INTERNATIONAL FEDERATION FOR INFORMATION PROCESSING

IFIP SEMINAR HUNGARY '69

INTERNATIONAL FEDERATION FOR INFORMATION PROCESSING

Report on the INTERNATIONAL SEMINAR IN ADMINISTRATIVE DATA PROCESSING

HUNGARY 1969

This Seminar was organized by the
JOHN v. NEUMANN SOCIETY FOR COMPUTER SCIENCES
(Hungarian member society of IFIP) and the
HUNGARIAN COMPUTER EDUCATION CENTRE
supported by the
IFIP Technical Committee for Education (TC 3) and the
IFIP ADP Group (IAG)

Edited by
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Co-director of the Seminar

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PREFACE

The John v. Neumann Society for Computer Sciences (Hungarian member society of IFIP) and the Hungarian Computer Education Centre (formerly National Supervisiory Board of ADP) organized an International Seminar on Administrative Data Processing in Hungary that lasted for six months, from the 1st of July, till the 20th of December 1969, supported by the IFIP Technical Committee for Education (TC 3), and Administrative Data Processing Group (IAG). Similar seminars were organized by the IFIP in collaboration with the International Computation Centre in Rome in 1965/66, and in London in 1967.

CONTENTS

ORGANIZING COMMITTEE

The committee in charge of the supervision and responsible for the organization of the Seminar included the following members:

Lajos PESTI	Chairman of the Organizing Committee (Head of the ADP Department, Central Statistical Office)
Sándor FARAGÓ	Director of the Seminar (Director of the Computer Education Centre)
Ervin GÖMBÖS	Co-director of the Seminar (Software Education Consultant, Computer Education Centre)
Zoltán BOTKA	(Director of the National Supervisory Board of ADP)
László HÁKLÁR	(Director of the Computing Centre, Ministry of Finance)
Iván KÁDÁR	(Scientific director of DATORG, Secretary of the John v. Neumann Society for Computer Sciences)
László KALMÁR	(Member of the Hungarian Academy of Sciences, Professor of Mathematics, University of Szeged)
Tamás KORBULY	(Manager of the Organizing and Computing Department, Ganz-Mávag Factory, Budapest)
Béla KREKÓ	(Professor of Mathematics, Director of the Computing Centre, University for Economics, Budapest)
Zsolt NÁRAY	(Director of the Institute for Coordination of Computer Technique)

Gyula PÁDÁR	(Head of Department of INFELOR, Systems Engineering Co.)
Rezső TARJÁN	(Ph. D., Dr. Techn. Sc. University Professor, Head of Dept. State Office of Technical Development, President of John v. Neumann Society for Computer Sciences)

Besides the Organizing Committee, all subjects had a leader who was responsible for the syllabus of the subject, and for the coordination of the lectures. Ervin Gömbös, Co-director of the Seminar was the permanent leader in charge.

AIMS OF THE SEMINAR

By the organization of the Seminar we intended to realize the following objectives:

- to give the latest knowledge and experience gained by the application of electronic data processing and computing techniques to young experts coming from countries, where education and development in these fields is most urgently needed. The students came from socialist, or from developing countries. It is our international obligation to promote in these countries the development of a scientific field which increases the effectiveness of social production,

- to establish contacts during this period among the leaders of the IFIP, foreign lecturers and students, which might lead to fruitful scientific cooperations,

- to help the development of ADP in the countries concerned in such a manner, that their students pass the knowledge obtained during the Seminar to colleagues and professionals at home,

- to give further impetus by the Seminar to the development and education in this special field in Hungary.

PUBLICITY

Starting to make propaganda for the Seminar proved to be a bit late. At the beginning of January, 1969, we sent a circular letter to the member societies of IFIP and to other similar international organizations (IFAC, FID etc.), as well as to the editorial offices of leading technical journals, in which the first announcements of the Seminar appeared. By the end of February a bulletin was completed, – which was distributed too.

The Hungarian Ministry of Foreign Affairs was very helpful in this work. Our legations in the socialist-, and in the "third world" countries requested the highest competent national organizations to draw attention to the Seminar. A considerable number of the students arrived through this "channel".

In this respect IFIP supported us by publishing the circular letter and the above mentioned bulletin in the first and second issues of IAG Communications 1969, furthermore mailed 200 bulletins to different addresses.

Due to the fact being late with starting the propaganda work, the date of application had to be extended, and the final list of the students could be completed only one month prior to the beginning of the Seminar.

STUDENTS

In the Seminar the following 23 students were participating with university diploma:

Bulgaria	2 persons	**Todorka MOSKOVA**	(electrical engineer)
		Ferdinand PETKOV	(economist)
Cuba	3 persons	**Alberto AGUADO Behar**	(electrical engineer)
		Alejandro AGUILAR Trujillo	(economist)
		José MENCHACA Montano	(engineer)
Czechoslovakia	7 persons	**Katarina BARTOSOVA**	(mathematician)
		Eva HRABCOVA	(mathematician)
		Jan JISKRA	(economist)
		Maria KONSKA	(mathematician)
		Anna KRAJCIKOVA	(mathematician)
		Miloslav KRAJNÁK	(economist)
		Ladislav ORSÁG	(economist)
Ghana	1 person	**Dipankar RAY**	(economist)
India	3 persons	**Divakara Rao GUMMALLA**	(statistician)
		Narendranath RAJE	(statistician)
		Rajagopala SARMA	(statistician)
Poland	5 persons	**Bogdan JAKUBOWSKI**	(engineer)
		Andrzej KISIEL	(economist)
		Maria KOWALIK	(mathematician)
		Izabella LINKOWSKA	(economist)
		Leslaw WOLANSKI	(economist)
United Arab Republic	2 persons	**Ahmed OADA**	(statistician)
		Fathia ZAGHLOUL	(mathematician)

Breakdown by sex:	male:	15 persons
	female:	8 persons
Breakdown by qualification:	economist:	9 persons
	mathematician:	6 persons
	statistician:	4 persons
	engineer:	4 persons

The avarage of the students was 30.

PROGRAMME

Theoretical period

From the 1st of July, till the 1st of November, lectures were held during the Seminar, lasting 6 hours/day. The first lecture took place from 8 to 10.40 a.m., the second from 11 a.m. till 13.40 p.m. with two, ten minutes' intervals. Sometimes there were lectures also on Saturdays. The afternoons were free, which the stundents spent mainly by preparing homeworks individually or in groups. Teamwork was established by forming groups of 4–5 persons of different nationalities. In some cases the homework was to be solved by groups. During the above period, altogether 49 lecturers (36 Hungarian and 13 from abroad) held lectures in English. The lectures were given in 522 hours.

The foreign lecturers came from the following countries:

Denmark (1), England (1), France (1), German Federal Republic (1), Japan (1), the Netherlands (6), Sweden (1), and the United States of America (1).

Regularly two themes were running simultaneously i.e. two lectures were held daily, on two different subjects.

LECTURES

I. ADP EQUIPMENTS AND SYSTEMS

Subject leader: **T. SZENTIVÁNYI** (Hungary)

1. **M. GÁL** (Hungary)
   Punched card machines for data processing — hrs. 6

2. **J. M. van OORSCHOT** (the Netherlands)
   Mechanized office equipments and automatic accounting machines
   Typical data processing machine configurations (Case study) — hrs. 9

3. **Cs. GERGELY** (Hungary)
   Equipments of the electronic data processing and computing techniques
   Peripheral units of the ADP equipments and the electronic computers — hrs. 12

4. **L. DEDEK** (German Federal Republic, Siemens)
   Teleprocessing systems — hrs. 6

5. **T. SZENTIVÁNYI** (Hungary)
   Selection and installation of the adequate machine configuration
   The establishment of computing centres — hrs. 9

   Total — hrs. 42

II. PROGRAMMING TECHNIQUES

Subject leader: **M. HAVASS** (Hungary)

1. **A. MÜNNICH** (Hungary)
   Architecture of computers — hrs. 6

2. **I. MAROS** (Hungary)
Basic concepts and methods of programming
Programming in machine language — hrs. 6
Introduction to the automatic programming — hrs. 6

3.* **G. SÁNDOR** (Hungary)
COBOL programming language — hrs. 33

4.* **Gy. LŐCS** (Hungary)
FORTRAN IV programming language — hrs. 33

5. **A. MÜNNICH** (Hungary)
PL/I programming language — hrs. 36

6. **B. DÖMÖLKI** (Hungary)
Systems software — hrs. 18

7. **Gy. PÁDÁR** (Hungary)
Application program-packages — hrs. 6

8. **Á. KERTÉSZ** (Hungary)
Operating systems and program libraries — hrs. 12

Total — hrs. 156

III. BASIC CONCEPTS IN INFORMATION PROCESSING ORGANISATION OF DATA PROCESSING SYSTEMS

Subject leader: **A. A. M. VEENHUIS** (the Netherlands)

1. **P. SVEISTRUP** (Denmark)
An approach to systems work — hrs. 15

2. **A. SCHINKEL** (the Netherlands)
Systems and systems design (Systematic approach to the development of business information systems) — hrs. 33

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*There was a possibility to choose between FORTRAN and COBOL (9 students learned FORTRAN, and 14 COBOL)

3. **B. SCHEEPMAKER** (the Netherlands)
Management and automation
System for production control — hrs. 15

4. **G. M. NIJSSEN** (the Netherlands)
File organisation techniques and data–banks — hrs. 15

5. **M. KRAJCSOVICS** (Hungary)
Program packages for serial file handling — hrs. 9
Production control in factories with batch production — hrs. 12

6. **P. TAS** (the Netherlands)
An approach to the organisation of
municipal information systems — hrs. 12

7. **D. FAVRE** (England)
BISAD system of Honeywell — hrs. 12

Total — hrs. 123

IV. THE APPLICATION OF MATHEMATICAL TECHNIQUES FOR DECISION MAKING (OPERATIONS RESEARCH)

A. Theory

Subject leader: **A. PRÉKOPA** (Hungary)

1. **A. MAJTHAY** (Hungary)
Linear algebra — hrs. 6
Linear programming — hrs. 12

2. **J. SZÉP** (Hungary)
Analysis repetition — hrs. 12

3. **G. ZOUTENDIJK** (the Netherlands)
Computational aspects of linear programming
Large, specially structured linear programs — hrs. 15

4. **Mrs. K. BOGNÁR** (Hungary)
Introduction to the probability theory — hrs. 12

5. **Mrs. M. ZIERMANN** (Hungary)
Mathematical theory of inventory control
Basic models of inventory control — hrs. 6

6. **A. PRÉKOPA** (Hungary)
Stochastic inventory control
models of minimum cost — hrs. 6

7. **A. HEPPES** (Hungary)
Transportation problems — hrs. 6

8. **L. B. KOVÁCS** (Hungary)
Discrete programming — hrs. 6
Dynamic programming — hrs. 6

9. **B. KREKÓ** (Hungary)
Non-linear programming — hrs. 12

10. **J. ABADIE** (France)
Algorithmic and numerical aspects of
non-linear programming — hrs. 6

11. **H. WOLD** (Sweden)
Mathematical statistical methods in
operations research — hrs. 12

12. **P. BOD** (Hungary)
Graphs and networks — hrs. 6

13. **A. PRÉKOPA** (Hungary)
Stochastic optimization — hrs. 6

Total — hrs. 129

B. Case studies
Subject leaders: P. BOD (Hungary)
T. PONGRÁCZ (Hungary)

1. **Y. KURATANI** (Japan)
Application of operations research — hrs. 3

2.	**I. MAROS** (Hungary) The economical cutting up of steel strips at plate-mill works	hrs.	3
3.	**Á. KOVÁCS** (Hungary) A model for the optimal allocation of a firm's research and development resources	hrs.	3
4.	**A. BRÓDY** (Hungary) Application of input-output analysis	hrs.	6
5.	**Gy. SZAKOLCZAI** (Hungary) Price models and price planning	hrs.	6
6.	**J. KORNAI** (Hungary) Mathematical programming tools applied to economical planning	hrs.	6
7.	**M. TARDOS** (Hungary) The problem of central management of foreign trade turnover	hrs.	6
8.	**T. PONGRÁCZ** (Hungary) Two applications of transportation models in the economical practice	hrs.	3
9.	**P. BENEDEK** (Hungary) Problems in the oil industry	hrs.	3
10.	**F. FORGÓ** (Hungary) A model of forest plantation	hrs.	3
11.	**J. SEBESTYÉN** (Hungary) Normativ price analysis in agriculture	hrs.	3
	Total	hrs.	45

V. EDUCATIONAL METHODS, PERSONNEL REQUIREMENTS, CAPITA SELECTA*

Subject leader: **Z. BÁTHORY** (Hungary)

1.	**SYLVIA CHARP** (USA) Education problems of EDP experts	hrs. 3
2.	**Mrs. T. KORNAI** (Hungary) The social effects of electronic data processing within the firm	hrs. 6
3.	**I. HARSÁNYI** (Hungary) Social psychological conditions of professional training	hrs. 6
4.	**J. CSIRSZKA** (Hungary) Personnel requirements of EDP	hrs. 6
	Total	hrs. 21

VI. SUMMARY LECTURES

1.	**R. TARJÁN** (Hungary) Future trends of digital computers	hrs. 3
2.	**L. KALMÁR** (Hungary) Trends of software development	hrs. 3
	Total	hrs. 6

*Note: On the 25th, 26th and 27th of September, the students took part in the "Computer education" symposium, organized for the East-European countries at Balatonszéplak.

SUMMARY TABLE OF THE LECTURES

Subject	Number of Hungarian lecturers	Number of hours	Number of foreign lecturers	Number of hours	Total	
					number of lecturers	number of hours
I.	3	27	2	15	5	42
II.	8	156	–	–	8	156
III.	1	21	6	102	7	123
IV/a.	9	96	3	33	12	129
IV/b.	10	42	1	3	11	45
V.	3	18	1	3	4	21
VI.	2	6	–	–	2	6
Total:	36	366	13	156	49	522

PRACTICAL TRAINING PERIOD

Responsible: **József LUKÁCSI** (Hungary)

From the 3rd of November, till the 6th of December the students have taken part in a 5 weeks' practical training at different computer centres in Hungary, furthermore at the U.N. Computing Research Centre in Bratislava (5 persons). The distribution of the students for the practice was made according to their special professional interest.

During the practical training the students delt with a certain subject, under the direction of a consultant, and became acquainted with the organization and work of the centres involved. At the end of the practical training period they wrote a paper on their special topic.

Site of the practice	Name of the Students	Special topic	Consultant
Csepel Steel and Metal Works (Csepel Vas- és Fémművek)	Jan Jiskra	The system of management and data processing of fixed assets	Gy. Vig
DATORG, Foreign Trade Data Processing and Organizing Co. Ltd.	Andrzej Kisiel	Application of mathematical models and computers in Hungarian foreign trade	T. Pongrácz
University Computing Centre (Egyetemi Számítóközpont)	Eva Hrabcova	Data processing applications in universities	Mrs. E. Pogány
Bureau for Computation and for Mechanisation of Building Administration (Építőipari Számítástechnikai és Ügyvitelgépesítési Vállalat)	Bogdan Jakubowski	The VOP-method and its applicability in building industry	J. Aszalós Mrs. S. Kaliczky A. Szolnoky
INFELOR Systems Engineering Company (INFELOR Rendszertechnikai Vállalat)	Dipankar Ray	System software (A study of operating systems)	Gy. Révész
	Katarina Bartosova	Some methods for solving problems in discrete programming	T. Lampl
Central Statistical Office (Központi Statisztikai Hivatal)	José Menchaca	The estimation of parameters in the construction of econometric models	Z. Vithalm
Computer Centre of Central Statistical Office (KSH Számítástechnikai Igazgatóság)	Maria Konska	The processing of data of the statistical observation of household expenditure in Hungarian Central Statistical Office	Z. Kalas
	Miloslav Krajnák	The analysis of the household expenditure pattern in Hungary	Z. Kalas

Site of the practice	Name of the Students	Special topic	Consultant
Hungarian National Bank (Magyar Nemzeti Bank)	Ferdinand Petkov	The method of designing the electronic data processing system of the National Bank of Hungary	Z. Fila
Mathematical Research Institute (MTA Matematikai Kutatóintézet)	Fathia Zaghloul	Complementary algorithm for quadratic programming	A. Majthay
Institute of Industrial Economic and Management, Ministry of Heavy Industry (NIM IGÜSZI)	Todorka Moskova	A linear programming approach to the stock cutting problem	I. Maros
	Alberto Aguado	Linear programming application, a diet problem	A. Heppes
Institute of Economic Planning, National Planning Office (OT, Tervgazdasági Intézet)	Anna Krajcikova	A study on data bank	P. Vásárhelyi
	Alejandro Aguilar	Input-output tables (Computation and use)	P. Vásárhelyi
National Management Development Centre (Országos Vezetőképző Központ)	Leslaw Wolanski	Breakdown method	S. Szarvas
Computing and Management Organization Service (Számítástechnikai és Ügyvitelszervező Vállalat)	Ladislav Orság	The ICL Promt	Mrs. J. Geschich
	Izabella Linkowska	Computer payroll	Mrs. Gy. Majtényi
U. N. Computing Research Centre (Pozsony ENSZ Számítóközpont)	D. R. Gummalla	A study of file organisation techniques for large-scale sample survey data	Milos Lampert
	Maria Kowalik	File maintenance	
	Ahmed Oada	On decision-making process at a firm	
	Narendranath Raje	Statistical Information System	
	Rajagopala Sarma	On the methodology of computer simulation	

EXAMINATIONS

I. Non-official tests

1. Hardware (25 July) — Duration: 2 hours
2. COBOL (18 August) — Duration: 3 hours
3. FORTRAN (18 August) — Duration: 3 hours

II. Official examinations

For all examinations:

Chairman: **R. A. Buckingham** (England), Chairman of the IFIP TC 3

Vice-chairman: **S. Faragó** (Hungary), Director of the Seminar

Secretaries: **A. A. M. Veenhuis** (the Netherlands), from IAG
E. Gömbös (Hungary), Co-director of the Seminar

1. PL/I — Duration: 3 hours
(Written examination)
(9 September)
Examiners: **A. Münnich** (Hungary)
E. Gömbös (Hungary)

2. Operations research — Duration: 4 hours
(written examination)
(31 October)
Examiners: **A. Prékopa** (Hungary)
A. Majthay (Hungary)
L. Kovács (Hungary)

3. System organization — Duration: 5 hours (theoretical part 2 hours practical part 3 hours)
(written examination)
(17 December)
Examiners: **A. Schinkel** (the Netherlands)
P. Tas (the Netherlands)

4. Final oral examination
(19 December)

At the final examination, made before five boards of examiners, the students gave account of their knowledge acquired, firstly on the basis of their paper prepared during the practical training period. Previously the papers had been evaluated and marked by the members of the respective board of examiners. In front of a board of examiners 4, respectively 5 students sat for the examination, which lasted 45 minutes, on the average.

Boards of Examiners of the final oral examination:

A. **A. Prékopa** (Hungary)
A. Münnich (Hungary)

B. **A. Schinkel** (the Netherlands)
Gy. Lőcs (Hungary)
L. Kovács (Hungary)

C. **P. Tas** (the Netherlands)
B. Dömölki (Hungary)
A. Majthay (Hungary)

D. **M. Krajcsovics** (Hungary)
I. Kádár (Hungary)
I. Maros (Hungary)

E. **Gy. Pádár** (Hungary)
P. Bod (Hungary)

EVALUATION OF THE EXAMINATIONS

At every examination, the students got marks, ranging from 1 to 10. Marks, under 6 meant an "unsatisfactory mark". The computation of the total marks was made by means of weighting the results of the examinations as follows: PL/I (1), Operations research (2), System-organization (3), the better of the paper written during the practical training period-, or the final oral examination (3).

RESULTS

Name	PL/I	Operations research	System organization	Paper	Final exam	Total marks (weighted)
D. Ray	9	10	9	10	10	86
B. Jakubowski	8	9	7	10	9	77
N. Raje	6	9	8	8	9	75
D. R. Gummalla	7	8	7	10	10	74
R. Sarma	9	7	8	9	9	74
E. Hrabcova	9	8	7	9	8	73
J. Menchaca	9	7	7	9	9	71
J. Jiskra	8	7	7	9	10	70
F. Zaghloul	10	9	5	10	8	70
T. Moskova	9	8	6	9	8	70
A. Aguado	10	7	7	8	8	69
A. Oada	6	10	4	7	6	69
M. Konska	9	7	6	9	9	68
A. Aguilar	7	6	7	9	9	67
M. Krajnák	7	6	7	9	9	67
A. Kisiel	7	6	7	8	8	64
I. Linkowska	8	7	4	10	9	64
F. Petkov	6	6	7	8	8	63
M. Kowalik	9	8	4	8	7	61
L. Wolanski	7	6	5	7	8	58
L. Orság	9	6	6	6	6	57
K. Bartosova	7	6	5	7	7	55
A. Krajcikova	8	7	4	6	5	52

CULTURAL AND OTHER PROGRAMS

For the students and lecturers the following collective social programs had been organized:

1. Half day sightseeing tour in Budapest, with guide.
2. One day excursion to Visegrád and Esztergom, by coach.
3. One day excursion from Balatonfüred to Badacsony and Tihany by chartered yacht.
4. One day excursion by coach via Balatonfüred-Veszprém-Zirc-Pannonhalma-Győr-Pápa-Balatonfüred.
5. Sightseeing tour at Pécs, with guide, on the way from Balatonfüred to Szeged.
6. The Moscow Ice-Revue in Budapest.
7. Verdi: Rigoletto.
8. Ballet of Pécs.
9. Sightseeing tour at Szeged, with guide.
10. Visit to the Laboratory of Cybernetics, József Attila University of Sciences.
11. Meeting with the members of the COMECON Permanent Statistical Committee's Technical Group for Education, followed by a dinner party at Balatonfüred.
12. To the celebration of birthdays, occurring during the Seminar, the students organized social meetings on their own expenses. The celebrated student was toasted according to national traditions. On these meetings the students sang their folk-songs, and danced their folk-dances.
13. Lecture on the history of Budapest.
14. Lecture on the history of Hungary.

SITES OF THE SEMINAR

The accomodation, meals, travelling (Budapest-Balatonfüred-Szeged-Budapest) and a part of the special programs have been arranged by the EXPRESS Youths' and Students' Travel Bureau. The trip was made at every occasion by coach.

1. The first part of the Seminar – from the Ist of July, till the 26th of August – took place in Budapest. Both the students and the lecturers were accomodated in the new Students' Hostel in single rooms. The lectures were given in the building of the neighbouring High-School, and meals in the Thököly Restaurant.

2. From the 26th of August, till the 5th of October, the Seminar was continued in Balatonfüred, at the Hotel Marina. Here the students of different nationalities were accomodated in double bedrooms. Lectures were given inside the hotel.

3. From the 5th of October, till the 1st of November, the students were accomodated in double bedrooms at Szeged, at the Hotel Tisza. Lectures were given in the building of the Szeged Academic Centre.

4. From the beginning of the practical training period, until the end of the Seminar – i. e. from the 1st of November, till the 20th of December – the students stayed in Budapest, in single rooms, at the Hotel Szabadság (with the exception of 5 students, who spent 5 weeks at Bratislava). To this period we stopped the institutional feeding, everybody provided for oneself. For this purpose we ensured – in additon to the pocketmoney – 1500,– Ft/student monthly.

BOARD AND LODGING OF THE STUDENTS

We have provided all students with 1000 Ft pocket-money monthly and bus tickets in Budapest, besides the board and lodging. The duplicated materials of each lecture were distributed in due time, prior to the examinations. Students were granted note-books, ball point pens, portfolios and writing-pads as well. It has been arranged that the exercises written during the practical training period were typed and we had the Hungarian articles related to the topic translated into English.

We acquired the necessary technical books from Hungarian libraries, in addition to the 36 volumes, placed to our disposal by IFIP.

OPENING AND CLOSING CEREMONY

The Seminar was opened officially on the 8th of July – after the actual beginning, the 1st, of July – by István HUSZÁR, Secretary of State, President of the Hungarian Central Statistical Office.

Presidency of the opening ceremony (from left to right): S. Faragó, Director of the Seminar, N. I. Bech (Denmark), Director of Regnecentralen, I. Kádár, Secretary of the John v. Neumann Society, R. A. Buckingham (England), Chairman of IFIP TC 3, I. Huszár, President of the Central Statistical Office, S. D. Duyverman (the Netherlands) Chairman of IAG, R. Tarján, President of the John v. Neumann Society, Z. Botka, Director of the National Supervisory Board of ADP, A. A. M. Veenhuis (the Netherlands), Director of the Rome and London Seminars, E. Gömbös, Co-director of the Seminar.

On the opening ceremony reporters from the TV News and from the Evening Chronicle of the Radio were also present.

On the eve of the opening day the Organizing Committee held a reception in the House of Technics, and following the official opening a lunch was given in the Thököly Restaurant.

Audience of the opening ceremony. In the first row: Dr. Sylvia Charp (USA), Mrs. and Mr. J. Hebenstreit (France), P. Ercoli (Italy) – members of IFIP TC 3.

The closing ceremony took place on the 20th of December, where Lajos Pesti, Chairman of the Organizing Committee of the Seminar, gave the closing address. On the previous evening a banquet was given, and after the ceremony a reception was held.

Foreign guests:
Mrs. Duyverman (the Netherlands)
A. A. M. Veenhuis (the Netherlands)
P. Tas and A. Schinkel (the Netherlands) members of the final-examination board.

SUPPORT PROVIDED BY THE IFIP

The main support given by the IFIP was that obtained from Mr. Veenhuis, director of the former Rome and London seminars. In 1969 he visited Budapest 6 times, first in the middle of April. Due to his great experience, his help and suggestions were very useful. He supported us in selecting and organizing the participation of the most suitable foreign lecturers, arranging the final-exams, and finally in compiling the III. subject of the Seminar.

IFIP Granted $ 2700 to the financial fund of the Seminar.

We got the whole material of the London seminar, in 35 copies, which were distributed among the students and lecturer and in addition a library, consisting of 36 volumes, furthermore several other IFIP and IAG publications were received.

CONTRIBUTION TO THE EXPENSES

The financial basis of the Seminar was ensured by Hungarian firms and institutions, in form of scholarships. Moreover two Czechoslovakian students participated at the expenses of their employers, and in addition some computer manufacturers, as well as IFIP, supplied financial support.

The scholarships were offered by the following organizations:

a) Hungarian companies and institutes:

Csepel Steel and Metal Works
(Csepel Vas- és Fémművek)

Steel Works, Dunaújváros
(Dunai Vasmű, Dunaújváros)

BUDAPRINT, Hungarian Textile Printing Co.
(Pamutnyomóipari Vállalat)

GANZ-MÁVAG, Locomotive and Railway Carriage Manufacturers,
(GANZ-MÁVAG, Mozdony- Vagon- és Gépgyár)

Hungarian Optical Works
(Magyar Optikai Művek)

VIDEOTON

IBM Hungary
(IBM Magyarországi Kft.)

Central Statistical Office
(Központi Statisztikai Hivatal)

Institute of Industrial Economic and Management, Ministry of Heavy Industry
(NIM Ipargazdasági és Üzemszervezési Intézet)

Computing and Management Organization Service
(Számítástechnikai és Ügyvitelszervező Vállalat)

Research Institute for Electronics and Precision Mechanics
(Elektronikai és Finommechanikai Kutató Intézet)

Electronic Measuring Gears
(Elektronikus Mérőkészülékek Gyára)

Computer Centre for Light Industry
(KÖGAV, Könnyűipari Gépi Adatfeldolgozó Vállalat)

Hungarian Academy of Sciences
(Magyar Tudományos Akadémia)

Engineering Bureau of the Hungarian United
Chemical Works
(Magyar Vegyipari Egyesülés, Mérnöki Iroda)

FERROGLOBUS

b) Foreign companies and institutes:

VYSOKÁ SKOLA BÁNSKÁ (Ostrava, Czechoslovakia)

CESKÉ ZÁVODY MOTOCYKLOVÉ (Strakonice, Czechoslovakia)

HONEYWELL

SIEMENS

IFIP

ICL

CONCLUSIONS

By organizing the Seminar we reached the goals mentioned at the beginning of this report. We succeeded in arranging the Seminar smoothly, and more effectively as expected. The general level of the lectures was high, both in respect of content and methodology.

It happened rarely that the students couldn't follow the lecture, were dissatisfied with it's contents, or with the manner of lecturing.

In the first period the copying of the text of the lectures in English was difficult, but we could solve this problem in due time. Thus, in September, respectively in October – with one or two exceptions – we could place all of them at the disposal of the students. The main cause of the lag was, that the lecturers didn't provide the materials in the time stated in our contract – furthermore, that we couldn't manage the copying of the materials within a few days, we needed at least 2 or 3 weeks.

The students attended the lectures regularly, unjustified or causeless absences didn't happen. They were very diligent and showed great interest – particularly before the exams.

In the first time some students had problems because of their poor English. Nevertheless, during the semester they have improved their English to such a level, that on the examinations, they were able to reach the required standards and thus neither they returned home "empty-handed". All of the students got certificates. The subject of operations research, which gave rise to many debates, – it was thought to be oversized by the leaders of IFIP – still justified our views. The mathematical knowledge of the students was enough to understand the material, and as it turned out from the papers written during the practical training period, the majority of the students took interest mainly in this topic. Naturally, we took care of it, that the subject shouldn't be too theoretical, the emphasis was on the application. It has to be mentioned here, that we started to organize the Seminar with the aim of emphasising this subject better than it was in the previous seminars, according to the fact, that this field has already reached the world standard in Hungary. Previously this suggestion had been accepted by the IFIP Technical Committee for Education. Only a few of the lectures scheduled originally for the Seminar were left out, which didn't however essentially influence the program. Otherwise all the lectures – enumerated in this report – were held at the appointed date.

During the six months of the Seminar a really good community developed out of the group of seven nationalities. The "national isolation" experienced at the beginning (students from the same country were always together) ceased and we didn't experience this reservedness neither at work nor in the leisure time.

After the successful exams and on the basis of the opinion of the lecturers and that of the students themselves, we think, that the 23 students went home by gaining a lot in knowledge and experiences and that this six months organized by us was a time which they would always recall with pleasure, during their whole life.

PRESS REACTIONS

During the Seminar – besides the foreign press – the following Hungarian newspapers and reviews gave reports on the Seminar:

1.	Népszabadság	1 July, 1969	(p. 5.)
2.	Népszava	8 July, 1969	(p. 1.)
3.	Napló	10 September, 1969	(p. 3.)
4.	Napló	14 October, 1969	(p. 4.)
5.	Délmagyarország	10 October, 1969	(p. 3.)
6.	Magyar Nemzet	11 December, 1969	(p. 7.)
7.	Magyar Hírlap	11 December, 1969	(p. 5.)
8.	Népszabadság	18 December, 1969	(p. 6.)
9.	Információ Elektronika 1969/1.		(p. 54.)
10.	Információ Elektronika 1969/3.		(p. 237.)
11.	Számvitel- és Ügyviteltechnika 1970/2.		(p. 81.)
12.	KGST Statisztikai Információs Bulletin 1969/2. (COMECON Secretariate, Moscow)		(p. 62.)

On the 10th of December, 1969 Mr. L. Pesti gave a press conference in the Central Statistical Office, in the presence of some students.

INTERNATIONAL FEDERATION FOR INFORMATION PROCESSING

Joint Working Group of the IFIP Technical Committee for Education and the IFIP ADP Group on the Organisation of Educational Seminars (WG3.2)

certificate

awarded to

born on in

who attended the **IFIP Seminar in Administrative Data Processing**, organised by the John von Neumann Society for Computer Sciences and the Computer Education Centre (formerly National Supervisory Board of ADP) **in Budapest**, Hungary, from July 1st through December 20th, 1969

has been examined in the subject matter covered by the Seminar (see overleaf)

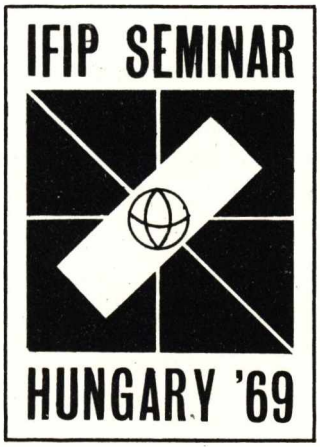
and has reached the standards approved by the Board of Examiners

Budapest, 20th December 1969

The John von Neumann Society:	**The IFIP WG3.2:**	**The Seminar Directors:**
R. Tarján, President	R.A. Buckingham, Chairman	S. Faragó
L. Pesti, Chairman Organising Committee	A.A.M. Veenhuis, Secretary	E. Gömbös

BADGE OF THE SEMINAR

We had 300 badges made for the Seminar, which included the emblem of IFIP



CURRICULA VITAE OF THE STUDENTS

Alberto AGUADO Behar (28) obtained a degree for Electrical Engineering at the University of Havana, Cuba. Since 1966 working as a systems engineer in the Department of Cybernetics of the Academy of Sciences and experienced in mathematical models in sugar industry but no prior experience in data processing.

ADDRESS: Calle B. No 51 apto 7 e/3 ray
Vedado-Habana 5 ta,
CUBA

J. Alejandro AGUILAR Trujillo (31) obtained a degree at the Institute for Economics, University of Havana Cuba. Experienced for five years as an accountant auditor and since 1965 working as an analyst for the national economic planning to design an input-output model. Especially interested in mathematical models and OR-techniques for economic planning.

ADDRESS: Concejal Veiga 108 apt 21
Santos, Suarez-Habana, 5
CUBA

Katarina BARTOSOVÁ (27) obtained a degree of the Faculty of Mathematics, University of Bratislava, CSSR. Has been employed as a programmer from 1963, during the first three years at the Slovak Technical University, afterwards for three years at the Computer Centre of Kablo. Is now since this year programmer at the U. N. Computing Research Centre in Bratislava and especially in charge of integrated data processing systems for industrial plants.

ADDRESS: Sumracná 4, Bratislava
CSSR

Divakara Rao GUMMALLA (35) obtained M. A. and M. Sc. degrees with extensive expertise in statistics and a training course in data processing in Calcutta, India. Since 1957 has been working at the Indian Statistical Institute on planning of large scale sample surveys, data processing and analytical reports. Experience in data processing for commercial firms and the National Sample Survey.

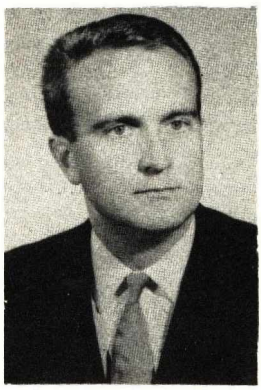
ADDRESS: National Sample Survey Dept.
Indian Statistical Institute
203 B. T. Road, Calcutta-35
INDIA

Eva HRABCOVÁ (25) obtained a degree of the mathematics department, University Palacky, CSSR, and since 1966 has been employed as programmer-analyst for scientific and administrative data processing, as well as in teaching these subjects at the University of Ostrava. She expects to acquire specific knowledge and experience to improve her skill both in administrative data processing and teaching.

ADDRESS: Délnická, 21 Havirov, 7
CSSR

Bogdan JAKUBOWSKI (30) obtained a degree at the Polytechnic High School in Krakow, Poland. Experience since 1963 as engineer and chief programmer in the Institute of Investigations and Experiences in the Building Industry, especially in mathematical and computer planning methods (PERT and WAMPP). Interested in further development of systems for building industry.

ADDRESS: Dzierzynskiego 53 m. 65, Krakow
POLAND



Jan JISKRA (35) obtained degrees at the School of Economics, the Technical College in Prague and the University of 17th November in Prague. For three years has been employed as credit-inspector in the State Bank, afterwards for six years head of the control department of the Motorcycles Association and since 1965 programmer-systems analyst in the Czechoslovak Motorcycle Works. Experienced in data processing of the accounts and programming Minsk 22. Interested in Management Sciences and Management Information Systems.

ADDRESS: Zizkova 850/1, Strakonice
CSSR

Andrzej KISIEL (28) obtained a degree of M. Sc. in Economics at the High School of Economics and Statistics in Warsaw, Poland. After two years in the Production Planning and Control Group of a mechanical factory, since 1963 has been working at the Polish Management Development Centre on methodology for management training as well as on management systems and integrated systems for market research in socialist economy.

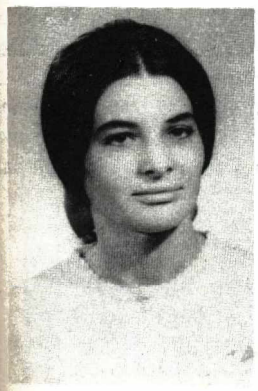
ADDRESS: Washington Ave 39/86, Warszawa
POLAND

Maria KONSKÁ (25) obtained a degree in mathematics at the PFUK Bratislava, CSSR. For two years has been employed as a programmer with the Regional Computer Centre of the Slovak Planning Committee and since 1968 as an engineer with the United Nations Computing Research Centre in Bratislava. Especially in charge of the study and development of mathematical and statistical applications in data processing.

ADDRESS: C. A. 53. Bratislava
CSSR

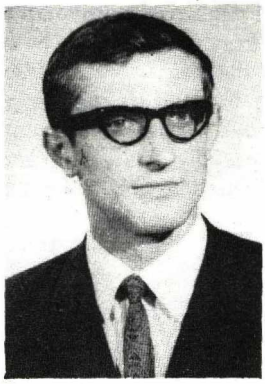
Maria KOWALIK (25) obtained a degree M. Sc. in mathematics at the Jagiellonian University of Krakow, Poland. Since 1967 has been employed as a programmer for planning and control of the building industry. Is especially interested in management systems for building industry.

ADDRESS: ul. Miechowicka 14/1, Chorzow
POLAND



Anna KRAJCIKOVÁ (25) obtained a degree of the Faculty of Mathematics at the University of Bratislava, CSSR. From 1965 as programmer in the Computer Centre for the Transport and since 1968 as an engineer at the U. N. Computing Research Centre in Bratislava. Especially interested in the construction of methods for a data bank and integrated systems for data processing.

ADDRESS: Záluzická 21. Bratislava
CSSR

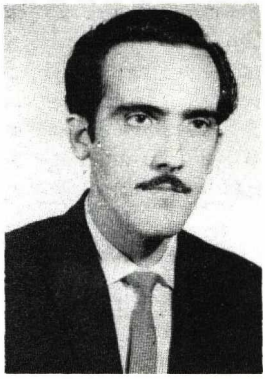


Miloslav KRAJNÁK (26) obtained a degree in commercial engineering at the Faculty of Economics in Prague, CSSR. After three years of experience as commercial referent with the Glassexport Company, since 1968 as an engineer at the U. N. Computing Research Centre in Bratislava. Especially interested in statistical information systems and programming for trade applications.

ADDRESS: Matuskova 9/a, Bratislava
CSSR

Izabella LINKOWSKA (39) obtained a degree at the Highschool of Economics and Statistics in Warsaw, Poland. Prior experience as programmer and systems analyst in the building industry with ICL 1904 equipment and Cobol. Interested in development of data processing in the building industry as well as being a teacher. Also interested in economic models for planning, for concept development and procedure programming.

ADDRESS: Bohaterow Warszawy 23/33, Ursus
POLAND



José C. MENCHACA Montano (31) obtained a degree of Industrial Engineering at the Havana University, Cuba. After four years in the organisation section of a company, for six years assistant professor at the Havana University. Recently appointed as a mathematical analyst with the Central Planning Committee, Cuban Calculus Centre.

ADDRESS: Calle 27 204, Apto 5,
Vedado, La. Havana
CUBA

Todorka MOSKOVA (28) obtained a degree of the Higher Institute of Machine and Electronic Engineering in Sofia, Bulgaria. After three years of experience as an engineer at the Development Centre of the Electra plant, since last year has been working at the Institute of Management on Complex blueprints for the organisation of management systems in industry.

ADDRESS: Residential Quarter Tolstoi
bl 3, B. 19. Szófia
BULGARIA

Ahmed OADA (22) obtained a degree in Statistics at the Cairo University and is since 1967 as a researcher in the Institute of National Planning of the U. A. R. His special interest goes in the direction of linear programming and non-linear programming.

ADDRESS: Geza, El Ahram street
El taawen city
U. A. R.

Ladislav ORSÁG (27) obtained a degree at the University of Economics in Bratislava, CSSR. Has been working as programmer since 1967 at the Regional Computer Centre of the Slovak Planning Committee and since 1968 at the U. N. Computing Research Centre as engineer in charge of statistical information processing.

ADDRESS: Vlárska 10, Bratislava
CSSR

Ferdinand PETKOV (38) obtained a degree at the Higher Institute of Economics in Sofia, Bulgaria. Experience since 1959 as senior economist at the Central Bureau of Statistics and the Board of Supply. During the last three years deputy head of the department for coding, economic information and national nomenclature for the preparation of the application of data processing for the economic performance.

ADDRESS: T sar Assen st. No. 25
Szófia, C.
BULGARIA

Narendranath RAJE (35) obtained a degree in mathematics and physics at the University of Bombay, India. Since 1958 has been employed with the Department of Statistics of the Reserve Bank of India, as a statistical assistant. Upon completion of the Seminar he will likely be involved in the application of a Honeywell 400 in his department of statistics.

ADDRESS: C. D. O. Aluminium Quarters No. 22.
Dr. Annie Besant Road,
Worli, Bombay 18
INDIA

Dipankar RAY (24) obtained a M. A. degree in the Delhi School of Economics, India, and has been working from 1965 for two years on research of input-output problems in economics at the same School in Delhi. Since 1966 supervisor at the Computer Centre of the University of Ghana, Legon, Ghana, where he is teaching Operations Research and Mathematical Economics as well. He expects to get an overall education in information systems and applications of computers which he will need to extend his field of activity.

ADDRESS: University of Ghana, Institute of Statistics
P. O. B. 74, Legon
GHANA

Rajagopala SARMA (37) obtained a M. Sc. degree at the University of Kerala, India and a postgraduate diploma for statistics. Since 1956 has been employed as a statistician in the Indian Statistical Institute for surveying data and statistical analysis. Has experience in programming, but hopes to improve his knowledge required by his work in the Institute, where a Honeywell 400 is installed.

ADDRESS: National Sample Survey Dept.
Indian Statistical Institute
203 B. T. Road, Calcutta 35
INDIA

Leslaw WOLANSKI (31) graduate of the Highschool of Economics in Wroclaw, Poland. Has been from 1963–67 section leader and since then systems-designer at the Computing Centre of the Polish Machine Industry. Especially interested in the application of data processing systems in machine industry and in lecturing on administrative data processing.

ADDRESS: Swidnica, ul. Lesna 11/3
POLAND

Fathia ZAGHLOUL (28) obtained a M. Sc. degree in Mathematics at the Cairo University, U. A. R. and is since 1962 researcher in the Operations Research Center of the Institute of National Planning. She has programming experience in Fortran and hopes to acquire some knowledge in the constitution of mathematical models, especially in the development of national economic plans.

ADDRESS: 26 Gober Ibn Hayan St.
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U. A. R.

Further information:
Hungarian Computer Education Centre
Budapest, XIV., Törökőr u. 18.
Tel.: 832-761

CORRIGENDUM

Last line on page 10 should be:

The average age of the students was 30.

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