Warmup Start > Day (Weekly)
32	I Bool	pmdFldSimOptWarmWeekWk	Simulation > Options > Warmup Start > Week (Weekly)
33	I Bool	pmdFldSimOptBegDayWk	Simulation > Options > Sim. Begin > Day (Weekly)
34	I Bool	pmdFldSimOptBegWeekWk	Simulation > Options > Sim. Begin > Week (Weekly)
35	I Bool	pmdFldSimOptEndDayWk	Simulation > Options > Sim. End > Day (Weekly)
36	I Bool	pmdFldSimOptEndWeekWk	Simulation > Options > Sim. End > Week (Weekly)
37	I Bool	pmdFldSimOptDaySaveAdjust	Simulation > Options > Adjust for Daylight Savings
38	I Bool	pmdFldSimOptGenAniScript	Simulation > Options > Generate Animation Script
39	I Bool	pmdFldSimOptComRand	Simulation > Options > Common Random Numbers
40	I Bool	pmdFldSimOptSkipResDT	Simulation > Options > Skip Resource DTs if Off-shift
41	I Bool	pmdFldSimOptDisArrayExp	Simulation > Options > Disable Array Export

Location Graphics (45): pmdTblLocGraphic

Field	Graphic Type Table	Constant	Description or Location in ProModel
1	1	pmdGfxTypeLibrary	Library
1	2	pmdGfxTypeQ	Queue / Conveyor
1	3	pmdGfxTypeTank	Gauge / Tank
1	4	pmdGfxTypeCounter	Counter
1	5	pmdGfxTypeText	Text
1	6	pmdGfxTypeStatus	Status Light
1	7	pmdGfxTypeEntSpot	Entity Spot
1	8	pmdGfxTypeRegion	Region

Library Graphics (Graphic Type Table 1)

Field	Type	Constant	Description or Location in ProModel
1	I	pmdFldGfxType	Graphic Type
2	I	pmdFldGfxLibWidth	Width
3	I	pmdFldGfxLibHeight	Height
4	R	pmdFldGfxLibWidR	Real Width (feet or meters)
5	R	pmdFldGfxLibHtR	Real Height (feet or meters)
6	I	pmdFldGfxLibRotat	Rotation
7	I	pmdFldGfxLibID	ID
8	I	pmdFldGfxLibSpotX	Hotspot X value
9	I	pmdFldGfxLibSpotY	Hotspot Y value
10	I	pmdFldGfxLibXpos	Postion X value
11	I	pmdFldGfxLibYpos	Postion Y value
12	I	pmdFldGfxLibColor	Color
20	S	pmdFldGfxLibConvWidth	Width on conveyor (Entities only)
21	S	pmdFldGfxLibConvLength	Length on conveyor (Entities only)

Queue/Conveyor Graphics (Graphics Type Table 2)

Field	Type	Constant	Description or Location in ProModel
1	I	pmdFldGfxType	Graphic Type
2	I	pmdFldGfxQIsQ	Conveyor?
		Conveyor Rule 0 = No 1 = Yes	
3	I	pmdFldGfxQSpeed	Speed (Conveyor Only)
4	S	pmdFldGfxQLength	Length (Conveyor Only)
5	S	pmdFldGfxQAccum	Accumulating?
		Accumulating Rule 0 = No 1= Yes	
6	I	pmdFldGfxQEntDir	Entity Orientation
		Entity Orientation Rule 0 = Lengthwise 1 = Widthwise	
7	I	pmdFldGfxQBrdrClr	Border Color
8	I	pmdFldGfxQFillClr	Fill Color
9	I	pmdFldGfxQStyle	Graphic Style
		Graphic Style Rule 1 = Solid 2 = Line 3 = Roller	
10	I	pmdFldGfxQWidth	Width
11	I	pmdFldGfxQIsVis	Invisible?
		Invisible Rule 0 = No 1 = Yes	

Gauge/Tank Graphics (Graphics Type Table 3)

Field	Type	Constant	Description or Location in ProModel
1	I	pmdFldGfxType	Graphic Type
2	I	pmdFldGfxTnkLeft	Left
3	I	pmdFldGfxTnkTop	Top
4	I	pmdFldGfxTnkRight	Right
5	I	pmdFldGfxTnkBotm	Bottom
6	I	pmdFldGfxTnkBrdrClr	Border Color
7	I	pmdFldGfxTnkEmptyClr	Empty Color
8	I	pmdFldGfxTnkFillClr	Fill Color
9	R	pmdFldGfxTnkMinVal	Minimum Value
10	R	pmdFldGfxTnkMaxVal	Maximum Value
11	I	pmdFldGfxTnkDir	Direction
		Direction Rule 1 = Up 2 = Down 3 = Left 4 = Right	
12	I	pmdFldGfxTnkScale	Show Scale?
		Scale Rule 0 = No 1 = Yes	
13	I	pmdFldGfxTnkBrdr	Show Border?
		Border Rule 0 = No 1 = Yes	
14	I	pmdFldGfxTnkIsTank	Tank?
		Tank Rule 0 = No 1 = Yes	

Counter Graphics (Graphics Type Table 4)

Field	Type	Constant	Description or Location in ProModel
1	I	pmdFldGfxType	Graphic Type
10	I	pmdFldGfxCtrLeft	Left
11	I	pmdFldGfxCtrTop	Top
12	I	pmdFldGfxCtrRight	Right
13	I	pmdFldGfxCtrBotm	Bottom
14	I	pmdFldGfxCtrFrType	Frame Type
		Frame Type Rule 1 = Invisible 2 = Plain 3 = Raised 4 = Recessed 5 = Shadow 6 = None	
15	I	pmdFldGfxCtrFrShape	Frame Shape

		Frame Shape Rule 1 = Rectangle 2 = Round Rectangle 3 = Ellipse 4 = Diamond	
16	I	pmdFldGfxCtrFrClr	Frame Color
17	I	pmdFldGfxCtrBrdrClr	Frame Border Color
20	I	pmdFldGfxCtrFontSize	Font Size
21	S	pmdFldGfxCtrFont	Font Name
22	I	pmdFldGfxCtrFontClr	Font Color

Text Graphics (Graphic Type Table 5)

Field	Type	Constant	Description or Location in ProModel
1	I	pmdFldGfxType	Graphic Type
2	S	pmdFldGfxTxtLabel	Label Text
10	I	pmdFldGfxTxtLeft	Left
11	I	pmdFldGfxTxtTop	Top
12	I	pmdFldGfxTxtRight	Right
13	I	pmdFldGfxTxtBotm	Bottom
14	I	pmdFldGfxTxtFrType	Frame Type
		Frame Type Rule 1 = Invisible 2 = Plain 3 = Raised 4 = Recessed 5 = Shadow 6 = None	
15	I	pmdFldGfxTxtFrShape	Frame Shape
		Frame Shape Rule 1 = Rectangle 2 = Round Rectangle 3 = Ellipse 4 = Diamond	
16	I	pmdFldGfxTxtFrClr	Frame Color
17	I	pmdFldGfxTxtBrdrClr	Frame Border Color
20	I	pmdFldGfxTxtFontSize	Font Size
21	S	pmdFldGfxTxtFont	Font Name
22	I	pmdFldGfxTxtFontClr	Font Color
23	I		Alignment
		Allignment Rule 1 = Left 2 = Center 3 = Right	
24	I		Rotation
		Rotation Rule 0 = None 1 = 90 degrees 2 = 180 degrees 3 = 270 degrees	

Status Light Graphics (Graphic Type Table 6)

Field	Type	Constant	Description or Location in ProModel
1	I	pmdFldGfxType	Graphic Type
2	I	pmdFldGfxLightX	X Position
3	I	pmdFldGfxLightY	Y Position

Entity Spot Graphics (Graphic Type Table 7)

Field	Type	Constant	Description or Location in ProModel
1	I	pmdFldGfxType	Graphic Type
2	I	pmdFldGfxSpotX	X Position
3	I	pmdFldGfxSpotY	Y Position

Region Graphics (Graphic Type Table 8)

Field	Type	Constant	Description or Location in ProModel
1	I	pmdFldGfxType	Graphic Type
2	I	pmdFldGfxRgnLeft	Left
3	I	pmdFldGfxRgnTop	Top
4	I	pmdFldGfxRgnRight	Right
5	I	pmdFldGfxRgnBotm	Bottom

Resource Graphics (46): pmdTblResGraphic

Field	Type	Constant	Description or Location in ProModel
1	1	pmdGfxTypeLibrary	Library

Entity Graphics (47): pmdTblEntGraphic

Field	Type	Constant	Description or Location in ProModel
1	1	pmdGfxTypeLibrary	Library

Background Graphics (49): pmdTblBackGraphic

Field	Type	Constant	Description or Location in ProModel
1	I		1=Library, 6=Text
4	I		Font color (RGB)
6	I		Position Locked? (0 = no, 1 = yes)
8	I		X-coordinate of upper left corner of graphic
9	I		Y-coordinate of upper left corner of graphic
10	I		X-coordinate of lower right corner of graphic
11	I		Y-coordinate of lower right corner of graphic
100	S		Text shown on graphic
101	I		Frame type (1=invisible, 2=plain, 3=raised, 4=recessed, 5=shadow, 6=no border)
102	I		Frame shape (1=rectangle, 2=rounded rectangle, 3=ellipse, 4=diamond)
103	I		Frame border color (RGB)
120	I		Font size (use negative number to specify point size)
121	S		Font name
122	I		Alignment (1=left, 2=center, 3=right)
123	I		Rotation (0=0 degrees, 1=90 degrees, 2=180 degrees, 3=270 degrees

Variable Graphics (60): pmdTblVarGraphic

Field	Type	Constant	Description or Location in ProModel
1	4	pmdGfxTypeCounter	Counter

Model Defaults Table (50): pmdTblModelDefaults

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldModDfltModPath	Tools > Options > Default Folders > Models
2	S	pmdFldModDfltGfxPath	Tools > Options > Default Folders > Graphics Library
3	S	pmdFldModDfltOutPath	Tools > Options > Default Folders > Output Results
4	I Bool	pmdFldModDfltSaveSet	Save defaults to .INI file?
5	I Bool	pmdFldModDfltShowPath	Views > Show Hidden Networks
6	I Bool	pmdFldModDfltShowRtg	Views > Show Routings
7	I Bool	pmdFldModDfltShowGrid	Views > Show Grid
7	I Bool	pmdFldModDfltLongMenu	Tools > Options > Long Build Menu checkbox

Views Table (55): pmdTblView

Field	Type	Constant	Description or Location in ProModel
1	S	pmdFldViewName	View > Views > Define > View List
2	I	pmdFldViewXOffset	Relative horizontal position of view
3	I	pmdFldViewYOffset	Relative vertical position of view
4	I	pmdFldViewWidth	View width in pixels
5	I	pmdFldViewHeight	View height in pixels

Queue/Conveyor Joints Table (61): pmdTblQJoint

Field	Type	Constant	Description or Location in ProModel
1	I	pmdFldQJointXPos	(Distance, in pixels, from Left margin)
2	I	pmdFldQJointYPos	(Distance, in pixels, from Top margin)

Routing Points Table (62):

Field	Type	Constant	Description or Location in ProModel
1	I		(Distance, in pixels, from Left margin)
2	I		(Distance, in pixels, from Top margin)

Runtime Table.

Table Name	Visual Basic Constant	Value
Locations	pmrTblLocation	1
Single Capacity Locations	pmrTblLocSingle	2
Multi Capacity Locations	pmrTblLocMulti	3
Resources	pmrTblResource	5
Resource States (by Percentage)	pmrTblResState	6
Node Entries	pmrTblNodeEntry	7
Failed Arrivals	pmrTblFailArrival	8
Entity Activity	pmrTblEntAct	9
Entity States (by Percentage)	pmrTblEntState	10
Variables	pmrTblVariable	12
Logs	pmrTblLog	13
Location Costing	pmrTblLocCost	14
Resource Costing	pmrTblResCost	16
Entity Activity Costing	pmrTblEntCost	17

Locations Runtime Fields (1): pmrTblLocation

Field	Constant	Field
1	pmrFldLocEntries	Total Entries
2	pmrFldLocAvgMins	Avg Min per Entry
3	pmrFldLocAvgCnt	Avg Contents
4	pmrFldLocMaxCnt	Max Contents
5	pmrFldLocCurCnt	Cur Contents
6	pmrFldLocUtilPct	Utilization %

Single Capacity Locations Runtime Fields (2): pmrTblLocSingle

Field	Constant	Field
1	pmrFldLocSOperPct	Operation %
2	pmrFldLocSSetupPct	Setup %
3	pmrFldLocSIdlePct	Idle %
4	pmrFldLocSWaitPct	Waiting %
5	pmrFldLocSBlkdPct	Blocked %
6	pmrFldLocSDownPct	Down %

Multi Capacity Locations Runtime Fields (3): pmrTblLocMulti

Field	Constant	Field
1	pmrFldLocMEmptyPct	Empty %
2	pmrFldLocMPartFullPct	Part Occupy %
3	pmrFldLocMFullPct	Full %
4	pmrFldLocMDownPct	Down %

Resource Runtime Fields (5): pmrTblResource

Field	Constant	Field
1	pmrFldResTimesUsed	# Times Used
2	pmrFldResAvgMins	Avg Min per Usage
3	pmrFldResTrvl2Use	Travel to Use
4	pmrFldResTrvl2Park	Travel to Park
5	pmrFldResBlkdTrvlPct	Blocked in Travel %
6	pmrFldResUtilPct	Utilization %

Resource States (By Percentage) Runtime Fields (6): pmrTblResState

Field	Constant	Field
1	pmrFldResStPctUse	In Use %
2	pmrFldResStPctTrvl2Use	Travel to Use %
3	pmrFldResStPctTrvl2Prk	Travel to Park %
4	pmrFldResStPctIdle	Idle %
5	pmrFldResStPctDown	Down %

Node Entries Runtime Fields (7): pmrTblNodeEntry

Field	Constant	Field
1	pmrFldNodeTotEntry	Total Entries
2	pmrFldNodeBlkdEntry	Blocked Entries

Failed Arrivals Runtime Fields (8): pmrTblFailArrival

Field	Constant	Field
1	pmrFldNodeTotFail	Total Failed

Entity Activity Runtime Fields (9): pmrTblEntAct

Field	Constant	Field
1	pmrFldEntTotExit	Total Exits
2	pmrFldEntCurQty	Cur Qty Sys
3	pmrFldEntAvgMinSys	Avg Min System
4	pmrFldEntAvgMinMove	Avg Min Move Logic
5	pmrFldEntAvgWaitRes	Avg Wait Res
6	pmrFldEntAvgMinOper	Avg Min Operation
7	pmrFldEntAvgMinBlkd	Avg Min Blocked

Entity States (By Percentage) Runtime Fields (10): pmrTblEntState

Field	Constant	Field
1	pmrFldEntStPctMove	In Move Logic %

2	pmrFldEntStPctWait	Wait for Res %
3	pmrFldEntStPctOper	In Operation %
4	pmrFldEntStPctBlkd	Blocked %

Variables Runtime Fields (12): pmrTblVariable

Field	Constant	Field
1	pmrFldVarTotChgs	Total Changes
2	pmrFldVarAvgMinPer	Avg Min Per Change
3	pmrFldVarMinVal	Min Value
4	pmrFldVarMaxVal	Max Value
5	pmrFldVarCurVal	Current Value
6	pmrFldVarAvgVal	Avg Value

Logs Runtime Fields (13): pmrTblLog

Field	Constant	Field
1	pmrFldLogNumObsrv	# Observations
2	pmrFldLogMinVal	Min Value
3	pmrFldLogMaxVal	Max Value
4	pmrFldLogAvgVal	Avg Value

Location Costing Runtime Fields (14): pmrTblLocCost

Field	Constant	Field
1	pmrFldLCostOperDlr	$ Operation Cost
2	pmrFldLCostOperPct	% Operation Cost
3	pmrFldLCostResDlr	$ Resource Cost
4	pmrFldLCostResPct	% Resource Cost
5	pmrFldLCostTotDlr	$ Total Cost
6	pmrFldLCostTotPct	% Total Cost

Resource Costing Runtime Fields (16): pmrTblResCost

Field	Constant	Field
1	pmrFldRCostNonUseDlr	$ Non-use Cost
2	pmrFldRCostNonUsePct	% Non-Use Cost
3	pmrFldRCostUseDlr	$ Usage Cost
4	pmrFldRCostUsePct	% Usage Cost
5	pmrFldRCostTotDlr	$ Total Cost
6	pmrFldRCostTotPct	% Total Cost

Entity Activity Costing Runtime Fields (17): pmrTblEntCost

Field	Constant	Field
1	pmrFldECostTotDlr	$ Total Cost
2	pmrFldECostTotPct	% Total Cost

Result Codes (Errors)

Field	Constant	Description of Error
0	pmdErrNoError	No Error.
1	pmdErrInvalidTableNum	There is no table by that number in ProModel.
2	pmdErrMethodNotApplicable	Function does not apply to the selected record (e.g. - SelectMainRecord-ByName() on the Processing Table)
3	pmdErrInvalidRecordNum	Record by that name does not exist, or record has not been selected (when using Set… or Get…)
4	pmdErrInvalidFieldNum	There is no field (column) by that number in the selected table.
5	pmdErrDataTypeMismatch	Set… or Get… function does not match data type (e.g. - SetStringField-Value() used on an integer field
6	pmdErrFieldNotApplicable	Field does not exist for the selected record (e.g. - trying to access the RTI fields for non-RTI macros)
7	pmdErrNotImplemented	The selected element has not been ActiveX enabled yet.
8	pmdErrGfxNotImplemented	Graphic element has not been ActiveX enabled yet.
9	pmdErrValueNotApplicable	Value does not apply for selected field (time units = 6. Arrivals > ent name set to non-existing rec.)
11	pmdErrParentNotSelected	The parent table has not been selected
12	pmdErrObsolete	The specified ActiveX element is no longer used
13	pmdErrDataProtected	The model is protected, so data can't be accessed
14	pmdErrKeyNotFound	No hardware key, data can't be accessed
15	pmdErrReadOnlyField	Attempting to write to a read-only field
16	pmdErrJointNotFound	Attempting to delete queue/conveyor joint, when none exist (i.e. - has only start & end points)
99	pmdErrOther	Any other kind of error

Events

Field	Constant	When does the event fire?	Return Values
0	pmeUndefined		
1	pmeQuit	Just after "Save Current Model?" dialog	True = Cancel Quit
2	pmeSaveBeforeQuit	"Save Current Model?" dialog	True = Skip Save dialog
3	pmeSimComplete	Simulation Ends Normally	True = Skip Stats dialog
4	pmeSimUserEnd	User Selects "Simulation > End Simulation"	True = Skip Collect Stats dialog
5	pmeSimPauseOn	User Selects "Simulation > Pause Simulation"	
6	pmeSimPauseOff	User Selects "Simulation > Resume"	
7	pmeSimAbEnd	Simulation Crashes	
8	pmeSimStart	Simulation Start (before translation/simulation)	
9	pmeTranStart	Translation Start (at start of translation for each scenario)	
10	pmeTranEnd	Translation End (between translation & simulation)	
11	pmeEditModeOn	Edit Mode Entered (between simulation end and return to build environment)	
12	pmeModLoaded	Model Loaded (after successful load)	
15	pmeAnimOn	Animation On (when animation turned on)	
16	pmeAnimOff	Animation Off (when animation turned off)	
20	pmeMsgInfo		
21	pmeMsgOK	"GLB Missing" message box, other message box	
22	pmeMsgOkCancel		
23	pmeMsgRetryCancel		
24	pmeMsgYesNo	"Couldn't Get Exclusive…" message box	
25	pmeMsgYesNoCancel	"Save Current Model?" dialog	
26	pmeMsgAbortRetryIgnore		
30	pmeMsgPrompt		

Path Colors

Field	Constant	Name
0	pmdColorBlack	Black
128	pmdColorMaroon	Maroon
255	pmdColorRed	Red
32768	pmdColorDk_Green	Dark Green
32896	pmdColorGold	Gold
65280	pmdColorLt_Green	Light Green
65535	pmdColorYellow	Yellow
8388608	pmdColorDk_Blue	Dark Blue
8388736	pmdColorPurple	Purple
8421376	pmdColorTeal	Teal
8421504	pmdColorDk_Gray	Dark Gray
12632256	pmdColorLt_Gray	Light Gray
16711680	pmdColorMed_Blue	Medium Blue
16711935	pmdColorPink	Pink
16776960	pmdColorCyan	Cyan (Light Blue)
16777215	pmdColorWhite	White

Menu Ids

This method is defined as: ***MenuCommand***<*MenuId*>,<*Parameter*>

For most commands, Parameter has no meaning and a zero should be passed. The following is a list of menu IDs that have no equivalent method in the CProModel interface.

Menu ID	Constant	Descriptionn	Window	Parameter
1155	pmaMnuCost	Open Cost Dialog	Main	
1170	pmaMnuSimOpt	Open Simulation Options dialog	Main	
1185	pmaMnuGenInfo	Open General Info Dialog	Main	
1500	pmaMnuFind	Open Find Dialog	Main	
1505	pmaMnuReplace	Open Replace Dialog	Main	
1510	pmaMnuFindNext	Repeat Last Search Replace Operation	Main	
2450	pmaMnuSimRun	Launch SimRunner	Main	
2500	pmaMnuViewStats	Launch Output Module	Main	1 = Open Hidden
2505	pmaMnuViewTrace	View Trace File	Main	
2600	pmaMnuGfxEdit	Launch Graphic Editor	Main	
2605	pmaMnuShiftDef	Launch Shift Editor	Main	
2650	pmaMnuStatFit	Launch Stat::Fit	Main	
2754	pmaMnuShortcut	View Shortcut Panel	Main	
2755	pmaMnuRefresh	Refresh Layout	Main	
2850	pmaMnuViewDef	Open Views Dialog	Main	
2861	pmaMnuView1	Set Layout to 1st View	Main	
2862	pmaMnuView2	Set Layout to 2nd view	Main	
2889	pmaMnuView29	Set Layout to 29th view	Main	
2906	pmaMnuSnapGrid	Toggle “Snap to Grid”	Main	
2908	pmaMnuShowGrid	Toggle Grid On/Off	Main	
2910	pmaMnuFont	Open Edit Table Font Selection Dialog	Main	
2920	pmaMnuPMOpt	Open Options Dialog	Main	
2942	pmaMnuGridSet	Ope Grid Grid Settings Dialog	Main	
2944	pmaMnuBackColor	Open Background Color Selection Dialog	Main	
2946	pmaMnuPathColor	Open Routing Path Color Dialog	Main	
2951	pmaMnuScenarios	Open Scenarios Dialog	Main	
2952	pmaMnuModParams	Open Model Parameters Dialog	Main	
2980	pmaMnuResetWin	Reset Window Positions	Main	
3000	pmaMnuAboutPM	Open About box	Main	
3005	pmaMnuPMSupport	Go To Support Page on the Web	Main	

Menu ID	Constant	Descriptionn	Window	Parameter
3010	pmaMnuShowHidNet	Toggle “Show Hidden Networks”	Main	
3015	pmaMnuShowRtgPath	Toggle “Show Routing Paths”	Main	
3020	pmaMnuColor	Open Edit Table Color Select Dialog	Main	
3200	pmaMnuCntxtMenu	Pop Up Layout Context Menu (general)	Layout	
4415	pmaMnuMakePkg	Open Create Package Dialog	Main	
4416	pmaMnuInstallPkg	Open Install Package Dialog	Main	
4420	pmaMnuPrint2File	Open Print Text to File Dialog	Main	
4500	pmaMnuViewText	View Text	Main	
4600	pmaMnuPrintLayout	Open Print Layout Dialog	Main	
4601	pmaMnuPrntrSetup	Open Print Setup Dialog	Main	
4602	pmaMnuPrint2Prntr	Open Print Text Dialog	Main	
4650	pmaMnuHelpIndex	Help Index	Main	
4655	pmaMnuHelpCntxt	Context Help	Main	
4710	pmaMnuFile1	Open File #1 in history list	Main	
4714	pmaMnuFile5	Open File #5 in history list	Main	
4803	pmaMnuSimClock	Pop Up Simulation Clock Menu	Simulation	
4804	pmaMnuTraceOff	Trace Off	Simulation	
4805	pmaMnuTraceClose	Trace Close	Simulation	
4806	pmaMnuTraceStep	Trace Step	Simulation	
4807	pmaMnuTraceContin	Trace Continuous	Simulation	
4808	pmaMnuTrace2Win	Trace to Window	Simulation	
4810	pmaMnuTrace2File	Trace to File	Simulation	
4811	pmaMnuAnimOnOff	Toggle Animation On/Off	Simulation	
4814	pmaMnuUserPause	Open User Pause Dialog	Simulation	
4815	pmaMnuShowLegend	Show Legend	Simulation	
4816	pmaMnuPauseOnOff	Pause Resume	Simulation	
4817	pmaMnuSimInfo1Loc	Open Location Info Dialog	Simulation	
4818	pmaMnuSimInfoAll	Open All Locations Info Dialog	Simulation	
4821	pmaMnuSimInfoVars	Open Variable Info Dialog	Simulation	
4822	pmaMnuSimInfoArray	Open Array Info Dialog	Simulation	
4824	pmaMnuSimDebug	Open Debug Options Dialog	Simulation	
4825	pmaMnuSimInteract	Open Interactive Subroutines Dialog	Simulation	
4826	pmaMnuDynPlotNew	New Dynamic Plots	Simulation	
4827	pmaMnuDynPlotConfig	Configure Dynamic Plots	Simulation	
4850	pmaMnuWorkSrch	Resource Work Search	Resources	
4851	pmaMnuParkSrch	Resource Park Search	Resources	

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