dictionary of multimedia and internet applications: a guide for developers and users. francis botto

Print ISBN 0-471-98624-0 Online ISBN 0-470-84178-8

G

Garbage collection A feature found in the memory management facet of such modern programming languages as Java and Smalltalk. It reclaims the space occupied by an object when there are no references to that object.

(See C++, Java and OOP.)

Gates, Bill A co-founder of Microsoft, and currently its CEO. He is the world's best known and financially most successful computer software programmer and entrepreneur.

(See Microsoft.)*

GDI (Graphics Device Interface) A Windows device-independent graphics output interface. Inexpensive GDI printers operate via this interface. It exists as a DLL (Dynamic Link Library).

(See DLL.)

Genlock A process by which computer graphics are synchronised with video images so that they can be mixed using a 'genlock' device, or a genlock feature that is integrated into a video capture card. A practical scenario might be the coexistence of video footage and computer-generated text and/or graphics on the same screen.

GIF (Graphics Interchange Format) A standard graphics file format that produces relatively compact files.

GIF98 A file format used in animated sequences.

GIF Animator *(See Microsoft GIF Animator.)*

Gigabit Ethernet An upscaled version of the Fast Ethernet network standard. It may deliver up to 1000 Mbps access speeds, and is backwardly

compatible with 10baseT and 100baseT Ethernet standards. It may be used over the following media:

- multimode fibre optic cables over a maximum distance of 500 metres
- single- or mono-mode fibre optic cables over a maximum distance of 2 kilometres
- coaxial cable over a maximum distance of 25 metres.

(See Fibre optic.)

Global roaming A term used to describe the process of reading e-mail messages other than by using your local ISP's point-of-presence. The ability to access e-mail for subscribers to international ISPs such as Compuserve is unimportant, due to the availability of worldwide points of presence. Web-based global roaming e-mail services are available which simply provide users with a PIN. Mail may then be read using any Internet access device, such as those available in so-called Cybercafés. The term global roaming is also applicable to mobile telephony, with major digital carriers offering the ability to use services in specified countries, which can be assumed to include all first-world countries.

(See E-mail and POP3.)

Global variable A variable that may be used at any point, or by any procedure or routine of a program.

Glove An item of clothing that provides a means of interfacing a user with a virtual environment, synthesised environment or process control system. It permits user interaction to varying degrees that extend from giving simple hand signals to the user grasping and manipulating virtual objects, which can include musical instruments. Glove applications include:

- telepresence and telemanipulation
- computer-aided design
- computer games
- translating sign language into speech
- researching the effectiveness of manual or semiautomatic processes so as to refine ergonomic environments and minimize the risk of RSI (Repetitive Strain Injury).

Commercial examples include Power Glove and VPL's Data Glove.

(See Bodysuit, LED, Optical fibre and VR.)

Glue A term given to the entities that hold distributed and local applications together. In a client/server context it is an alternative name for middleware. The underlying client/server system architecture may be that

of the Web. Object-oriented glues include all the collective entities that provide the communications between distributed components. Glues in the Web architectural model include the protocols:

- TCP/IP
- HTTP
- SMTP

as well as miscellaneous low-level protocols including UDP. Glues in LANs might include Ethernet and even proprietary protocols. Aside from protocols, which are the lowest level glues in both traditional and modern OO systems, the next level is the programming model, which is of concern to systems programmers, systems architects and programmers. This dictates the method of communications between components, which include:

- remote procedure call (RPC)
- message queuing, where messages are exchanged between components normally using queues, buffers or even pipes which interface more loosely coupled components, perhaps via a WAN
- peer-to-peer, where either component can be the server (sending a message) or the client (receiving the message).

Local glue A collection of entities that unite client components, so that they may operate collectively. OLE, OpenDoc, ActiveX and JavaBeans components require local glues so that their running operations may be coordinated. These common OO component architectures use different local glues, where:

OLE uses ODL (Object Definition Language)
ActiveX uses COM
OpenDoc uses CORBA IDL (Interface Definition Language.)
JavaBeans uses a subset of the Java programming language.

(See ActiveX, JavaBeans, OLE and OpenDoc.)*

Scripting A scripting language such as VBScript or JScript may also be perceived as a glue, as may HTML.

(See JScript and VBScript.)

Distributed glues A name given to the collective entities which bind together (dynamically) running components that are on the client and on the server. As is the case with local glues, standard OO component architectures use different distributed glues.

(See ActiveX, JavaBeans, OLE and OpenDoc.)*

Gold code The final build of a program, which is released for end users. It is the final stage of development, and will have been alpha and beta tested. Programs that are sold conventionally, such as those from Microsoft, and those that are shareware or freeware, are termed gold code.

GoLive An HTML development environment for the Macintosh computer.

Gooey *(See GUI and UI builder.)*

Graphical user interface *(See GUI.)*

Graphics card An electronic assembly used to generate graphics and text. Occasionally it is referred to as a graphics engine or graphics controller. A VGA card is a graphics engine, but is more commonly referred to as a graphics adapter or card. Standard IBM graphics cards include Monochrome Display Adapter (MDA), Colour Graphics Adapter (CGA), Enhanced Graphics Adapter (EGA), Video Graphics Array (VGA), Multi-Colour Graphics Array (MCGA, used on PS/230 Model) and 8514/A. The fastest graphics controllers are of the local bus variety. These connect more directly to the processor's data bus. The graphics card specification of a PC is influential in determining the quality of digital video playback attainable. A video card comprising dedicated hardware for decoding and playing MPEG, VideoCD or Intel Indeo will generally yield improved video playback. The many areas that separate graphics cards include the following:

- the expansion bus type
- 3-D graphics capability
- ISA (Industry Standard Architecture) 16 bit
- VLB (Vesa Local Bus)
- PCI (Peripheral Component Interconnect)
- EISA (Extended Industry Standard Architecture)
- MCA (Micro-channel Architecture)
- screen resolutions supported
- screen refresh rates at each resolution; particularly important at higher resolutions and should not fall below 70 Hz
- what refresh rates are supported by the attached monitor?
- the number of colours possible
- speed of operation
- is it aimed at Windows usage?
- is it MPC-compliant?
- does it require the presence of another graphics card? If yes, what type of connector does it require? A special features connector or Vesa Media Channel connector?
- does it accelerate Video for Windows playback?
- does it scale up Video for Windows video?
- does it have the ability to play Intel Indeo video at high speed?
- does it accelerate 3-D graphics?

- does it have the ability to play video compressed according to one or more standards, which might include MPEG-1 or VideoCD?
- obvious factors that drive a graphics card's performance include the bus width of the graphics processor used, the amount of VRAM (Video RAM) it has, and its interface type.

Graphics controller An alternative name for a graphics card or for the chipsets responsible for generating graphics.

Graphics engine An alternative name for a graphics card or for the chipsets responsible for generating graphics.

Graphics format An image file may be produced and stored according to a number of different graphics file formats, which include CompuServe GIF, PCX, Windows BMP, PIC, TIFF, IMG, EPS and others. The efficiency of various image file formats in terms of the data capacity they consume tends to vary significantly.

Green Book An alternative name for the CD-I Full Functional Specification announced in June 1987, exactly one year after the first draft was issued.

(See CD-I.)

Groupware A name given to a software implementation which provides collaboration and communication across an enterprise's (business's) network solution, or even over the Web. Orfali, Harkey and Edwards define groupware as: '*Software that supports the creation, flow, and tracking of nonstructured information in direct support of collaborative group activity*.' Conventional modern groupware integrates:

- e-mail
- conferencing, such as whiteboards
- telephony, including voice mail
- scheduling
- workflow
- shared document databases
- Internet access.

The best known groupware product is Lotus Notes.

Guernica An early interactive documentary about the destruction of the Basque town of Guernica during the Spanish Civil War. Picasso's famous painting Guernica is used to promote the central theme. Authored by Robert Abel, it was first platformed on the Apple Macintosh computer.

GUI (Graphical User Interface – 'gooey') A user interface consisting of icons, usually facilitating interaction via a mouse, resulting in minimal keyboard use; sometimes referred to as the graphical front-end. The most widespread commercial examples include those of the Microsoft Windows continuum, though others exist in the form of Apple System, OS/2 Warp, and X Window System. When the Windows concept was originated at Xerox PARC (Palo Alto Research Centre), the UI was called a WIMP (Windows, Icons, Mouse and Pointer) environment.

(See GUI builder.)

GUI builder A development tool used to build a graphical user interface, or the presentation element of an application. Most modern UIs are OO. GUI builders provide a means of implementing the presentation element, together with its interaction with objects, applications and application logic. GUIs can be built using all modern multimedia authoring tools, which include Authorware, IconAuthor and ToolBook. Programming tools such as Microsoft Visual Basic and others included with Microsoft Visual Studio also have the capability to construct GUIs using visual techniques. Such development tools, including GUI builders, feature standard UI components or widgets, which include buttons, sliders, drop-down list boxes, scroll bars, dialogs and windows. Static GUI components might include fonts, colours, textures, patterns etc. The GUI will also feature containers which act as receptacles for objects or components, which might be ActiveX or OLE objects. For example, using Visual Basic, a container can be used to integrate OLE objects such as the Media Player or any compatible OLE object.

(See GUI, OOUI, Visual Basic and Windows.)