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AGONY AND THE ECSTASY

Many of us would be familiar with the works of the world famous painter and sculptor Michaelangelo who in his lifetime has contributed in no small measure to the world of art. An aspect of his life one may not know, however, is his penchant for perfection. In order to draw or mould a human figure, he was supposed to have stolen dead bodies from mortuaries in the dead of night and dissected them. We in the computer profession too have such dedicated computer professionals—right here, in our midst—Professionals who work with computers in order to excel in what the designer had originally thought of and made—But we need more of this breed. Let the community know that the Indian computer professionals would be perfectionists to the core—May many more of us become Mihaelangeos.

CORRESPONDENCE COURSE

I am extremely glad to inform you that professor V. Rajaraman of IIT, Kanpur (who in our profession doesn’t know him) has consented to direct the FORTRAN-IV correspondence course for the CSI. He does not want any honorarium. I am wondering if we would not institute a prize in the money (that normally would have been paid to him as honorarium) for the best student of the course. He would be assisted by one or two others for correcting the answers of students. While more details of his course with firm dates, modus operandi, fees etc will be published in the July issue of Newsletter, I am sure some of our big computer centres in the cities will permit the students to run programs free of charge. Mr. F. C. Kohli, the past president and Chairman, Education Awards Committee has agreed to provide free time on the Burroughs machine of the TCS for the participants. I am sure many others will also contribute their mite. I must add that this is a unique experiment and members will exploit this opportunity.

MEMBERSHIP CERTIFICATE

We have been seriously considering the possibility of awarding membership scrolls to our members. Some very nice designs have also been poured in. What bugs me is the fact that once a member gets a certificate, he may not show much interest in the activities of the society and may not renew his/her subscription also. Another factor to be considered is—do we give certificates to Institutional members also—if the nominee changes, would we give another certificate to the new nominee? But these problems shall be overcome.

In order to maintain/introduce standards in the entry of new members, I must point out that if an application form were to bear the signature of the chapter Managing Committee members or the National Council members, the grade of membership requested by the new entrant would be accorded without any reservations. If the attesting signatures are from some other member, there might be a delay in conferring the appropriate grade of membership. I think chapter Managing Committees must have a say in the award of the appropriate grade of membership.

CSI 78

It is heartening to note that the Chairman Program Committee Dr. U.K. Banerjee is leaving no stone unturned to make CSI 78 a grand success. He and Mr. Kalstra, Chairman Organising Committee promise a rich bill of fare indeed. Have you started working on your papers?
Technical News

ADVANCED PROGRAMME ON COMPUTER BASED INFORMATION SYSTEMS:

An Advanced Program on Computer-Based Information Systems Analysis and Design will be held in the Campus of the Indian Institute of Management, Ahmedabad, from August 7 to November 5, 1977.

For application forms and queries, please write to Dr. Mohan Kaul, Indian Institute of Management, Vastrapur, Ahmedabad 380 015. The last date for application is July 2, 1977.

TELEPROCESSING—COMPUTER NETWORKS

European Symposium on Data Communication (EJH von Neumann Society for Computer Sciences announces):

An INTERNATIONAL SYMPOSIUM in Budapest 3-7 October 1977

With sponsorship by the International Federation for Information Processing (IFIP) Technical Committee 6 and participation by the Committee of Computing Sciences of the Hungarian Academy of Sciences and of other similar Hungarian scientific societies, in the fields of:

—TELEPROCESSING
—DATA COMMUNICATION
—COMPUTER NETWORK

The organizing and Program Committee of Szemészeti includes:

P. Bakonyi, Budapest Hungary
T. Bakos, Budapest Hungary
M. Bezvov, Warsaw Poland
M. Bohus, Budapest Hungary
A. Boyarchenko, Kiev Soviet Union
A. Bulimovska, HSSA, Austria
D. W. Davies, United Kingdom
Cs. Gergely, Budapest Hungary
I. Gvozdyak, Czechoslovakia
J. Lukus, Budapest Hungary

The Symposium under the chairmanship of T. A. Voronyi has been formed and the following have been elected as office bearers:

Chairman: G. D. S. Datta, BHCL
Vice Chairman: Dr. S. Ravani, M.A.C.T.
Secretary: Mr. R. B. Vyasani, BHCL
Treasurer: Mr. N. Balakrishnan, ICL

Executive Member: Dr. N. S. Srivastava, TTTI
Mr. S. S. Devanathan, BHCL
Mr. S. V. Silvanam, BHCL

Mr. Subhash Manohar of BHCL was nominated as Editor of Chapter Newsletter and Mr. Shankat K. of BHCL was nominated as Auditor.

BYPHAL CHAPTER

The 1st Annual Conference of Computer Scientists in India has been scheduled for September 22 and 23, 1977. The organizing committee for the Conference consists of D.P. Medhat, Chairman, Bombay Chapter, T.V. Raman, Vice President, CST, P. Jayant and S.S. Thakur.

The full details have already been published in the May 77 issue of the Newsletter.

Seminars on data base management systems

The Business Applications Division of the Computer Society of India, Bombay Chapter, held a 1-day Seminar on Data Base Management Systems.

The Seminar was planned as a forum for computer professionals to exchange ideas on Data Base Management Systems and their relevance and utility to computer professionals in Bombay. Although various aspects of DBMS theory were discussed, the Seminar was chiefly concerned with the practical aspects of planning developing and implementing a Data Base System. Case studies of systems actually implemented in Bombay were presented as vehicles to describe DBMS concepts.

FROM CHAPTERS

A 'highlight' of the Seminar was a 'live' DBMS demonstration on the DEC-10 computer system at TIFR which was made available to the Bombay Chapter by courtesy of National Centre for Software Development and Computing Technique.

The faculty comprised of Mr. D. Desai (TCS), Mr. S. Kapor (TCS), Mr. B. Mehta (Data Management Services) and Mr. P. S. Saha, (NISDCT). Mr. R. J. Fernandes was the Seminar Coordinator.

The response to the Seminar was far more than planned and a "repeat" is planned for later this year subject to the availability of the faculty.

DELHI CHAPTER

The COBOL programming course being organized by the chapter was inaugurated at 6:30 P.M. on 16th May, 1977 at the Kashmir Hall, YMCA Tower Hotel, New Delhi by the chairman of the chapter Mr. S. K. Sengupta. The classes are being held daily at the YMCA Education Centre, New Delhi and conducted by Maj. Thungarat as already reported. There was an overwhelming response and only 33 participants could be selected. A programming aptitude test was given to non-member participants.

The details regarding the Training Course on Computer Systems Analysis and Design (announced in the last issue) were sent to every member of the chapter individually. For the information and benefit of the entire CST membership, some details of the course are being given here:

Scope

The Course is aimed at developing the skill in Computer Systems Analysis and Design in a highly workshop-oriented manner. The participants, divided into small groups of 4-5 persons each, will work on a few independent systems. After the systems analysis, they would work out the complete specifications of input and output as also the file design. There will be a few lecture-sessions also. No programming will be taught in this course.

Details of the Course and Course Content

1. The participants would be divided into smaller groups, called syndicates. Each
syndicate would have 4-5 participants. Participants, who have common interest and would like to work on the same system would be kept in the same syndicate.

 ii. The participants would be required to develop one of the following systems:
 - System for Accounting, Budgeting & Control (FIS).
 - System for Personnel Records Management (PMS).

 iii. A participant would be a member of ONLY ONE Syndicate.

 iv. Every Syndicate would be working under the supervision of a faculty member. However, more than one Syndicate may be working with only one faculty member.

 v. On the very first day of the course, the participants are likely to be briefed by an expert. This expert would have the background of the system they want to develop, but may or may not have the background of computers.

 The course is highly workshop-oriented. However, there would be a few lecture sessions, tutorial exercises on Flow charts and Decision tables, and a number of reading assignments would be given for which the participants would be required to do some library work. Keeping in view the short time at our disposal, the participants may have to work till late hours.

 (vi) Each Syndicate would prepare a report, giving complete details of the system specifications, lists of input, outputs, control and file design and the processing they would like to be done etc.

 Course Director: Dr. Vinendra Gupta, Professor of Computer Applications, IIPA.
 Fees: Rs. 400/- for a member or up to a max. of one nominee of a member organization. Rs. 500/- for non-member.
 Eligibility: Graduates in Arts/Science/Engineering/Commerce with knowledge of fundamentals of a Computer and Computer programming experience for about three years.

 The Computing orientation course for practicing chartered accountants jointly organized by the Delhi Chapter and the Delhi units of the Institute of Chartered Accountants of India will be held from 27th June 1977 to 1st July 1977.

 ROORKEE CHAPTER

 Training on ECOCAL
 Sri V.V. Ramanjeyulu of ECIL Hyderabad conducted a training programme on ECOCAL language. This training programme was started on 11th April and was concluded on 15th April, 1977.

 The response from the members of Rourkela Chapter was good.

 [K.K. Sarkar]

 CSI News

 PLANS FOR DIVISION I

 From Prem Shrivastasi, DCM Data Products, S. B. Mills Premises, Shingli Marg, New Delhi-110015.

 Dear Member,

 In Article 1.2 of its Constitution the Computer Society of India states its purpose as follows:

 "The purposes of the Society are scientific and educational directed toward the advancement of the theory and practice of computer science, computer engineering and technology, systems science and computing, information processing and related arts and sciences. It shall endeavour to

 a) promote interchange of information, in these disciplines and subdisciplines, amongst

 the specialists and between the specialists and the public;

 b) encourage and assist the professionals engaged in these fields to maintain the integrity and competence of the profession and

 c) foster a sense of partnership amongst the professionals engaged in these fields.

 The technical areas and interests covered by CSI of Division I are: Computer Architecture, Hardware of the Committee. Please do send your nomination.

 So far Division I activities had mainly been restricted to seminars and lecture courses. We would like to widen this activity and promote pro-active development in this area. I welcome your suggestions as to how Division I can help you. Please send me your ideas.

 It is only with your help that we can make Division I into a responsive Division which truly promotes the areas of interest common to the majority of CSI Members. I welcome your comments.

 Very truly yours,
 Prem Shrivastasi

 Elections 1977-78

 The results of the Elections conducted in April-May, 1977 and some relevant statistics, as communicated by the Nominations Committee, are given below:

 1. The following are declared elected:

 President (1977-78) : Dr. P.P. Gupta, CMC, Bombay
 Vice President (\(\_\) ) : Sh. T. V. Balan, ACC, Bombay
 Secretary (\(\_\) ) : Major B. Thiggaraj, NIC, Delhi
 Treasurer (\(\_\) ) : Dr. Y. B. Damle, SBI, Goa
 Representative for Division I (1977-79) : Sh. P. Shrivastasi, DCM, Delhi
 Representative for Division 3 (\(\_\) ) : Dr. P. K. Patwardhan, BARC, Bombay
 Representative for Region 1 (\(\_\) ) : Dr. Virendra Gupta, IIPA, Delhi
 Representative for Region 3 (\(\_\) ) : Sh. T. V. Natarajan, Computertronics, Madras
 Nominations Committee (1977-78) : Prof. J. R. Isaac, IIT, Bombay

 2. Ballots mailed: 1882

 Ballots returned undelivered: 18

 Ballots received: 1864

 Counted: 1846

 Invalid: 490

 Valid: 1356
What Price Security
Lt Col V P Ranadive, Senior Systems Analyst
Army HQ EDP Centre, Signals Enclave
New Delhi-110010

1. The progress of the growth of the Computer facilities in our country, though slow in the beginning, has gradually picked up. Today we have computing facilities in our country varying from being small to medium sized. Most of these are in-house ones with access to the systems being controlled and restricted. The threat to data security and privacy in such an environment will be mainly from within the organisation rather than from any external agency since the entry to the in-house computer system is restricted by the management. However, with the future concept of linking up regional centres to various data nodes which could be operating on mini computers/data terminals, safeguard against distant users is equally important.

2. To provide the highest levels of security would be prohibitively expensive. In fact, the level of expenditure needs to be related to the degree of vulnerability the computer installation faces.

3. This paper aims at highlighting the security measures required to be taken in a medium sized computer installation in our country and its cost effectiveness.

Direct Manpower/Workload Projection System
M.C. Rainigarni, IBM, MFG, Operation,
Bombay-400072

1. System Overview

Direct Manpower/Workload Projection System
(DIMPS) is designed to provide a Rapid and an
Accurate means of developing a manpower require-
ment forecast for 'Direct' areas i.e. Departments
directly involved in Manufacturing activities
(Shop-Floor).

The three years projections made by DIMPS are
based on information consisting of calendar,
Production Plans for different products and the basic
data on 'Objective Hours' for all the operations in-
volved in the manufacture of the product.

The system projects the Direct Manpower require-
ments by Product, by Department, and by Skill
power figures are provided month-by-month with
Year-end totals and averages.

The system is designed for use on IBM 1401 with
16 K e core storage.

2. Uses:

2.1 Basic Tool for Planning and Solutioning of direct
workload:
— by department
— by skill,
Periodically, with every change in Production
Plans.
2.2 Leveling out direct workload over various
months.
2.3 Stipulates extent of solutioning to be done by:
— Overtime
— Temporary help
— Adjustment of leave
— Transfers—between direct departments
— between direct and indirect etc.
— Subcontracting/Return of Subcontracted
work to Factory.

2.4 Effective Tool in making Direct Manpower
(Alternatively, Production Plans because of market fluctuations
Production Plans for optimum deploy-
ment.)

2.5 Used as a simulation tool to select between
manpower, of

3. Paper Contents :
The Full paper will contain the details under the
following heads:

i) Introduction.
ii) Mechanics of computation of workload and
manpower.
iii) Output Reports and explanation of con-
tents therein.
iv) Input Requirements and discussion on the
impact of each input on the workload and
manpower figures.

A Review of Computerised Production-Scheduling
Techniques.
V. Raman, I.B.M. Fairfield Road, Bangalore-560001.

The need for the use of Electronic Computers for production scheduling cannot be overemphasised, particularly in large manufacturing organizations, making use of sophisticated methods of operation planning.

Several techniques are used for production scheduling depending on the planning horizon, for example capacity planning, order release planning and operation sequencing. The choice of the various parameters used with these techniques depends on the relative importance of the objectives to be achieved like meeting due-dates, minimising work-in-
process and idle time, etc. This paper describes those techniques as implemented in current IBM software. It highlights the advantages of using a computer like Dynamic Programming. Look ahead facility, Shop Floor Simulation, exception reporting etc.

Use of tele-communication terminals has drama-
tically increased the responsiveness of Production Scheduling Systems. Enquiry Processing and on-
line data collection techniques have obviated the conventional data feeds. The development of interactive planning methods of batch-processing oriented computers.

This paper also describes the new techniques used in online production scheduling like simulation, net change processing and use of Action Files etc.

This paper briefly highlights implementation requirements and procedures for the techniques described.

Applications of Generalized File Processors.
LT NC Sarangi, IN, and Corke Sur, IN.
EDP Dept., Naval Dockyard, Bombay-400033.

The heart of all business data processing is file
processing. Lots of development has been done for
the use of computers for Scientific applications, and
therefore, standard routines are available for most of
the algorithms commonly used for such systems.
Even since the computer has become a common tool
for business data processing, it has become imperative

A generalized file processor provides a system and/or language in which:

a. the details of the file and record data are
specified,
b. general operations are permitted,
c. simplified report forms are supplied, and/or
d. a program is generated to reflect specific
details of application.

Thus, in a generalized system the emphasis is more on the process of the application and not on the
programming. This paper discusses in detail various points to be considered while developing a
generalized file processor and its impact on a com-
puter system. Some of the topics discussed are
a generalized package in favour of developing one's own programs where the advantages of
such file processors are demonstrated with the help of examples from data base management systems
developed by IBM, UNICOR, PDP and General Electric for their respective systems.

Comparison of File Organization Techniques
LT NC Sarangi EDP Systems and Dr. Ms. Krishnamoorti,
Naval Dockyard, Department of Computer
Bombay-600023 Science, IIT Kharagpur-208016

File organization techniques are receiving more and more importance both in the field of information
retrieval and database management systems. It has
appeal to those who are interested in information
retrieval and also to those involved in specific com-
puter applications such as business, scientific, engi-
neering and government systems. To suit various
constraints like storage space, retrieval time and user requirements, different file organization tech-
niques are developed.

In this paper the authors have restricted the
comparison to some of the most important and
commonly used file organization techniques. Each
description technique is briefly analysed and explained
qualitatively as regards storage space required and
retrieval time necessary for various methods of
access. The techniques considered are, the positional
(serial, sequential, indexed-sequential and random)
the ring structured the linked list (chain), the
binary, the inverted list and the CRWR (Con-
secutive Retrieval With Redundancy) organizations.
The criteria for selecting a particular technique
to meet specific user requirements is also discussed.
A Hierarchical Decision Model for Selection of Data Base Management System

S.K. Singh, Nitte, Bombay

The data base approach is the logical culmination of a process which started in the late fifties with introduction of computers and consequent recognition of information as an important organisational resource. The first crucial choice which organisations opting for data base approach must face is between developing their own data base management systems (DBMS) and choosing among the commercially available ones most suitable for their needs. Given the enormity and complexity of effort involved in the development of DBMS, most of them naturally opt for the latter choice.

Unfortunately the task of selecting a suitable DBMS turns out to be no less hazardous. It is complicated by high evolutionary speed of DBMS technology, lack of standardisation of DBMS features, changing organisational environment, poorly defined user needs and multidimensional nature of optimisation function. The paper presents an overview of a hierarchical decision model to help organisations make a rational and informed selection of a DBMS most suited to their needs at minimum cost. The model provides unified framework for DBMS selection, ensuring that choices relating to different facets are made at levels most appropriate for making them.

Computer Simulation Models in Environmental Systems

D. Srinivasakrishna and V. Radhakrishna Murty, Dept. of Elec. Engineering, Andhra University, Vishakhapatnam-530003.

Man in his effort to progress has reached a stage where he is more conscious of his environment than at any other time in history. The problems of these current approaches is to identify various spheres of Man’s interaction with the environment, to come up with a list of environmental priorities for each section of the country and to define and establish various environmental indices.

In this paper, the various environmental problems are briefly identified and the importance of simulating models and early warning systems. A computer-based model and analyse the particular variety of Urban air quality management and pollution. The architecture of such a computer-based system is discussed.

High pressure valves to regulate flow of fluids is among the product profile of BHIL, Thrissur. The organisation offers its standard catalogue about 40 varieties for a wide range of applications in Boiler, Chemical and Petroleum industries. Annual turnover for this product line is around 7.5 crores involving 52,000 orders.

A sound planning information system is essential, to cope up with demands for short deliveries, notwithstanding material and component non-availability. The problems of the system are further compounded by the necessity to optimise the utilisation of numerous machine tools with an overall objectives of maximising the productivity. This paper attempts to provide a glimpse of the computerized system developed to support these operations.

Computers in Hospital Utilisation Study


The computers have been extensively used in western countries to study the utilisation of hospital services and also to study the prognosis and diagnosis of various diseases. In this country, a little effort has been made in this direction. The Indian study to study the feasibility of utilising the hospital statistics to understand the morbidity pattern and hospital statistics. The ultimate objective is to have a national picture of morbidity pattern through hospital by adopting a suitable sample representative of the nation.

In this paper, the details of methodology adopted and the utilisation of computer are discussed in detail.

Some Aspects of Data Security in Computer-Based Information System

R. Thiagarajan, Army Headquarters, New Delhi

On late, a number of white collar thefts by computer professionals have been reported. Computer organisation is becoming a common place. The place fails to accord due importance to the security.

There are instances galore when computer data has resulted in heavy losses to organisations in the United States. The time is now opportune to learn from the mistakes of others. Based on the computer system, we can perhaps institute measures in the early stages of computer growth.

After describing some prominent data disasters, the various types of data exposure are highlighted. Some symptoms of poor security precautions are also outlined with examples of cryptographic techniques.

Precedence Method-Second Generation Technique Network Diagramming


This paper describes a dynamic new critical path method diagramming technique. The technique called the Precedence Method does away with node numbers, introduction of dummy nodes to signify dependencies, splitting of activities to indicate that subsequent activities can start (overlapping) with partial completion of preceding activities, etc. which are required merely to define the sequence of activities in a network. Precedence Method shifts the emphasis on activities rather than on the diagram.

Illustrations are included to graphically depict the differences between the arrow diagram and the precedence networks.

LIST OF INSTITUTIONAL MEMBERS
(Supplementary to the List Published in the Issue of May, 1977)

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<thead>
<tr>
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<td>Assam Oil Company Ltd.</td>
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<tr>
<td>90312</td>
<td>UP Electronics Ltd., 4 Prag Narain Road, Lucknow 226 001</td>
</tr>
</tbody>
</table>
AN ALGOL LIST-PROCESSING SYSTEM FOR ICL 1969

R. G. Gupta and P. K. Sehgal

Computer Centre, I.I.T., Delhi

[The system provides the ICL 1969 computer with list-processing facilities for non-numeric computation and is based on (1).]

INTRODUCTION

The system provides list-processing facilities as a package of procedures, written in ALGOL 60, which can be used with a general purpose language having a facility to call ALGOL procedures. The major advantage of this approach is that all facilities of the general purpose language are available to the user.

The system outlined here uses direct or straight linkage [1, 6] for representation of Lists. A cell is created to store either an atom or List and has two fields: INFO and LINK. INFO part of atom cells contains atom which is either an integer or string of four alphanumeric characters. INFO part of List cells points to the head and LINK to the tail of List. The atoms and Lists are differentiated by contents of LINK as follows:

\[
\begin{array}{ll}
3 & 4 \\
5 & 6 \\
\end{array}
\]

- 3 - 4: List: (ROSE, NIL)
- 5 - 6: List: (ROSE, NIL)

OPERATING FACILITIES

A large number of operations are provided in the implementation as a report with the authors.

(a) Basic Operations:

- 3-4: are provided by the ATOM, INATOM, SETUP procedures.

(b) Input-Output Operations:

- The procedures READLIST, PRINTLIST and comma notation are provided to read a List in print the INFO part of a cell in the character form.

Example:

If the store size is 10, then the List: (6, (ROSE, NIL)) is stored as:

\[
\begin{array}{ll}
1 & \text{INFO}\ [1] \\
2 & \text{LINK}\ [2] \\
3 & \text{Remarks} \\
4 & 0 \ -1 \ -1 \\
5 & 2 \ 6 \ 0 \ (6, (ROSE, NIL)) \\
6 & \text{atom: NIL} \\
7 & \text{atom: 2} \\
8 & \text{atom: 6} \\
9 & \text{atom: 6} \\
10 & \text{atom: 6} \\
\end{array}
\]

end

STORAGE RECOVERY

Garbage collection is a technique to recover storage at execution time in an efficient manner. The present system works as an additional to allocate the storage to the given List of structure in an optimum way.

DEBUGGING FACILITIES

The map of the store apart from cells on the free list obtained by calling the procedure POSTMORTEM at any stage during the execution of the program. This procedure prints out on the selected output channel, three columns of integers, each row being INFO [1] and LINK [1].

Besides this various checks are incorporated in the procedures defined in the previous sections and if any one of these fails the procedure ERROR will be entered. This procedure prints the error message, gives a map of the storage (if asked) and terminates the run on encountering sigt (-1). Hence, the diagnostics provided with the operating system will also be available.

ACCESS TO THE SYSTEM

The complete package is inserted in the second outermost block before the users program. The global variables and arrays for the package and the user's program are declared in second and second outermost blocks respectively. The overall structure is:

begin <global variables>
begin <global arrays>
begin <package>
begin <users program>

acknowledgement

The authors wish to thank Mr. Naveen Prakash and Y.K. Sharma, Research Scholars in Computer Science at I.I.T., Delhi for many helpful discussions during this Project.

REFERENCES


PERSONALIA

Shri A.S. Raizada has been on 15th of May 1977 for Philippines to undertake research duties of UNESCO mission in cooperation with the National Library of Philippines.
Literature Window

GENERAL


ARTIFICIAL INTELLIGENCE


MATHEMATICS


TECHNIQUES


PROGRAMMING


HARVEY F L: Developing software industry. Infosystems 1976, 23(7), 34-5.


SYSTEM DESIGN


INPUT/OUTPUT


DATA TRANSMISSION


APPLICATIONS

Business & Management


HERMUNGER T.: Bending the bank card boom. Infosystems 1976, 23(7), 54-5.

SCHNEIDER M.: Sizing up facility management users. Infosystems 1976, 23(7), 56.

UNITED STATIONERS SUPPLY CO.: Network system moves more merchandise. Infosystems 1976, 23(7), 55-6.

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<td>Half Page</td>
<td>Rs. 750/-</td>
<td>Rs. 1,250/-</td>
</tr>
</tbody>
</table>

Reduction for multiple insertions of the same advertisement booked at one time 10%

Reduction for advertisements of Professional vacancies 30%

3. Newsletter Rates

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Back Cover</td>
<td>Rs. 1,200/-</td>
</tr>
<tr>
<td>Full Page</td>
<td>Rs. 900/-</td>
</tr>
<tr>
<td>Half Page</td>
<td>Rs. 550/-</td>
</tr>
<tr>
<td>Quarter Page</td>
<td>Rs. 300/-</td>
</tr>
</tbody>
</table>

Reduction for multiple insertions of the same advertisement booked at one time 10%

Reduction for advertisements of Professional vacancies 30%

4. Prompt Payment Discount for all Advertising, 2%

Advertisers whose payments are received within 30 days of the date of the relevant invoice or invoices shall be eligible for a discount of 2% over and above any other discounts.

Send your orders to

**Block Booking & Journal**

Chairman: Shri AS Raizada

Editor: C/o INSODC

Computer Society of India

Tata Institute of Fundamental Research

Homi Bhabha Road, Colaba, Bombay 400 005

Hillside Road

New Delhi 110 012

**Advertising Details for CSI Publications**

<table>
<thead>
<tr>
<th>Frequency:</th>
<th>Monthly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price:</td>
<td>Free to members</td>
</tr>
<tr>
<td></td>
<td>Rs. 20/- annually (Inland)</td>
</tr>
<tr>
<td></td>
<td>$ 10/- annually (abroad)</td>
</tr>
</tbody>
</table>

| Layout:    | Two columns |
|           | 8 cms x 22 cms |
| Material:  | Block (preferred) |
|           | Screen 80 for half-tones |
| Circulation: | 2500 (approx.) |
|            | Blocks (preferred) |
|            | Screen 80 for half-tones |
|            | 2000 (approx.) |
| Layout:    | Subscribers and Libraries |
|            | One month before |
| Acceptance: | Publication date |
| Date:      | 15% of net amount payable |
| Agency:    | Commission |

Printed and Published by A. S. Raizada for Computer Society of India, at Printograph 2556/6, Beadapura, Karol Bagh, New Delhi - 110005
Annual Convention

"Computer and the Quality of Life"
FEBRUARY 1978, CALCUTTA
TENTATIVE PROGRAMME

Inaugural Day:
3.00—4.00 P.M. Registration
4.00—4.30 " Inauguration
4.30—5.00 " Tea
5.00—6.30 " Theme Session:
‘Computers & Quality of Life’

Second Day:
9.00—11.00 A.M. General Session
11.00—11.30 " Coffee
11.30—1.00 P.M. Panel Discussion
1.00—2.00 " Lunch
2.00—4.00 " Parallel Session/Tutorial
4.00—4.30 " Tea
4.30—5.30 " Parallel Session/Tutorial

First Day:
9.00—11.00 A.M. General Session
11.00—11.30 " Coffee
11.30—1.00 P.M. Invited talk
1.00—2.00 " Lunch
2.00—4.00 " Parallel Session/Tutorial
4.00—4.30 " Tea
4.30—5.30 " Parallel Session/Tutorial

Third Day:
9.00—11.00 A.M. General Session
11.00—11.30 " Coffee
11.30—1.00 P.M. Panel Discussion
1.00—2.00 " Lunch
2.00—4.00 " Parallel Session/Tutorial
4.00—4.30 " Tea
4.30—5.30 " Convention Review

SUGGESTION THEMES FOR GENERAL SESSIONS & PANEL DISCUSSIONS:
1. IFIP & CSI
2. Computer & National Policy
3. Computer Productivity & Corporate Policy
4. Computer Manufacture & Maintenance in India
5. Problems of development & implementation of computerised systems in Business & Industry.

SUGGESTED THEMES FOR PARALLEL SESSIONS:
1. Systems Architecture & devices
2. Artificial intelligence and pattern recognition
3. Numerical computation, analysis and application
4. Business Information systems
5. Mini-computer applications
6. Real time application software
7. O.R. & Statistical data processing
8. Data base design & application
9. Software Engineering (Principles and Practice): A. Applications B. Systems
10. Computers in Education & Research
11. Management of computer centres
12. Distributed data processing.

SUGGESTED THEMES FOR TUTORIALS:
3. Programming Methodology

N. B.—In the morning of the Inaugural Day, there will be EXECOM meeting and on the second day evening, the CSI-AGM. There are definite promises of one or more Cultural Evenings, too!

IMPORTANT FOR CONTRIBUTORS

Final programme in July '77 Newsletter

Papers must reach the following address positively by 30th September, 1977, around the suggested themes for Parallel Session and/or the framework of four Divisions:

Dr. Utpal K Banerjee,
Chairman, Program Committee
Manager, Management Services,
Tata Iron & Steel Company Limited,
Jamshedpur-831001.