

Tech Info Library

Apple IIGS: A descriptive list of tools in the IIGS Toolbox

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Among other features, the Apple IIGS' built-in Toolbox distinguishes the Apple IIGS from earlier Apple II's in that IIGS applications can call the Toolbox routines like Macintosh applications can call the Macintosh Toolbox. Supporting the desktop user interface, the IIGS Toolbox makes developing new applications easier.

1. Tool Locator

The Tool Locator provides the mechanism for dispatching tool calls. It maintains vectors to all of the managers and their associated routines and allows for the patching of these routines with RAM tools or substitutions.

2. Memory Manager

Controlling memory allocation, the memory manager attempts to parcel out sections of memory for an application's use in response to a request by that application. If the memory manager cannot grant that request because of lack of memory, then it is up to the application to deal with an "Out Of Memory" error condition.

3. QuickDraw II

Many of the routines in QuickDraw II are the same as those in the Macintosh. However, QuickDraw II does have the added capability of drawing in color (in both 320 and 640 resolution).

4. SANE Numerics

SANE stands for Standard Apple Numeric Environment. An extended-precision floating point routine package, it conforms to IEEE standard (754) arithmetic.

5. The Desk Accessory Manager

The Desk Accessory Manager keeps track of active Desk accessories on

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the desktop. On the Apple IIGS, there are two types of Desk Accessories: classic desk accessories that can run either in the Apple IIGS desktop environment or with old-style applications (like AppleWorks) and new desk accessories that run only in the Apple IIGS desktop environment.

6. Event Manager

This manager is responsible for keeping track of events that occur in the computer system while the current application is doing something else. The application can, when it is done with its current task, ask the event manager what happened while it was busy, and the manager will return a record describing the events that occurred.

7. Menu Manager

This manager is responsible for the maintenance and selection of menus and their associated items. It handles both mouse and keyboard selection.

8. Window Manager

This manager is responsible for keeping track of which areas are covered by which windows including overlapping windows. Whenever a mouse down event is detected, the application calls this manager to find out in which window the event took place.

9. Control Manager

Controls are little "hot spots" on the screen; clicking in controls gives the application commands: yes/no buttons, check boxes, and scroll bars. The control manager is responsible for the placement of these controls on the screen and for alerting the application when the user clicks the mouse in one of them.

10. Line Editor

The Line Editor provides a standard text input interface. Text can be entered, deleted, cut, and pasted within limits.

11. Dialog Manager

This manager is responsible for placing alert messages and text-filled boxes on the screen.

12. Scrap Manager

This manager is responsible for handling the transmission of data from one application to another, often appearing as the clipboard or the scrapbook.

13. Print Manager

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The print manager provides for a standard interface for applications among the many printers available for the Apple IIGS.

14. Integer Math Tools

These are a series of fast, extended-precision routines for arithmetic on integer numbers only.

15. Sound Manager

The Sound Manager, a set of routines that controls the Digital Oscillator Chip (DOC) and the Note Synthesizer, oversees the transmission of data to the sound RAM and activates and deactivates all of the 15 voices the Apple IIGS can produce.

16. The Scheduler

Much of the system code in the Apple IIGS is not re-entrant. This means that an interrupt routine cannot call the section of code that was running when the interrupt occurred. The Scheduler makes it possible to delay the execution of tasks that require non-re-entrant system code whenever that code is already in use.

17. Miscellaneous Tools

These tools allow modifying of battery RAM (Control Panel settings) and the clock chip, preparing interrupts and installing interrupt handling routines, as well as mouse control, data compaction, and other small but necessary routines.

Apple Technical Communications

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