COMPUTING CENTRE NEWSLETTER
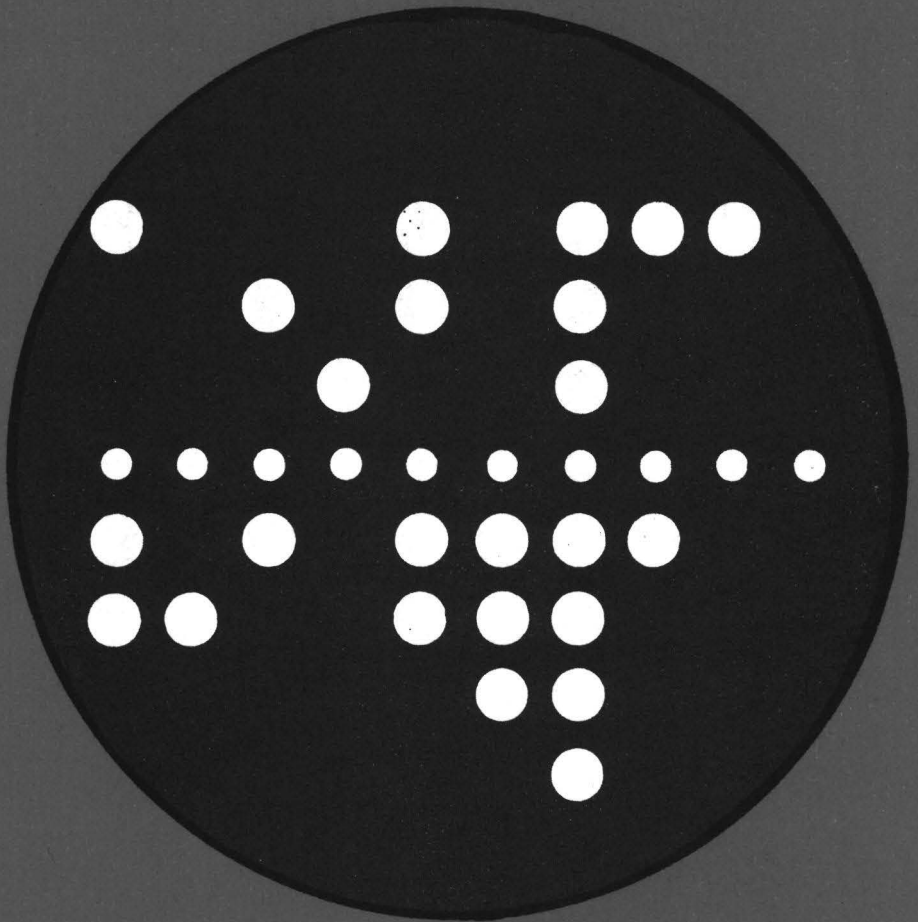## September 1978·No 24

Commission of the European Communities

JOINT RESEARCH CENTRE

Ispra Establishment

CONTENTS

Note of the Editor

The present Newsletter is published monthly except for August and December.

The Newsletter includes:

- Developments, changes, uses of installations
- Announcements, news and abstracts on initiatives and accomplishments.

The Editor thanks in advance those who want to contribute to the Newsletter by sending articles in English or French to one of the following persons of the Editorial Board.

Note de la Rédaction

Le présent Bulletin est publié mensuellement excepté durant les mois d'août et décembre.

Le Bulletin traite des:

- Développements, changements et emploi des des installations
- Avis, nouvelles et résumés concernant les initiatives et les réalisations.

La Rédaction remercie d'avance ceux qui veulent bien contribuer au Bulletin en envoyant des articles en anglais ou français à l'un des membres du Comité de Rédaction.

Editorial Board / Comité de Rédaction

H. de Wolde, D.G. Ispra
C. Pigni, C.C. Ispra
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Computing Centre References

		Room	Tel.
Manager	J. Pire	1816	732
Adjoined	G. Gaggero	1874	787
Computer Room	P. Tomba	1857	797
Adjoined	A. Binda	1857	797
Peripherals	G. Nocera	1825	767
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Eléments de Facturation du Centre de Calcul

J. Pire

I. La facturation des services du Centre de Calcul est aussi analytique que possible de façon à ne laisser dans le coût de l'heure de calcul ou unité d'oeuvre (U.O.) que le coût réel d'exploitation de l'ordinateur débarrassé des charges qui varient selon les facilités spécifiques utilisées par des utilisateurs particuliers.

Ce type de facturation ne modifie pas la somme totale à payer, mais permet de juger de l'utilité ou de l'utilisation des facilités offertes.

Par ailleurs, certaines dépenses du Centre de Calcul ne peuvent être justifiées que par l'usage qu'en font les utilisateurs et par leur accord de payer un certain supplément correspondant au coût de la facilité mise à disposition réparti entre tous les usagers effectifs.

La facturation dépend évidemment de la possibilité de repérer effectivement l'usage fait d'une certaine ressource. Cette possibilité dépend elle-même des moyens mis en oeuvre. Il peut arriver que le repérage de l'utilisation d'une ressource coûte trop cher ou soit impossible dans un certain système de gestion et devienne possible ou rentable dans un autre. Un changement de système de repérage peut par conséquent nous conduire à introduire d'autres éléments de facturation ou de modifier le mode de facturation.

Le deuxième paragraphe énumère de façon non nécessairement exhaustive les services pouvant faire l'objet de facturation.

La troisième partie de cette note constitue en quelque sorte le tarif des prestations du Centre de Calcul.

Certains éléments de facturation sont estimés en U.O. dont le coût réel est estimé lors de l'établissement des budjets et réévalué à la fin de l'année ou en cours de l'exercice.

D'autres éléments sont exprimés directement en U.C.E. et ne sont plus sujets à réévaluation.

A   Les services évalués en U.O. sont

A.1   L'exécution des **travaux** en mode **batch**

A.2   L'utilisation du système **T.S.O.**

A.3   L'utilisation du système **I.M.S.**

B   Les services et facilités facturés directement en U.C.E. sont les suivants:

B.1   **Travaux périphériques** tels que

Lecture de cartes

Perforation de cartes:
- automatique
- manuelle
Impression de résultats
Lecture de bandes perforées
Perforation de bandes de papier
Exécution de travaux graphiques:
- CALCOMP
- BENSON
- GOULD
Montage de supports de données:
- bandes magnétiques
- disques non résidents

B.2 Droits de garde

Bandes magnétiques
Disques non résidents

B.3 Location du matériel dédié à la téléinformatique

Terminaux:
- porte d'accès
- modems*
- terminal proprement dit*
- maintenance du terminal*

B.4 Location de mémoires à accès direct «off-» et «on-line»

Volumes complets
Fractions de volume forfaitaires
Espaces variables selon disponibilité

B.5 Utilisation de logiciel spécial

Le logiciel spécial comporte les compilateurs, sous systèmes et programmes non standards, c'est-à-dire non compris dans le logiciel accompagnant automatiquement l'ordinateur, mais disponible en permanence dans des librairies publiques et dont la maintenance est assurée.

Certains paramètres cités ci-dessus n'ont pas encore été établis ou n'ont pas encore été comptabilisés et grèvent par conséquent le coût de l'U.O.

Les paragraphes suivants fournissent les informations concernant le mode de calcul des éléments cités ci-dessus.

---

* s'ils appartiennent au Centre de Calcul et si la maintenance est assurée par le Centre de Calcul.

III. Facturations mensuelles

Chaque mois le Service Budjet reçoit le décompte des prestations fournies.

·Il comporte 3 rubriques:

1 les U.O. rélatives à l'utilisation BATCH - TSO - IMS (points Ax ci-dessus)
2 les travaux périphériques, tels qu'ils sont déscrits au point B.1 ci-dessus
3 les autres services, tels qu'ils sont déscrits aux points B.2 - B.5 ci dessus.

Un tableau plus détaillé est envoyé mensuellement à chaque responsable d'objectif (v. annexe A). Des informations encore plus complètes peuvent être obtenues au Sécrétariat de la Division Informatique (Mlle Rambs).

IV. Tarifs

A.1 Travaux en mode batch*

Pour les travaux de type batch, l'U.O. est calculée selon la formule suivante:

$$UO = CPU + K_1(I/OD + I/OT) + 0.12(CPU + K_2 I/OD + K_3 I/OT) \, MEM$$

CPU temps CPU en mode problème compté en heures

K_1 2×10^{-6}

K_2 7×10^{-6}

K_3 3×10^{-6}

I/OD nombre d'XCP sur unité à accès direct

I/OT nombre d'XCP sur unité à bande magnétique

MEM mémoire centrale occupé exprimée en centaines de kilobytes

A.2 Travaux T.S.O.

Pour les travaux T.S.O.

$$UO = 1,5 \, (CPU + K_1 I/OD + 0.009 \, TC + 0.001 \, NL)$$

CPU temps CPU en mode problème compté en heures

K_1 2×10^{-6}

I/OD nombre d'XCP effectué sur unité à accès direct. Le montage de bandes magnétiques ou de disques privés n'est pas autorisé.

TC temps de connection exprimé en heures

NL nombre de logon

---

* le coût de l'U.O. est fixé annuellement tant pour les utilisateurs internes qu'externes.
Il ne faut confondre l'U.O. servant à la facturation et le temps équivalent (T.E.) qui sert à calculer approximativement le temps de résidence d'un travail

$$T.E. = CPU + K_2 \, I/OD + K_3 \, I/OT$$

.

A.3 Travaux I.M.S.

Pour les travaux I.M.S.

$$UO = 1,5 (CPU + K_1 I/OD) + X NT$$

CPU   temps CPU en mode problème compté en heures

K_1 2×10^{-6}

I/OD   nombre XCP effectué sur unité à accès direct. Le montage de bandes magnétiques ou disques privés n'est pas autorisé.

X 10^{-4}

NT   nombre de transactions

En outre une taxe forfaitaire mensuelle de 250 U.C.E. d'utilisation I.M.S. est appliquée.

Cette taxe couvre les frais relatifs à la mémorisation des noms des transactions des programmes et des formats et les maintenances nécessaires.

La taxe autorise la mémorisation de 10 programmes et de 100 formats.

La maintenance est effectuée hebdomadairement.

L'espace disque relatif aux Data Bases proprement dits de même que les frais de connection des terminaux sont facturés séparément.

L'utilisation de I.M.S. implique une durée minimum forfaitaire de six mois exigibles à la signature du contrat.

Note: Provisoirement I.M.S. est payé globalement par l'Administration sous la formule batch.

V. Prix 1979

B.1 Travaux périphériques

Lecture de cartes	0.0006 UCE/carte
Perforation de cartes	
- automatique	0.0030 UCE/carte
- manuelle (délai 1 jour)	0.1200 UCE/carte*
- manuelle (délai court)	0.1600 UCE/carte*
Impression de résultats	
- par page (= 50 lignes)	0.0390 UCE/page
Travaux graphiques	
- CALCOMP	60.00 UCE/heure
- BENSON	35.00 UCE/heure
- GOULD	2 UCE par bande
	+ 1.7 UCE par mètre de pap.
Montage de support de données	
- bandes magnétiques	1.00 UCE*

- disques   2.00 UCE*

B.2 Droits de garde (par mois)

Bandes magnétiques   1.00 UCE/mois*

Disques magnétiques   1.00 UCE/mois*

* non appliqué actuellement

B.3 Matériel dédié à la téléinformatique

Porte d'accès à l'ordinateur IBM 370/165

asynchrone 133,5 bps   45.00 UCE/mois

asynchrone 1200 bps   140.00 UCE/mois

asynchrone 2400 bps   195.00 UCE/mois

BSC 4800 bps   270.00 UCE/mois

BSC 9600 bps   380.00 UCE/mois

Les modems doivent être fournis par les utilisateurs. Ils peuvent être commandés à la Division Electronique. Deux modems sont nécessaires pour réaliser une connection; le coût d'un modem est de l'ordre de 500 UCE.

Terminaux loués par le Centre de Calcul

Quelques terminaux sont de propriété du Centre de Calcul et mis à disposition des projets.

IBM 2741 (y compris la connection)   130.00 UCE/mois

IBM MC72T   215.00 UCE/mois

IBM 3270   165.00 UCE/mois

ou OLIVETTI printer   215.00 UCE/mois

IBM MC72 (non connectable)   180.00 UCE/mois

B.4 Mémoires à accès direct «off-» et «on-line»

Disques 3330 mod. 11

- off-line   39.00 UCE/mois

- on-line   1025.00 UCE/mois

- on-line par cylindre   5.00 UCE/mois

- on-line, par piste,
selon l'occupation réelle   0.0240 UCE/jour

Bandes magnétiques   12.00 UCE/an*

* non appliqué actuellement

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B.5 Utilisation de logiciel spécial

Surtaxe de 400 UCE

GENESYS

Surtaxe de 200 UCE

BERSAFE - 3
DISMOD
NLGRADOP
OPTVIN
STEPRE
STEPW

Surtaxe de 150 UCE

BANDOPT
BERCYL
BERDYNE
BERGEN
BERMESH
BERPLOT
ICES
MPSX
PMS - 4

Surtaxe de 100 UCE

ANISN - 3
ANISN - 4
AUTTRI - 80
BERSAFE - 1
BERSAFE - 2
CONPL - 2
CSMP - 3
DOT - 2
DOT - 2C2
DYNAMO
ETC
EQUIPOISE - 3
EURCYL
FEMG
FLHE - 1
FLHE - 2
GAM - 22
GATHER - 2
HERA - 1A
HERA - 1A4
INTERATOM

LASER
LIBRARIAN
ORACLE
ORACLE - 80
PLUTHARCO
REXCO - H - 75
SAFE - AXISYM
SAFE - PLANE
SAFE - SHELL
SAFECT
SAFEDP
SAFEMG
SAFEPS
SIMAS
SIMPL/1
SIMULA
SQUID
SQUID - 3
SQUIRREL
SUPERTOG - 3

Surtaxe de 50 UCE

Tous les autres programmes dans la «CTE Library».

La charge additionnelle est par U.O d'utilisation selon la formule batch.

Manuels divers de 2 à 15 UCE/manuel.

The Newsletter is available at:	*Des exemplaires du Bulletin sont disponibles chez:*
Mrs. A. Cambon	**Mme A. Cambon**
Support to Computing	**Support to Computing**
Bldg. 36 - Tel. 730	**Bât. 36 - Tel. 730**

Note to all FORTRAN users

C.L. van den Muyzenberg

At the moment , there are 4 FORTRAN compilers available at C.C.:
FORTRAN IV G, H, G1, and HE (H Extended).
The G1 and HE compilers are new, improved compilers that correspond to the old G and H compilers.

Advantages of using the new compilers are:

1. better error diagnostics (easier to understand)
2. more checking during compilation, resulting in less errors during the execution of the program
3. added features:
   HE only:
   - extended precision
   - asynchronous input/output
   - extension of EXTERNAL statement
   - GENERIC statement
   HE and Gl:
   - list directed input/output

(see also Newsletter nr. 10, april 1977, C. Pigni, IBM FORTRAN IV (H Extended)).

All FORTRAN users are strongly recommended to use the new compilers.

Starting 1-10-1978:

1. use of the G and H compilers will be no longer supported by the consulting service
2. the pre-punched cards (// EXEC FTGCLG etc.) will be changed in cards using the new compilers (// EXEC FTG1CLG etc.)
3. the old compilers (and cataloged procedures) will remain available.

Bibliography

1. FORTRAN IV languages GC28-6515
2. IBM OS FORTRAN IV (H Extended) Compiler - Programmer's Guide SC28-6852
3. IBM System/360 OS Code and Go FORTRAN and FORTRAN IV (G1) - Programmer's Guide SC28-6853

The procedures available are:

NEW NAME	OLD NAME	REMARKS
FTG1C	FTGC	
FTG1CG	FTGCG	
FTG1CGX	FTGCGX	
FTG1CL		
FTG1CLG	FTGCLG	
FTG1CLGX	FTGCLGX	
FTG1G		alias FTPPG
FTG1GX		alias FTPPGX
FTG1L		alias FTPPL
FTG1LG		alias FTPPLG
FTG1LGX		alias FTPPLGX
FTHEC	FTHC	
FTHECG	FTHCG	
FTHECGX	FTHCGX	
FTHECL		
FTHECLG	FTHCLG	
FTHECLGX	FTHCLGX	
FTHEG		alias FTPPG
FTHEGX		alias FTPPGX
FTHEL		alias FTPPL
FTHELG		alias FTPPLG
FTHELGX		alias FTPPLGX
FTPPG	FTG	
FTPPGX	FTGX	
FTPPL	FTL	
FTPPLG	FTLG	
FTPPLGX	FTLGX	

For more information about the procedures see:
«Note informative sull'uso dei prodotti programmi», this description may be obtained by executing:
// EXEC LIHNO,MEMB=PPGL

Utilisation of computer centre by the objectives and appropriation accounts for the month of July 1978

		IBM 360/165 equivalent time in hours
1.20.2	General Services - Administration - Ispra	35.26
1.20.3	General Services - Technical - Ispra	1.02
1.30.4	L.M.A.	–
1.90.0	ESSOR	51.78
1.92.0	Support to the Commission	1.55
2.10.1	Reactor Safety	82.96
2.10.2	Plutonium Fuel and Actinide Research	7.70
2.10.3	Nuclear Materials	0.72
2.20.1	Solar Energy	0.02
2.20.2	Hydrogen	–
2.20.4	Design Studies on Thermonuclear Fusion	0.72
2.30.0	Environment and Resources	21.24
2.40.0	METRE	0.83
2.50.1	Informatics	23.65
2.50.3	Safeguards	1.64
309	Programming Support	0.62
	TOTAL	229.71
1.94.0	Service to External Users	9.42
	TOTAL	239.13

Utilisation of computer centre by the objectives and appropriation accounts for the month of August 1978

		IBM 370/165 equivalent time in hours
1.20.2	General Services - Administration - Ispra	30.66
1.20.3	General Services - Technical - Ispra	0.79
1.30.4	L.M.A.	–
1.90.0	ESSOR	20.93
1.92.0	Support to the Commission	10.04
2.10.1	Reactor Safety	140.69
2.10.2	Plutonium Fuel and Actinide Research	–
2.10.3	Nuclear Materials	0.90
2.20.1	Solar Energy	–
2.20.2	Hydrogen	–
2.20.4	Design Studies on Thermonuclear Fusion	3.32
2.30.0	Environment and Resources	37.83
2.40.0	METRE	2.62
2.50.1	Informatics	19.08
2.50.3	Safeguards	2.33
309	Programming Support	0.43
	TOTAL	269.62
1.94.0	Services to External Users	4.95
	TOTAL	274.57

ACCOUNTED WORK UNITS TABLE FOR ALL JOBS OF THE GENERAL SERVICES - Monthly and Cumulative Statistics

	January	February	March	April	May	June	July	August	September	October	November	December
Year 1977	44	74	78	32	26	36	27	25	27	31	40	34
accumulation	44	118	196	228	254	290	317	342	369	400	440	474
Year 1978	51	43	55	50	49	74	36	31				
accumulation	51	94	149	199	248	322·	359	391				

ACCOUNTED WORK UNITS TABLE FOR THE JOBS OF ALL THE OBJECTIVES AND GENERAL SERVICES - Monthly and Cumulative Statistics

	January	February	March	April	May	June	July	August	September	October	November	December
Year 1977	135	218	312	193	180	269	244	196	277	275	284	179
accumulation	135	353	665	858	1038	1307	1551	1747	2024	2300	2584	2763
Year 1978	211	213	283	232	202	317	230	270				
accumulation	211	424	707	939	1141	1.458	1688	1958				

ACCOUNTED WORK UNITS TABLE FOR THE JOBS OF THE EXTERNAL USERS - Monthly and Cumulative Statistics

	January	February	March	April	May	June	July	August	September	October	November	December
Year 1977	13	14	18	16	13	22	19	18	27	25	21	20
accumulation	13	27	45	61	74	96	115	133	160	185	206	· 226
Year 1978	12	10	11	46	23	11	9	5				
accumulation	12	22	33	79	102	113	123	128				

EQUIVALENT TIME TABLE FOR ALL JOBS OF ALL USERS - Monthly and Cumulative Statistics

	January	February	March	April	May	June	July	August	September	October	November	December
Year 1977	158	241	314	242	202	294	266	217	299	299	318	235
accumulation	158	399	713	955	1157	1451	1717	1934	2233	2532	2850	3085
Year 1978	276	261	356	298	262	335	245	297				
accumulation	276	537	893	1191	1453	1.788	2.033	2.330				

At my proposal Mr. Barnreiter has written the following summary report of this meeting which took place recently. The Summer School intended to expose a series of recent researches in the important field of program construction going on in Europe and North America.
This line of research in some cases has an immediate application in a practical working environment and in other cases one of a more long-term nature as far as applications are concerned.
Under all circumstances the research into programming techniques should influence the mind and work habits of the practical programmer. We therefore felt the readers of the Newsletter would wish to be informed of the research directions being discussed at the Summer School.

H.J. Helms

International Summer School on Program Construction

Manfred Barnreiter

This Summer School took place in Marktoberdorf, Germany, from July 26 to August 6, 1978.
It was organized under the auspices of the Technical University Munich, and was sponsored by the NATO Scientific Affairs Division under the 1978 Advanced Study Institutes Programme. Partial Support was made available by the European Research Office, London.

Organizing Directors: Prof. F.L. Bauer, Bavarian Academy of Sciences, Munich; Prof. L. Bolliet, Université de Grenoble; Dr. H.J. Helms, CCR Ispra.

Lecturing Professors: F.L. Bauer, E.W. Dijkstra, D. Gries, M. Griffiths, J. Guttag, J.J. Horning, S. Owicki, C. Pair.

Special Lecturers: H. Partsch, P. Pepper, M. Wirsing, H. Wössner.

The variety of topics presented under the given title showed how much of a concern program construction became for modern software development.

The presentations covered the range from very practical aspects to highly theoretical foundations of programming. This reflected also the mixture of participants, who to the greater part came from computer science departments of universities or various national research institutions, but also from private industry and in particular also from software-houses.

It could not be overheard, both in the private discussions during coffee-breaks and the official discussion during lectures, that industrial and academic research did not allways communicate on the same level of

concerns.This could be noticed in one of the lecturers remarks, saying that money is not what they want to talk about in program development, thus provocating representatives from industry.

The general line of the course might also be seen under the three major problem areas, software development, better languages, program verification and correctness proofs, as it was listed in the summary on a similar course in the Newsletter No. 18 (Programming Foundations). However, for many of the lectures this classification is not too relevant, since they were concerned with all three subject areas at the same time, which may reflect the uniformity of the general subject area.

With this summary it is not intended to go deeper into any of the topics nor to treat them all, but just to give a general idea of what else is going on in the field of computer science.

System Environment and Programming Efficiency

In one of the lectures it was brought to consciousness that there exists a strongly diverging development of costs of hardware on the one hand and software on the other hand. As an often cited figure it was said, that computer cost/performance improves by a factor of two every two years, whereas computer software has by no means kept pace. The lecturer praising his own current programming environment, was stating the example, of how programmers' productivity was increased by a capital-intensive system environment. He cited his colleagues' opinion, who in general feel twice as productive as they were in any previous environment.

Specification as a Link between Problem Definition and Program Realisation

Two lectures were dedicated to specification tools and specification languages. The importance of specification was pointed out by the idea, that specification represents the contract between a supplier and the user of a program; thus specification is considered a mapping from input to output, described in a certain language, called a specification language, just as a program is considered a mapping from input to output represented in a formal programming language. Therefore a specification language must also be derived from formal systems, for instance from first order predicate calculus.

Programming Methodology

As one of the general ideas it could be recognized, that the effort of programming has to be met more on the level of problem solving, rather than being concerned with the question which instructions of a current programming language can be invoked to realize a solution. The programmers' situation with the current programming languages was characterized by the remark: «The programmer as a navigator».

In this respect I may remind of a similar concept in Wittgenstein's philosophy of (natural) languages, where there is expressed, that speech, thus, the language one is using, is responsible for the patterns of our reasoning («words as vehicles of thoughts»).

Transferred to the programmers' situation, this might mean, that much of our reasoning capacity has already been mislead and spoiled by the «thinking-vehicles» of current programming languages.

Much attention therefore was paid to recursive and nondeterministic constructs, serving as tools for structuring problems, respectively, for postponing decisions in the process of program development.

Various

Some of the further topic areas though occupying a considerably important part of the lectures, may just be outlined below, since it would not be of much use introducing all the notations applied, for instance in techniques of correctness-proofs, transformation methods or specification languages.

Correctness-proof has evolved to one of the big key-words in current program construction. Therefore program-development becomes «proof-and-program-development», specification again plays an important role and abstract data types were introduced.

Most amusing was the almost classical example of the five philosophers in a continuous life-cycle of «thinking-and-eating». Assuming that there was enough to eat for all of them, seated around a table with five seats, except that they were limited in their eating instruments, such that for each seat there was only one fork, however for eating one needed two. Each philosopher therefore had to use the fork from the left and from the right neighbour. Implying the objectives, that both, individual starvation and deadlocks had to be excluded, the challenge for the lecturers was, to state an example of proof-and-program rules.

The concepts of two major programming language systems were presented and discussed: CIP-L and EUCLID. EUCLID, a language for writing system programs, was derived from Pascal and extended by a set of proof-rules.The

basic idea of CIP-L (Computer-aided intuition-guided Programming Language) was characterized as a «vast pattern of formalism, to help recover intuition by the vehicles of formalism», and is designed to serve as a «wide spectrum language to support program specification and program development».

Conclusions

In spite the fact that not from each of the lectures one could gain immediate scientific profit, it was on the whole a valuable experience: one may benefit in ones own working environment, both by general inspiration and particular suggestions for solutions, one gets challenged to widen ones own fields of interest more or less related to current working projects, and last not least it may be considered a unique occasion to meet a greater number of lecturers, who are recognized as the main capacities in the field of computer science

Note to all TSO Users

C. Daollo, A. Rink

This is to inform that a new command procedure is available under TSO. The command procedure is called RENRESCT and its basic task is to rename, to reserve and to catalog an uncataloged data set residing on an USERXX volume (XX = 01/02/03/04/05/0A).

In detail this task is carried out in the following sequence:

- first the uncataloged data set is cataloged,
- second the data set is renamed
- then the renamed data set is reserved, and
- finally the old data set name is removed from the catalog.

The expiration date, which will be asked for during the reservation step, does not constitute the VTOC expiration date but constitutes the date used as internal reservation date (see page H.1-1 of «Proc» note (Librairies privées)).

An example on how to use the RENRESCT command procedure is shown below:

Example:

Known:

Useridentification	TSOTEST
Account number	14550823 (aut.no and progr. no)
Name of the uncataloged data set	MICKY.DATA
Volume	USEROA
Unit	3330-1
Desired new name	DONALD.DATA
Desired expiration date	31.12.78

All user input is printed in Lower case letters and is ended by CR (carriage return).

.
.

READY

renresct micky.data donald.data unit(3330-1) vol(useroa) CR

SAVED

TO TERMINATE, REPLY AT ANY TIME «END» OR «STOP».

DO YOU WANT TO RESERVE, INQUIRY OR STOP? (REPLY R, I OR S)

r CR

SPECIFY AUT: NO AND PROGR: NO

.... (8 NUMERICS)

14550823 CR

SPECIFY THE VOLUME SERIAL NUMBER.

...... (6 ALPHANUMERICS)

useroa CR

SPECIFY THE DATA-SET NAME (FULLY-QUALIFIED DSNAME)

tsotest.donald.data CR

SPECIFY THE EXPIRATION DATE (DAY/MONTH/YEAR)

...... (6 NUMERICS)

311278

YOUR DATA-SET IS NOW RESERVED.

DO YOU WANT TO RESERVE, INQUIRY OR STOP ? (REPLY R, I OR S)

s CR

TSOTEST.DONALD.DATA

--RECFM-LRECL-BLKSIZE-DSORG-CREATED--EXPIRES--SECURITY

  FB   80   3360   ** *31/10/78 00/00/00   NONE

--VOLUMES--

USEROA

READY

.

.

*
This refers to the VTOC expiration date

Note: During the execution of this command procedure the filenames SYSIN and SYSPRINT are freed. So if they are needed, they have to be reallocated (for instance: ALLOC file (SYSIN) dataset (*)).

To get more information on RENRESCT one can use the HELP command of TSO:

help renresct CR

New TSO Data Management Commands: CONCAT, DECONC and FREEALL

C. Daolio, A. Rink

This is to inform that the following new TSO data management commands are now available:

— CONCAT command
— DECONC command
— FREEALL command

The CONCAT command and the DECONC command offer the possibility to concatenate and deconcatenate data sets dynamically. (Concatenation of data sets refers to the technique to process two or more data sets successively as a single data set, that is the system treats a group of concatenated data sets as a single data set).

Concatenation of data sets can be achieved by assigning two or more data sets to one DD name respectively file name. (A DD name corresponds to the Data Definition (DD) name in OS/360 Job Control Language. For PL/1, this name is the file name in a DECLARE statement, for COBOL, this name is the external-name used in the ASSIGN TO clause, and for FORTRAN, this name is the data set reference number that identifies a data set and has the form «FTxxFyyy»).

The FREEALL command can be used to deallocate all up to that point dynamically allocated data sets and/or attribute lists.

Example:

A data set called EX.PLI contains a PL/1 program which is supposed to process two input data sets IN1.DATA and IN2.DATA in one run. As file name the program uses its standard file name SYSIN.

```
.
.
READY
free file (sysin)
READY
allocate file (sysin) dataset (in1.data) old
READY
allocate file (temp) dataset (in2.data) old
READY
concat file (sysin temp)
READY
run ex.pli
.
.
.
```

READY
deconc file (sysin temp)
READY
freeall
READY
•
•

To get more information on how to use the CONCAT, DECONC and FREEALL commands, the user can use the HELP command of TSO:

•
•

READY
help concat
•
•

help deconc
•
•

help freeall
•
•

Below follows a list of all Computing Centre Newsletter articles and IBM manuals which are of general importance to the TSO user. They will be available from the manual-library of the «Support to Computing» group.

References

Computing Centre Newsletter articles:

1. No. 12, Sept. 1977, IBM Time Sharing Option (TSO) - Concepts, Features and Facilities.
2. No. 21, May 1978, The Librarian - TSO Interface now in Use.
3. No. 21, May 1978, Note to TSO Users.
4. No. 22, June 1978, Note to all PSQ-FILEDI Users.
5. No. 22, June 1978, TSO Data Utilities: COPY, FORMAT, LIST and MERGE.

IBM manuals

1. «IBM System/360 Operating System: Time Sharing Option Terminal User's Guide, GC28-6763-X
2. IBM System/360 Operating System: Time Sharing Option Command Language Reference, GC28-6732-X
3. OS/MVT and OSV/VS2 TSO terminals, GC28-6762-X
4. IBM Program Product, OS/MVT and OS/VS2 TSO Data Utilities: COPY, FORMAT, LIST, MERGE, User's Guide and Reference, SC28-6765-4.

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Mme A. Cambon
Support to Computing
Bât. 36, Tel. 730

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