Interface Building Tools

Features of Interface-Building Tools.

User Interface Independence:

Separate interface design from internals
Enable multiple user interface strategies
Enable multiple platform support
Establish user interface architect role
Enforce standards

Methodology & Notation:

Develop design procedures
Find ways to talk about design
Create project management

Rapid Prototyping

Try out ideas very early
Test, revise, test, revise
Engage end users, managers, and others

Software Support

Increase productivity
Offer some constraint & consistency checks
Facilitate team approaches
Ease maintenance

User interface mock-up tools

Examples:

Paper and pencil
Word processors
Slide-show software
Macromedia Director, Flash mx, or Dreamweaver

Visual Editing

Microsoft Visual Studio
Borland JBuilder

Finding the right tool is a trade-off between six main criteria:

1. Part of the application built using the tool.

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2. Learning time
3. Building time
4. Methodology imposed or advised
5. Communication with other subsystems
6. Extensibility and modularity

The windowing system layer

Sometimes working at a low-level is required.
E.g., new platform
The while(true) main loop

The GUI toolkit layer

Widgets, such as windows, scroll bars, pull-down or pop-up menu, etc.
Difficult to use without an interface

The application framework and specialized language layer

Application frameworks are based on object-oriented programming
Can quickly build sophisticated interfaces
Require intensive learning
Specialized language layers lighten the programming burden
Tcl (and its toolkit Tk)
Perl/Tk
Python/Tk
Visual Basic
Java Script

Software Layers		Visual Tools	Examples
4	Application	Model-Based Building Tools	Microsoft Access, Sybase PowerDesigner
3	Application Framework/ Specialized Language	Conceptual Building Tools	Macromedia Director, Tcl/Tk, Microsoft MFC
2	GUI Toolkit	Interface Builder	Borland JBuilder Microsoft Visual Studio
1	Windowing System	Resources Editor	Windows Graphical User Interface Apple Quartz X11 Windowing System

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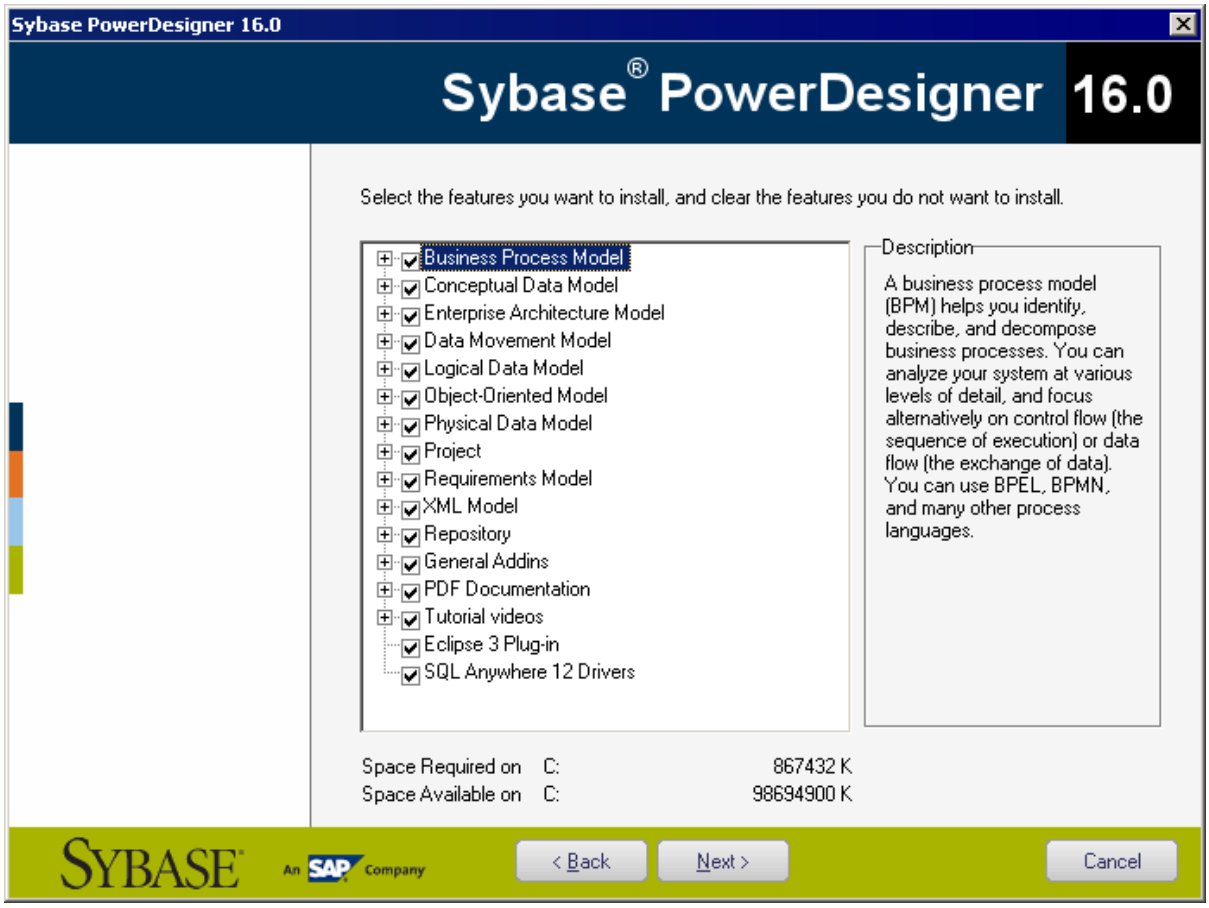

User interface tools	Introduction	Factors of success
Component Systems	Combining separately written and compiled components Examples: Microsoft's OLE, Active X Apple's OpenDoc, Sun's Java beans	Addresses the important and useful aspect of application building
Scripting Languages	Interpreted language, combined with components and an interface builder. Examples: Visual Basic	Relatively high thresh-hold and high ceiling: non professional programmers could create sophisticated and useful interactive
Hypertext	Linkage, Examples: World Wide Web system, Mosaic browser.	Low thresh-hold: ease of making pages accessible on the Web, and the embedding of pictures with the text
Object-Oriented Programming	Well-known. Example: C++.	Because the success of GUI and Windows 3.1.

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