

MM MM SSSSSSSSSS ## ## WW WW TTTTTTTTTTTT FFFFFFFFFFFFFF
MMM MMM SSSSSSSSSSSS ## ## WW WW TTTTTTTTTTTT FFFFFFFFFFFFFF
MMMM MMMM SS SS ##### WW WW TT FF
MM MM MM MM SS ##### WW WW TT FF
MM MMMM MM SSS ##### WW WW TT FF
MM MM MM SSSSSSSSSS ## ## WW WW TT FFFFFFFF
MM MM SSSSSSSSSS ## ## WW WW TT FFFFFFFF
MM MM SSS ## ## WW WW WW WW TT FF
MM MM MM SS ##### WW WW WW WW TT FF
MM MM SS ##### WWW WWW TT FF
MM MM SSSSSSSSSSSS ## ## WWW WWW TT FF
MM MM SSSSSSSSSS ## ## WW WW TT FF

JJJJJJJJJJ 11 11 777777777777 8888888888 AAAAAAAAAA
JJJJJJJJJJ 111 111 777777777777 888888888888 AAAAAAAAAAAAAA
JJ 1111 1111 77 77 88 88 AA AA
JJ 11 11 77 88 88 AA AA
JJ 11 11 77 88888888 AAAAAAAAAAAAAA
JJ 11 11 77 88888888 AAAAAAAAAAAAAA
JJ 11 11 77 88 88 AA AA
JJ JJ 11 11 77 88 88 AA AA
JJ JJ 11 11 77 88 88 AA AA
JJJJJJJJ 1111111111 1111111111 77 888888888888 AA AA
JJJJJJ 1111111111 1111111111 77 8888888888 AA AA

****A	START	JOB 1178	MS#WTF	ROOM	2.36.09 PM 12 MAY 20	PRINTER1	SYS TK4-	JOB 1178	START	A****
****A	START	JOB 1178	MS#WTF	ROOM	2.36.09 PM 12 MAY 20	PRINTER1	SYS TK4-	JOB 1178	START	A****
****A	START	JOB 1178	MS#WTF	ROOM	2.36.09 PM 12 MAY 20	PRINTER1	SYS TK4-	JOB 1178	START	A****
****A	START	JOB 1178	MS#WTF	ROOM	2.36.09 PM 12 MAY 20	PRINTER1	SYS TK4-	JOB 1178	START	A****

J E S 2 J O B L O G

14.36.08 JOB 1178 \$HASP373 MS#WTF STARTED - INIT 1 - CLASS A - SYS TK4-
14.36.08 JOB 1178 IEF403I MS#WTF - STARTED - TIME=14.36.08
14.36.09 JOB 1178 IEFACTRT - STEPNAME PROCSTEP PROGRAM RETCODE
14.36.09 JOB 1178 MS#WTF GO WATFIV RC= 0000
14.36.09 JOB 1178 IEF404I MS#WTF - ENDED - TIME=14.36.09
14.36.09 JOB 1178 \$HASP395 MS#WTF ENDED

----- JES2 JOB STATISTICS -----

12 MAY 20 JOB EXECUTION DATE

10 CARDS READ

306 SYSOUT PRINT RECORDS

0 SYSOUT PUNCH RECORDS

0.00 MINUTES EXECUTION TIME

```
1 //MS#WTF JOB CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),NOTIFY=HERC01, JOB 1178
// USER=HERC01,PASSWORD= GENERATED BY IKJEFF10
2 // EXEC WATFIV
3 XXWATFIV PROC PROG=WATFIV,LIB='FUNLIB',WLIB='WATLIB',
XX JB='JOBLIB',PFX='WATFIV'
*****
***
*** NAME: SYS2.PROCLIB(WATFIV)
***
*** DESC: EXECUTE WATFIV FORTRAN PROGRAMS
***
*****
4 XXGO EXEC PGM=&PROG
5 XXSTEPLIB DD DSN=&PFX..&JB,DISP=SHR
6 XXWATLIB DD DSN=&PFX..&LIB,DISP=SHR
7 XX DD DSN=&PFX..&WLIB,DISP=SHR
8 XXFT01F001 DD SPACE=(TRK,(20,10)),DCB=(RECFM=VS,BLKSIZE=256),UNIT=SYSDA
9 XXFT02F001 DD SPACE=(TRK,(20,10)),DCB=(RECFM=VS,BLKSIZE=256),UNIT=SYSDA
10 XXFT03F001 DD SPACE=(TRK,(20,10)),DCB=(RECFM=VS,BLKSIZE=256),UNIT=SYSDA
11 XXFT04F001 DD SPACE=(TRK,(20,10)),DCB=(RECFM=VS,BLKSIZE=256),UNIT=SYSDA
12 //FT05F001 DD *
X/FT05F001 DD DDNAME=SYSIN
13 // DD DSN=MAGIC.TEST.SOURCE(MS#WTF),DISP=SHR
14 // DD *
15 // DD DSN=MAGIC.TEST.DATA(ORDER),DISP=SHR
16 XXFT06F001 DD SYSOUT=*,DCB=(RECFM=FA,BLKSIZE=133)
17 XXFT07F001 DD SYSOUT=B
```

STMT NO. MESSAGE

4 IEF653I SUBSTITUTION JCL - PGM=WATFIV
 5 IEF653I SUBSTITUTION JCL - DSN=WATFIV.JOBLIB,DISP=SHR
 6 IEF653I SUBSTITUTION JCL - DSN=WATFIV.FUNLIB,DISP=SHR
 7 IEF653I SUBSTITUTION JCL - DSN=WATFIV.WATLIB,DISP=SHR

IEF236I ALLOC. FOR MS#WTF GO
 IEF237I 240 ALLOCATED TO STEPLIB
 IEF237I 191 ALLOCATED TO SYS00086
 IEF237I 240 ALLOCATED TO WATLIB
 IEF237I 240 ALLOCATED TO
 IEF237I 140 ALLOCATED TO FT01F001
 IEF237I 190 ALLOCATED TO FT02F001
 IEF237I 170 ALLOCATED TO FT03F001
 IEF237I 180 ALLOCATED TO FT04F001
 IEF237I JES2 ALLOCATED TO FT05F001
 IEF237I 242 ALLOCATED TO
 IEF237I JES2 ALLOCATED TO
 IEF237I 242 ALLOCATED TO
 IEF237I JES2 ALLOCATED TO FT06F001
 IEF237I JES2 ALLOCATED TO FT07F001

IEF142I MS#WTF GO - STEP WAS EXECUTED - COND CODE 0000

IEF285I WATFIV.JOBLIB	KEPT	*-----0
IEF285I VOL SER NOS= PUB000.		
IEF285I SYS1.UCAT.MVS	KEPT	*-----0
IEF285I VOL SER NOS= MVSCAT.		
IEF285I WATFIV.FUNLIB	KEPT	*-----6
IEF285I VOL SER NOS= PUB000.		
IEF285I WATFIV.WATLIB	KEPT	*-----0
IEF285I VOL SER NOS= PUB000.		
IEF285I SYS20133.T143608.RA000.MS#WTF.R0000001	DELETED	*-----0
IEF285I VOL SER NOS= WORK00.		
IEF285I SYS20133.T143608.RA000.MS#WTF.R0000002	DELETED	*-----0
IEF285I VOL SER NOS= WORK03.		
IEF285I SYS20133.T143608.RA000.MS#WTF.R0000003	DELETED	*-----0
IEF285I VOL SER NOS= WORK01.		
IEF285I SYS20133.T143608.RA000.MS#WTF.R0000004	DELETED	*-----0
IEF285I VOL SER NOS= WORK02.		
IEF285I JES2.JOB01178.SI0101	SYSIN	
IEF285I MAGIC.TEST.SOURCE	KEPT	*-----2
IEF285I VOL SER NOS= MV0001.		
IEF285I JES2.JOB01178.SI0102	SYSIN	
IEF285I MAGIC.TEST.DATA	KEPT	*-----2
IEF285I VOL SER NOS= MV0001.		
IEF285I JES2.JOB01178.S00103	SYSOUT	
IEF285I JES2.JOB01178.S00104	SYSOUT	

IEF373I STEP /GO / START 20133.1436

IEF374I STEP /GO / STOP 20133.1436 CPU OMIN 00.04SEC SRB OMIN 00.00SEC VIRT 808K SYS 220K

 * 1. JOBSTEP OF JOB: MS#WTF STEPNAME: GO PROGRAM NAME: WATFIV EXECUTED ON 12.05.20 FROM 14.36.08 TO 14.36.09 *
 * ELAPSED TIME 24:00:00,19 CPU-IDENTIFIER: TK4- PAGE-IN: 0 *
 * CPU TIME 00:00:00,04 VIRTUAL STORAGE USED: 808K PAGE-OUT: 0 *
 * CORR. CPU: 00:00:00,04 CPU TIME HAS BEEN CORRECTED BY 1 / 1,0 MULTIPLIER *
 * *
 * I/O OPERATION *
 * NUMBER OF RECORDS READ VIA DD * OR DD DATA: 3 *
 * 240.....0 191.....0 240.....6 240.....0 140.....0 190.....0 170.....0 180.....0 DMY.....0 242.....2 *
 * DMY.....0 242.....2 DMY.....0 DMY.....0 *
 * *
 * CHARGE FOR STEP (W/O SYSOUT): 0,06 *

 * I/O OPERATION *
 * NUMBER OF RECORDS READ VIA DD * OR DD DATA: 3 *
 * 240.....0 191.....0 240.....6 240.....0 140.....0 190.....0 170.....0 180.....0 DMY.....0 242.....2 *
 * DMY.....0 242.....2 DMY.....0 DMY.....0 *
 * *
 * CHARGE FOR STEP (W/O SYSOUT): 0,06 *

 * I/O OPERATION *
 * NUMBER OF RECORDS READ VIA DD * OR DD DATA: 3 *
 * 240.....0 191.....0 240.....6 240.....0 140.....0 190.....0 170.....0 180.....0 DMY.....0 242.....2 *
 * DMY.....0 242.....2 DMY.....0 DMY.....0 *
 * *
 * CHARGE FOR STEP (W/O SYSOUT): 0,06 *

IEF375I JOB /MS#WTF / START 20133.1436

IEF376I JOB /MS#WTF / STOP 20133.1436 CPU OMIN 00.04SEC SRB OMIN 00.00SEC



```

$JOB          MAGIC,NOCHECK,PROF
C$PROFON
C PROGRAMMA PER TESTARE LA SUBROUTINE MAGIC
1      INTEGER M(30,30)
2      READ(5,*) N
3      CALL MAGIC(M,N)
4      CALL PMAGIC(M,N)
5      STOP
6      END

C
C SUBROUTINE PER STAMPARE IL QUADRATO MAGICO

7      SUBROUTINE PMAGIC(A,N)
8      INTEGER A(N,N)
C LA DOCUMENTAZIONE DIFFERISCE DALLA REALTÀ, PAG. 65 E SEGUENTI
9      CHARACTER*12 FMTCHR(1)
10     WRITE(FMTCHR,100) N,INT(ALOG10(N**2.0))+2
11     100  FORMAT(1H(,I2,1HI,I2,1H))
12     WRITE(6,FMTCHR) ((A(I,J),J=1,N),I=1,N)
13     RETURN
14     END

C
C VERSIONE MODIFICATA DI DSWAP.F DEL PACCHETTO OPENBLAS
C INTERCHANGES TWO VECTORS.
C USED UNROLLED LOOPS FOR INCREMENTS EQUAL ONE.

15     SUBROUTINE SWAP(N,X,Y)
C     .. SCALAR ARGUMENTS ..
16     INTEGER N
C     .. ARRAY ARGUMENTS ..
17     INTEGER X(N),Y(N)
C     .. LOCAL SCALARS..
18     INTEGER TEMP
19     INTEGER I,IX,IY,M,MP1

C     .. INTRINSIC FUNCTIONS ..
C     INTRINSIC MOD
C
C     CODE FOR BOTH INCREMENTS EQUAL TO 1
C
C     CLEAN-UP LOOP
C
20     M = MOD(N,3)
21     IF (M.NE.0) THEN DO
22         DO 10 I = 1,M
23             TEMP = X(I)
24             X(I) = Y(I)
25             Y(I) = TEMP
26     10    CONTINUE
27     IF (N.LT.3) RETURN
28     END IF
29     MP1 = M + 1
30     DO 20 I = MP1,N,3
31         TEMP = X(I)
32         X(I) = Y(I)
33         Y(I) = TEMP
34         TEMP = X(I+1)
35         X(I+1) = Y(I+1)
36         Y(I+1) = TEMP
37         TEMP = X(I+2)
38         X(I+2) = Y(I+2)
39         Y(I+2) = TEMP

```

```

40 20 CONTINUE
41 RETURN
42 END
C
C VERSIONE MODIFICATA DI MAGIC.F DEL PACCHETTO SCILAB

43 SUBROUTINE MAGIC(A,N)
C ALGORITHMS FOR MAGIC SQUARES TAKEN FROM
C MATHEMATICAL RECREATIONS AND ESSAYS, 12TH ED.,
C BY W. W. ROUSE BALL AND H. S. M. COXETER
44 INTEGER A(N,N),T
C
45 IF (MOD(N,4) .EQ. 0) GO TO 100
46 IF (MOD(N,2) .EQ. 0) M = N/2
47 IF (MOD(N,2) .NE. 0) M = N
C
C ODD ORDER OR UPPER CORNER OF EVEN ORDER
C
48 DO 20 J = 1,M
49 DO 10 I = 1,M
50 A(I,J) = 0
51 10 CONTINUE
52 20 CONTINUE
53 I = 1
54 J = (M+1)/2
55 MM = M*M
56 DO 40 K = 1, MM
57 A(I,J) = K
58 I1 = I-1
59 J1 = J+1
60 IF(I1.LT.1) I1 = M
61 IF(J1.GT.M) J1 = 1
62 IF(A(I1,J1).EQ.0) GO TO 30
63 I1 = I+1
64 J1 = J
65 30 I = I1
66 J = J1
67 40 CONTINUE
C
C REST OF EVEN ORDER
C
68 IF (MOD(N,2) .NE. 0) RETURN
69 T = M*M
70 DO 60 I = 1, M
71 DO 50 J = 1, M
72 IM = I+M
73 JM = J+M
74 A(I,JM) = A(I,J) + 2*T
75 A(IM,J) = A(I,J) + 3*T
76 A(IM,JM) = A(I,J) + T
77 50 CONTINUE
78 60 CONTINUE
79 M1 = (M-1)/2
80 IF (M1.EQ.0) RETURN
81 DO 70 J = 1, M1
82 CALL SWAP(M,A(1,J),A(M+1,J))
83 70 CONTINUE
84 M1 = (M+1)/2
85 M2 = M1 + M
86 CALL SWAP(1,A(M1,1),A(M2,1))
87 CALL SWAP(1,A(M1,M1),A(M2,M1))
88 M1 = N+1-(M-3)/2
89 IF(M1.GT.N) RETURN

```

```

90      DO 80 J = M1, N
91          CALL SWAP(M,A(1,J),A(M+1,J))
92      80  CONTINUE
93      RETURN

      C
      C      DOUBLE EVEN ORDER
      C
94      100 K = 1
95      DO 120 I = 1, N
96          DO 110 J = 1, N
97              A(I,J) = K
98              IF (MOD(I,4)/2 .EQ. MOD(J,4)/2) A(I,J) = N*N+1 - K
99              K = K+1
100     110  CONTINUE
101     120  CONTINUE
102      RETURN
103      END

```

```

$ENTRY
64  2  3 61 60  6  7 57
 9 55 54 12 13 51 50 16
17 47 46 20 21 43 42 24
40 26 27 37 36 30 31 33
32 34 35 29 28 38 39 25
41 23 22 44 45 19 18 48
49 15 14 52 53 11 10 56
 8 58 59  5  4 62 63  1

```


WATFIV PROGRAM PROFILE

210 STATEMENT(S) EXECUTED
33 SECONDARY STATEMENT(S) EXECUTED
60 STATEMENT(S) NOT EXECUTED

TABLE OF FREQUENCY COUNT

FROM	TO	COUNT	FROM	TO	COUNT	FROM	TO	COUNT	FROM	TO	COUNT
2	4	1	10	10	1	12	13	1	45	45	1
94	95	1	96	96	8	97	98	64	98	OBJECT	32
99	99	64	100	LEVEL 1	8	101	LEVEL 1	1	102	102	1

THE FOLLOWING STATEMENTS WERE NOT EXECUTED

FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO
20	25	26	LEVEL 1	27	27	28	ENDIF	29	39
40	LEVEL 1	41	41	46	50	51	LEVEL 1	52	LEVEL 1
53	66	67	LEVEL 1	68	76	77	LEVEL 1	78	LEVEL 1
79	82	83	LEVEL 1	84	91	92	LEVEL 1	93	93

HISTOGRAM OF PERCENTAGE FREQUENCY COUNT

STMT	COUNT	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
2	1	*	.	.	.	.	.	.	.	.	.	.
3	1	*	.	.	.	.	.	.	.	.	.	.
4	1	*	.	.	.	.	.	.	.	.	.	.
10	1	*	.	.	.	.	.	.	.	.	.	.
12	1	*	.	.	.	.	.	.	.	.	.	.
13	1	*	.	.	.	.	.	.	.	.	.	.
45	1	*	.	.	.	.	.	.	.	.	.	.
OBJECT	1	*	.	.	.	.	.	.	.	.	.	.
94	1	*	.	.	.	.	.	.	.	.	.	.
95	1	*	.	.	.	.	.	.	.	.	.	.
96	8	*****	.	.	.	.	.	.	.	.	.	.
97	64	*****	.	.	.	.	.	.	.	.	.	.
98	64	*****	.	.	.	.	.	.	.	.	.	.
OBJECT	32	*****	.	.	.	.	.	.	.	.	.	.
99	64	*****	.	.	.	.	.	.	.	.	.	.
102	1	*	.	.	.	.	.	.	.	.	.	.
		243	TOTAL STATEMENT(S) EXECUTED									

HISTOGRAM OF ABSOLUTE FREQUENCY COUNT

STMT	COUNT	0	7	14	21	28	35	42	49	56	63	70
2	1 **	.	.	.	.	.	.	.	.	.	.	.
3	1 **	.	.	.	.	.	.	.	.	.	.	.
4	1 **	.	.	.	.	.	.	.	.	.	.	.
10	1 **	.	.	.	.	.	.	.	.	.	.	.
12	1 **	.	.	.	.	.	.	.	.	.	.	.
13	1 **	.	.	.	.	.	.	.	.	.	.	.
45	1 **	.	.	.	.	.	.	.	.	.	.	.
OBJECT	1 **	.	.	.	.	.	.	.	.	.	.	.
94	1 **	.	.	.	.	.	.	.	.	.	.	.
95	1 **	.	.	.	.	.	.	.	.	.	.	.
96	8 *****	.	.	.	.	.	.	.	.	.	.	.
97	64 *****	.	.	.	.	.	.	.	.	.	.	.
98	64 *****	.	.	.	.	.	.	.	.	.	.	.
OBJECT	32 *****	.	.	.	.	.	.	.	.	.	.	.
99	64 *****	.	.	.	.	.	.	.	.	.	.	.
102	1 **	.	.	.	.	.	.	.	.	.	.	.
243 TOTAL STATEMENT(S) EXECUTED												

CORE USAGE OBJECT CODE= 4952 BYTES,ARRAY AREA= 3612 BYTES,TOTAL AREA AVAILABLE= 673792 BYTES
DIAGNOSTICS NUMBER OF ERRORS= 0, NUMBER OF WARNINGS= 0, NUMBER OF EXTENSIONS= 2
COMPILE TIME= 0.01 SEC,EXECUTION TIME= 0.00 SEC, 14.36.08 TUESDAY 12 MAY 20 WATFIV - JAN 1976 V1L5

C\$STOP

MM MM SSSSSSSSSS ## ## WW WW TTTTTTTTTTTT FFFFFFFFFFFFFF
MMM MMM SSSSSSSSSSSS ## ## WW WW TTTTTTTTTTTT FFFFFFFFFFFFFF
MMMM MMMM SS SS ##### WW WW TT TT FF
MM MM MM MM SS ##### WW WW TT TT FF
MM MMMM MM SSS ##### WW WW TT TT FF
MM MM MM SSSSSSSSSS ## ## WW WW TT TT FFFFFFFF
MM MM MM SSSSSSSSSS ## ## WW WW TT TT FFFFFFFF
MM MM MM SSS ## ## WW WW TT TT FF
MM MM MM SSS ## ## WW WW TT TT FF
MM MM MM SSS ## ## WW WW TT TT FF
MM MM SS SSS ##### WW WW WW WW TT TT FF
MM MM SSSSSSSSSSSS SS ##### WWW WWW WWW TT TT FF
MM MM SSSSSSSSSS ## ## WWW WWW WWW TT TT FF
MM MM SSSSSSSSSS ## ## WW WW TT TT FF

JJJJJJJJJJ 11 11 777777777777 88888888888 AAAAAAAAAA
JJJJJJJJJJ 111 111 77777777777 8888888888888 AAAAAAAAAAAAAA
JJ 1111 1111 77 77 88 88 AA AA
JJ 11 11 77 88 88 AA AA
JJ 11 11 77 88888888 AAAAAAAAAAAAAA
JJ 11 11 77 88888888 AAAAAAAAAAAAAA
JJ 11 11 77 88 88 AA AA
JJ JJ 11 11 77 88 88 AA AA
JJ JJ 11 11 77 88 88 AA AA
JJJJJJJJ 1111111111 1111111111 77 8888888888888 AA AA
JJJJJJ 1111111111 1111111111 77 8888888888 AA AA

****A	END	JOB 1178	MS#WTF	ROOM	2.36.09 PM 12 MAY 20	PRINTER1	SYS TK4-	JOB 1178	END	A****
****A	END	JOB 1178	MS#WTF	ROOM	2.36.09 PM 12 MAY 20	PRINTER1	SYS TK4-	JOB 1178	END	A****
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