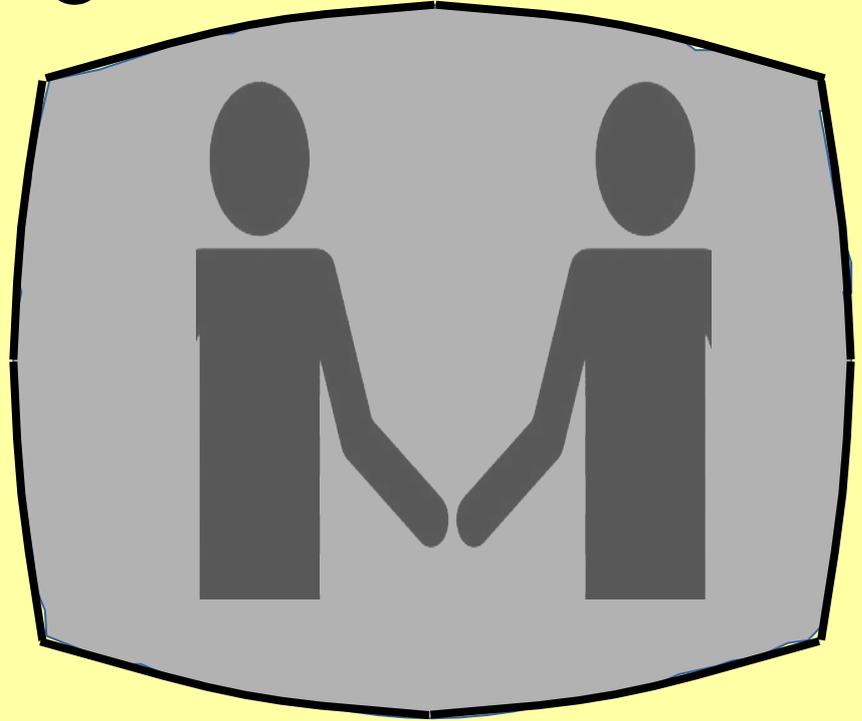


# LOLA



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The original appears to have page 7 missing, or possibly page 8 should be no. 7. It is undated but the text suggests it was written in approximately 1983.

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Alan Cooper, April 2021

# Computing for the End User

Modern Computer Technology is only a few decades old and could be said to be still in its infancy, yet in that short period of time we have seen the performance and reliability of computer hardware increase more than a thousand fold. In the sixties, commercial batch processing systems became common, and in the seventies on-line systems were extensively developed, but it was not until the eighties that computing started to be put directly in the hands of those who have the business problems to solve - the business professional (or, as we call them, the 'end user').

Data Processing Professionals - systems analysts, computer Operators, programmers and the like - are and will continue to be a vital part of any D.P. installation such as LOLA, but the march of technology has begun to make it possible for some business problems to be addressed by non D.P. people. The term 'Personal Computing' describes the use of D.P. resource by an end user, in order to develop, run and maintain his or her own computer application(s). The hardware part of that D.P. resource may involve a large mainframe, or a micro, or anything in between. The software used may be one or more of the many 'user friendly' packages now available - some quite generalised in nature, others geared to a specific business requirement.

The essential corporate computer applications will, as far as one can tell, always remain in the domain of D.P. professionals, as will a large proportion of all other, less vital, computer applications - even down to the personal computing level. The hard learned skills and sheer productivity of D.P. Staff are essential for the maintenance, development and integrity of large, complex systems, but towards the simpler, smaller end of the scale, 'essential' becomes 'desirable' and eventually often positively 'undesirable'.

There are many aspects of current computer systems that end users feel do not satisfactorily address their needs; for example -

- although an application may hold all relevant data, that data is not made available in a form which helps the user to carry out his management role.
- use of the application is very structured and requires training and perhaps frequent reference to manuals.
- Ad hoc problems cannot be addressed by the application.
- Changes to the system can take months to implement, or may never get implemented.
- Users often have difficulty in specifying their total needs in advance, yet this is a necessary prerequisite of most computer systems, as changes are difficult to make later.

Some of these problems can, in many instances, be addressed by 'personal computing' methods.



## Support for End Users

LOLA has set up two end user support groups to help end users become self sufficient in the use of personal computing facilities which will help them with their business objectives : The Personal Computing Group supports mainframe-based facilities, while micro-based systems are supported by the Micro Support Group.

This paper deals specifically with mainframe based personal computing facilities and hence only the role of the Personal Computing Group (PCG) is described here. PCG's functions can be briefly outlined as follows:

### CONSULTANCY

- To advise on the general approach to application development.
- To advise on the selection of the most appropriate personal computing product for a given task.
- To provide system design assistance..
- To provide assistance in justifying the usage of Personal Computing facilities.

### ● EDUCATION

- To provide training, (including courses) for each of the mainframe personal computing products supported by LOLA.
- To advise users on individual education requirements.
- To provide user guides and other documentation.

### ● ADVICE

- To assist users in problem determination and resolution.
- To provide advice on product usage.
- To advise users on methods of accessing operational data.

### ● DATA MANAGEMENT

- To provide systems for retrieving and collating data from any of LOLA's databases or files.
- To provide extracts of operational data as required.

### ● ADMINISTRATION

- To maintain records of personal computing systems developed by LOLA and end users.
- To co-ordinate training.
- To circulate a Personal Computing Bulletin at regular intervals.
- To monitor user satisfaction with the Personal Computing Service.
- To maintain a directory of users.
- To administer and schedule data extract procedures.

### ● TECHNICAL SUPPORT

- Co-ordinate user hardware/software requirements.
- Evaluate and test new products.
- Provide user-friendly interfaces with Personal Computing products.

PCG was formed in July 1981 as an autonomous group within LOLA, responsible to the Director of Computer Services. In 1981 it consisted of four staff and has now (August 1983) grown to seven. Additionally, one post in the Technical Services Section is financed from the personal computing budget.

The costs of PCG are recovered by direct charge to end users of the mainframe personal computing service. The charge consists of two elements - a sum for time 'logged-on' to the service and a sum for the machine resource consumption.

In 1983/84 the following PCG costs will be recovered in this way :

Staff	£ 60,739.
Disk Storage	£ 29,250.
Software	£ 23,530.
PCG Terminals	£ 10,695.
User Manuals	£ 900.
Other	£ 9,886.

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£135,000.

Until the present time, communication to the LOLA mainframe PC service has been almost exclusively via dial-up lines and teletype terminals. Significant improvements in speed, reliability and function will come about with the availability of personal computing facilities on the VDU's of the LOLA (IMS) network. This availability started in May with just one VDU per borough. By August/September this will have risen to about sixty, and by the Autumn potentially all VDU's on the network could be made 'dual function'. While many of these VDU's were not located with personal computing users in mind, they nevertheless afford a major expansion in the availability of the personal computing service.

Until now, users have not only had to put up with the limitations of teletype communications but also poor response times, due to the inadequate computer resource available at LOLA. With the installation of an IBM 3081D, giving three times more performance than our old hardware, a significant improvement can be made in that area, (at least until such time as that machine is outgrown!).

The foregoing constraints on the service have meant that personal computing growth has been inhibited - nonetheless, the service has grown more than 100% in the last two years. It is only now that adequate hardware is available that PCG can start, in conjunction with local computer development staff, to increase the awareness among borough staff of the personal computing facilities available from LOLA.

# Personal Computing Software

Nearly all the software currently available on LOLA's PC service is based on a common programming language - APL. Like, for example, many forms of BASIC, APL is an interpretive language - that is, code can be entered at a terminal and executed directly, without the need to run a compiler against that code. APL programs can be executed and amended interactively, which makes it a very productive language for generating applications.

APL handles data in the form of single elements, strings or tables - easy structures to understand. It will not directly handle complex data structures such as are found in many LOLA databases and files, but these files were never designed to be used by end users.

The notation of the language incorporates many strange characters not seen on an ordinary QWERTY keyboard. Use of these characters makes for very concise code, but necessitates a special keyboard. These keyboards are available for many teletype devices, and micros. Availability on the Data Logic VDU's (PTS 2000 models only) is scheduled about now. Many applications written in APL, including ADRS2 and ADI, do not require terminals with APL keyboards, but any programming in APL obviously requires such a keyboard.

It is estimated that much less than 10% of all end users have more than minimal APL knowledge - the vast majority find products such as ADRS2 and ADI make the task of learning a programming language unnecessary.

## ADRS2

ADRS stands for A Departmental Reporting System and is a generalised IBM supplied APL package providing an easy to use environment for entering, storing and processing information and for producing reports.

Communication with ADRS2 can be via a teletype terminal or 3270 type VDU (APL keyboards are not necessary). The 3270 type terminal offers spreadsheet type data entry, update and display facilities.

ADRS2 holds information in a 'rows and columns' structure and the user must initially describe the characteristics of his data (maximum no of characters, numeric or alphabetic etc.) to the system. Changes to the structure of the ADRS2 database can easily be made at any time.

Once the database has been defined, the user may begin to enter his data and ADRS2 provides several simple methods for this purpose. Alternatively (or additionally), data may be loaded into the database from other computer files (eg IMS database extracts) or APL workspaces.

ADRS2 offers many facilities for the manipulation of data. Information may be sorted and calculations may also be performed. The function available in ADRS2 can be further extended by the use of APL if required.

Interactive data analysis, inquiry and report generation facilities are provided. The latter allows for multiple page heading lines, subheadings, footnotes, automatic subtotalling and summarisation. Graphical output can also be produced, in the form of graphs, bar charts and histograms.

ADRS2 is in extensive use both within LOLA and in the four authorities.

## ADI

ADI stands for APL Data Interface. It is a collection of programs which enable a user with an APL terminal to interrogate extracts of any of LOLA's databases and files, and to obtain (more or less) immediate response to his enquiries.

ADI works on extracts of databases rather than live databases for several reasons:

1. If it worked on a live database it would 'shut out' IMS users of that database while it was working.
2. An extract contains only those data items generally required for analysis and is, therefore, smaller and hence quicker to access than a database.
3. Extracts from different databases can be combined into 1 file: e.g. Data from several payroll files plus the overtime control file plus the GPA personnel database can be merged into one combined extract.
4. Additional data can be added to an extract in two ways:
  - a) by using ADI update functions to create new data items, derived from other items by calculation, e.g. the payroll files hold a rate of pay for each employee as a weekly or monthly value, depending on when he is paid. It is a simple matter to set up a new field, which holds an annual rate of pay.
  - b) by adding additional records, either by entering them at the terminal or by conventional data preparation methods to produce a file of new data which is merged with the extract data as described at (3) above. An example of this is the addition of vacant post data to a payroll extract in order to produce an establishment file.

Once the parameters for the extract are defined by the user the extract is normally automatically refreshed every month, or to an agreed timetable.

Once the required extract of data is obtained, how do you use ADI to analyse it? The procedure is quite straightforward:

1. Logon at your APL terminal.
2. Load the ADI workspace (')LOAD 10 ADI')
3. Enter 'INQ' : ADI then asks for a filename.
4. Enter filename : ADI then asks you to enter criteria for selection of records.
5. Enter your selection criteria : ADI asks you to name the function that you wish to carry out.

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A note on charging for ADI usage : There is no APL charge for creating the database extracts, but ADI usage at a terminal is charged out at a slightly higher rate than for other APL services.