PC Procurement

As you may remember from the previous issue of Keynotes, the Computing Service is about to readvertise the Preferred Supplier arrangements for PCs. By the time you read this issue of Keynotes the advertisement will have appeared in the European Journal.

Our current suppliers, Viglen, Dan and AST, will have to re-tender as part of the exercise.

The new arrangement will be for two years from 1 December 1997. One thing that will be different is that suppliers are being asked to tender separately for the supply of desktop computers and laptops, so we could end up with six suppliers – three for desktops and three for laptops.

Servers and non-Intel architecture compatible systems, for example Macintoshes, are excluded from this exercise, although it is always possible that we will have to negotiate contracts for some classes of excluded systems should the University's annual spend on a particular class of excluded device exceed 200,000 ECU (roughly £142,000 at the time of writing).

Hewlett Packard printers are subject to separate arrangements and the supply of these devices will not be affected by the PC negotiations.

Doug Moncur

Staff News

We welcome Raymond Drainville as our new Information Officer. Raymond joins us with a background in the History of Art culminating in an MA from Princeton University and involvement in the 'Piero Project', a networked multimedia experiment for teaching the History of Art. He has recently gained an MA in Librarianship at Sheffield and has been involved in multimedia course design and World Wide Web information provision.

Raymond joins us at an exciting time with the implementation of the Computing Service Review recommendations and the generation of an Information Strategy for the University. We hope he will enjoy the challenges of his new role.

Mike Jinks

Performance Problems

The changes which we made to the Mail system around Christmas were very successful and improved performance considerably, but unfortunately during the latter part of the spring term the load of around 25,000 messages per day again along with 500 simultaneous mail users caused severe problems. Thanks to all the users who responded to our plea to keep their Pine and ECSmail sessions short – this was a great help.

Similarly the old Indigo workstation which was pressed into service last summer as a print server (johnbull) had severe trouble coping with the 800 jobs which appeared in the classroom print queue as deadlines approached. The software which drives the controlling terminals adjacent to the classroom printers will be modified soon to encourage the deletion of unwanted jobs.

We hope to replace both these servers next year, funding permitting.

Dave Atkin

Spring Bank Holidays

The Computing Service building, including the Information Desk and entrance lobby, will be closed on the Early May Bank Holiday (5 May) and the Late May Bank Holiday (26 May). All computer systems will be left running with classroom facilities available as for a normal weekend. Arrangements will be made to deal with any major problems affecting the network and to fill the classroom printers with paper.

Brian Souter

Continuation of Windows 3.11 service

Those of you who view the onset of Windows 95 (released August 1995) with trepidation rather than joy will be pleased to note that the Information Committee at their meeting on 17 February *decided* (97/10) "...that the Computing Service should continue to support Windows 3.1 for at least one more academic year (1997/98)."

John Illingworth

Computing Committee Questionnaire to Departments

A draft of the questionnaire described in our previous issue was considered by Computing Committee on 13 March. After a number of amendments have been made it will be ready for distribution to Heads of Department. It will give everyone the opportunity to say how important they consider the various items of software and hardware provision.

The information gathered will help the Computing Committee to decide which software should be provided and funded centrally, and which should be an extra charge on those wishing to use it. The Computing Service Review suggests that this exercise be carried out annually.

John Illingworth

Staff & Graduate Training Needs Survey – Retrospective

Last summer the Computing Service carried out a review of training needs for staff and graduates in the IT sector, and the findings were summarised in the October 1996 Keynotes (first page of the gold-coloured Staff & Graduate IT Training Courses insert). The changes we made as a result of the survey have been in place for two terms, and we are now in a position to report on what happened.

More courses in the vacation

Surprisingly there are nearly as many bad times in vacations as there are in term time. Christmas holidays, financial year end, summer holidays, preparing for new students and so on. However we tried some out-of-term courses at the end of the autumn term. The "Information from the Internet" course was well attended, but none of the others attracted enough people for them to go ahead.

Open Learning Sessions

The idea of these is that people who cannot attend normal courses, or who prefer to work alone, but out of the office, can come along, pick a workbook, and pursue the course of their choice with a tutor on hand to sort out any problems. This is a popular format elsewhere, and in some institutions has taken over from regular course sessions. We have had mixed success with this one – few people, but mostly good feedback. The concept is popular amongst those who have tried it but possibly the word has not yet spread widely enough. Perhaps we should combine this and the previous idea and have out-of-term open learning sessions.

Workshop sessions

These provide the opportunity for users of a particular software item to get together with an expert and thrash out problems with specific techniques or facilities. These were a complete failure. This is odd, because we have tried this before with some success, particularly in the early days of wordprocessing.

Term-by-term scheduling

This was a departure from our normal year-by-year scheduling, and was designed to allow more flexibility – we could modify the next term's schedule on the basis of requests and lessons learned in the previous one.

This doesn't work because it is necessary to submit the room-booking requests in the middle of the previous term, when it is too soon to draw any conclusions. The result is no added flexibility. It turns out that the best way to achieve this kind of flexibility is to book the rooms first and assign the courses afterwards!

The University's Visual Identity: how to find it!

There are files on the PC network N: drive for various components of the University's visual identity. These have been grouped into sub-directories: logo (for the 'University of York'), totem (for totem-pole images to go at the left hand edge of pages, or individual items in the sections subdirectory), woodcut (for 3 section horizontal bars), and slides (Microsoft PowerPoint master slides). If you load these images into WordPerfect documents, remember to use the 'Image on Disk' option to avoid copying these large files to your documents – if you have done this in the past you may need to update the filenames to locate the images in their new homes.

These images are mostly in the commonly used TIFF format, and load directly into WPWIN6.1, PowerPoint and other applications. However WordPerfect 7 (under Windows 95) has been dis-improved to the point where it will not load these images, although its predecessor did [it computes the image size based on an incorrect idea of print resolution, and claims the image would be larger than 27"]. The only workaround so far is to load the images into the WP-Draw module, and save them in WordPerfect's own WPG image format. We have done that where required for the totem pole images, but we hope in time to get a fix for WordPerfect 7, and then be able to delete these converted images.

The totem pole images should have the top and bottom sections forming a triangle with the corner of the paper, not a line running into the corner (all the complete images here do that), and also look best when printed to the edges of the paper. Few computer printers or copiers can print right to the edge, but if you are producing a master for further reproduction it is worth printing it with a large margin on a larger paper size – the central colour PostScript printer can print up to A3 sheets (see **http://www.york.ac.uk/services/cserv/help/print/pra3col.htm**).

The University visual identity asks for text of letters and documents to use the Palatino font. This font is only available on PostScript printers (as used for the Computing Service central and classroom print queues), which have their own processor and memory for interpreting the PostScript page layout definition language. Most cheaper laser or deskjet printers do not support the PostScript language, and therefore cannot print Palatino. If you need to produce documents using Palatino, you should either use the central printers, or some other PostScript printer. We are investigating the possibility of extending the range of fonts on networked PCs so that Palatino will be available on all printers, but this may take some time.

John Robinson

Future changes

The most fruitful area at the moment seems to be exploiting the overlap between the basic and introductory courses for staff and graduates and the ILIAD courses for undergraduates which cover the same ground.

If the suggestions contained in the Computing Service Review are carried out, then the major change might be that many courses will become chargeable, despite the belief of those filling in our course feedback forms that departments should not be asked to pay for Computing Service training (Keynotes 23 4 Feb 1997 p5).

John Illingworth

Software training for administrative staff

The Computing Service currently offers administrative staff training in such areas as:

- General PC applications such as WordPerfect, ECSmail, Quattro Pro and Paradox.
- Administrative systems such as Powerhouse (this provides an introduction to using the MAC system) and Paradox for Data Warehouse Users.

Full details are contained in this edition of Keynotes. Staff can attend these courses free of charge simply by registering with the Information Desk (email infodesk, ext 3838).

If you feel that you and your colleagues would benefit from additional administrative computing training, for example your department might want a short course on using the World Wide Web, or if you require copies of Computing Service training materials, then contact Richard Jardine (email rrj1, ext 3739).

Richard Jardine

MAC News

Logging out of MAC

Please remember to log out of MAC in an orderly manner at the end of the working day. A number of users are often logged in all weekend, leaving programs accessing the MAC data files. A facility automatically runs each weekend to reorganise the MAC data files, but this is not able to run successfully if users leave programs accessing these data files.

Trevor Bolton

Speeding things up

MIS have been investigating the recent poor performance of the MAC applications. Problems have been identified with the structure of the data files, so over the past few weekends the data files have been restructured and re-organised to improve performance. We are continuing to monitor the performance of the applications.

Trevor Bolton

The end of WPS

As advertised in previous issues of Keynotes, all WPS files were removed from administrative user accounts and archived onto magnetic tape on 7 April.

Trevor Bolton

MAC Spooler Files

Would all users please check and remove any unwanted report files from their spooler at frequent intervals. Performance will be improved if you reduce the number of spooled files.

Trevor Bolton

UCAS Applications

Departmental Admissions Tutors should note that the UCAS application will continue to be populated in the ADVAX2.DEPT accounts for this current cycle, but will be discontinued from the 97/98 cycle. The data warehouse should be used in place of these accounts.

Trevor Bolton

MAC Steering Group: a reminder of its function

The MAC Steering Group continues to meet regularly with the formal purpose: "to oversee the MAC implementation programme in order to realise the benefits to both academic departments and the central administration from the introduction of the MAC software".

Its terms of reference are:

- To draw up a programme implementation plan consistent with available resources, focusing on delivering achievable benefits.
- To establish management and monitoring procedures for the programme as a whole and for individual projects.
- To monitor the implementation of the programme.
- To ensure that all stakeholders are fully informed of plans and progress.
- To advise the Information Committee on policy implications of the implementation, particularly in the areas of major changes to the software or working practices, information management, and resources.
- To report to the Information Committee.

Notes of MAC Steering Group meetings are distributed to Heads of Department and are available from Margaret Newton (email men1).

Trevor Bolton

Finding information on the Internet: Women's Studies

There is a wealth of information concerning women on the Internet, so much so that navigating and keeping up is a problem. The Women's Studies Information Resources page, accessible from York Information Connections, organises access to resou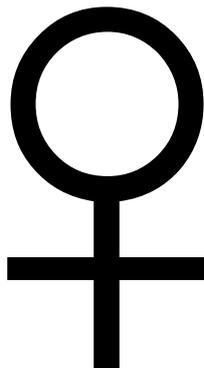rces on women to make it easier for you. You will find it on**http://www.york.ac.uk/services/ library/subjects/women.htm**.

Directories

The BUBL Subject Tree features women and society and feminism at **http:// www.bubl.bath.ac.uk/BUBL/ women.html** covering archives, websites, mailing lists and many resources. The Yahoo sites are also very extensive. Try **http://www.yahoo .com/Social_Science/Women_s_ Studies/**. A more populist approach is at herspace on **http://www.herspace .com/herspace/herspace2.html**.

Helen Fallon has compiled a directory of freely accessible gender related Internet resources in connection with her research and has made it available at**http://www .dcu.ie/staff/hfallon/thesis.htm**.

Academic sites

Women's Studies academic sites are prolific and reflect the world-wide interest in feminism and related studies. One of the oldest established and best is at the University of Maryland, called InforM, on **http://www.inform.umd.edu./ EdRes/Topic?WomensStudies/**. This database was established in 1992 and features collections of conference announcements, calls for papers, a picture gallery and US Government documents. In addition there are collections of texts, bibliographies, reference materials and course syllabi. Two useful collections are on women in computing (appropriately) and government and politics. Feminist film reviews are also collected here.

Another major US site of interest is at the University of Wisconsin-Madison on **http://www.library.wisc.edu/ libraries/WomensStudies/** which gives access to, among other resources, *Feminist Collections: A Quarterly of Women's Studies Resources.*

European sites are represented, from Helsinki, Norway, Antwerp, Italy, Germany and the University of Warwick, and also one from New Zealand.

Regional resources and development

Many studies on women's issues explore conditions in the Third World. The regional resources section on **http:// www.york.ac.uk/services/library/ subjects/womenint.htm#regional** includes links to the Library of Congress Handbook of Latin American Studies, SAWNET (South Asian Women's NET mailing list forum, and a new Women of Africa link to Lawrence University.

Look also at **http://www.york.ac.uk/ services/library/subjects/ womenint.htm#development** for links to other resources, such as Women, Ink., *Resources on women and development* at **http://www.feminist .com/ink.htm**, which markets and distributes books on women and development worldwide. The 1997 catalogue lists nearly 200 new titles.

Discussion lists and forums

Women have a high profile on the Internet and there are discussion lists on everything you could possibly imagine, from a feminist or women's viewpoint. Joan Korenman has collected the most comprehensive list of these at **http:// www-unix.umbc.edu/~korenman/ wmst/forums.html** and she always keeps it up-to-date so it is a most valuable resource. WMST-L is an international electronic forum and one of general academic interest. To join, follow the link from **http://www-unix.umbc .edu/~korenman/wmst/wmst- l_index.html**. But be warned that it will swamp your mail box, so you will have to check it every day at least once, or instead opt for the digest.

Bibliographies

Most bibliographies figure in collections in academic sites. *Wisconsin bibliographies in women's studies* is a series published by the University of Wisconsin System Women's Studies Librarian's Office at **http://www .library.wisc.edu/libraries/ WomensStudies/homemore .htm#bibliographies**. One of the newest is *Gender and Creative Writing: A Bibliography*, by Susan Hubbard and Gail Stygall (1997). You may also be interested in topics as diverse as *Ecofeminism: An Introductory Bibliography*, by Julie Knutson (1995) or *The Glass Ceiling: A Selective Bibliography*, by Melba Jesudason, assisted by Janet Rother-Harris (1995).

Electronic journals

Access to electronic journals and table-of-contents services of especial relevance to Women's Studies is at **http:// www.york.ac.uk/services/library/ subjects/womenint.htm#ejournals**. A list of Women's Studies journals with prices and subscription details and additional Internet publications is at **http://www.feminist.org/research/ pubjourn.html**.

For further information please contact Elizabeth Heaps, Women's Studies Librarian, email aemh1.

Elizabeth Heaps
J B Morrell Library

Apple Mac Classroom to Close

The six Apple Macintoshes provided by the Computing Service in room L/051 will be withdrawn from service on 31 July 1997. The equipment in use dates back to late 1993 and the hardware configuration is no longer suitable for running current versions of applications. The time has come for them to be retired.

Since the room was set up, University policy has defined the PC as the standard, supported access device to the campus network and this approach has been continued in the recommendations of the Review of the Computing Service where Apple Macintosh support is a non-core service. Accordingly, the Apple Macintosh systems will not be replaced.

We intend to continue providing one Macintosh, located in the User Area of the Computing Service building, to provide a residual file-transfer-only service. Its use will be under the control of the Information Desk staff, and it will be available during normal opening hours.

Important!

If you use the classroom Macs and have Word or WordPerfect documents that you will need after 31 July you must convert them for use with WordPerfect on a PC before that date. See the Computing Service's Hint & Tips area on YorkWeb for details on how to do this:

http://www.york.ac.uk/services/cserv/help/

Mike Brudenell

PS. The Macintoshes being removed are being placed in storage for the time being. Please don't email me asking what will be happening to them or if they will be for sale. Thanks!

Withdrawal of GatorBox Service

The GatorBox is a device attached to the campus network that can provide certain filestore services to users of networked Macintoshes. In particular, it can be used to make your home directory on the central filestore appear as a "disk" on a Macintosh's desktop (akin to the "M:" drive on a Supported Connection PC).

However, the GatorBox has proven unreliable in use and has suffered several problems with its controlling software. New versions of this are difficult to obtain and often introduce more problems than they fix. This, coupled with the apparent impossibility of purchasing a maintenance contract for the GatorBox hardware, means it is no longer practicable to continue this service.

The majority of Macintosh users will not be affected by the withdrawal of this service.

Are you currently using the GatorBox's services?

If you are using your Macintosh's "Chooser" and its "AppleShare" icon to connect to the "unixfs" fileserver in the "CompServ" AppleTalk zone then you are making use of the GatorBox's services.

After 31 July these will no longer be available. Instead you should start using an ftp program – such as "Anarchie" or "Fetch" – to transfer files between your Mac and the central server. The name of this machine, which you will need to tell Anarchie and/or Fetch, is ftp.york.ac.uk.

Recent versions of Anarchie (2.0.1) and Fetch (3.0.1) include extensive built-in help about their use. They also support drag-and-drop, enabling files to be transferred merely by dragging them between windows.

Mike Brudenell

CHEST/Corel Agreement signed

CHEST have signed an agreement with Corel, the owners of WordPerfect, to allow universities to buy licences at an advantageous rate. This agreement differs from the one previously in force with WordPerfect and later Novell, and covers a wider range of products, including Corel Draw, Ventura (a DTP package) as well as the WordPerfect Suite (WordPerfect, Presentations and Quattro Pro), and Office Professional (the WordPerfect suite plus Paradox and some other applications). These are 'Academic Edition' products, which lack some components (eg WordPerfect has no Clip Art) that are present in the full commercial products (see **http://www.corel.com/** for details).

Please note that there is no mechanism for staff or students to purchase software for their own machines under this agreement, but anyone wishing to do so can buy the same 'academic edition' products at very reasonable prices from resellers such as Pugh (**http://www.pugh.co.uk/**), Phoenix (01759 304885) or Software Corporation plc (01904 333333).

John Robinson

Windows 95 applications

The range of applications available on the Windows 95 Trial Service has recently been expanded, as was announced at last term's Computing Forum. The applications are shown in the **Start | Programs** menu under the functional headings:

Accessories
Standard items in Windows 95

Databases
Paradox and Powerplay

Graphics & Presentations
ArcView, Presentation 7 and Stanford Graphics

Maths & Stats
Maple, Minitab, SPSS and Genstat

Network Access
Netscape, eXceed, Telnet, FTP and PC-Pine

Programming
Borland C++, and Delphi ('visual Pascal' with database access)

Spreadsheets
Quattro 7

Text Processing
Envoy 7 (manual reader) and WordPerfect 7 (which now has working QuickTasks, Address book and Perfect Expert)

Utilities & Extras
HTMLedPro, MapThis and AcroRead (document reader)

During the installation of all these packages on the test server, concerns were raised about the hard disk space requirements of the full range of applications that will be available after the upgrade. As you will be aware, modern applications suites do occupy a large amount of disk space – the Corel WordPerfect Suite full installation is some 170Mb, and even the 'Compact' installation of WordPerfect alone is 30Mb.

Of course, in a networked environment, most of the files involved are held on drives on the servers, but some files must reside on the PC's hard disk for the applications to function correctly, and for the applications in the list above these total around 20Mb.

With a newish PC with a large hard disk, and Windows 95 loaded from the network, there is unlikely to be a disk space problem. But we are aware that not everyone is in this fortunate position, and some users have older machines with smaller disks, nearly full of data files and installed packages. It would be unwise, therefore, for an automatic installation process to assume that the PC's hard disk does have 20Mb free. [In general Windows 95 and applications use a lot of disk space for swapping and temporary files, and lack of free disk space (say less than 10Mb) can cause instability and lost work].

We therefore had to develop mechanisms for installing the applications on an 'as-needed' basis, so that users who do not, for instance, ever invoke the programming languages C++ or Delphi did not have to provide space for the files required for them. This took some time, and did delay the availability of the new applications.

At the last Computing Forum meeting there was discussion of the recommended machine specification for running Windows 95 – it is worth noting that the installation of these packages is all done on 486 DX2/66 with 16Mb of RAM and a 200Mb hard disk, so the figure of 32Mb RAM raised at that meeting is very much 'preferred' rather than 'required'.

John Robinson

ArcView 3 on Windows 95 PCs

The full upgrade of the desktop GIS ArcView to release 3 is now released on supported Windows 95 PCs. This is functionally identical to the version running on the UNIX systems, and includes full support for the Spatial Analyst (raster processing) and Network Analyst (route finding and path analysis) extensions.

Users should be aware that it is *not* possible to move backwards from ArcView 3 to ArcView 2 (eg as running on the Windows 3.1 systems) but existing work should transfer without special action to ArcView 3.

On the Windows 95 system all the current spatial datasets are available, together with the (US based) ArcView Tutorial 'tour'. The York datasets, the K: drive on Windows 3.1, are accessed by adding a drive with the specification \\goodram.york.ac.uk\/mounts/datasets.

Windows 3.1 users should seriously consider upgrading to Windows 95. On the Windows 3.1 platform ArcView 3 does not support the full range of techniques, nor the extensions; we will not therefore be upgrading the Windows 3.1 provision from ArcView 2.1, the version that has been running for some time.

New and upgraded spatial data

We have recently received the latest revision of the Bartholomew digital map data. The existing Bartholomew data will be upgraded as time permits; there are no adverse implications for existing applications using this data. Some of the datasets contain additional information – for example the British Roads database now has every road identified with its Department of Transport 'number'.

We now have working digital map data for Europe. This data, from Bartholomew, is nominally offered at a resolution of 1 : 1000000; much of this data is of a substantially higher resolution, at around 1 : 250000 (the same as for Great Britain). The European data may be recognised by the "_eu" suffix used in the names of the datasets in $BARTS (Arc/Info and UNIX

ArcView users), or \\goodram.york.ac.uk\ /mounts/datasets/bartholomew (Windows 95 users of ArcView). At the time of writing the following European datasets are online:

gazet_eu Gazetteer of place names (Arc/Info: Point cover)

admin_eu Administrative Boundaries (Arc/Info: Polygon cover)

coast_eu Europe coastline (Arc/Info: Line cover)

rail_eu Railways and Ferries (Arc/Info: Line cover)

roads_eu Roads, with class flag (Arc/Info: Line cover)

river_eu Rivers and Canals (Arc/Info: Line cover)

towns_eu Towns and Villages with size flag (Arc/Info: Point cover)

urban_eu Major conurbations (Arc/Info: Polygon cover)

Full details are to be found in the Spatial Data web pages, under the GIS at York home page **http://www.york.ac.uk/ services/cserv/sw/gis/gis-at-york.htm**.

A 'corrected' version of the North Yorkshire Ward boundary data, derived for the 1981 census, is now available on $BOUNDS81/wards_ny (Arc/Info and UNIX ArcView),\\goodram.york.ac.uk\ /mounts/datasets/boundaries/doe81/ wards_ny (Windows 95 ArcView). This data appears to be topologically correct and to have correct ward names.

Recent news of CHEST negotiations suggests that 'affordable' prices for Great Britain Elevation data and for the widely advertised 'Cities Revealed' aerial photography data of British and European cities will soon be available.

Any users who think that these data, other data already offered by CHEST but not currently accessible at York or, indeed, other data that might be considered for the future, are encouraged to discuss their needs with Peter Halls (email pjh1).

Peter Halls

A day in the life of...

Rob Fletcher, Graphics Co-ordinator
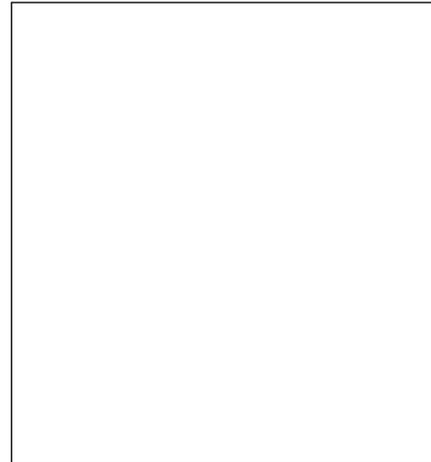
Many of you will know me as the first person to contact when you have questions or problems which relate to the use of computer graphics. However, in common with all the members of the Applications Support Group, I have a background in other academic subjects.

My first degree was in the Biological Sciences and it was during this that I first learned to program using Algol 60 (way back in 1968). My first flirtation with computers however was back at school when I gave a talk to our "Ions Society" entitled "Deriving the Full Adder Circuit using Boolean Algebra", and also organised trips to "see and play" with early Elliot Automation computers at a local RAF camp.

My second degree investigated information processing in sensory nerve cells. To this end I had single nerve cells on-line to a computer. The trick was to (a) not kill the nerve cell, (b) keep it alive long enough to make it do something, and (c) make sure all the data pathways to the computer were working! During the course of my D.Phil I wrote numerous programs to capture and analyse the data thus collected. (A major undertaking was a 5-way factorial ANOVA with 2 random factors – easy nowadays with the likes of SPSS and Minitab, but then, if you needed some statistical procedure, the likelihood was that you would have to write it!).

After completing the D.Phil I joined the Psychology Department as a Research Fellow for 3 two-year contracts. During this time I wrote a huge number of programs for capturing and analysing data. A lot of the real-time programming was on a PDP-11 with a GT-40 display unit. I developed many novel systems for interactive graphical display and analysis of EEG, EKG and skin conductance data.

During the period as a research fellow I also used many of the newer statistical techniques such as LISREL, MDS as well as many other well known multivariate procedures. By then, SPSS was commonly available, but did not offer such a wide range of procedures as today, so procedures such as the above were bought as source code and needed to be implemented, with all the rigorous testing that entails.

I joined the Computing Service in 1981 with responsibility for graphics. In the early days we were all expected to be able to program and offer advice and help to others. We also tried to overlap skills to some extent, and I looked after some of the statistical packages. When another emerging technology hit the scene, I took on the added responsibility of databases. The software in those days was a Computer Board funded system called RAPPORT, 1022 DBMS and SIR. By then, microcomputers were appearing at reasonable cost and dBase II was another DBMS which needed support.

Over the next few years the two areas of graphics and databases grew, and finally a new post was created to take over database systems, leaving me to concentrate on computer graphics. So, what does all this mean in a typical day?

First, check the email and scan for any potential local disasters posted directly to me or via the UHL system on the Information Desk, for example, "Uniras is not working". Next, check for any bug fixes to problems I have emailed out to various lists and helpdesks and Usenet News – as a point of contact it is often sensible for me to co-ordinate questions and answers on behalf of users of the

software. This contact is necessary because much of our graphics software is either public domain or freeware gleaned from the Net. Most of this type of software still comes with the source code and thus known problems can be fixed and the software re-built. Bugs in commercial software often have to wait for the next release. The previous comments also hint at some of my activities in searching out useful software via my many contacts around the world in order to build up a portfolio of graphics software for users at York. I have been actively involved with Brown University in the USA helping with the development of software for multiplexing the X-Protocol, checking, building and debugging the IRIX version. I am also on the developers team for a network wide (worldwide even!) effort producing a program called The GIMP, which will be a graphics program to rival the de facto standard, Photoshop. I was also a consultant to AVS/UNIRAS during the early development of their new graphing product GSharp. I am secretary of the UK Uniras User Group, and thus any email here may need action! Talking of groups, I am also the chairman of the UK Chapter of Eurographics and sit on the Executive Board of Eurographics, and one of the jobs to is to organise a conference once a year, as well as keep the Chapter running and think of new services we can offer our members.

Once the email is out of the way there is the usual paperwork, licences to renew, and so on. Of course, software does not stand still and there are always new versions to install. It would be nice if everything always "worked out of the box", but this is not usually the case, and some testing and tailoring is usually necessary. Before new versions can replace the older versions, a cycle of installation, tailoring and testing needs to be done carefully – the idea being to not have too many unpleasant surprises when the new system goes live, both for the users and me.

At any time the phone may ring (and usually does) with someone wanting advice on something to do with graphics; such topics are "which scanner?", "which OCR software?", "which is the best graphics package to do so and so?", "how do I write a graphical user interface?" and so on. Of course, there are numerous questions to do with the World Wide Web and the best way to use and produce graphics. If simple advice cannot be given over the phone, then of course the person is asked to make an appointment to come to discuss their problem and/or requirements with me.

A recent example was from Tony Myatt (Music Department) who was working with Peter Fluck (co-founder of "Spitting Image"). He wanted to know how to track different parts of a moving sculpture (so-called, kinetic sculptures) using a video camera in real time. The idea was to use this positional information to control music generation algorithms so that the sculpture "made its own music". I checked out shape recognition and so on, but this was not really possible because elements of the sculpture would pass in front or behind others (thus changing their shape). The motion of the sculptures is chaotic and thus you cannot use "prediction algorithms" to work out where an object might "re-appear" after occlusion by another. I developed a system for identifying elements of the sculptures based on a "colour fingerprint" and further refined this over a period of a few weeks. Problems still exist, but so successful has the venture been that an example of the sculpture, tracking and music system was commissioned by the Tate Gallery at St. Ives and has been installed since late January and runs until the end of April. To date the system has performed flawlessly in the Rotunda Room from 10.30 am until 17.30 pm every day – the sculpture merrily whizzing around doing its dance, a concealed video camera "watching" it and an Indy computer tracking the movement, passing this information to the music systems which generate MIDI data to drive a Roland SC88 Pro to make music.

I see my job as providing baseline graphics programs and support as well as more advanced support to research staff and groups. As can be seen from the above collaboration, not all graphics software can come from a box. To be at the leading edge of research and development then necessarily the techniques employed have yet to be developed. I see myself in a unique position of being able to offer advice and help (where needed) to those who require graphical techniques for the advancement of their research effort. The techniques may be new forms of display of data, new forms of interaction with data, graphical user interfaces to control data and so on.

As an added bonus I also help and advise on the use of sound on computers, either as raw data (and its subsequent processing) or MIDI. I am very much involved with the pilot ATM project which aims to link the Electronics and Music Departments at very high speed. The multiplexing software mentioned above will be used to distribute real-time user interfaces to multiple machines on the network. I will also be advising on the use of graphics both for display and interactive generation of music, within the realms of Music Technology.

All in all, it's never dull. Graphics pervades all we do on computers. The only regret I have is that fewer people program these days, but when they do there is some compensation by virtue of the fact that it's much harder and challenging. My challenge is to somehow keep one step ahead, anticipate what may be useful in the near future, and to make sure my knowledge is modern and up to date. By keeping a high profile on the Internet I have made a large number of extremely good contacts worldwide. I keep in touch with these people for both personal and academic reasons. Of course, once you are known, you are expected to provide answers as well as ask them!

When I get home I try to relax with my family, 2 elderly cats (17 and 15) and a young golden retriever. If I can chuck my daughter and/or friends off the computer, then I may do some music composition work using various software systems, a DX-11 keyboard all coupled through to a small 4 track studio.

I am teaching myself to play the guitar, very slowly. Like my computing, my music is all self taught bar the early excursions as a 10 year old. I get my daughter (12) to do the "real music" and add anything from recorder to saxophone, from piano to violin. Somehow the younger generation has the knack of making you feel very inadequate!

Rob Fletcher