

Glossary

arc A portion of the circumference of an **oval**, not including the bounding radii or any part of the oval's interior.

arithmetic transfer mode A specification for how QuickDraw should draw or copy color images into a bitmap or pixel map. Arithmetic modes perform add, subtract, and blend operations on the red, green, and blue component values of RGB colors.

background color The color of the pixels wherever no drawing has taken place. By default, the background color is white.

background pattern The pattern displayed in a graphics port when an area is erased or when pixels are scrolled out of it.

background printing A feature supported by some printer drivers that allows the user to work with an application while documents are printing. These printer drivers send printing data to a spool file in the PrintMonitor Documents folder inside the System Folder.

basic graphics port The drawing environment provided by **basic QuickDraw**. A basic graphics port is defined by a data structure of type `GrafPort` and contains the information that basic QuickDraw uses to create and manipulate onscreen either black-and-white images or color images that employ the **eight-color system**.

basic QuickDraw The set of QuickDraw routines that you use to create and manipulate graphics information in a graphics port. All Macintosh computers have basic QuickDraw routines in ROM. See also **Color QuickDraw**.

bit image A collection of bits in memory that forms a grid—that is, a rectangular pattern of bits. The bit image is pointed to in the `baseAddr` field of a `BitMap` record. Compare **pixel image**.

bitmap A data structure of type `BitMap` that represents the positions and states of a corresponding set of pixels, which can be either

black and white or the eight predefined colors provided by basic QuickDraw. A bitmap is contained within a **basic graphics port**. See also **pixel map**.

bit pattern An 8-by-8 pixel image drawn by default in black and white, although any two colors can be used on a color screen. A bit pattern can be repeated indefinitely to form a repeating design (such as stripes) when drawing lines and shapes or when filling areas on the screen. See also **pixel pattern**.

Boolean transfer mode A specification of which Boolean operation QuickDraw should perform when drawing or copying an image into a bitmap or pixel map. Boolean transfer modes that draw patterns are called **pattern modes**; Boolean transfer modes that copy images or draw text are called **source modes**. Compare **arithmetic transfer mode**.

boundary rectangle A rectangle (by default, the entire main screen) that links the local coordinate system of a graphics port to QuickDraw's global coordinate system and defines the area of the pixel image or bit image into which QuickDraw can draw. The boundary rectangle is stored in either the pixel map or the bitmap.

bounding rectangle A rectangle used to define other shapes, such as ovals and rounded rectangles. The lines of bounding rectangles completely enclose the shapes they bound; in other words, no pixels from these shapes lie outside the infinitely thin lines of the bounding rectangles.

clipping region A region to which an application can limit drawing. The initial clipping region of a graphics port is an arbitrarily large rectangle: one that covers the entire QuickDraw coordinate plane. An application can set the clipping region to any arbitrary region, to aid in drawing inside the graphics port.

CLUT See **color lookup table**.

color bank A structure into which all the colors of a picture, pixel map, or bitmap are gathered by the Picture Utilities or by your application for later selection. The Picture Utilities generate a color bank consisting of a **histogram** to a resolution of 5 bits per color.

color graphics port The sophisticated color drawing environment provided by **Color QuickDraw**. A color graphics port is defined by a data structure of type `CGrafPort` and contains the information that Color QuickDraw uses to create and manipulate grayscale and color images onscreen.

colorize To use the `CopyBits` procedure to copy colors into black-and-white images.

color lookup table (CLUT) A data structure that maps color indexes specified with QuickDraw into actual color values. Color lookup tables are internal to certain types of **graphics devices**. Compare **color table**.

Color Manager A set of system software routines that supply color-selection support for **Color QuickDraw**. Most applications never need to call the Color Manager directly.

Color Picker Utilities A set of system software routines that enable your application to solicit color choices from users. The Color Picker Utilities also provide routines that allow your application to convert colors between those specified in `RGBColor` records as used by Color QuickDraw and those used in other color models, such as the CMYK model used by most color printers.

Color QuickDraw The set of QuickDraw routines that you use to create and manipulate graphics information in a **color graphics port**. You can use Color QuickDraw to create a color image and then display it on any type of screen—black and white, color, or grayscale. Most Color QuickDraw routines are in ROM on Macintosh computers that use an MC68020 or faster processor. See also **basic QuickDraw**.

ColorSync Utilities A set of system software routines and algorithms that assist you in matching colors between screens and input and output devices such as scanners and printers.

color table A collection of colors available for a pixel image on indexed devices. Color tables are specified by either `ColorTable` records or 'clut' resource types. The Color Manager stores a color table for the currently available colors in the graphics device's CLUT. Compare **color lookup table**.

current device The graphics device on which drawing is actually taking place. A handle to its `GDevice` record is stored in the global variable `TheGDevice`.

current printer The printer that the user last selected from the Chooser.

cursor A 256-bit image defined by a 16-by-16 bit square. The mouse driver displays the cursor on the screen and maps the movement of the mouse to relative locations on the screen as the user moves the mouse. The cursor follows the movement of the mouse or shows where the user's next action will take place. The cursor can be an arrow, an I-beam, a crossbar, a wristwatch, or another appropriate image. Called the pointer in Macintosh user documentation. See also **insertion point**.

Cursor Utilities A collection of system software routines for creating and using **cursors**, including color and animated cursors.

data fork The part of a file that contains data accessed using the File Manager. This data usually corresponds to data entered by the user. Compare **resource fork**.

deferred printing A method of printing whereby some printer drivers record each page of a document's printed image in a structure similar to a QuickDraw picture, which the driver writes to a spool file. An application must use the `PrPicFile` procedure to send the spool file to the printer. Deferred printing is also known as *spool printing*. Compare **draft-quality printing**.

device list A linked list containing the `GDevice` records for a user's computer system. The global variable `DeviceList` holds a handle to the first record in the list.

direct colors Up to 16 million colors that have a direct correlation between a value placed in a graphics device and the color displayed onscreen.

GLOSSARY

direct device A plug-in video card, a video interface built into a Macintosh computer, or an offscreen graphics world that supports up to 16 million colors having a direct correlation between a value placed in the device and the color displayed onscreen. Compare **indexed device**.

direct pixel A pixel displayed on a **direct device**. Direct pixels can have **pixel values** of 16 or 32 bits.

discrete resolution A printing resolution that has been predefined by a printer driver. A printer supporting discrete resolution prints only a limited number of such resolutions. Compare **variable resolution**.

dithering A technique for mixing existing colors together to create the illusion of a third color that may be unavailable on a particular device.

dpi Dots per inch in the x and y directions; used to measure the resolution of a screen or printer. The higher the value, the finer the detail of the image.

draft-quality printing The method by which printer drivers convert into drawing operations calls only to QuickDraw's text-drawing routines. The printer driver sends these routines directly to the printer instead of using **deferred printing** to capture the entire image for a page in a spool file. Draft-quality printing, which is supported on the ImageWriter printer driver, produces quick, low-quality drafts of text documents that are printed straight down the page, from top to bottom and left to right. Compare **enhanced draft-quality printing**.

eight-color system The eight predefined colors provided by **basic QuickDraw** for display on color screens and color printers.

enhanced draft-quality printing The method by which some printer drivers print bitmaps, pixel maps, and text without writing to or reading from a spool file. The ImageWriter printer driver, for example, supports enhanced draft-quality printing. Compare **deferred printing**, **draft-quality printing**.

erase To draw both the outline of a shape and its interior with the background pattern for the current graphics port. The background pattern is typically solid white on a black-and-white screen or a solid background color on a color screen. Making the shape blend into the background pattern of the graphics port effectively erases the shape.

extended version 2 picture format The format for all pictures created with the `OpenPicture` function. Available on all Macintosh computers running System 7, this format allows applications to specify resolutions when creating images.

fill To draw both the outline of a shape and its interior with any pattern you specify. The procedure transfers the pattern with the `patCopy` pattern mode, which directly copies your requested pattern into the shape.

font substitution Substitution of a screen font for a printer font by a printer driver. PostScript printer drivers may substitute PostScript printer fonts for bitmapped screen fonts.

foreground color The color of the "ink" used for bit patterns and for the graphics pen when drawing. By default, the foreground color is black.

frame To draw the outline of a shape (such as a rectangle) using the size, pattern, and pattern mode of the graphics pen for the current graphics port. The interior of the shape is unaffected, allowing previously existing pixels in the image to show through.

GDevice record A data structure of type `GDevice` that holds information about the physical characteristics of a video device or offscreen graphics world, including a pixel map that describes the pixel depth for that video device or offscreen graphics world, information about whether the video device or offscreen graphics world supports indexed or direct colors, and—for indexed devices—specifications for the colors that are currently available for the video device or offscreen graphics world. System software allocates and initializes one `GDevice` record for each installed video device and stores the record in the system's **device list**.

GLOSSARY

global coordinate system The coordinate system that represents all potential QuickDraw drawing space. The origin of the global coordinate system—that is, the point (0,0)—is at the upper-left corner of the **main screen**. Compare **local coordinate system**.

glyph The distinct representation of a character in a form that a screen or printer can display. A glyph may represent one character (the lowercase *a*), more than one character (the *fi* ligature, two characters but one glyph), or a nonprinting character (the space character).

graphics device Anything into which QuickDraw can draw. There are three types of graphics devices: video devices (such as plug-in video cards and built-in video interfaces) that control screens, offscreen graphics worlds (which allow your application to build complex images off the screen before displaying them), and printing graphics ports. For a video device or an offscreen graphics world, Color QuickDraw stores state information in a **GDevice record**.

graphics pen A metaphorical device for performing drawing operations onscreen. Your application can set this pen to different sizes, patterns, and colors.

graphics port A drawing environment, defined by a `GrafPort` record (**basic graphics port**) or `CGrafPort` record (**color graphics port**), that contains all the information QuickDraw needs to transmit drawing operations from bits in memory to onscreen pixels.

gray region The region that represents all available desktop area—that is, a collection of rounded rectangles representing the display areas of all screens available to a computer.

hairlines Printed lines that are less than 1/72 of an inch wide.

highlighting A QuickDraw capability that displays background bits or pixels in a distinctive visual way, such as inverting them.

high-quality printing Printing that produces documents using all of the fonts and formatting that the user has included.

histogram A **color bank** composed of frequency counts of each color within a picture, pixel map, or bitmap at a particular resolution.

hot spot The portion of the cursor that must be positioned over a screen object before mouse clicks can have an effect on that object. Designated as a point (not a bit) in the image of the cursor. The mouse driver uses the hot spot to align the cursor with the mouse location.

idle procedure A routine that handles events and updates information while system software completes a task. For example, applications displaying a print status dialog box while a printer driver directs output to a printer typically use an idle procedure that checks for user-generated events indicating that the user wishes to cancel the printing.

imaging The construction and display of graphical information. Such graphical information can consist of shapes, pictures, and text and can be displayed on output devices such as screens and printers.

indexed colors A set of up to 256 colors contained in a video data interface called a **color lookup table** (or, more commonly, a CLUT). Video devices and offscreen graphics worlds that use indexed colors support pixels of 1-bit, 2-bit, 4-bit, or 8-bit depths.

indexed device A plug-in video card, a video interface built into a Macintosh computer, or an offscreen graphics world that supports up to 256 colors in a **color lookup table**. Indexed devices support pixels of 1-bit, 2-bit, 4-bit, or 8-bit depths. Compare **direct device**.

indexed pixel A pixel displayed on an **indexed device**. Indexed pixels can have **pixel values** of 1, 2, 4, or 8 bits.

insertion point The position where text will be inserted, usually marked by a blinking vertical bar.

inverse table A special data structure arranged by the Color Manager in such a manner that, given an arbitrary RGB color, the Color Manager can very rapidly look up its pixel value.

GLOSSARY

invert To reverse the colors of all pixels within a shape. On a black-and-white screen, this changes all the black pixels in the shape to white and all the white pixels to black. Inverting operates on color pixels in color graphics ports, but the results are predictable only with direct pixels.

job dialog box A dialog box—usually displayed by an application in response to the user choosing the Print command—that solicits printing information from the user, such as the number of copies to print, the print quality, and the range of pages to print.

line A graphic image defined by two points: the current location of the **graphics pen** and its destination. The graphics pen, which can draw with different patterns, hangs below and to the right of the defining points.

line layout error The difference between the width of the printed line and the width of the screen line after the printer driver has performed **font substitution**. Certain printer drivers compensate for this by distributing the error to **major glyphs** and **minor glyphs**.

local coordinate system The coordinate system defined by the **port rectangle** of a graphics port. When the Window Manager creates a window, it places the origin of the local coordinate system at the upper-left corner of the window's port rectangle. Compare **global coordinate system**.

luminance The intensity of light in a color. Color QuickDraw uses a color's luminance to convert the color to an appropriate grayscale color.

main screen In a drawing environment with multiple screens, the screen with the menu bar. QuickDraw maps the (0,0) origin point of the coordinate plane to the main screen's upper-left corner, and other screens are positioned adjacent to it. Compare **startup screen**.

major error The amount of line layout error that a printer driver applies to the space glyph.

major glyph On a printed page, a space glyph, to which printer drivers apply most of the **line layout error**. Compare **minor glyph**.

minor error The amount of line layout error that a printer driver applies to nonspace glyphs.

minor glyph On a printed page, a nonspace glyph, to which printer drivers apply the **line layout error** that remains after applying most of the error to **major glyphs**.

offscreen graphics world A sophisticated environment for preparing complex color or black-and-white images before displaying them on the screen. An offscreen graphics world is defined in a private data structure referred to by a pointer of type `GWorldPtr`.

opcode A value passed to a routine, such as the `DrawPicture` or `PrGeneral` procedure, that determines how the routine should operate.

oval A circular or elliptical shape defined by the bounding rectangle that encloses it. The oval is completely enclosed within the infinitely thin lines of its bounding rectangle, and never includes any pixels lying outside the bounding rectangle. If the bounding rectangle is square (that is, has equal width and height), then the oval is a circle.

page rectangle The rectangle marking the boundaries of the printable area on a page. The upper-left corner of the page rectangle always has the coordinates (0,0). The coordinates of the lower-right corner give the maximum page height and width attainable on the given printer; these coordinates are specified by the units used to express the resolution of the printing graphics port. For example, the lower-right corner of a page rectangle used by the PostScript LaserWriter printer driver for an 8.5-by-11-inch U.S. letter page is (730,552) at 72 dpi.

GLOSSARY

paint To draw the outline of a shape and its interior with the pattern of the graphics pen, using the pattern mode of the graphics pen.

Palette Manager A set of system software routines that allows your application to specify the colors that it needs on a window-by-window basis. The Palette Manager makes the colors available (within application-determined ranges) in a graceful manner.

paper rectangle The rectangle that describes the size of a piece of paper on which a page is printed. This rectangle is defined in the same coordinate system as the **page rectangle**. Thus, the upper-left coordinates of the paper rectangle are typically negative and its lower-right coordinates are greater than those of the page rectangle.

pattern An image that can be repeated indefinitely to form a repeating design when drawing lines and shapes or when filling areas on the screen. See also **bit pattern**, **pixel pattern**.

pattern mode A specification of which Boolean operation QuickDraw should perform when drawing patterns into bitmaps or pixel maps. See also **source mode**.

pen See **graphics pen**.

picture A saved sequence of QuickDraw drawing commands (and, optionally, **picture comments**) that your application can play back later with the `DrawPicture` procedure; also, the image resulting from these commands.

picture comment A command or data used for special processing by output devices, such as printer drivers. Picture comments are usually stored in the definition of a picture or are included in the code an application sends to a printer driver.

picture opcode A number that the `DrawPicture` procedure uses to determine what object to draw or what mode to change for subsequent drawing.

Picture Utilities A set of system software routines for extracting information—such as pixel depth and colors—in pictures and pixel maps.

pixel Short for *picture element*, the smallest dot that QuickDraw can draw; also, the visual representation of that dot on the screen. On a black-and-white screen, each single-color phosphor dot is a pixel that represents a bit in memory—white if the bit is 0, black if it's 1. On a color screen, three phosphor dots (red, green, and blue) compose each color pixel, which represents up to 48 bits in memory. On a grayscale screen, a white phosphor dot whose intensity can vary is a pixel that usually represents 1, 2, 4, or 8 bits in memory.

pixel depth The number of bits per pixel in a pixel image. Pixels on indexed devices can be 1, 2, 4, or 8 bits deep. (A pixel image that is 1 bit deep is equivalent to a bit image.) Pixels on direct devices can be 16 or 32 bits deep.

pixel image A collection of pixels in memory that forms a grid—a rectangular pattern of pixels. The pixel image is pointed to in the `baseAddr` field of a `PixelFormat` record. Compare **bit image**.

pixel map A data structure of type `PixelFormat` that represents the positions and states of a corresponding set of color pixels. A handle to a pixel map is contained within a **color graphics port**. See also **bitmap**.

pixel pattern An image that can be repeated indefinitely to form a repeating design (such as stripes) or tone (such as gray) when drawing lines and shapes or when filling areas on the screen. A pixel pattern can use color at any pixel depth and can be of any width and height that's a power of 2. See also **bit pattern**.

pixel value A number used by system software and a graphics device to represent a color. The translation from the color that an application specifies in an `RGBColor` record to a pixel value is performed at the time the application draws the color. The process differs for indexed and direct devices.

point The intersection of a horizontal grid line and vertical grid line on the coordinate plane, defined by a horizontal and a vertical coordinate.

GLOSSARY

polygon A graphic shape defined by any sequence of points representing the polygon's vertices, connected by straight lines from one point to the next.

port rectangle An entry in a **graphics port** that represents the area of the graphics port available for drawing—ordinarily, the content region of a window.

PostScript printer driver A printer driver that converts each QuickDraw drawing operation into the equivalent PostScript drawing operation. The driver sends the converted drawing operations to the printer—typically, a laser printer. The printer interprets the PostScript drawing operations and renders the image, thereby off-loading image processing from the computer.

printer driver A device driver that translates QuickDraw drawing routines and sends the translated instructions and data to the current printer.

printer resource file A file containing all the resources needed to run the Printing Manager with a particular printer.

printing graphics port The printing environment defined by a `TPrPort` record, which contains a QuickDraw graphics port (either a `GrafPort` or `CGrafPort` record) plus additional information used by the printer driver and system software. An application prints text and graphics by drawing into a printing graphics port using QuickDraw drawing routines, just as if drawing on the screen.

printing loop Application-supplied code that handles printing needs, such as presenting the job dialog box and determining the range of pages to be printed.

Printing Manager A collection of system software routines that your application can use to print from the Macintosh computer to any type of connected printer.

QuickDraw A collection of system software routines that performs graphics operations on the user's screen. See also **basic QuickDraw** and **Color QuickDraw**.

QuickDraw GX A collection of graphics, typography, and printing routines that provide provides applications with sophisticated color publishing capabilities. QuickDraw GX augments the capabilities of **QuickDraw**.

QuickDraw printer driver A printer driver that renders images on the Macintosh computer and then sends the rendered images in the form of bitmaps or pixel maps to the printer, which might be a dot-matrix printer, an ink jet printer, a laser printer, or a plotter.

rectangle (1) A mathematical entity defined either by its four boundaries (upper, left, lower, and right) or by two points (the upper-left and lower-right corners). Rectangles are used to define active areas on the screen, to assign coordinate systems to graphical entities, and to specify the locations and sizes for various graphical operations. (2) A rectangular shape drawn onscreen with a QuickDraw procedure such as `FrameRect` or `PaintRect`.

region An arbitrary area or set of areas on the QuickDraw coordinate plane. The outline of a region should be one or more closed loops.

resolution The degree of detail at which a device such as a printer or a screen can display an image. Resolution is usually specified in dots per inch, or **dpi**, in the x and y directions. The higher the value, the finer the detail of the image.

resource fork The part of a file that contains the files' resources, which contain data accessed using the Resource Manager. This data usually corresponds to data—such as menu, icon, and control definitions—created by the developer, but it may also include data created by the user while the application is running. Compare **data fork**.

RGBColor record A data structure of type `RGBColor` used to specify a color by its red, green, and blue components, with each component defined as a 16-bit integer. Color QuickDraw compares such a 48-bit value with the colors actually available on a screen's video device at execution time and chooses the closest match.

GLOSSARY

RGB color value A value that indicates the red, green, and blue components of a color. An RGB color value is specified in an **RGBColor record**.

rounded rectangle A rectangle with rounded corners. The figure is defined by a bounding rectangle and the width and height of the ovals forming the corners. The corner width and corner height are limited to the width and height of the bounding rectangle itself; if they are set larger, the rounded rectangle becomes an oval.

scrap The storage area maintained by the Scrap Manager to hold the last data cut or copied by the user. The scrap can reside either in memory or on disk.

source mode A specification of which Boolean operation QuickDraw should perform when copying images or text into bitmaps or pixel maps. See also **pattern mode**.

spool file A temporary disk file used by an application to store data; generally used to save memory.

spool printing See **deferred printing**.

standard state The size and location that an application deems the most convenient for a window.

startup screen The screen on which the “happy Macintosh” icon appears. By default, the menu bar appears on the startup screen. Compare **main screen**.

style dialog box A dialog box—usually displayed by an application in response to the user choosing the Page Setup command—allowing the user to specify printing options (such as the paper size and the printing orientation) that an application needs to format the document.

TPrint record A data structure of type `TPrint`. A `TPrint` record contains fields that specify the Printing Manager version, information about the printer (such as its resolution in dpi), and the dimensions of the paper rectangle.

TPrJob record A data structure of type `TPrJob`. The `TPrJob` job record contains information about a particular print job; for

instance, the first and last pages to be printed, the number of copies, and the printing method (either draft-quality or deferred).

transfer mode A specification, either Boolean or arithmetic, of how QuickDraw should draw or copy images into a bitmap or pixel map. See **arithmetic transfer mode** and **Boolean transfer mode**.

user state The size and location that the user has established for a window.

variable resolution Any printing resolution within a range bounded by maximum and minimum values. Compare **discrete resolution**.

video device A piece of hardware, such as a plug-in video card or a built-in video interface, that controls a screen.

visible region The part of a window’s graphics port that’s actually visible on the screen—that is, the part that’s not covered by other windows.

wedge A pie-shaped segment of an **oval**, bounded by a pair of radii joining at the oval’s center.

window origin The upper-left corner of a window. Usually specified with a vertical coordinate of 0 and a horizontal coordinate of 0, the window origin is the upper-left corner of the port rectangle of a graphics port and is expressed in coordinates local to the graphics port.

Index

Numerals

0..255 data type A-4
-128..127 data type A-4

A

Acur data type 8-20 to 8-21
'acur' resource type 8-13, 8-14, 8-36 to 8-37
addMax arithmetic transfer mode 4-39, 4-40
addOver arithmetic transfer mode 4-38, 4-40
addPin arithmetic transfer mode 4-38, 4-40, 4-78
AddPt procedure 2-52
adMin arithmetic transfer mode 4-39, 4-40
alignPix flag 6-13, 6-15, 6-25
allDevices flag 5-30
allInit flag 5-17, 5-23, 5-31, 5-36
AllocCursor procedure 8-27
AllowPurgePixels procedure 6-34 to 6-35
angles, calculating 3-57
animated cursor resources 8-13, 8-14, 8-36 to 8-37
animated cursors
 creating 8-13 to 8-15, 8-31 to 8-33
 data type for 8-20 to 8-21
 resource type for 8-36 to 8-37
 user interface guidelines for 8-5, 8-13, 8-15
AppendDITL procedure 9-38
Apple events 9-25 to 9-26
arcs. *See also* wedges
 defined 1-14
 drawing 3-26, 3-71 to 3-77
 framing 3-72 to 3-73
 low-level routine for drawing 3-134
arithmetic transfer modes 4-38 to 4-41, 4-78
arrow cursor 8-8, 8-9 to 8-12
arrow global variable 2-36, 8-18
arrow region 8-9 to 8-12

B

BackColor procedure 3-14, 3-124
background colors 3-124, 4-72 to 4-73, 4-80
background patterns
 in basic graphics ports 2-32
 changing 3-48 to 3-49, 4-68 to 4-69

 in color graphics ports 4-51
 defined 3-7
background printing 9-9
BackPat procedure 3-48 to 3-49
BackPixPat procedure 4-68 to 4-69
basic graphics ports. *See also* color graphics ports;
 offscreen graphics worlds; printing graphics
 ports
 bitmaps in 2-32
 bit patterns in 2-13, 2-32
 boundary rectangles in 2-32
 clipping regions 2-12 to 2-13, 2-32, 2-47 to 2-49
 closing 2-38, 2-40 to 2-41
 color pictures in 7-6 to 7-7
 colors in 2-14, 2-35, 3-14 to 3-15, 3-122 to 3-125
 compared with color graphics ports 4-5 to 4-9
 copying images between 3-32 to 3-35, 3-112 to 3-122
 copying images from offscreen graphics worlds 6-9
 to 6-11
 creating 2-16 to 2-17, 2-37 to 2-40
 data type for 2-30 to 2-35
 defined 1-4
 drawing areas in 2-11 to 2-13
 getting 2-18, 2-41 to 2-42, 6-8, 6-28
 opening 2-38 to 2-39
 pattern stretching in 2-35
 pen locations in 2-33
 pen modes in 2-33
 pen patterns in 2-33
 pen sizes in 2-33
 pen visibility in 2-33
 port rectangles in 2-32
 restoring 2-18, 2-42, 6-8, 6-29
 saving 2-18, 2-41 to 2-42, 6-8, 6-28
 setting 2-18, 2-42, 6-8, 6-29
 text in 2-33 to 2-34
 visible regions 2-32
basic QuickDraw
 application-defined routines for 5-35 to 5-37
 bit patterns in 1-11
 customizations of 3-35 to 3-36, 3-129
 data structures in 2-26 to 2-35, 3-36 to 3-40, 5-15 to
 5-18, 6-12 to 6-15, 7-27 to 7-29, 8-16 to 8-18, 8-20
 to 8-21
 drawing with 1-10 to 1-17, 3-3 to 3-141
 graphics ports in 1-5
 initializing 2-16, 2-36 to 2-37
 printing with. *See* Printing Manager

INDEX

basic QuickDraw (*continued*)
resources in 3-140 to 3-141, 5-37, 7-67 to 7-68, 8-33 to 8-34, 8-36 to 8-37
routines in 2-36 to 2-54, 3-41 to 3-139, 5-19 to 5-25, 6-16 to 6-39, 7-36 to 7-46, 8-22, 8-24 to 8-31, 8-32 to 8-33
testing for availability 2-15
Bézier splines B-25
BitClr procedure 4-42
bit images
in bitmaps 2-9 to 2-11, 2-29
as pixel images in offscreen graphics worlds 6-9
BitMap data type 2-29 to 2-30. *See also* bitmaps
bitmaps
in basic graphics ports 2-9 to 2-11, 2-32
bit images in 2-9 to 2-11, 2-29
boundary rectangles for 2-10 to 2-11, 2-30
copying images between 3-32 to 3-35, 3-112 to 3-122
data type for 2-29 to 2-30
defined 1-5
fill operations in 3-108 to 3-112
local coordinate systems for 2-11
low-level routine for copying images between 3-136
as pixel maps in offscreen graphics worlds 6-3, 6-8 to 6-9
pixels in 2-11
BitMapToRegion function 2-49 to 2-50
bit patterns
background 3-6, 3-48 to 3-49
in basic graphics ports 2-13, 2-32
in color graphics ports 4-23 to 4-24, 4-58 to 4-59, 4-68, 4-69, 4-13
data type for 3-40
defined 1-11
filling with 3-6
framing and painting with 3-6
of graphics pens in basic graphics ports 2-33
predefined 3-6 to 3-8
resources for 3-140 to 3-141
routines for retrieving 3-126 to 3-128
Bits16 data type 8-16
BitsRect opcode A-11, A-21
BitsRgn opcode A-11, A-21
BkColor opcode A-6, A-18
BkPat opcode A-5, A-18
BkPixPat opcode A-6
black-and-white QuickDraw. *See* basic QuickDraw
black global variable 2-36, 3-7
blend arithmetic transfer mode 4-38, 4-40, 4-78
Boolean transfer modes 3-8 to 3-11, 4-32 to 4-38
boundary rectangles
in basic graphics ports 2-32
in bitmaps 2-10 to 2-11, 2-30
defined 1-7

bounding rectangles 3-11
burstDevice flag 5-17, 5-23, 5-31, 5-36

C

CalcCMask procedure 4-83 to 4-84
CalcMask procedure 3-111 to 3-112
CCrsr data type 8-18 to 8-20
CGrafPort data type 4-48 to 4-54. *See also* color graphics ports
CGrafPort records
background pattern for 4-51
clipping regions 2-12 to 2-13, 2-47 to 2-49, 4-51
closing 4-67
compared with GrafPort records 4-8 to 4-9
copying images between 3-112 to 3-122
copying images from offscreen graphics worlds 6-9 to 6-11
creating 4-20 to 4-21, 4-63 to 4-66
disposing of 4-21, 4-63, 4-67
getting 2-18, 2-41 to 2-42, 6-8, 6-28
opening 4-63 to 4-66
pattern stretching in 4-53
pen locations in 4-52
pen modes in 4-52
pen patterns in 4-52
pen sizes in 4-52
pen visibility in 4-52
pixel maps in 4-50
port rectangles in 4-51
in printing graphics ports 9-51
restoring 2-18, 2-42, 6-8, 6-29
saving 2-18, 2-41 to 2-42, 6-8, 6-28
setting 2-18, 2-42, 6-8, 6-29
text in 4-53
visible regions 4-51
ChExtra opcode A-6
'cicn' resource type 4-105 to 4-106
classic QuickDraw. *See* basic QuickDraw
ClientLineLayout picture comment B-5, B-41
Clip opcode A-5, A-18
clipping regions 2-12 to 2-13, 2-32, 2-47 to 2-49, 4-51
clipPix flag 6-14, 6-15, 6-24, 6-25
ClipRect procedure 2-49, 3-29, 7-12
CloseCPort procedure 4-67
ClosePicture procedure 7-11, 7-42
ClosePoly procedure 3-79
ClosePort procedure 2-40 to 2-41
CloseRgn procedure 3-28, 3-89
CloseWindow procedure 7-20
CLUT. *See* color lookup tables
'clut' resource type 4-104 to 4-105
CMBeginProfile picture comment B-7

INDEX

- CMDisableMatching picture comment B-7
- CMEnableMatching picture comment B-7
- CMEndProfile picture comment B-7
- 'cmt' resource type 7-68
- color banks 7-33, 7-61 to 7-66
- ColorBit procedure 3-124 to 3-125
- color cursor resources 8-34 to 8-36
- color cursors
 - data structure for 8-18 to 8-20
 - displaying 8-25 to 8-27
 - resource for 8-34 to 8-36
 - user interface guidelines for 8-5
- color graphics ports. *See also* basic graphics ports;
offscreen graphics worlds; printing graphics
ports
 - background pattern for 4-51
 - clipping regions 2-12 to 2-13, 2-47 to 2-49, 4-51
 - closing 4-67
 - compared with basic graphic ports 4-5 to 4-9
 - copying images between 3-112 to 3-122, 4-26 to 4-32
 - copying images from offscreen graphics worlds 6-9
to 6-11
 - creating 4-20 to 4-21, 4-63 to 4-66
 - data type for 4-48 to 4-54
 - defined 1-5
 - disposing of 4-21, 4-63, 4-67
 - getting 2-18, 2-41 to 2-42, 6-8, 6-28
 - opening 4-63 to 4-66
 - pattern stretching in 4-53
 - pen locations in 4-52
 - pen modes in 4-52
 - pen patterns in 4-52
 - pen sizes in 4-52
 - pen visibility in 4-52
 - pixel maps in 4-50
 - port rectangles in 4-51
 - restoring 2-18, 2-42, 6-8, 6-29
 - saving 2-18, 2-41 to 2-42, 6-8, 6-28
 - setting 2-18, 2-42, 6-8, 6-29
 - text in 4-53
 - visible regions 4-51
- color icon resources 4-105 to 4-106
- color lookup tables (CLUTs)
 - and the Color Manager 1-24
 - and the Palette Manager 1-20
 - in video devices 1-19 to 1-20
- Color Manager 1-29
 - direct colors, handling 1-25
 - indexed colors, handling 1-24
- Color Picker Utilities 1-29
- color-picking method resources 7-68
- Color QuickDraw. *See also* global coordinate systems;
local coordinate systems; shapes
 - application-defined routines for 4-101 to 4-102, 5-35
to 5-37
 - checking for, when zooming windows 5-10
 - customizations of 3-129, 4-96 to 4-97
 - data structures in 4-45 to 4-62, 5-15 to 5-18, 6-12 to
6-15, 7-27 to 7-29, 8-18 to 8-20
 - direct colors, handling 1-25, 4-15 to 4-17
 - drawing with 1-10 to 1-17, 4-21 to 4-44, 4-70 to 4-79
 - graphics ports in 1-5
 - indexed colors, handling 1-24, 4-13 to 4-14
 - initializing 4-19
 - multiple graphics device support in 1-21 to 1-23
 - pixel patterns in 1-11
 - printing with. *See* Printing Manager
 - resources in 4-102 to 4-106, 5-37, 7-67 to 7-68, 8-34 to
8-36
 - routines in 4-63 to 4-97, 5-19 to 5-25, 6-16 to 6-39,
8-25 to 8-27
 - testing for availability 4-18
 - 32-bit 1-4
 - user interface guidelines for 4-44
 - versions of 1-4
- colors
 - application-defined picking method 7-61 to 7-67
 - in basic graphics ports 2-14, 2-35, 3-14 to 3-15
 - in color graphics ports 4-67 to 4-105
 - determining 4-79 to 4-81, 7-26
 - on grayscale devices 4-17
 - intermediate 4-81
- color search functions 4-101 to 4-102
- ColorSpec data type 4-55 to 4-56
- ColorSync Utilities 1-29
- ColorTable data type 4-56 to 4-57. *See also* color tables
- color table resources 4-104 to 4-105
- color tables. *See also* color lookup tables
 - creating 4-92 to 4-93, 4-104 to 4-105
 - data type for 4-56 to 4-57
 - default 4-93
 - defined 4-11 to 4-12
 - disposing of 4-93
 - modifying 4-97 to 4-98
 - resource type for 4-104 to 4-105
- CommentSpec data type 7-30
- content areas of windows. *See* port rectangles
- coordinate planes 1-6 to 1-10. *See also* global
coordinate systems; local coordinate systems
- copies, to print 9-19
- CopyBits procedure 3-32 to 3-34, 3-112 to 3-118, 4-26
to 4-28, 6-6, 6-9
- CopyDeepMask procedure 3-120 to 3-122, 4-30 to 4-32,
6-10
- CopyMask procedure 3-119 to 3-120, 4-28 to 4-30, 6-10
to 6-11
- CopyPixMap procedure 4-86
- CopyPixPat procedure 4-90
- CopyRgn procedure 3-90 to 3-91, 8-11
- CQDProcs data type 4-60 to 4-61

INDEX

- crosshairs cursor 8-8 to 8-9
- 'crsr' resource type 8-34 to 8-36
- cSpecArray data type 4-55 to 4-56
- CTabChanged procedure 4-97 to 4-98
- current device
 - defined 5-4
 - determining 5-26
 - setting 5-24
- current printer
 - defined 9-3
 - device number of 9-48
 - feed type of 9-48
- Cursor data type 8-16 to 8-18
- cursor resources 8-13 to 8-14, 8-33 to 8-34
- cursors
 - animating 8-13 to 8-15, 8-31 to 8-33
 - arrow 8-8, 8-9 to 8-12
 - changing 8-7 to 8-13, 8-26 to 8-27
 - color 8-18 to 8-20, 8-25 to 8-27, 8-34 to 8-36
 - crosshairs 8-8 to 8-9
 - data types for 8-16 to 8-21
 - defined 8-3 to 8-4
 - getting from resources 8-24, 8-26
 - hiding 8-28 to 8-29
 - hot spots for 8-19
 - I-beam 8-8 to 8-12
 - initializing 8-6 to 8-7, 8-21 to 8-23
 - obscuring 8-29
 - plus sign 8-8 to 8-9
 - resources for 8-33 to 8-37
 - setting the appearance of 8-7
 - shielding behind rectangles 8-29
 - showing, after hiding 8-30 to 8-31
 - user interface guidelines for 8-4 to 8-5
 - wristwatch 8-8 to 8-9
- Cursors data type 8-20
- Cursor Utilities 8-3 to 8-43
 - data structures in 8-16 to 8-21
 - resources for 8-33 to 8-37
 - routines in 8-21 to 8-33
- 'CURS' resource type 8-13 to 8-14, 8-33 to 8-34
- destination rectangles, for the DrawPicture procedure 7-18 to 7-19
- device control entry, for printer drivers 9-80 to 9-81
- DeviceList global variable 5-4
- device lists
 - defined 5-4
 - getting first device in 5-26 to 5-27
- DeviceLoopFlags data type 5-18 to 5-19
- DeviceLoop procedure 5-8 to 5-9, 5-29 to 5-30
- DHDVText opcode A-7, A-19
- DHText opcode A-7, A-19
- dialog boxes, for printing. *See also* job dialog boxes; print status dialog boxes; style dialog boxes
 - altering 9-35 to 9-38, 9-63 to 9-66, 9-86
 - data structure for 9-50 to 9-51
 - displaying 9-13 to 9-15, 9-61 to 9-64
- dialog hooks 9-37, 9-38
- Dialog Manager
 - and Printing Manager 9-5 to 9-8, 9-35 to 9-38
 - and QuickDraw 4-6
- diameters of curvature 1-14
- DiffRgn procedure 3-96, 8-11
- DirectBitsRect opcode A-11
- DirectBitsRgn opcode A-12
- direct colors 1-19, 1-20, 1-25
- direct devices
 - defined 4-5
 - pixel values for 4-15 to 4-17
- discrete resolution 9-11, 9-30 to 9-32
- DisposeCCursor procedure. *See* DisposeCCursor procedure
- DisposeCTable procedure. *See* DisposeCTable procedure
- DisposeCCursor procedure 8-27
- DisposeCTable procedure 4-93
- DisposeGDevice procedure 5-25
- DisposeGWorld procedure 6-6, 6-26 to 6-27
- DisposePictInfo function 7-60
- DisposePixMap procedure 4-87
- DisposePixPat procedure 4-25, 4-91
- DisposeRgn procedure 3-28, 3-90
- DisposeScreenBuffer procedure 6-27
- DisposeWindow procedure 7-13, 7-20
- DisposPictInfo function. *See* DisposePictInfo function
- DisposPixMap procedure. *See* DisposePixMap procedure
- DisposPixPat procedure. *See* DisposePixPat procedure
- ditherCopy mode 4-37
- dithering 4-37 to 4-38
- ditherPix flag 6-14, 6-15, 6-24, 6-25
- dkGray global variable 2-36, 3-7 to 3-8
- documents
 - names for, when printing 9-27

D

- DashedLine picture comment B-6, B-9, B-33 to B-35
- dashed lines B-33 to B-35
- DashedStop picture comment B-6, B-9, B-34
- data forks 7-7
- DCE (device control entry), for printer drivers 9-80 to 9-81
- deferred printing 9-24, 9-71 to 9-72
- DefHilite opcode A-7
- DeltaPoint function 2-53

INDEX

printing 9-18 to 9-26, 9-66 to 9-72
dontMatchSeeds flag 5-30
draftBitsOp opcode 9-33 to 9-35, 9-52, 9-55
draft-quality printing 9-24, 9-55. *See also* enhanced
 draft-quality printing
DrawPicture procedure 7-12, 7-18 to 7-19, 7-44 to 7-45
DVText opcode A-7, A-19

E

eight-color system 3-14 to 3-15, 3-122 to 3-125
EmptyRect function 3-58
EmptyRgn function 3-99
EndFormsPrinting picture comment B-7, B-41
EndofPicture opcode A-21
enhanced draft-quality printing 9-33 to 9-35, 9-55, 9-73
EqualPt function 2-54
EqualRect function 3-58
EqualRgn function 3-98
eraseArc opcode A-9, A-20
EraseArc procedure 3-76
eraseOval opcode A-9, A-20
EraseOval procedure 3-70
erasePoly opcode A-10, A-20
ErasePoly procedure 3-84
eraseRect opcode A-8, A-19
EraseRect procedure 3-61 to 3-62, 4-35, 5-10, 6-11
eraseRgn opcode A-10, A-21
EraseRgn procedure 3-102 to 3-103
EraseRoundRect procedure 3-66 to 3-67
eraseRRect opcode A-8, A-19
eraseSameArc opcode A-10, A-20
eraseSameOval opcode A-9, A-20
eraseSamePoly opcode A-10, A-21
eraseSameRect opcode A-8, A-19
eraseSameRgn opcode A-11, A-21
eraseSameRRect opcode A-8, A-19
erasing shapes 3-12
error handling
 for Color QuickDraw routines 4-94 to 4-95
 for printing 9-41 to 9-42, 9-73, 9-75 to 9-78
event filter functions 9-36, 9-38
ext32Device flag 5-17, 5-23, 5-31, 5-36
extended version 2 format 7-5 to 7-6, 7-37 to 7-39, A-3,
 A-5 to A-14, A-23 to A-24

F

feed types 9-48
FgColor opcode A-6, A-18
File menu

Page Setup command 9-5 to 9-7
Print command 9-5 to 9-6, 9-7 to 9-8
fillArc opcode A-9, A-20
FillArc procedure 3-75
FillCArc procedure 4-76
FillCOval procedure 4-75
FillCPoly procedure 4-76 to 4-77
FillCRect procedure 4-25, 4-74
FillCRgn procedure 4-77
FillCRoundRect procedure 4-74 to 4-75
filling shapes 3-12, 3-108 to 3-112
fillOval opcode A-9, A-20
FillOval procedure 3-69 to 3-70
FillPat opcode A-6
fill patterns
 in basic graphics ports 2-32
 in color graphics ports 4-74 to 4-77
FillPixPat opcode A-6
fillPoly opcode A-10, A-20
FillPoly procedure 3-30, 3-83 to 3-84
fillRect opcode A-8, A-19
FillRect procedure 3-23 to 3-24, 3-60 to 3-61, 4-22
fillRgn opcode A-11, A-21
FillRgn procedure 3-28, 3-102
FillRoundRect procedure 3-65 to 3-66
fillRRect opcode A-8, A-19
fills
 calculating black-and-white 3-108 to 3-112
 calculating color 4-82 to 4-84
fillSameArc opcode A-10, A-20
fillSameOval opcode A-9, A-20
fillSamePoly opcode A-10, A-21
fillSameRect opcode A-8, A-19
fillSameRgn opcode A-11, A-21
fillSameRRect opcode A-8, A-20
FindControl function 2-19
Finder, printing from 9-25 to 9-26, 9-66
Fixed data type A-4
fontName opcode A-7
FontSpec data type 7-30 to 7-32
font substitution B-11 to B-14
ForeColor procedure 3-14, 3-123
foreground colors 3-123, 3-124 to 3-125, 4-21 to 4-23,
 4-70 to 4-71, 4-79

INDEX

formats for pictures

- extended version 2 7-5 to 7-6, 7-37 to 7-39, A-3, A-5 to A-14, A-23 to A-24
- version 1 7-5 to 7-6, A-3 to A-4, A-5, A-18 to A-21, A-25 to A-26
- version 2 7-5 to 7-6, 7-39, A-3, A-5 to A-16, A-24 to A-25

FormsPrinting picture comment B-7, B-41

FractEnable global variable B-15

frameArc opcode A-9, A-20

FrameArc procedure 3-26, 3-72 to 3-73

frameOval opcode A-9, A-20

FrameOval procedure 3-25, 3-68

framePoly opcode A-10, A-20

FramePoly procedure 3-81 to 3-82

frameRect opcode A-8, A-19

FrameRect procedure 3-22 to 3-23, 3-59

frameRgn opcode A-10, A-21

FrameRgn procedure 3-100 to 3-101

FrameRoundRect procedure 3-64

frameRRect opcode A-8, A-19

frameSameArc opcode A-10, A-20

frameSameOval opcode A-9, A-20

frameSamePoly opcode A-10, A-20

frameSameRect opcode A-8, A-19

frameSameRgn opcode A-11, A-21

frameSameRRect opcode A-8, A-19

framing shapes 3-12

FSpOpenDF function 7-14

G

gdDevType flag 5-17, 5-23, 5-31, 5-33, 5-34, 5-36

GDeviceChanged procedure 4-100

GDevice data type 5-15 to 5-18. *See also* graphics devices

GDevice records. *See also* graphics devices

- creating 5-20 to 5-23
- disposing of 5-25
- getting available 5-25 to 5-28
- with greatest pixel depth 5-27 to 5-28
- modifying 4-100
- for multiple devices 1-21 to 1-23
- setting attributes for 5-22 to 5-23
- setting for current device 5-24

gestaltQuickDrawFeatures selector 4-19

gestaltQuickDrawVersion selector 4-18

GetBackColor procedure 4-80

GetCCursor function 8-26

GetClip procedure 2-47, 3-29

GetCPixel procedure 4-80 to 4-81

GetCTable function 4-92 to 4-93

GetCursor function 8-11, 8-24

GetDeviceList function 5-11, 5-26 to 5-27

GetForeColor procedure 4-79

GetGDevice function 5-26

GetGray function 4-81

GetGWorldDevice function 6-30

GetGWorldPixmap function 6-6, 6-31 to 6-32

GetGWorld procedure 6-6, 6-28

GetIndPattern procedure 3-127 to 3-128

GetMainDevice function 5-11, 5-27

GetMaxDevice function 5-27 to 5-28

GetNewCWindow function 2-16 to 2-17, 4-20

GetNewWindow function 2-16 to 2-17, 4-20

GetNextDevice function 5-11, 5-28

GetPattern function 3-126 to 3-127

GetPen procedure 3-43

GetPenState procedure 3-43

GetPictInfo function 7-25, 7-47 to 7-50

GetPicture function 7-46

GetPixBaseAddr function 6-38 to 6-39

GetPixel function 2-54 to 2-55

GetPixelsState function 6-36 to 6-37

GetPixmapInfo function 7-50 to 7-52

GetPixPat function 4-25, 4-88

GetPort procedure 2-18, 2-41 to 2-42

getRotnOp opcode 9-32 to 9-33, 9-52, 9-56

getRslDataOp opcode 9-30 to 9-32, 9-53 to 9-54

getWindowPic function 7-13

global coordinate systems

- converting to local coordinate systems 2-19, 2-51
- defined 1-6 to 1-10
- across multiple screens 1-21

GlobalToLocal procedure 2-19, 2-51

global variables

- arrow 2-36, 8-18
- black 2-36, 3-7
- DeviceList 5-4
- dkGray 2-36, 3-7 to 3-8
- FractEnable B-15
- gray 2-36, 3-7
- HiliteRGB 4-42
- ltGray 2-36, 3-7
- MainDevice 5-27
- PrintErr 9-78
- QDColors 4-71
- randSeed 2-36
- screenBits 2-36
- ScrHRes 5-32
- ScrVRes 5-32
- TheGDevice 5-4
- thePort 2-36
- TopMapHdl 9-39
- white 2-36, 3-7

glyphs B-12

GrafPort data type 2-30 to 2-35. *See also* basic graphics ports

INDEX

- GrafPort records
 - bitmaps in 2-32
 - bit patterns in 2-13, 2-32
 - boundary rectangles in 2-32
 - clipping regions 2-12 to 2-13, 2-32, 2-47 to 2-49
 - closing 2-38, 2-40 to 2-41
 - and color pictures 7-6 to 7-7
 - colors in 2-14, 2-35, 3-14 to 3-15, 3-122 to 3-125
 - compared with CGrafPort records 4-8 to 4-9
 - copying images between 3-32 to 3-35, 3-112 to 3-122
 - copying images from offscreen graphics worlds 6-9 to 6-11
 - creating 2-16 to 2-17, 2-37 to 2-40
 - drawing areas in 2-11 to 2-13
 - getting 2-18, 2-41 to 2-42, 6-8, 6-28
 - opening 2-38 to 2-39
 - pattern stretching in 2-35
 - pen locations in 2-33
 - pen modes in 2-33
 - pen patterns in 2-33
 - pen sizes in 2-33
 - pen visibility in 2-33
 - port rectangles in 2-32
 - in printing graphics ports 9-51
 - restoring 2-18, 2-42, 6-8, 6-29
 - saving 2-18, 2-41 to 2-42, 6-8, 6-28
 - setting 2-18, 2-42, 6-8, 6-29
 - text in 2-33 to 2-34
 - visible regions 2-32
 - GrafVars data type 4-62
 - GrafVerb data type 3-132
 - graphics device records. *See* GDevice records
 - graphics devices 5-3 to 5-44. *See also* GDevice records
 - application-defined routine for 5-35 to 5-37
 - data structures in 5-15 to 5-18
 - defined 5-3
 - determining characteristics of 5-8 to 5-9, 5-29 to 5-32
 - getting handles to 5-25 to 5-28
 - with greatest pixel depth 5-27 to 5-28
 - initialization 1-22 to 1-23
 - optimizing images for 5-8 to 5-13, 5-29 to 5-30, 5-35 to 5-37
 - resource for 5-37
 - routines for 5-19 to 5-25
 - testing for availability 5-8
 - graphics pens
 - attributes of 1-11, 2-33, 3-4 to 3-5, 4-52
 - bit patterns for 3-20 to 3-21, 3-43, 3-48 to 3-49
 - colors for 3-123, 4-21 to 4-26, 4-67 to 4-68, 4-70 to 4-71
 - defined 1-5
 - drawing with 1-10 to 1-17
 - in graphics ports 2-13
 - initial values 3-48
 - invisible state 3-42
 - locations of 3-43
 - moving 3-17, 3-18 to 3-19, 3-50 to 3-51
 - pattern modes 3-43 to 3-48
 - pixel patterns for 4-67 to 4-68
 - routines for managing 3-41 to 3-48
 - sizes of 3-19 to 3-20, 3-43 to 3-44, 3-48
 - visible state 3-42
 - graphics port records. *See* CGrafPort records; GrafPort records; TPrPort records
 - graphics ports. *See also* basic graphics ports; color graphics ports; offscreen graphics worlds; printing graphics ports
 - background patterns in 2-32
 - clipping regions 2-12 to 2-13, 2-47 to 2-49
 - copying images between 3-32 to 3-35, 3-112 to 3-122
 - creating 1-7 to 1-8
 - data types for 2-30 to 2-35, 4-48 to 4-54, 9-51 to 9-52
 - defined 1-4
 - drawing areas in 2-11 to 2-13
 - fill patterns in 2-32
 - getting 2-18, 2-41 to 2-42
 - graphics pens in 2-13
 - local coordinate systems in 2-13
 - modifying 4-99 to 4-100
 - patterns in 2-13
 - port rectangles in 2-11
 - printing in 9-4 to 9-5, 9-15 to 9-35, 9-66 to 9-74, B-3 to B-42
 - restoring 2-18, 2-42, 6-8, 6-27 to 6-29
 - saving 2-18, 2-41 to 2-42, 6-8, 6-27 to 6-29
 - setting 2-18, 2-42, 6-8, 6-27 to 6-29
 - text in 2-13
 - visible regions 2-11
 - as windows 1-7 to 1-8
 - gray global variable 2-36, 3-7
 - grayscale devices, colors on 4-17
 - gwFlagErr flag 6-14
 - GWorld. *See* offscreen graphics worlds
 - GWorldFlags data type 6-13 to 6-15
 - GWorldPtr data type 6-12
- ## H
-
- hairlines B-35 to B-37
 - HasDepth function 5-13, 5-33 to 5-34
 - header information A-3
 - HeaderOp opcode A-3, A-13
 - Hide_Cursor procedure 8-28
 - HideCursor procedure 8-28
 - HidePen procedure 3-42
 - highlighting 4-41 to 4-44, 4-78 to 4-79
 - HiliteColor opcode A-7
 - HiliteColor procedure 4-78 to 4-79
 - hilite mode 4-44

INDEX

HiliteMode opcode A-7
HiliteRGB global variable 4-42
histograms 7-61, 7-63 to 7-64
hot spots 8-4, 8-19

I

I-beam cursor 8-9 to 8-12
I-beam region 8-9 to 8-12
idle procedures 9-13 to 9-15, 9-21, 9-38 to 9-41, 9-85
images
 copying 3-112 to 3-122, 4-26 to 4-32, 6-9 to 6-11
 scrolling 2-20 to 2-26, 2-43 to 2-44
ImageWriter LQ printers B-7
imaging, defined 1-3
indexed colors 1-19 to 1-20, 1-24 to 1-25
indexed devices
 defined 4-5
 pixel values for 4-13 to 4-14
InitCPort procedure 4-66
InitCursorCtl procedure 8-7, 8-22 to 8-23
InitCursor procedure 8-7, 8-22
InitGDevice procedure 5-21 to 5-22
InitGraf procedure 2-36 to 2-37
initialization, of graphics system 1-22 to 1-23
InitPort procedure 2-39 to 2-40
InsetRect procedure 3-54
InsetRgn procedure 3-93 to 3-94
Integer data type A-4
inverse tables, defined 5-5
invertArc opcode A-9, A-20
invertArc procedure 3-77
inverting shapes 3-13
invertOval opcode A-9, A-20
invertOval procedure 3-71
invertPoly opcode A-10, A-20
invertPoly procedure 3-85
invertRect opcode A-8, A-19
invertRect procedure 3-62
invertRgn opcode A-10, A-21
invertRgn procedure 3-103 to 3-104
invertRoundRect procedure 3-67 to 3-68
invertRRect opcode A-8, A-19
invertSameArc opcode A-10, A-20
invertSameOval opcode A-9, A-20
invertSamePoly opcode A-10, A-21
invertSameRect opcode A-8, A-19
invertSameRgn opcode A-11, A-21
invertSameRRect opcode A-8, A-20

J

job dialog boxes
 altering 9-35 to 9-38, 9-63 to 9-64, 9-65, 9-86
 defined 9-6
 displaying 9-62 to 9-63
 for LaserWriter printers 9-8
 for multiple documents 9-26, 9-66
 for StyleWriter printers 9-7 to 9-8

K

keepLocal flag 6-13, 6-14, 6-18, 6-20, 6-24
KillPicture procedure 7-13, 7-42 to 7-43
KillPoly procedure 3-30, 3-80 to 3-81

L

landscape printing 9-32 to 9-33, 9-34, 9-56, 9-73
LaserWriter printers 9-7, 9-76, B-7
LaserWriter SC printers B-7
LineFrom opcode A-7, A-19
lineJustify opcode A-7
line layout, disabling and enabling B-11 to B-17
line layout error B-12 to B-16
LineLayoutOff picture comment B-5, B-15 to B-16, B-17
LineLayoutOn picture comment B-5, B-15, B-17
Line opcode A-7, A-19
Line procedure 3-18 to 3-19, 3-51 to 3-52
lines
 defined 1-12
 defining 3-11 to 3-12
 drawing 3-17 to 3-21, 3-49 to 3-52
 low-level routine for drawing 3-132
 printing, with picture comments B-33 to B-37
LineTo procedure 3-17 to 3-18, 3-51
local coordinate systems
 for bitmaps 2-11
 converting to global coordinate systems 2-19, 2-52
 defined 1-7 to 1-10
 in graphics ports 2-13
LocalToGlobal procedure 2-52
LockPixels function 6-6, 6-32 to 6-33
LongComment opcode A-12, A-21
Long data type A-4
LongText opcode A-7, A-19
ltGray global variable 2-36, 3-7
luminance 4-17

M

magic pen B-8. *See also* pattern modes
 MainDevice global variable 5-27
 main screen
 defined 1-21
 determining 5-27
 mainScreen flag 5-17, 5-23, 5-31, 5-36
 major error B-13 to B-14
 major glyphs B-12 to B-14
 MakeRGBPat procedure 4-90 to 4-91
 mapPix flag 6-13, 6-15, 6-25
 MapPoly procedure 3-108
 MapPt procedure 3-106
 MapRect procedure 3-106 to 3-107
 MapRgn procedure 3-107
 MatchRec data type 4-57
 minor error B-13 to B-14
 minor glyphs B-12 to B-14
 -128..127 data type A-4
 Mode data type A-4
 mouse region 8-9 to 8-12
 MovePortTo procedure 2-46 to 2-47
 Move procedure 3-18 to 3-19, 3-50 to 3-51
 MoveTo procedure 3-17 to 3-18, 3-50
 multiple graphics devices 1-21 to 1-23
 MyCalcColorTable function 7-65 to 7-66
 MyColorSearch function 4-101 to 4-102
 MyDisposeColorPickMethod function 7-67
 MyDoPrintIdle procedure 9-85
 MyDrawingProc procedure 5-36 to 5-37
 MyInitPickMethod function 7-62 to 7-64
 MyPrDialogAppend function 9-86
 MyRecordColors function 7-64 to 7-65

N

newDepth flag 6-13, 6-15, 6-25
 NewGDevice function 5-20 to 5-21
 NewGWorld function 6-5 to 6-7, 6-16 to 6-21
 NewPictInfo function 7-53 to 7-55
 NewPixMap function 4-85 to 4-86
 NewPixPat function 4-88 to 4-89
 NewRgn function 3-28, 3-87
 newRowBytes flag 6-13, 6-15, 6-25
 NewScreenBuffer function 6-21 to 6-22
 NewTempScreenBuffer function 6-22 to 6-23
 noDraftBitsOp opcode 9-52, 9-55
 noDriver flag 5-17, 5-23, 5-31, 5-36
 noNewDevice flag 6-13, 6-14, 6-18, 6-20, 6-30
 NOP opcode A-5, A-18
 NoPurgePixels procedure 6-35
 notPatBic pattern mode 3-9 to 3-10, 3-45

notPatCopy pattern mode 3-9 to 3-10, 3-45
 notPatOr pattern mode 3-9 to 3-10, 3-45
 notPatXor pattern mode 3-9 to 3-10, 3-45
 notSrcBic source mode 3-9 to 3-10, 3-114, 3-116
 notSrcCopy source mode 3-9 to 3-10, 3-114, 3-115,
 4-33, 4-34
 notSrcOr source mode 3-9 to 3-10, 3-114, 3-115, 4-33,
 4-34
 notSrcXor source mode 3-9 to 3-10, 3-114, 3-116, 4-33

O

ObscureCursor procedure 8-29
 offscreen graphics worlds 6-3 to 6-46
 copying images from 6-9 to 6-11
 creating 6-5 to 6-7, 6-16 to 6-23
 data structures in 6-12 to 6-15
 defined 6-3
 disposing of 6-26 to 6-27
 drawing into 6-8 to 6-9
 restoring 6-8, 6-27 to 6-29
 routines for 6-16 to 6-39
 saving 6-8, 6-27 to 6-29
 setting 6-8, 6-27 to 6-29
 testing for availability 6-5
 updating 6-9, 6-23 to 6-26
 OffsetPoly procedure 3-80
 OffsetRect procedure 3-53 to 3-54
 OffsetRgn procedure 3-93
 Opcode data type A-4
 opcodes 7-6
 for pictures A-3 to A-26
 for the PrGeneral procedure 9-52, 9-72 to 9-74
 OpColor opcode A-7
 OpColor procedure 4-78
 OpenCPicParams records 7-29
 OpenCPicture function 7-11, 7-37 to 7-39
 OpenCPort procedure 4-64 to 4-65
 OpEndPic opcode A-3, A-12
 OpenPicture function 7-39 to 7-40
 OpenPoly function 3-30, 3-78 to 3-79
 OpenPort procedure 2-38 to 2-39
 OpenRgn procedure 3-28, 3-87 to 3-88
 original Color QuickDraw. *See* Color QuickDraw
 Origin opcode A-6, A-18
 origins. *See* window origins
 ovals
 defined 1-13
 drawing 3-25, 3-68 to 3-71
 erasing 3-70
 filling
 with bit patterns 3-69 to 3-70
 with pixel patterns 4-75

INDEX

ovals (*continued*)

- framing 3-68
- inverting 3-71
- painting 3-69
 - and rounded rectangles 1-14
- OvSize opcode A-6, A-18

P

- PackBitsRect opcode A-11, A-21
- PackBitsRgn opcode A-11, A-21
- page rectangles 9-10 to 9-11, 9-46
- pages
 - determining number to print 9-19, 9-23
 - orientation of 9-32 to 9-33
 - printable area for 9-10 to 9-11
 - printing 9-19 to 9-24, 9-69 to 9-70
- Page Setup command (File menu) 9-5 to 9-7
- paintArc opcode A-9, A-20
- PaintArc procedure 3-26, 3-73 to 3-74
- painting shapes 3-12
- paintOval opcode A-9, A-20
- PaintOval procedure 3-69
- paintPoly opcode A-10, A-20
- PaintPoly procedure 3-82 to 3-83
- paintRect opcode A-8, A-19
- PaintRect procedure 3-23 to 3-24, 3-60, 4-22, 4-25
- paintRgn opcode A-10, A-21
- PaintRgn procedure 3-101
- PaintRoundRect procedure 3-64 to 3-65
- paintRRect opcode A-8, A-19
- paintSameArc opcode A-10, A-20
- paintSameOval opcode A-9, A-20
- paintSamePoly opcode A-10, A-21
- paintSameRect opcode A-8, A-19
- paintSameRgn opcode A-11, A-21
- paintSameRRect opcode A-8, A-19
- Palette Manager 1-20, 1-29
- paper rectangles 9-10
 - 'PAT#' resource type 3-127 to 3-128, 3-141
- patBic pattern mode 3-9 to 3-10, 3-45
- patCopy pattern mode 3-9 to 3-10, 3-45
- patOr pattern mode 3-9 to 3-10, 3-45
- 'PAT ' resource type 3-126 to 3-127, 3-140
- Pattern data type 3-40, A-4. *See also* bit patterns
- pattern list resources 3-127 to 3-128, 3-141
- pattern modes 3-8 to 3-11, 4-33
 - changing 3-45 to 3-46
 - “magic,” for PostScript printers B-22, B-30 to B-32, B-34
- pattern resources 3-126 to 3-127, 3-140
- patterns. *See also* bit patterns; pixel patterns
 - background, in basic graphics ports 2-32
 - background, in color graphics ports 4-68 to 4-69
 - in basic graphics ports 2-13, 2-32
 - changing 3-47 to 3-49, 4-68 to 4-69
 - data types for 3-40, 4-58 to 4-60
 - defined 1-11
 - fill, in basic graphics ports 2-32
 - fill, in color graphics ports 4-74 to 4-77
 - of graphics pens in basic graphics ports 2-33
 - of graphics pens in color graphics ports 4-67 to 4-68
 - resources for 3-140 to 3-141, 4-103
 - stretching for printer output 2-35, 4-53
- patXor pattern mode 3-9 to 3-10, 3-45
- PenMode procedure 3-45 to 3-46, B-22, B-30 to B-32, B-34
- pen modes. *See* pattern modes
- PenNormal procedure 3-48
- PenPat procedure 3-20 to 3-21, 3-47
- PenPixPat procedure 4-67 to 4-68
- pens. *See* graphics pens
- PenSize procedure 3-19 to 3-20, 3-44
- pen state 3-37 to 3-38
- PenState data type 3-37 to 3-38
- Personal LaserWriter LS printers B-7
- PicComment procedure 7-40 to 7-42, B-3 to B-41
- 'PICT' file type 7-7, 7-13 to 7-16, 7-21 to 7-23
- PictInfo data type 7-32 to 7-36
- 'PICT' resource type 7-7, 7-20, 7-46, 7-67 to 7-68
- 'PICT' scrap format 7-7 to 7-8, 7-17, 7-22
- picture comments 7-40 to 7-42, B-3 to B-44
 - defined 7-6
 - delimiting text strings with B-16 to B-17
 - device independence and printing B-8 to B-9
 - disabling and enabling line layout with B-11 to B-17
 - graphics rotation with B-29 to B-32
 - inserting into pictures or printing code 7-40 to 7-42
 - limited or obsolete B-40 to B-41
 - low-level routine for processing 3-137
 - matching colors with B-7
 - printing dashed lines with B-33 to B-35
 - printing graphics with B-6, B-22 to B-32
 - printing hairlines with B-35 to B-37
 - printing polygons with B-23 to B-29
 - printing ruled lines with B-6, B-33 to B-37
 - printing text with B-5, B-11 to B-22
 - sending PostScript printing code with B-6, B-38 to B-40
 - synchronizing between QuickDraw and PostScript printer drivers B-10 to B-11
 - text rotation with B-17 to B-22
- Picture data type 7-27 to 7-28. *See also* pictures
- picture opcodes A-3 to A-26
- picture resources 7-7, 7-20, 7-46, 7-67 to 7-68
- pictures
 - collecting information from 7-24 to 7-26, 7-46 to 7-50, 7-53 to 7-57, 7-58 to 7-60

INDEX

- color, in basic graphics ports 7-6 to 7-7
- creating 7-10 to 7-13, 7-37 to 7-42
- data type for 7-27 to 7-28
- defined 1-16, 7-4
- destination rectangles for 7-18 to 7-19
- disposing of 7-13, 7-20, 7-42 to 7-43
- drawing 7-10 to 7-20, 7-43 to 7-45
- extended version 2 format 7-5 to 7-6, 7-37 to 7-39, A-3, A-5 to A-14, A-23 to A-24
- low-level routines for 3-138 to 3-139
- opcodes for 7-6
- opening 7-13 to 7-20
- in 'PICT' files 7-7, 7-13 to 7-16, 7-21 to 7-23
- in 'PICT' resources 7-7, 7-20, 7-22, 7-46
- reading from a resource file 7-46
- resolutions for 7-11, 7-19
- saving 7-21 to 7-23
- in the scrap 7-7 to 7-8, 7-17, 7-22
- version 1 format 7-5 to 7-6, A-3 to A-4, A-5, A-18 to A-21, A-25 to A-26
- version 2 format 7-5 to 7-6, 7-39, A-3, A-5 to A-16, A-24 to A-25
- and the Window Manager 7-13
- Picture Utilities
 - application-defined routines for 7-61 to 7-67
 - data structures in 7-30 to 7-36
 - defined 7-8
 - gathering information with 7-24 to 7-26
 - routines in 7-46 to 7-60
 - testing for availability 7-10
- picVersion opcode A-19
- PixData data type A-4, A-15
- pixel depths
 - default color tables for 4-93
 - defined 4-10
 - determining 5-8 to 5-13, 5-29 to 5-30, 5-33 to 5-34
 - setting 5-13, 5-34 to 5-35
- pixel images
 - addresses of, for offscreen graphics worlds 6-38 to 6-39
 - defined 4-10 to 4-12
 - getting states of, for offscreen graphics worlds 6-36 to 6-37
 - locking, for offscreen graphics worlds 6-32 to 6-33
 - in pixel maps 4-10 to 4-12
 - purgeable, for offscreen graphics worlds 6-34 to 6-35
 - setting states, for offscreen graphics worlds 6-37 to 6-38
 - unlocking, for offscreen graphics worlds 6-33 to 6-34
 - unpurgeable, for offscreen graphics worlds 6-35
 - whether in 32-bit mode, for offscreen graphics worlds 6-39
- pixel maps
 - copying images between 3-112 to 3-122, 4-26 to 4-32
 - creating 4-85 to 4-86
- data type for 4-46 to 4-48
- defined 1-5, 4-9
- disposing of 4-87
- gathering color information from 7-50 to 7-55, 7-57 to 7-60
- low-level routine for copying images between 3-136
- obtaining, for offscreen graphics worlds 6-31 to 6-32
- pixel images in 4-10 to 4-12
- setting 4-86 to 4-87
- pixel pattern resources 4-24 to 4-25, 4-103
- pixel patterns
 - background 4-68 to 4-69
 - creating 4-88 to 4-91, 4-103
 - data type for 4-58 to 4-60
 - defined 1-11, 4-12 to 4-13
 - disposing of 4-91
 - filling with 4-23 to 4-26, 4-74 to 4-77
 - framing and painting with 4-23 to 4-26
 - of graphics pens 4-23 to 4-26, 4-67 to 4-68
 - modifying 4-98 to 4-99
 - resources for 4-24 to 4-25, 4-103
- pixels
 - in bitmaps 2-11
 - colors for
 - in basic QuickDraw eight-color system 3-14 to 3-15, 3-122 to 3-125
 - in Color QuickDraw 4-4 to 4-5, 4-10 to 4-11, 4-13 to 4-17, 4-21 to 4-44
 - copying between bitmaps 3-32 to 3-35, 3-112 to 3-122
 - copying between pixel maps 3-32 to 3-35, 3-112 to 3-122, 4-26 to 4-32
 - copying from offscreen graphics worlds 3-112 to 3-122, 6-9 to 6-11
 - defined 1-4
 - depths of. *See* pixel depths
 - patterns for. *See* bit patterns, pixel patterns
 - relationship to points 1-9
 - scrolling 2-20 to 2-26, 2-43 to 2-44
 - values for. *See* pixel values
 - whether black or white 2-54 to 2-55
 - whether in rectangles 3-56
 - whether in regions 3-97
- pixelsLocked flag 6-13, 6-15, 6-36, 6-37
- pixelsPurgeable flag 6-13, 6-14, 6-36, 6-37
- pixel values
 - defined 4-11
 - for direct devices 4-15 to 4-17
 - for indexed devices 4-13 to 4-14
 - as RGB colors 4-13 to 4-17
- PixMap32Bit function 6-39
- PixMap data type 4-46 to 4-48. *See also* pixel maps
- PixMap records
 - copying images between 3-112 to 3-122
 - creating 4-85 to 4-86
 - disposing of 4-87

INDEX

- Pixmap records (*continued*)
 - low-level routine for copying images between 3-136
 - obtaining, for offscreen graphics worlds 6-31 to 6-32
 - pixel images in 4-10 to 4-12
 - setting 4-86 to 4-87
- PixPatChanged procedure 4-98 to 4-99
- PixPat data type 4-58 to 4-60. *See also* pixel patterns
- PixPatHandle data type 4-58
- pixPurge flag 6-13, 6-14, 6-18, 6-19
- plus sign cursor 8-8 to 8-9
- PnLocHFrac opcode A-6
- PnMode opcode A-6, A-18
- PnPat opcode A-6, A-18
- PnPixPat opcode A-6
- PnSize opcode A-6, A-18
- Point data type 2-27, A-4. *See also* points
- points
 - adding coordinates of 2-52
 - assigning coordinates to 2-54
 - changing between global and local 2-19, 2-51 to 2-52
 - comparing coordinates of 2-54
 - coordinates for 2-4 to 2-5
 - data type for 2-27
 - defined 1-9 to 1-10
 - mapping between rectangles 3-106
 - rectangles around 3-56
 - relationship to pixels 1-9
 - routines for managing 2-51 to 2-54, 3-104 to 3-106
 - subtracting coordinates of 2-53
 - used for defining rectangles 2-5 to 2-6
 - whether in rectangles 3-56
 - whether in regions 3-97
- PolyBegin picture comment B-6, B-24, B-28
- PolyClose picture comment B-6, B-24
- Poly data type A-4
- PolyEnd picture comment B-6, B-24
- Polygon data type 3-37. *See also* polygons
- polygons
 - closing 3-79
 - creating 3-78 to 3-79
 - data type for 3-37
 - defined 1-15
 - defining 3-30
 - disposing of 3-80 to 3-81
 - drawing 3-81 to 3-85
 - erasing 3-84
 - filling
 - with bit patterns 3-83 to 3-84
 - with pixel patterns 4-76 to 4-77
 - framing 3-81 to 3-82
 - inverting 3-85
 - low-level routine for drawing 3-135
 - mapping and scaling 3-108
 - moving 3-80
 - painting 3-82 to 3-83
 - routines for managing 3-78 to 3-85, 3-108
 - smoothed, on PostScript printers B-23 to B-29
- PolyIgnore picture comment B-6, B-24, B-27 to B-28
- PolySmooth picture comment B-6, B-24 to B-28
- PortChanged procedure 4-99 to 4-100
- port rectangles
 - in basic graphics ports 2-32
 - changing positions of 2-46 to 2-47
 - changing sizes of 2-46
 - changing window origins of 2-23 to 2-26, 2-45 to 2-46
 - in color graphics ports 4-51
 - defined 1-7
 - in graphics ports 2-11
 - scrolling pixels in 2-20 to 2-26, 2-43 to 2-44
- PortSize procedure 2-46
- PostScriptBegin picture comment B-8 to B-9, B-31, B-34
- PostScriptEnd picture comment B-9, B-31, B-35
- PostScriptFile picture comment B-6, B-41
- PostScriptHandle picture comment B-6, B-38 to B-39
- PostScript language, use in printing B-3 to B-44
- PostScript LaserWriter printers 9-76, B-7
- PostScript printer drivers 9-9
- 'ppat' resource type 4-24 to 4-25, 4-103
- PrCloseDoc procedure 9-21, 9-22, 9-68
- PrClosePage procedure 9-22, 9-70
- PrClose procedure 9-22, 9-37, 9-58
- PrCtlCall procedure 9-81 to 9-84
- PrDlgMain function 9-37, 9-63 to 9-64
- PrDrvrClose procedure 9-80
- PrDrvrDCE function 9-80 to 9-81
- PrDrvrOpen procedure 9-79
- PrDrvrVers function 9-79
- PrError function 9-18, 9-21, 9-41 to 9-42, 9-75 to 9-77
- PrGeneral procedure 9-28 to 9-35, 9-42, 9-72 to 9-74
- Print command (File menu) 9-5 to 9-6, 9-7 to 9-8
- PrintDefault procedure 9-37, 9-59
- print dialog boxes. *See also* job dialog boxes; print status dialog boxes; style dialog boxes
 - altering 9-35 to 9-38, 9-63 to 9-65, 9-86
 - data structure for 9-50 to 9-51
 - displaying 9-61 to 9-64
 - for multiple documents 9-26, 9-66
- print dialog box record. *See* TPrDlg data type
- printer drivers
 - closing 9-58, 9-80
 - defined 9-3
 - determining versions of 9-79
 - device control entry for 9-80 to 9-81
 - dialog boxes for 9-5 to 9-8, 9-13 to 9-14
 - line layout capabilities of B-11 to B-17
 - opening 9-57, 9-79
 - picture comments supported by B-7
 - PostScript 9-9
 - QuickDraw 9-8 to 9-9

INDEX

- resolutions for 9-11, 9-30 to 9-32
 - printer resource files 9-3
 - PrintErr global variable 9-78
 - printers
 - current, device numbers of 9-48
 - current, feed types of 9-48
 - ImageWriter LQ B-7
 - information in TPrInfo records for 9-46
 - LaserWriter 9-7 to 9-8, 9-76, B-7
 - LaserWriter SC B-7
 - Personal LaserWriter LS B-7
 - PostScript LaserWriter 9-76, B-7
 - StyleWriter 9-6 to 9-8, B-7
 - print information record. *See* TPrInfo data type
 - printing
 - area for 9-10 to 9-11
 - canceling 9-14, 9-38 to 9-41, 9-85
 - deferred 9-24, 9-71 to 9-72
 - determining number of copies 9-19
 - determining number of pages 9-19, 9-23
 - dialog boxes for 9-5 to 9-8, 9-13 to 9-15, 9-50 to 9-51, 9-61 to 9-66
 - documents 9-18 to 9-26, 9-66 to 9-72
 - draft-quality 9-24, 9-55
 - enhanced draft-quality 9-33 to 9-35, 9-55, 9-73
 - error handling for 9-73, 9-75 to 9-78
 - from the Finder 9-25 to 9-26, 9-66
 - graphics ports for. *See* printing graphics ports
 - landscape, disabled 9-34
 - multiple documents 9-25 to 9-26, 9-66
 - with non-QuickDraw features B-3 to B-44
 - optimizing 9-72 to 9-74
 - picture comments for B-3 to B-44
 - resolutions for 9-30 to 9-32, 9-53 to 9-55
 - status 9-13 to 9-15, 9-49
 - user interface guidelines for 9-5 to 9-8, 9-13 to 9-15
 - whether landscape 9-32 to 9-33, 9-56, 9-73
 - printing graphics ports
 - closing 9-68
 - creating 9-19, 9-67
 - data type for 9-51 to 9-52
 - defined 9-3 to 9-5
 - drawing into 9-19 to 9-24, 9-69 to 9-70
 - opening 9-19, 9-67
 - printing loops 9-18 to 9-25
 - Printing Manager 1-26 to 1-28, 9-3 to 9-105
 - application-defined routines for 9-84 to 9-86
 - data structures in 9-44 to 9-56
 - and Dialog Manager 9-5 to 9-8, 9-35 to 9-38
 - initializing 9-15, 9-57
 - low-level routines in 9-78 to 9-84
 - and QuickDraw 9-3 to 9-5
 - routines in 9-57 to 9-84
 - testing for availability 9-15
 - user interface guidelines for 9-5 to 9-8, 9-13 to 9-15
 - printing status information. *See* TPrStatus data type
 - printing style record. *See* TPrStl data type
 - print job record. *See* TPrJob data type
 - print record. *See* TPrint records
 - print status dialog boxes 9-13 to 9-15, 9-38 to 9-41
 - PrJobDialog function 9-20, 9-62 to 9-63
 - PrJobInit function 9-37, 9-65
 - PrJobMerge procedure 9-26, 9-66
 - PrOpenDoc function 9-21, 9-67
 - PrOpenPage procedure 9-21, 9-69 to 9-70, B-4
 - PrOpen procedure 9-20, 9-57
 - PrPicFile procedure 9-21, 9-71 to 9-72
 - PrSetError procedure 9-78
 - PrStlDialog function 9-61 to 9-62
 - PrStlInit function 9-64
 - PrValidate function 9-18, 9-20, 9-60
 - PSBeginNoSave picture comment B-6, B-41
 - Pt2Rect procedure 3-56
 - PtInRect function 3-56
 - PtInRgn function 3-97, 8-11
 - PtToAngle procedure 3-57
-
- ## Q
- QDColor global variable 4-71
 - QDDone function 3-125 to 3-126
 - QDLError function 3-28, 3-30, 3-34, 4-94 to 4-95, 7-20
 - QDProcs data type 3-39 to 3-40
 - QDProcs record B-4
 - QuickDraw 1-3 to 1-29. *See also* basic QuickDraw;
Color QuickDraw; global coordinate systems;
local coordinate systems; shapes
 - compatibility between versions 1-4
 - customizations of 3-35 to 3-36, 3-129, 4-96 to 4-97
 - and Dialog Manager 4-6
 - drawing with 1-10 to 1-17
 - historical development 1-4
 - initializing 2-36 to 2-37
 - low-level drawing routines 3-129 to 3-139
 - mathematical foundations of 2-4 to 2-7
 - multiple graphics device support in 1-21 to 1-23
 - picture comments supported by printer drivers
for B-7
 - printer drivers 9-8 to 9-9
and Printing Manager 9-3 to 9-5
 - printing with. *See* Printing Manager
 - text 1-3
 - versions of 1-4
 - and the Window Manager 1-7 to 1-8

R

-
- ramInit flag 5-17, 5-23, 5-31, 5-36
 - randSeed global variable 2-36
 - reallocPix flag 6-14, 6-15, 6-25
 - RecordPictInfo function 7-56 to 7-57
 - RecordPixMapInfo function 7-57 to 7-58
 - rectangles. *See also* boundary rectangles; bounding rectangles; port rectangles
 - coordinates for 2-5 to 2-6
 - creating 3-53
 - data type for 2-27 to 2-28
 - defined 1-12 to 1-13
 - defining 3-22 to 3-23, 3-24
 - drawing 3-22 to 3-24, 3-58 to 3-62
 - emptiness of 3-58
 - equality of 3-58
 - erasing 3-61 to 3-62
 - expanding 3-54
 - filling
 - with bit patterns 3-23 to 3-24, 3-60 to 3-61
 - with pixel patterns 4-74
 - framing 3-22 to 3-23, 3-59
 - intersections of 3-55
 - inverting 3-62
 - low-level routine for drawing 3-132
 - mapping and scaling 3-106 to 3-107
 - moving 3-53 to 3-54
 - painting 3-23 to 3-24, 3-60
 - pixels in 3-56
 - and regions 3-91 to 3-92, 3-98
 - routines for managing 3-52 to 3-62, 3-104 to 3-108
 - scaling factors for 3-104 to 3-105
 - shrinking 3-54
 - smallest around two points 3-56
 - unions of 3-55
 - used to define other shapes 3-11
 - Rect data type 2-27 to 2-28, A-4. *See also* rectangles
 - RectInRgn function 3-98
 - RectRgn procedure 3-92, 8-11
 - Region data type 2-28 to 2-29. *See also* regions
 - regions
 - arrow 8-9 to 8-12
 - copying 3-90 to 3-91
 - creating 3-87 to 3-89
 - data type for 2-28 to 2-29
 - defined 1-16
 - defining 3-27 to 3-30
 - disposing of 3-90
 - drawing 3-100 to 3-104
 - emptiness of 3-91, 3-99
 - equality of 3-98
 - erasing 3-102 to 3-103
 - expanding 3-93 to 3-94
 - filling
 - with bit patterns 3-102
 - with pixel patterns 4-77
 - framing 3-100 to 3-101
 - I-beam 8-9 to 8-12
 - intersections of 3-94 to 3-95, 3-96 to 3-97
 - inverting 3-103 to 3-104
 - low-level routine for drawing 3-135 to 3-136
 - mapping and scaling 3-107
 - mouse 8-9 to 8-12
 - moving 3-93
 - painting 3-101
 - pixels in 3-97
 - and rectangles 3-91 to 3-92, 3-98
 - routines for managing 3-85 to 3-104, 3-107
 - shrinking 3-93 to 3-94
 - subtracting 3-96
 - unions of 3-95, 3-96 to 3-97
 - resolutions
 - discrete 9-11
 - for pictures 7-11, 7-19
 - for printers 9-11, 9-30 to 9-32, 9-46, 9-53 to 9-55, 9-73
 - for screens 5-32
 - variable 9-11
 - resource forks 7-7
 - ResourcePS picture comment B-6, B-41
 - resources
 - animated cursor 8-13, 8-14, 8-36 to 8-37
 - color cursor 8-34 to 8-36
 - color icon 4-105 to 4-106
 - color-picking method 7-68
 - color table 4-104 to 4-105
 - cursor 8-13 to 8-14, 8-33 to 8-34
 - pattern 3-140
 - pattern list 3-141
 - picture 7-7, 7-20, 7-46, 7-67 to 7-68
 - pixel pattern 4-24 to 4-25, 4-103
 - screen 5-37
 - resource types
 - 'acur' 8-13, 8-14, 8-36 to 8-37
 - 'cicn' 4-105 to 4-106
 - 'clut' 4-104 to 4-105
 - 'cmpt' 7-68
 - 'crsr' 8-34 to 8-36
 - 'CURS' 8-13 to 8-14, 8-33 to 8-34
 - 'PAT ' 3-140
 - 'PAT#' 3-141
 - 'PICT' 7-7, 7-20, 7-46, 7-67 to 7-68
 - 'ppat' 4-24 to 4-25, 4-103
 - 'scrn' 5-37
 - RetrievePictInfo function 7-58 to 7-59
 - RGBBackColor procedure 4-72 to 4-73
 - RGBbkCol opcode A-6
 - RGBColorArray data type 7-64
 - RGBColor data type 4-55. *See also* RGB colors

INDEX

RGBColor records 1-19, 4-13 to 4-17
RGB colors 1-19
 data type for 4-55
 defined 4-4 to 4-5
 as pixel values 4-13 to 4-17
RGBFgCol opcode A-6
RGBForeColor procedure 4-22, 4-70 to 4-71
Rgn data type A-4
RotateBegin picture comment B-6, B-9, B-29 to B-32
RotateCenter picture comment B-6, B-9, B-32
RotateCursor procedure 8-15, 8-32
RotateEnd picture comment B-6, B-9, B-29, B-32
rounded rectangles
 defined 1-14
 drawing 3-63 to 3-68
 erasing 3-66 to 3-67
 filling
 with bit patterns 3-65 to 3-66
 with pixel patterns 4-74 to 4-75
 framing 3-64
 inverting 3-67 to 3-68
 low-level routine for drawing 3-133
 painting 3-64 to 3-65
RowBytes data type A-4
ruled lines, printing B-33 to B-37

S

sample routines

DashDemo B-34
DoControlClick 2-19
DoGraphicsScroll 2-22
DoInit 8-6
DoIsLandscapeModeSet 9-33
DoNew 2-17, 4-20
DoPostScriptLine B-39
DoPrintDialog 9-37
DoSavePICTAsCmd 7-21
DoUpdate 5-8
DoZoomWindow 5-10 to 5-12
DrawInPort 2-18
HiliteDemonstration 4-43
MyAdjustCursor 8-10
MyAdjustDestRect 7-18
MyCopyBlackAndRedMasks 6-10
MyCreateAndDrawPict 7-11, A-22
MyDefineVertices B-26
MyDoPrintIdle 9-40
MyDrawArcAndPaintWedge 3-26
MyDrawDumbbell 3-28
MyDrawFilePicture 7-13
MyDrawLines 3-18
MyDrawOvals 3-25
MyDrawRects 3-23
MyDrawResPICT 7-20
MyDrawTriangle 3-30
MyDrawXString B-21
MyFileGetPic 7-16
MyFilePutPic 7-23
MyFillClipRegion 3-29
MyFlushGrafPortState B-10
MyFlushPostScriptState B-11
MyGetPICTProfileCount 7-25
MyGetPrintRecordForThisDoc 9-17
MyIsColorPort 7-16
MyLineWidthDemo B-37
MyPaintAndFillColorRects 4-22
MyPaintAndFillRects 3-24
MyPaintPixelPatternRects 4-25
MyPaintRectsThruGWorld 6-5
MyPastePict 7-17
MyPolygonDemo B-27
MyPrDialogAppend 9-37
MyPrintLoop 9-20
MyRepatternPens 3-21
MyReplaceGetPic 7-15
MyReplacePutPic 7-22
MyResizePens 3-20
MyRotateCursor 8-15
MySetHiliteMode 4-42
MySetNewLineWidth B-37
MyShrinkImages 3-33
MySpinCursor 8-15
MyStringReconDemo B-17
MyTrivialDrawingProc 5-9
ScalePt procedure 3-104 to 3-105
scrap
 defined 7-7
 pictures in 7-7 to 7-8, 7-17, 7-22
screenActive flag 5-17, 5-23, 5-31, 5-36
screenBits global variable 2-36
screenDevice flag 5-17, 5-23, 5-31, 5-36
screen resources 5-37
ScreenRes procedure 5-32
screens
 determining characteristics of 5-29 to 5-32
 with greatest pixel depth 5-27 to 5-28
 optimizing images for 5-8 to 5-13, 5-29 to 5-30, 5-35
 to 5-37
 resolution of 5-32
ScrHRes global variable 5-32
'scrn' resource type 5-37
scrolling pixels 2-20 to 2-26, 2-43 to 2-44
ScrollRect procedure 2-21 to 2-23, 2-43 to 2-44
ScrVRes global variable 5-32
SectRect function 3-55, 5-11
SectRgn procedure 3-94 to 3-95, 8-11
SeedCFill procedure 4-82 to 4-83

INDEX

- SeedFill procedure 3-109 to 3-110
 - SetCCursor procedure 8-26 to 8-27
 - SetClip procedure 2-48, 3-29
 - SetCPixel procedure 4-73
 - SetCursor procedure 8-11, 8-25
 - SetDepth function 5-13, 5-34 to 5-35
 - SetDeviceAttribute procedure 5-22 to 5-23
 - SetEmptyRgn procedure 3-91
 - SetFractEnable procedure B-15
 - SetGDevice procedure 5-24
 - SetGrayLevel picture comment B-40
 - SetGWorld procedure 6-6, 6-29
 - SetLineWidth picture comment B-6, B-35 to B-37
 - SetOrigin procedure 2-45 to 2-46, 8-11
 - SetPenState procedure 3-43 to 3-44
 - SetPixelsState procedure 6-37 to 6-38
 - SetPortBits procedure 2-50
 - SetPortPix procedure 4-86 to 4-87
 - SetPort procedure 2-18, 2-42
 - SetPt procedure 2-54
 - SetRect procedure 3-23, 3-25, 3-53, 5-11
 - SetRectRgn procedure 3-91 to 3-92
 - setRslOp opcode 9-30 to 9-32, 9-52, 9-54 to 9-55
 - SetStdCProcs procedure 4-96 to 4-97, 7-15, 7-23
 - SetStdProcs procedure 3-130
 - SetWindowPic procedure 7-13, 7-20
 - shapes. *See also* arcs; lines; ovals; pictures; polygons;
rectangles; regions; rounded rectangles; wedges
calculations and manipulations 3-31 to 3-32
creating 1-10 to 1-17
defined 1-10 to 1-17
defining 3-11 to 3-12
drawing, erasing, and inverting 3-12 to 3-13
erasing 1-17
filling 1-17, 3-108 to 3-112
framing 1-17
painting 1-17
 - ShieldCursor procedure 8-29
 - ShortComment opcode A-12, A-21
 - ShortLineFrom opcode A-7, A-19
 - ShortLine opcode A-7, A-19
 - Show_Cursor procedure 8-30 to 8-31
 - ShowCursor procedure 8-30
 - ShowPen procedure 3-42
 - singleDevices flag 5-30
 - source modes 3-8 to 3-11, 4-32 to 4-37
 - SpExtra opcode A-6, A-18
 - SpinCursor procedure 8-15, 8-32 to 8-33
 - spool files 9-8, 9-9, 9-25
 - srcBic source mode 3-9 to 3-10, 3-114, 3-115, 4-33,
4-34, 4-41
 - srcCopy source mode 3-9 to 3-10, 3-114, 3-115, 4-33,
4-41
 - srcOr source mode 3-9 to 3-10, 3-114 to 3-115, 4-33 to
4-34, 4-41
 - srcXor source mode 3-9 to 3-10, 3-114, 3-115, 4-33, 4-41
 - StandardGetFile procedure 7-14
 - standard state of a window 5-10
 - startup screen 1-23
 - status, of printing 9-13 to 9-15, 9-38 to 9-41, 9-49
 - StdArc procedure 3-134
 - StdBits procedure 3-136
 - StdComment procedure 3-137, B-4
 - StdGetPic procedure 3-138 to 3-139
 - StdLine procedure 3-132, B-24, B-27
 - StdOval procedure 3-133 to 3-134
 - StdPoly procedure 3-135
 - StdPutPic procedure 3-139, 7-14
 - StdRect procedure 3-132
 - StdRgn procedure 3-135 to 3-136
 - StdRRect procedure 3-133
 - StdText procedure 3-131
 - StdTxtMeas function 3-138
 - stretchPix flag 6-14, 6-15, 6-24, 6-25
 - StringBegin picture comment B-5, B-17
 - StringEnd picture comment B-5, B-17
 - style dialog boxes
 - altering 9-35 to 9-38, 9-63 to 9-64, 9-86
 - defined 9-6
 - displaying 9-61 to 9-62
 - for LaserWriter printers 9-7
 - for StyleWriter printers 9-6 to 9-7
 - StyleWriter printers 9-6 to 9-8, B-7
 - subOver arithmetic transfer mode 4-39, 4-40
 - subPin arithmetic transfer mode 4-39, 4-40, 4-78
 - SubPt procedure 2-53
 - System 7 1-4
- ## T
-
- TCenterRec data type B-20 to B-21, B-29
 - TDashedLineRec data type B-33
 - TDftBitsBlk data type 9-33 to 9-35, 9-55
 - TestDeviceAttribute function 5-11, 5-31 to 5-32
 - text. *See also* text strings
 - in basic graphics ports 2-33 to 2-34
 - in color graphics ports 4-53
 - in graphics ports 2-13
 - low-level routine for drawing 3-131
 - low-level routine for measuring width 3-138
 - TextBegin picture comment B-5, B-17 to B-20, B-21
 - TextCenter picture comment B-5, B-17 to B-18, B-19
to B-21
 - TextEnd picture comment B-5, B-17 to B-18, B-22
 - TextIsPostScript picture comment B-6, B-41
 - text streaming 9-82

INDEX

text strings
 delimiting with picture comments B-16 to B-17
 rotating with picture comments B-17 to B-22
TFeed data type 9-48
TGetRotnBlk data type 9-32 to 9-33, 9-56
TGetRslBlk data type 9-30 to 9-31, 9-53 to 9-54
TGNlData data type 9-52 to 9-53
TheGDevice global variable 5-4
thePat opcode A-18
thePort global variable 2-36
32-bit Color QuickDraw. *See* Color QuickDraw
TLineWidth data type B-35
TopMapHdl global variable 9-39
TPolyVerbRec data type B-25 to B-26
TPrDlg data type 9-50 to 9-51
TPrInfo data type 9-46
TPrint data type 9-38 to 9-39, 9-44 to 9-46
TPrint records
 creating 9-17
 defined 9-11 to 9-13
 initializing 9-59
 saving and reading 9-17 to 9-18
 validating 9-60
TPrJob data type 9-38 to 9-39, 9-47 to 9-48
TPrPort data type 9-51 to 9-52
TPrPort records
 closing 9-68
 creating 9-19, 9-67
 drawing into 9-24, 9-69 to 9-70
 opening 9-19, 9-67
TPrStatus data type 9-49
TPrStl data type 9-48
transfer modes. *See* arithmetic transfer modes; Boolean transfer modes; pattern modes; source modes
transparent mode 4-39, 4-40
TRotationRec data type B-30
TRslRec data type 9-54
TRslRg data type 9-53
TSetRslBlk data type 9-31, 9-54 to 9-55
TtxtPicRecord data type B-19 to B-20
TxFace opcode A-5, A-18
TxFont opcode A-5, A-18
TxMode opcode A-5, A-18
TxRatio opcode A-6, A-19
TxSize opcode A-6, A-18

U

UnionRect procedure 3-55
UnionRgn procedure 3-95
UnlockPixels procedure 6-6, 6-33 to 6-34
UpdateGWorld function 6-9, 6-23 to 6-26

user interface guidelines
 for animated cursors 8-5, 8-13, 8-15
 for color cursors 8-5
 for cursors 8-4 to 8-5
 for highlighting 4-44
 for Printing Manager 9-13 to 9-15
 for style and job dialog boxes 9-5 to 9-8
user state of a window 5-9
useTempMem flag 6-13, 6-14, 6-18, 6-20

V

variable resolution 9-11, 9-30 to 9-32
version 1 format 7-5 to 7-6, A-3 to A-4, A-5, A-18 to A-21, A-25 to A-26
version 2 format 7-5 to 7-6, 7-39, A-3, A-5 to A-16, A-24 to A-25
Version opcode A-6, A-13
video devices 1-19 to 1-20, 1-22 to 1-25, 5-3 to 5-37
visible regions 2-11
 in basic graphics ports 2-32
 in color graphics ports 4-51

W

wedges. *See also* arcs
 defined 1-14
 drawing 3-26, 3-71 to 3-77
 erasing 3-76
 filling
 with bit patterns 3-75
 with pixel patterns 4-76
 inverting 3-77
 low-level routine for drawing 3-134
 painting 3-73 to 3-74
white global variable 2-36, 3-7
Window Manager
 and pictures 7-13
 and QuickDraw 1-7 to 1-8
window origins
 changing 2-23 to 2-26, 2-45 to 2-46
 defined 2-20
windows
 as graphics ports 1-7 to 1-8
 scrolling through 2-20 to 2-26, 2-43 to 2-44
 standard state 5-10
 updating 2-24
 user state 5-9
 zooming 5-9 to 5-12
wristwatch cursor 8-8 to 8-9

INDEX

X, Y

XorRgn procedure 3-96 to 3-97

Z

0..255 data type A-4

zooming windows 5-9 to 5-12

ZoomWindow procedure 5-10, 5-12

This Apple manual was written, edited, and composed on a desktop publishing system using Apple Macintosh computers and FrameMaker software. Proof pages were created on an Apple LaserWriter Pro printer. Final page negatives were output directly from text files on an Optrotech SPrint 220 imagesetter. Line art was created using Adobe™ Illustrator and Adobe Photoshop. PostScript™, the page-description language for the LaserWriter, was developed by Adobe Systems Incorporated.

Text type is Palatino® and display type is Helvetica®. Bullets are ITC Zapf Dingbats®. Some elements, such as program listings, are set in Apple Courier.

LEAD WRITER
Tony Francis

WRITERS
Tony Francis, Lori Kaplan,
Sharon Everson, Rob Dearborn,
Dianne Patterson, Ulla Hald

DEVELOPMENTAL EDITOR
Sue Factor

ART DIRECTOR
Bruce Lee

ILLUSTRATOR
Ruth Anderson

PRODUCTION EDITORS
Pat Christenson, Alan Morgenegg

Special thanks to Joseph Maurer,
Don Moccia

Acknowledgments to Waymen Askey,
Michael Conley, Matt Deatherage,
Lorraine Findlay, Dave Hersey,
Shannon Holland, Edgar Lee,
Tim Monroe, Konstantin Othmer,
John Wang