

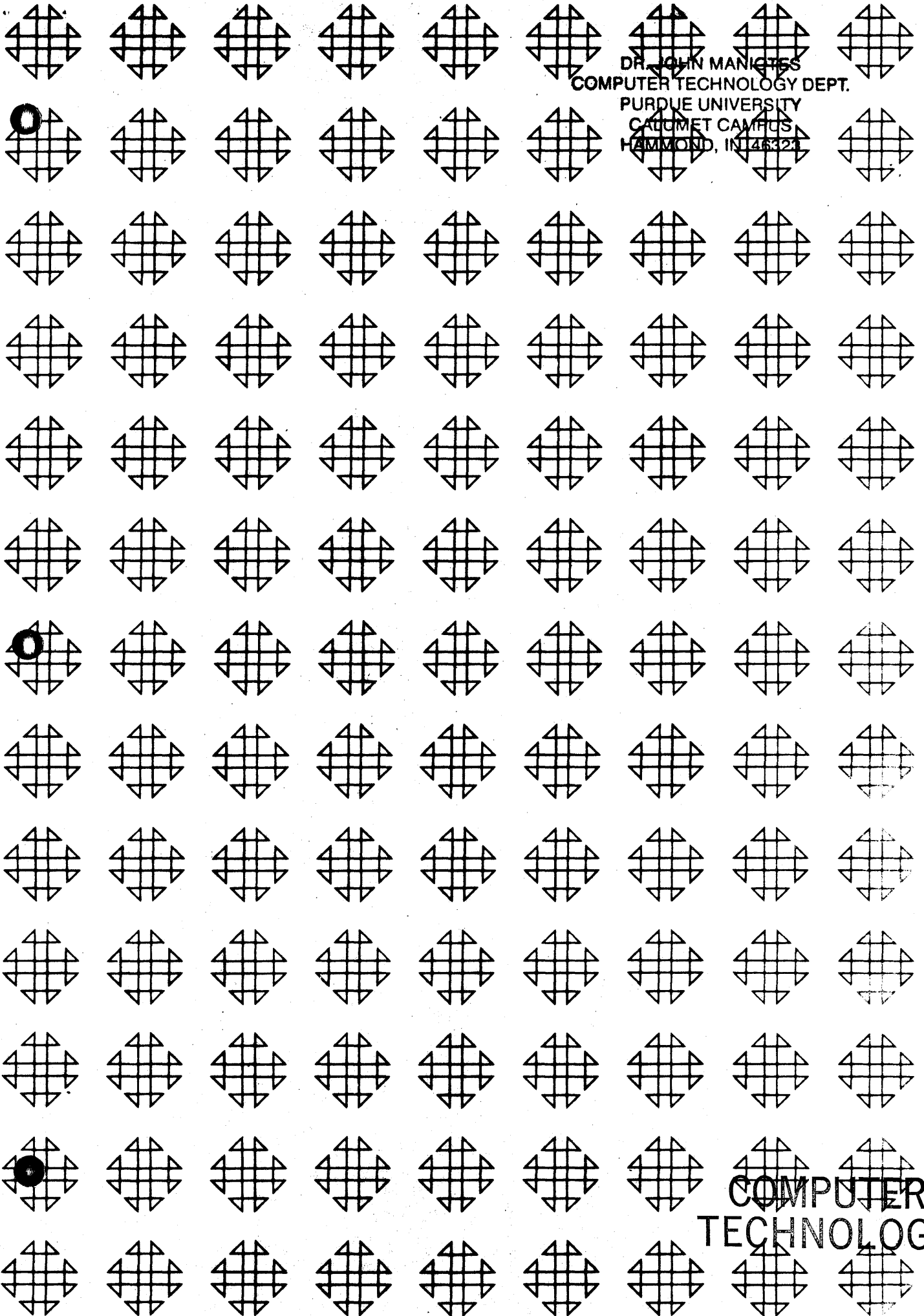
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1620 GENERAL PROGRAM LIBRARY

Mean Standard Deviation And Variance

6.0.051

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1620 USERS GROUP PROGRAM REVIEW AND EVALUATION

(fill out in typewriter or pencil, do not use ink)

Program No. \_\_\_\_\_

Date \_\_\_\_\_

Program Name: \_\_\_\_\_

1. Does the abstract adequately describe what the program is and what it does? Yes \_\_\_ No \_\_\_  
Comment \_\_\_\_\_
2. Does the program do what the abstract says? Yes \_\_\_ No \_\_\_  
Comment \_\_\_\_\_
3. Is the Description clear, understandable, and adequate? Yes \_\_\_ No \_\_\_  
Comment \_\_\_\_\_
4. Are the Operating Instructions understandable and in sufficient detail? Yes \_\_\_ No \_\_\_  
Comment \_\_\_\_\_  
Are the Sense Switch options adequately described (if applicable)? Yes \_\_\_ No \_\_\_  
Are the mnemonic labels identified or sufficiently understandable? Yes \_\_\_ No \_\_\_  
Comment \_\_\_\_\_
5. Does the source program compile satisfactorily (if applicable)? Yes \_\_\_ No \_\_\_  
Comment \_\_\_\_\_
6. Does the object program run satisfactorily? Yes \_\_\_ No \_\_\_  
Comment \_\_\_\_\_
7. Number of test cases run \_\_\_\_\_. Are any restrictions as to data, size, range, etc. covered adequately in description? Yes \_\_\_ No \_\_\_  
Comment \_\_\_\_\_
8. Does the Program Meet the minimal standards of the 1620 Users Group? Yes \_\_\_ No \_\_\_  
Comment \_\_\_\_\_
9. Were all necessary parts of the program received? Yes \_\_\_ No \_\_\_  
Comment \_\_\_\_\_
10. Please list on the back any suggestions to improve the usefulness of the program. These will be passed onto the author for his consideration.

Please return to:

Mr. Richard L. Pratt  
Data Corporation  
7500 Old Xenia Pike  
Dayton, Ohio 45432

Your Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

User Group Code \_\_\_\_\_

THIS REVIEW FORM IS PART OF THE 1620 USER GROUP ORGANIZATION'S PROGRAM REVIEW AND EVALUATION PROCEDURE. NONMEMBERS ARE CORDIALLY INVITED TO PARTICIPATE IN THIS EVALUATION.

11/09/64

Mean Standard and Variance  
William E. Milner  
North Texas State University  
May 10, 1962  
6.0 Statistical

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Modifications or revisions to this program, as they occur, will be announced in the appropriate Catalog of Programs for IBM Data Processing Systems. When such an announcement occurs, users should order a complete new program from the Program Information Department.

## Program Manual

I. Title: Mean, Standard Deviation and Variance

II. Description of Program

A. The results of the program are the mean, standard deviation and variance for an array of data with up to 15 columns and no limit on the number of rows. An option is present in that the values may be had for each row ( sense switch 4 on ) as well as for each column.

B. The method of computation are standard.

III. Input/Output

Input

Card 1: N M

where N = the no. of rows

M = the no of columns

Card 2 and subsequent : The raw data in row order

Output: See example

IV. Sample Problem

V. Operating Instructions

- 1) Set tabs etc. for normal FORTRAN run
- 2) Ready card reader with program deck followed by data
- 3) Depress reset and load
- 4) When the message "Load Data " is typed depress start.
- 5) Sense switch 4 is used as follows:
  - SS4 on: Results for each row are output as well as col
  - SS4 off: Results for each col are output only.

Input  
 No of rows  
 10 ←  
 No of columns  
 3 ←  
 2.2 3.35 7.7  
 1.1 2.25 4.4  
 3.2 6.45 5.3  
 1.5 2.45 4.  
 2.6 1.45 5.  
 1.5 2.45 4.  
 2.6 1.45 5.  
 3.2 6.45 5.3  
 1.1 2.25 4.4  
 2.2 3.35 7.7

OUTPUT MEAN	STANDARD DEVIATION	VARIANCE
4.4166666	2.3686610	5.6105556
2.5833333	1.3676825	1.8705556
4.9833333	1.3455688	1.8105556
2.6500000	1.0303720	1.0616666
3.0166666	1.4789260	2.1872223
2.6500000	1.0303720	1.0616666
3.0166666	1.4789260	2.1872223
4.9833333	1.3455688	1.8105556
2.5833333	1.3676825	1.8705556
4.4166666	2.3686610	5.6105556

Row  
 Optional output  
 sense switch 4

MOAN	STANDARD DEVIATION	VARIANCE	Col
2.1200000	.75206387	.56560000	1
3.1900000	1.7385050	3.0224000	2
5.2800000	1.2921299	1.6696000	3

Col.

```

C      MEAN, STANDARD DEVIATION, VARIANCE
C      GENE MILNER
C      NORTH TEXAS STATE UNIVERSITY
C      DIMENSION SX(16),SX2(16),X(15)
1 DO 2 I=1,16
  SX(I)=0.
2 SX2(I)=0.
  READ,N,M
  XN=N
  XM=M
  DO 10 I=1,N
  DO 5 J=1,M
  READ,X(J)
  IF(SENSE SWITCH 4)3,4
3 SX(16)=SX(16)+X(J)
  SX2(16)=SX2(16)+X(J)*X(J)
4 SX(J)=SX(J)+X(J)
5 SX2(J)=SX2(J)+X(J)*X(J)
  IF(SENSE SWITCH 4)6,9
6 XBI= SX(16)/XM
  SIG2=(SX2(16)-SX(16)*SX(16)/XM)/XM
  SIG=SQR(SIG2)
  TYPE,XBI,SIG,SIG2
9 SX(16)=0.
  SX2(16)=0.
10 CONTINUE
  Z=CWT(1.0000004)
  DO 11 I=1,M
  XBI= SX(I)/XN
  SIG2=(SX2(I)-SX(I)*SX(I)/XN)/XN
  SIG=SQR(SIG2)
  TYPE,XBI,SIG,SIG2,I
  Z=CWT(1.0000001)
11 CONTINUE
  PAUSE
  GO TO 1
  END

```

```

07500      C      MEAN, STANDARD DEVIATION, VARIANCE
07500      C      GENE MILNER
07500      C      NORTH TEXAS STATE UNIVERSITY
07500      DIMENSION SX(16),SX2(16),X(15)
07512      1 DO 2 I=1,16
07560      SX(I)=0.
07644      2 SX2(I)=0.
07668      READ,N,M
07704      XN=N
07740      XM=M
07752      DO 10 I=1,N
07764      DO 5 J=1,M
07800      READ,X(J)
07820      IF(SENSE SWITCH 4)3,4
07880      3 SX(16)=SX(16)+X(J)
07976      SX2(16)=SX2(16)+X(J)*X(J)
08084      4 SX(J)=SX(J)+X(J)
08264      5 SX2(J)=SX2(J)+X(J)*X(J)
08284      IF(SENSE SWITCH 4)6,9
08320      6 XBI= SX(16)/XM
08404      SIG2=(SX2(16)-SX(16)*SX(16)/XM)/XM
08428      SIG=SQR(SIG2)
08476      TYPE,XBI,SIG,SIG2
08500      9 SX(16)=0.
08524      SX2(16)=0.
08560      10 CONTINUE
08584      Z=CWT(1.0000004)
08596      DO 11 I=1,M
08656      XBI= SX(I)/XN
08812      SIG2=(SX2(I)-SX(I)*SX(I)/XN)/XN
08836      SIG=SQR(SIG2)
08896      TYPE,XBI,SIG,SIG2,I
08920      Z=CWT(1.0000001)
08956      11 CONTINUE
08968      PAUSE
08976      GO TO 1
      END

```

```

END OF COMPILATION
LOAD SUBROUTINE DECK
THEN PUSH START

```

```

SWI ON FOR SYMBOL TABLE
THEN PUSH START

```

```

19859      ABS
19849      ABSF
19839      CWT
19829      CWTF
19819      ERR
19809      ERRF
19799      SX      19649
19639      SX2     19489
19479      X       19339
19309      I
19299      000000000
19289      N
19279      M
19269      XN
19259      XM
19229      J
19169      XBI

```

NT0007

19159 SIG2  
 19139 SIG  
 19129 Z  
 19119 5110000004  
 19099 5110000001

PROCESSING COMPLETE  
 TO EXECUTE PROGRAM  
 LOAD OBJECT DECK  
 THEN PUSH START

TEST DATA

10 3  
 2.2 3.35 7.7  
 1.1 2.25 4.4  
 3.2 6.45 5.3  
 1.5 2.45 4.  
 2.6 1.45 5.  
 1.5 2.45 4.  
 2.6 1.45 5.  
 3.2 6.45 5.3  
 1.1 2.25 4.4  
 2.2 3.35 7.7

LOAD DATA

4.4166666	2.3686610	5.6105556
2.5833333	1.3676825	1.8705556
4.9833333	1.3455688	1.8105556
2.6500000	1.0303720	1.0616666
3.0166666	1.4789260	2.1872223
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2.1200000	.75206387	.56560000	1
3.1900000	1.7385050	3.0224000	2
5.2800000	1.2921299	1.6696000	3