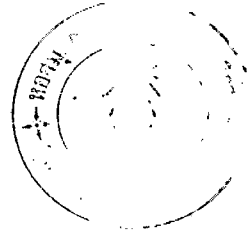


บรรณานุกรม



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ภาคผนวก ก.

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

ID DIVISION.
 PROGRAM-ID. QUANTITY.
 ENVIRONMENT DIVISION.
 CONFIGURATION SECTION.
 INPUT-OUTPUT SECTION.
 FILE-CONTROL.
 SELECT CARD-FILE ASSIGN TO UT-S-CARD.
 SELECT PRINT-FILE ASSIGN TO UT-S-PRINTER.
 SKIPI
 DATA DIVISION.
 FILE SECTION.
 SKIPI
 FD CARD-FILE
 LABEL RECORD IS OMITTED
 DATA RECORD IS CARD-REC.
 01 CARD-REC PIC X(80).
 SKIPI
 FD PRINT-FILE
 LABEL RECORD IS OMITTED
 DATA RECORD IS PRT-REC.
 01 PRT-REC PIC X(132).
 SKIPI
 WORKING-STORAGE SECTION.
 SKIPI
 77 I PIC 9999 VALUE ZERO.
 77 J PIC 9999 VALUE ZERO.
 77 K PIC 999 VALUE ZERO.
 77 TM1 PIC S9(8)V999.
 77 TM2 PIC S9(8)V999.
 77 NTM1 PIC 9(8)V999.
 77 NTM2 PIC 9(8)V999.
 SKIPI
 01 ZCARD.
 02 Z-VALUE PIC X(80).
 SKIPI
 01 Z-TABLE.
 02 Z-MOVE.
 03 Z-CD OCCURS 37 TIMES PIC X(80).
 02 Z-MOVE-R REDEFINES Z-MOVE.
 03 Z-E-VAL OCCURS 370 TIMES.
 04 ZZ PIC 9V99.
 04 PROB PIC V9999.
 04 FILLER PIC X.
 SKIPI
 01 DATA-AREA.
 02 STOCK-NO PIC 9(13).
 02 LAMDA PIC 9(5).
 02 ORDER-COST PIC 9(5).
 02 STOCK-COST PIC 999V99.
 02 BACK-OR-COST PIC 999V99.
 02 MEAN PIC 9(5).
 02 S-SD PIC 999V99.
 02 FILLER PIC X(37).
 SKIPI
 01 WORK-AREA.

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C2 QTY1 PIC 9(10)V9(4).
* C2 QTY2 PIC 9(10)V9(4).
C2 TY2 PIC 9(10)V9.
C2 HR PIC 9V9(4).
C2 Z PIC 9V99.
C2 R1 PIC 999 VALUE ZERO.
* C2 R2 PIC 999V999.
* C2 RR PIC 999V9.
C2 NR PIC S9(7)V9(7).
C2 T-NR1 PIC S9(7)V9(7).
C2 T-NR2 PIC S9(7)V9(7).
C2 EXP PIC S9(7)V9(7).
*SKIPI
01 AA.
C2 QTY2 PIC 9(10)V9999.
C2 FILLER REDEFINES QTY2.
05 FILLER PIC X(10).
05 RQTY2 PIC 9999.
01 BB.
C2 R2 PIC 999V999.
C2 FILLER REDEFINES R2.
05 FILLER PIC X(3).
05 RR2 PIC 999.
01 HEAD-1.
C2 FILLER PIC X(51) VALUE SPACE.
C2 FILLER PIC X(29) VALUE
*LOT-SIZE AND REORDER POINT*.
C2 FILLER PIC X(52) VALUE SPACE.
*SKIPI
01 HEAD-2.
C2 FILLER PIC X(07) VALUE SPACE.
C2 FILLER PIC X(12) VALUE 'STOCK-NUMBER'.
C2 FILLER PIC X(07) VALUE SPACE.
C2 FILLER PIC X(16) VALUE 'PROCUREMENT COST'.
C2 FILLER PIC X(07) VALUE SPACE.
C2 FILLER PIC X(13) VALUE 'CARRYING COST'.
C2 FILLER PIC X(07) VALUE SPACE.
C2 FILLER PIC X(14) VALUE 'BACKORDER COST'.
C2 FILLER PIC X(07) VALUE SPACE.
C2 FILLER PIC X(11) VALUE 'DEMAND-YEAR'.
C2 FILLER PIC X(09) VALUE SPACE.
C2 FILLER PIC X(04) VALUE 'MEAN'.
C2 FILLER PIC X(09) VALUE SPACE.
C2 FILLER PIC X(02) VALUE 'SD'.
C2 FILLER PIC X(07) VALUE SPACE.
*SKIPI
01 PRT-AREA-1.
C2 FILLER PIC X(07) VALUE SPACE.
C2 O-STOCK-NO PIC 9(5)89(5)89(3).
C2 O-STOCK-NO-R REDEFINES O-STOCK-NO.
03 FILLER PIC X(12).
03 O-STOCK-NO1 PIC X(3).
C2 FILLER PIC X(12) VALUE SPACE.
C2 O-ORDER-COST PIC ZZ99.
C2 FILLER PIC X(13) VALUE SPACE.

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02  Q-STOCK-COST . PIC ZZ9.99.
02  FILLER PIC X(15) VALUE SPACE.
02  Q-BACK-OR-COST PIC ZZ9.99.
02  FILLER PIC X(12) VALUE SPACE.
02  Q-LAMDA PIC ZZZ99.
02  FILLER PIC X(08) VALUE SPACE.
02  Q-MEAN PIC ZZZ99.
02  FILLER PIC X(10) VALUE SPACE.
02  Q-S PIC ZZ9.99.
02  FILLER PIC X(07) VALUE SPACE.
SKIPI
01  PFT-AFEA2.
02  FILLER PIC X(35) VALUE SPACE.
02  FILLER PIC X(17) VALUE 'QUANTITY ORDER = '.
02  FILLER PIC X(04) VALUE SPACE.
02  Q-QTY2 PIC 9(4).
02  FILLER PIC X(16) VALUE SPACE.
02  FILLER PIC X(15) VALUE 'REORDER POINT = '.
02  FILLER PIC X(04) VALUE SPACE.
02  Q-K2 PIC 999.
02  FILLER PIC X(35) VALUE SPACE.
EJECT
PROCEDURE DIVISION.
SKIPI
BEGIN-RTN.
OPEN INPUT CARD-FILE
OUTPUT PRINT-FILE.
WRITE PRT-REC FROM HEAD-1 AFTER POSITIONING 2.
WRITE PRT-REC FROM HEAD-2 AFTER POSITIONING 2.
SKIPI
CREAT-TABLE-FTN.
READ CARD-FILE INTO ZCARD.
ADD 1 TO I.
MOVE Z-VALUE TO Z-CD (I).
IF I < 37
GO TO CREAT-TABLE-RTN.
SKIPI
READ-DATA-RTN.
READ CARD-FILE INTO DATA-AFEA AT END GO TO EQU.
MOVE STOCK-NO TO Q-STOCK-NO.
IF Q-STOCK-NO1 = ZERO MOVE SPACE TO Q-STOCK-NO1.
MOVE LAMDA TO Q-LAMDA.
MOVE ORDER-COST TO Q-ORDER-COST.
MOVE STOCK-COST TO Q-STOCK-COST.
MOVE BACK-OR-COST TO Q-BACK-OR-COST.
MOVE MEAN TO Q-MEAN.
MOVE S-SD TO Q-SD.
WRITE PRT-REC FROM PRT-AREA1 AFTER POSITIONING 2.
SKIPI
PROCESS-RTN.
COMPUTE QTY1 = (2 * LAMDA * ORDER-COST) / STOCK-COST.
COMPUTE QTY1 ROUNDED = QTY1 ** (.5).
SKIPI
PROCESS-RTN-1.
COMPUTE HR = (QTY1 * STOCK-COST) / (LAMDA * BACK-OR-COST).

```

```

PERFORM FIND-Z-VAL THRU FIND-Z-VALX.
COMPUTE R2 ROUNDED = Z * S-SD + MEAN.
COMPUTE TM1 = (MEAN - R2) * HR.
COMPUTE EXP = (-1) * (HR ** 2) / 2.
COMPUTE TM2 = S-SD * (2.71828 ** EXP).
COMPUTE TM2 = TM2 / 2.5066.
COMPUTE NR = TM1 + TM2.
COMPUTE TM1 = ORDER-COST + BACK-OR-COST * NR.
COMPUTE TM1 = (2 * LAMDA * TM1) / STOCK-COST.
COMPUTE QTY2 ROUNDED = TM1 ** (.5).
COMPUTE TM1 = QTY2 - QTY1.
COMPUTE TM2 = R2 - R1.
SKIPI
IF TM1 < 0 THEN COMPUTE NTM1 = (-1) * TM1
      ELSE COMPUTE NTM1 = TM1.
IF TM2 < 0 THEN COMPUTE NTM2 = (-1) * TM2
      ELSE COMPUTE NTM2 = TM2.
IF NTM1 < 1 OR NTM1 = 1 OR
   NTM2 < 1 OR NTM2 = 1 NEXT SENTENCE
ELSE
  MOVE R2 TO R1
  MOVE QTY2 TO QTY1
  GO TO PROCESS-RTN-1.
SKIPI
IF RQTY2 > 500 THEN COMPUTE QTY2 = QTY2 + 1
      MOVE QTY2 TO O-QTY2
      ELSE MOVE QTY2 TO O-QTY2.
IF RR2 > 500 THEN COMPUTE R2 = R2 + 1
      MOVE R2 TO O-R2
      ELSE MOVE R2 TO O-R2.
WRITE PRT-REC FROM PRT-AREA2 AFTER POSITIONING 2.
COMPUTE F1 = 0.
GO TO READ-DATA-RTN.
SKIPI
FIND-Z-VAL.
IF HR > 0.1170
  PERFORM COMPARE-RTN THRU COMPARE-RTNX VARYING I FROM
    1 BY 1 UNTIL I > 120
ELSE IF HR > 0.0084
  PERFORM COMPARE-RTN THRU COMPARE-RTNX VARYING I
    FROM 121 BY 1 UNTIL I > 240
ELSE PERFORM COMPARE-RTN THRU COMPARE-RTNX VARYING I
    FROM 241 BY 1 UNTIL I > 371.
MOVE ZZ (K) TO Z.
FIND-Z-VALX.
EXIT.
SKIPI
COMPARE-RTN.
COMPUTE J = I + 1.
IF HR < PROB (I) AND HR > PROB (J)
  MOVE I TO K
  MOVE .883 TO I
  GO TO COMPARE-RTNX.
IF HR = PROB (I)
  MOVE I TO K

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```
MOVE 888 TO I
GO TO COMPARE-RTNX.
IF HR = PROB (J)
    MOVE J TO K
    MOVE 888 TO I.
COMPARE-RTNX.
EXIT.
SKIPI
EOJ.
CLOSE CARD-FILE PRINT-FILE.
STOP RUN.
SKIP2
*****
```



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LOT-SIZE AND REORDER POINT

51

STOCK-NUMBER	PROCUREMENT COST	CARRYING COST	BACKORDER COST	DEMAND-YEAR	MEAN	SD
01421 08258	122	2.00	2.50	750	125	44.63
	QUANTITY ORDER =	0335	REORDER POINT =	141		
09119 08010	491	3.20	4.00	3778	667	293.00
	QUANTITY ORDER =	1333	REORDER POINT =	834		
09140 14002	122	2.60	3.25	515	86	27.06
	QUANTITY ORDER =	0239	REORDER POINT =	095		
09160 20010	491	4.00	5.00	1255	209	94.17
	QUANTITY ORDER =	0622	REORDER POINT =	233		
09168 06002	98	1.40	1.75	893	149	53.67
	QUANTITY ORDER =	0393	REORDER POINT =	169		
09169 08130	98	1.00	2.25	533	88	23.37
	QUANTITY ORDER =	0258	REORDER POINT =	095		
09180 10003	48	2.60	3.25	251	41	15.62
	QUANTITY ORDER =	0108	REORDER POINT =	047		
09209 05011	48	1.60	2.00	417	69	22.84
	QUANTITY ORDER =	0176	REORDER POINT =	079		
09247 14001	48	1.60	2.00	214	35	13.92
	QUANTITY ORDER =	0124	REORDER POINT =	036		
09250 26003	98	2.60	3.25	747	124	50.59
	QUANTITY ORDER =	0279	REORDER POINT =	151		
09263 21006	982	24.00	30.00	2330	422	160.16
	QUANTITY ORDER =	0630	REORDER POINT =	547		

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ภาคผนวก ข.

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COMMON IPEF,ISAVE,ION,IN,INEXT1,IO,INEG,IC2,I77SW,ILSW,IORSW
1 READ (1,2,END=99) II,IN,IL,IC2,C3,C4
2 FORMAT (I3,I4,I2,I4,F5.2,F5.2)
CALL HEAD (II)
TOT=0.0
SCOST=0.0
SLOST=0
ICOLT=0
IORC=0
IPEF=0
INEXT1=0
ISW=0
IOW=IN
R=0.7859847
IACK=0
10 I77SW=0
ILSW=0
IORSW=0
IPEF=IPEF+1
IF (IPEF .GT. 300) GO TO 90
P=C.10+OS
C=C.1427E-03
RA=F*C*F
IRF=FA
AIR=IRK
RAND=FA-AIR
R=RAND
CALL IDEF (RAND,IO)
ION=ION-IO
IF (ION .GT. IR) GO TO 20
IF (ION .LT. 0) GO TO 30
IF (ISW .EQ. 1) GO TO 40
INEXT1=IPEF+IL
IORC=IORC+IC2
IORSW=1
ISW=1
GO TO 50
20 I77SW=1
GO TO 60
30 ILSW=1
INEG=ION*(-1)
IACK=IACK+INEG
OC=INEG*C3
SLOST=SLOST+OC
ION=0
GO TO 50
40 I77SW=1
50 IF (IPEF .LT. INEXT1) GO TO 60
ION=ION+IN-IACK
IACK=0
ISW=0
60 CAP=ION*C4
SCOST=SCOST+CAP
ISAVE=INEXT1
CALL PRINT

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GO TO 10
90 TCT=FLCAT(ICRC)+SCCST+SLEST
WRITE (2,91) SCCST
91 FORMAT(50X,'TOTAL CARRYING COST = ',F8.2)
WRITE (2,92) ICFC
92 FORMAT(50X,'TOTAL ORDERING COST = ',F8)
WRITE (2,93) SLEST
93 FORMAT(50X,'TOTAL BACKORDER COST = ',F8.2)
WRITE (2,94) TCT
94 FORMAT(50X,'GRAND TOTAL = ',F15.4)
GO TO 1
99 STOP
END
SUBROUTINE IDEM (RAND, ID)
IF (RAND .GT. .0 .AND. RAND .LE. .433) ID=0
IF (RAND .GT. .433 .AND. RAND .LE. .466) ID=1
IF (RAND .GT. .466 .AND. RAND .LE. .500) ID=3
IF (RAND .GT. .500 .AND. RAND .LE. .533) ID=4
IF (RAND .GT. .533 .AND. RAND .LE. .566) ID=5
IF (RAND .GT. .566 .AND. RAND .LE. .677) ID=10
IF (RAND .GT. .677 .AND. RAND .LE. .744) ID=12
IF (RAND .GT. .744 .AND. RAND .LE. .833) ID=13
IF (RAND .GT. .833 .AND. RAND .LE. .855) ID=20
IF (RAND .GT. .855 .AND. RAND .LE. .877) ID=22
IF (RAND .GT. .877 .AND. RAND .LE. .911) ID=23
IF (RAND .GT. .911 .AND. RAND .LE. .933) ID=25
IF (RAND .GT. .933 .AND. RAND .LE. .944) ID=33
IF (RAND .GT. .944 .AND. RAND .LE. .955) ID=40
IF (RAND .GT. .955 .AND. RAND .LE. .977) ID=60
IF (RAND .GT. .977 .AND. RAND .LE. .988) ID=62
IF (RAND .GT. .988 .AND. RAND .LE. 1.00) ID=65
RETURN
END
SUBROUTINE PRINT
COMMON IPER, ISAVE, ICON, IN, INEXT1, ID, INEG, IC2, I77SW, ILSW, IORSW
IF (ISAVE .EQ. IPER .AND. I77SW .EQ. 1) GO TO 10
IF (ISAVE .EQ. IPER .AND. ILSW .EQ. 1) GO TO 20
IF (ISAVE .EQ. IPER .AND. IORSW .EQ. 1) GO TO 30
IF (I77SW .EQ. 1) GO TO 40
IF (ILSW .EQ. 1) GO TO 50
IF (IORSW .EQ. 1) GO TO 60
GO TO 90
10 WRITE (2,11) IPER, ICON, IN, ID
11 FORMAT (14X, I3, 11X, I5, 11X, I4, 38X, I4, 42X)
GO TO 90
20 WRITE (2,21) IPER, ICON, IN, ID, INEG
21 FORMAT (14X, I3, 11X, I5, 39X, I4, 10X, I4, 11X, I3, 28X)
GO TO 90
30 WRITE (2,31) IPER, ICON, IN, INEXT1, IN, IC2
31 FORMAT (14X, I3, 11X, I5, 11X, I4, 10X, I4, 9X, I4, 40X, I4, 13X)
GO TO 90
40 WRITE (2,41) IPER, ICON, ID
41 FORMAT (14X, I3, 11X, I5, 53X, I4, 42X)
GO TO 90
50 WRITE (2,51) IPER, ICON, ID, INEG

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51 FORMAT (14X,13,11X,15,53X,14,11X,13,28X)
52 GO TO 90
53 WRITE (2,81) 1PER,1CN,1MEX1,1N,1C2
54 FORMAT (14X,13,11X,15,21X,14,10X,14,39X,14,13X)
55 RETURN
56 END
57 SUBROUTINE HEAD (1F)
58 WRITE (2,10)
59 FORMAT (18X,'NUMBER OF TIME PERIODS = 300 ')
60 WRITE (2,20)
61 FORMAT (18X,'PRICE OF ITEM = 10.00 PER UNITS ')
62 WRITE (2,30)
63 FORMAT (18X,'BEGINNING INVENTORY = 1000 UNITS')
64 WRITE (2,40) 1R
65 FORMAT (18X,'ORDER POINT = ',13,' UNITS')
66 WRITE (2,50)
67 FORMAT (18X,'COST OF PLACING REPLENISHMENT ORDER = 491.00')
68 WRITE (2,60)
69 FORMAT (18X,'COST OF BACKORDER = 4.00 ')
70 WRITE (2,70)
71 FORMAT (18X,'COST OF CARRYING = 3.20')
72 WRITE (2,80)
73 FORMAT (18X,'DEMAND',18X,'CUMULATIVE FREQUENCY')
74 WRITE (2,90)
75 FORMAT (19X,'0',20X,'0.433')
76 WRITE (2,100)
77 FORMAT (19X,'1',20X,'0.466')
78 WRITE (2,110)
79 FORMAT (19X,'3',20X,'0.500')
80 WRITE (2,120)
81 FORMAT (19X,'4',20X,'0.533')
82 WRITE (2,130)
83 FORMAT (19X,'5',20X,'0.566')
84 WRITE (2,140)
85 FORMAT (18X,'10',20X,'0.677')
86 WRITE (2,150)
87 FORMAT (18X,'12',20X,'0.744')
88 WRITE (2,160)
89 FORMAT (18X,'13',20X,'0.833')
90 WRITE (2,170)
91 FORMAT (18X,'20',20X,'0.855')
92 WRITE (2,180)
93 FORMAT (18X,'22',20X,'0.877')
94 WRITE (2,190)
95 FORMAT (18X,'23',20X,'0.911')
96 WRITE (2,200)
97 FORMAT (18X,'25',20X,'0.933')
98 WRITE (2,210)
99 FORMAT (18X,'33',20X,'0.944')
100 WRITE (2,220)
101 FORMAT (18X,'40',20X,'0.955')
102 WRITE (2,230)
103 FORMAT (18X,'60',20X,'0.977')
104 WRITE (2,240)
105 FORMAT (18X,'62',20X,'0.988')

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```
WRITE (2,250)
250 FORMAT (10X,'65',20X,'1.000')
WRITE (2,260)
260 FORMAT (10X,'PERIOD',9X,'ONHAND',9X,'ORDERED',7X,'DUE IN',
-          7X,'RECEIVED',7X,'DEMAND',6X,'BACKORDER',9X,'COST')
RETURN
END
```



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NUMBER OF TIME PERIODS = 360
 PRICE OF ITEM = 16.00 PER UNITS
 BEGINNING INVENTORY = 1333 UNITS
 ORDER POINT = 834 UNITS
 COST OF PLACING PERLENISHMENT ORDER = 491.0
 COST OF BACKORDER = 4.00
 COST OF CARRYING = 3.20

DEMAND	CUMULATIVE FREQUENCY
0	0.433
1	0.466
3	0.500
4	0.533
5	0.566
10	0.677
11	0.744
13	0.833
20	0.888
22	0.877
23	0.911
25	0.933
33	0.944
40	0.955
60	0.977
62	0.988
65	1.000

PERIOD	ONHAND	RECEIVED	DUE IN	ORDERED	DEMAND	BACKORDER
1	1329				4	0
2	1329				0	0
3	1316				13	13
4	1303				13	0
5	1303				0	0
6	1303				0	0
7	1303				0	0
8	1303				0	0
9	1291				12	12
10	1281				10	0
11	1261				0	0
12	1271				16	16
13	1259				12	0
14	1214				40	0
15	1214				0	0
16	1215				4	0
17	1215				0	0
18	1215				0	0
19	1192				23	0
20	1192				0	0
21	1192				0	0
22	1191				0	0
23	1191				0	0
24	1191				0	0
25	1181				12	0
26	1180				0	0
27	1180				0	0
28	1180				0	0
29	1157				23	0
30	1144				13	0
31	1131				13	0
32	1131				0	0
33	1131				0	0
34	1118				13	0
35	1118				0	0
36	1118				0	0

ศูนย์วิทยทรัพยากร
 ภาควิชาการ
 วิทยาลัย

37	1076	40
38	1076	0
39	1076	0
40	1075	3
41	1063	12
42	1059	4
43	1059	0
44	1047	12
45	1044	3
46	1032	12
47	1032	0
48	1032	0
49	1020	12
50	1020	0
51	1007	13
52	997	10
53	997	0
54	996	1
55	983	13
56	973	10
57	950	23
58	938	12
59	938	0
60	925	13
61	925	0
62	924	1
63	914	10
64	902	12
65	902	0
66	902	0
67	902	0
68	837	65
69	827	10
70	817	0
71	817	0
72	794	23
73	794	0
74	784	10
75	771	13
76	771	0
77	770	1
78	765	5
79	745	20
80	735	10
81	735	0
82	702	33
83	702	0
84	679	23
85	679	0
86	619	60
87	619	0
88	614	5
89	613	1
90	613	0
91	613	0
92	609	4
93	547	62
94	537	10
95	532	5
96	531	1
97	530	1
98	530	0
99	468	62
100	468	0
101	408	60
102	398	10

129

1333

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

103	386	12
104	386	C
105	321	65
106	321	0
107	321	C
108	309	12
109	309	0
110	309	0
111	309	0
112	309	0
113	309	0
114	306	3
115	306	C
116	302	4
117	302	0
118	277	25
119	277	0
120	277	0
121	264	13
122	264	0
123	264	0
124	254	10
125	254	0
126	254	0
127	241	13
128	241	0
129	1574	0
130	1564	10
131	1552	12
132	1552	0
133	1552	0
134	1547	5
135	1547	0
136	1547	0
137	1537	10
138	1527	10
139	1502	25
140	1492	10
141	1492	0
142	1492	0
143	1492	0
144	1482	10
145	1472	10
146	1447	25
147	1447	0
148	1447	0
149	1447	0
150	1442	5
151	1429	13
152	1429	0
153	1429	0
154	1389	40
155	1369	0
156	1389	0
157	1366	3
158	1374	12
159	1370	4
160	1370	0
161	1358	12
162	1355	3
163	1343	12
164	1343	0
165	1343	0
166	1331	12
167	1331	0
168	1318	13

1333

ศูนย์วิทยทรัพยากร
 ภาลงกรณ์มหาวิทยาลัย

165	1308	10
170	1308	0
171	1307	1
172	1294	13
173	1284	10
174	1261	23
175	1249	12
176	1249	0
177	1236	13
178	1236	0
179	1235	1
180	1225	10
181	1213	12
182	1213	0
183	1213	0
184	1213	0
185	1148	65
186	1138	10
187	1128	10
188	1128	0
189	1105	23
190	1105	0
191	1095	10
192	1082	13
193	1082	0
194	1081	1
195	1076	5
196	1056	20
197	1046	10
198	1046	0
199	1013	33
200	1013	0
201	990	23
202	990	0
203	930	60
204	930	0
205	925	5
206	924	1
207	924	0
208	924	0
209	920	4
210	856	62
211	848	10
212	843	5
213	842	1
214	841	1
215	841	0
216	779	0
217	779	0
218	719	60
219	709	10
220	697	12
221	697	0
222	632	65
223	632	0
224	632	0
225	620	12
226	620	0
227	620	0
228	620	0
229	620	0
230	620	0
231	617	3
232	617	0
233	613	4
234	613	0

ศูนย์วิทยทรัพยากร
 276 ลงกรณ์มหาวิทยาลัย 1333

235	565	25
236	566	0
237	567	0
238	571	13
239	575	0
240	577	0
241	569	10
242	561	0
243	569	0
244	552	13
245	552	0
246	552	0
247	542	10
248	530	12
249	530	0
250	530	0
251	525	5
252	525	0
253	525	0
254	515	10
255	505	10
256	480	25
257	470	10
258	470	0
259	470	0
260	470	0
261	460	10
262	450	10
263	425	25
264	425	0
265	425	0
266	425	0
267	420	5
268	407	13
269	407	0
270	407	0
271	367	40
272	367	0
273	367	0
274	364	3
275	352	12
276	1681	4
277	1681	0
278	1669	12
279	1660	3
280	1654	12
281	1654	0
282	1654	0
283	1642	12
284	1642	0
285	1629	13
286	1619	10
287	1619	0
288	1618	1
289	1605	13
290	1595	10
291	1572	23
292	1560	12
293	1560	0
294	1547	13
295	1547	0
296	1546	1
297	1530	10
298	1524	12
299	1524	0
300	1524	0



ศูนย์วิทยทรัพยากร
 ภาลงกรณ์มหาวิทยาลัย

301	1524	0
302	1459	65
303	1449	10
304	1439	10
305	1439	0
306	1416	23
307	1416	0
308	1406	10
309	1393	13
310	1393	0
311	1393	1
312	1367	5
313	1367	20
314	1357	10
315	1357	0
316	1324	33
317	1324	0
318	1301	23
319	1301	0
320	1241	60
321	1241	0
322	1236	5
323	1235	1
324	1235	0
325	1235	0
326	1231	4
327	1169	62
328	1159	10
329	1154	5
330	1153	1
331	1152	1
332	1152	0
333	1090	62
334	1090	0
335	1030	60
336	1020	10
337	1008	12
338	1008	0
339	943	65
340	943	0
341	943	0
342	931	12
343	931	0
344	931	0
345	931	0
346	931	0
347	931	0
348	928	3
349	928	0
350	924	4
351	924	0
352	899	25
353	899	0
354	899	0
355	886	13
356	886	0
357	886	0
358	876	10
359	876	0
360	876	0

TOTAL CARRYING COST = 3549.57
 TOTAL INDEXING COST = 962
 TOTAL BACKORDER COST = 0.0
 GRAND TOTAL = 4531.5703



ภาคผนวก ค.

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

```

COMMON IPER,ISAVE,ION,IN,INEXT1,IL,INEG,IC1,I77SW,ILSW,ICRSW
1 READ (1,2,END=99) IN,IN,IL,IC2,C3,C4
2 FORMAT (I3,I4,I2,I4,F5.2,F3.2)
CALL HEAD (IR)
ILT=0.0
SCOST=0.0
ILCST=0
ICOST=0
ICRC=0
IFER=0
INEXT1=0
ISW=0
ION=IN
R=0.7859347
IBACK=0
10 I77SW=0
ILSW=0
ICRSW=0
IPER=IPER+1
IF (IPER.GT. 360) GO TO 90
P=0.1D+G8
C=0.1427D-03
RA=P*C*R
IFR=RA
AIR=IRR
RAND=RA-AIR
R=RAND
CALL IDEM (RAND,IC)
ION=ION-IC
IF (ION.GT. IR) GO TO 20
IF (ION.LT. 0) GO TO 30
IF (ISW.EQ. 1) GO TO 40
INEXT1=IPER+IL
IORC=IORC+IC2
ICRSW=1
ISW=1
GO TO 50
20 I77SW=1
GO TO 60
30 ILSW=1
INEG=ION+(-1)
DC=INEG*C3
IBACK=IBACK+INEG
SLCST=SLCST+DC
ION=0
GO TO 50
40 I77SW=1
50 IF (IPER.LT. INEXT1).GO TO 60
ION=ION+IN-IBACK
IBACK=0
ISW=0
60 CAR=ION*C4
SCOST=SCOST+CAR
ISAVE=INEXT1
CALL PRINT

```

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      GO TO 10
90 TOT=FLOAT(ICRC)+SCOST+SLEST
   WRITE (2,91) SCOST
91 FORMAT(50X,'TOTAL CARRYING COST = ',F8.2)
   WRITE (2,92) ICPC
92 FORMAT(50X,'TOTAL ORDERING COST = ',F8)
   WRITE (2,93) SLEST
93 FORMAT(50X,'TOTAL BACKORDER COST = ',F8.2)
   WRITE (2,94) TOT
94 FORMAT(50X,'GRAND TOTAL      =      ',F15.4)
      GO TO 1
99 STOP
      END
      SUBROUTINE IDEN (RAND, ID)
      IF (RAND .GT. .0 .AND. RAND .LE. .138) ID=0
      IF (RAND .GT. .138 .AND. RAND .LE. .250) ID=3
      IF (RAND .GT. .250 .AND. RAND .LE. .529) ID=7
      IF (RAND .GT. .529 .AND. RAND .LE. .805) ID=10
      IF (RAND .GT. .805 .AND. RAND .LE. .945) ID=18
      IF (RAND .GT. .945 .AND. RAND .LE. 1.00) ID=30
      RETURN
      END
      SUBROUTINE PRINT
      COMMON IPER, ISAVE, ION, IN, INEXT1, ID, INEG, IC2, I77SW, ILSW, IORSW
      IF (ISAVE .EQ. IPER .AND. I77SW .EQ. 1) GO TO 10
      IF (ISAVE .EQ. IPER .AND. ILSW .EQ. 1) GO TO 20
      IF (ISAVE .EQ. IPER .AND. IORSW .EQ. 1) GO TO 30
      IF (I77SW .EQ. 1) GO TO 40
      IF (ILSW .EQ. 1) GO TO 50
      IF (IORSW .EQ. 1) GO TO 60
      GO TO 90
10 WRITE (2,11) IPER, ION, IN, ID
11 FORMAT (14X, I3, 11X, I5, 11X, I4, 38X, I4, 42X)
      GO TO 90
20 WRITE (2,21) IPER, ION, IN, ID, INEG
21 FORMAT (14X, I3, 11X, I5, 39X, I4, 10X, I4, 11X, I3, 28X)
      GO TO 90
30 WRITE (2,31) IPER, ION, IN, INEXT1, IN, IC2
31 FORMAT (14X, I3, 11X, I5, 11X, I4, 10X, I3, 10X, I4, 40X, I4, 13X)
      GO TO 90
40 WRITE (2,41) IPER, ION, ID
41 FORMAT (14X, I3, 11X, I5, 53X, I4, 42X)
      GO TO 90
50 WRITE (2,51) IPER, ION, ID, INEG
51 FORMAT (14X, I3, 11X, I5, 53X, I4, 11X, I3, 28X)
      GO TO 90
60 WRITE (2,61) IPER, ION, INEXT1, IN, IC2
61 FORMAT (14X, I3, 11X, I5, 25X, I4, 10X, I4, 39X, I4, 13X)
90 RETURN
      END
      SUBROUTINE HEAD (IR)
      WRITE (2,10)
10 FORMAT (10X, 'NUMBER OF TIME PERIODS = 360 ')
      WRITE (2,20)
20 FORMAT (10X, 'PRICE OF ITEM = 120 PER UNITS ')

```

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WRITE (2,30)
30 FORMAT (10X,'BEGINNING INVENTORY = 630 UNITS')
WRITE (2,40) IR
40 FORMAT (10X,'ORDER POINT = ',13,' UNITS')
WRITE (2,50)
50 FORMAT (10X,'COST OF PLACING REPLENISHMENT ORDER = 982.00')
WRITE (2,60)
60 FORMAT (10X,'COST OF BACKORDER = 30.00 ')
WRITE (2,70)
70 FORMAT (10X,'COST OF CARRYING = 24.00')
WRITE (2,80)
80 FORMAT (10X,'DEMAND',10X,'CUMULATIVE FREQUENCY')
WRITE (2,90)
90 FORMAT (19X,'0',20X,'0.138')
WRITE (2,100)
100 FORMAT (19X,'3',20X,'0.250')
WRITE (2,110)
110 FORMAT (19X,'7',20X,'0.529')
WRITE (2,120)
120 FORMAT (18X,'10',20X,'0.805')
WRITE (2,130)
130 FORMAT (18X,'15',20X,'0.945')
WRITE (2,140)
140 FORMAT (18X,'30',20X,'1.000')
WRITE (2,150)
150 FORMAT (12X,'PERIOD',9X,'ONHAND',9X,'ORDERED',7X,'DUE IN',
-       7X,'RECEIVED',2X,'DEMAND',6X,'BACKORDER',9X,'COST')
RETURN
END

```

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

NUMBER OF TIME PERIODS = 300
 PRICE OF ITEM = 120 PER UNITS
 BEGINNING INVENTORY = 600 UNITS
 ORDER POINT = 547 UNITS
 COST OF PLACING REPLENISHMENT ORDER = 982.00
 COST OF BACKORDER = 30.00
 COST OF CARRYING = 24.00

DEMAND	CUMULATIVE FREQUENCY
0	0.138
3	0.250
7	0.529
10	0.805
16	0.945
30	1.000

PERIOD	ONHAND	RECEIVED	DUE IN	ORDERED	DEMAND	BACKORDER	COST
1	623				7		
2	616				7		
3	606				10		
4	590				3		
5	587				0		
6	587				3		
7	564				7		
8	577				10		
9	567				10		
10	557				3		
11	554				10		
12	544		72	630	30		982
13	534				7		
14	504				7		
15	497				3		
16	490				7		
17	487				3		
18	480				7		
19	464				16		
20	461				3		
21	454				7		
22	447				7		
23	440				7		
24	437				3		
25	427				10		
26	424				3		
27	421				3		
28	418				3		
29	402				16		
30	386				16		
31	370				16		
32	370				0		
33	363				7		
34	353				10		
35	350				3		
36	343				7		
37	313				30		
38	306				7		
39	306				0		
40	297				7		
41	289				10		
42	282				7		
43	275				7		
44	265				10		
45	258				7		
46	249				10		
47	245				0		

ศูนย์วิทยทรัพยากร
 จุฬาลงกรณ์มหาวิทยาลัย

48	241	7
49	231	10
50	231	0
51	221	10
52	211	10
53	204	7
54	197	7
55	187	10
56	177	10
57	161	16
58	151	10
59	144	7
60	128	16
61	121	7
62	114	7
63	104	10
64	94	10
65	87	7
66	87	0
67	84	3
68	54	30
69	44	10
70	34	10
71	31	3
72	645	16
73	638	7
74	628	10
75	612	16
76	605	7
77	598	7
78	588	10
79	572	16
80	562	10
81	562	0
82	546	0
83	546	16
84	530	3
85	527	30
86	497	7
87	490	10
88	480	7
89	473	0
90	473	7
91	466	7
92	459	30
93	429	10
94	419	10
95	409	7
96	402	7
97	395	7
98	388	30
99	358	7
100	351	30
101	321	10
102	311	10
103	301	7
104	294	30
105	284	0
106	264	3
107	261	10
108	251	7
109	244	7
110	237	3
111	234	3
112	231	3
113	226	3

114	221	7
115	218	3
116	211	7
117	208	3
118	192	16
119	185	7
120	182	3
121	172	10
122	172	0
123	172	0
124	162	10
125	159	3
126	159	0
127	149	10
128	142	7
129	139	3
130	129	10
131	119	10
132	119	0
133	116	3
134	106	10
135	99	7
136	96	3
137	86	10
138	76	10
139	60	16
140	50	10
141	43	7
142	670	3
143	667	3
144	657	10
145	647	10
146	631	16
147	624	7
148	621	3
149	618	3
150	608	10
151	598	10
152	595	3
153	586	7
154	558	30
155	551	7
156	551	0
157	544	0
158	534	10
159	527	7
160	520	7
161	510	10
162	503	7
163	493	10
164	493	0
165	486	7
166	476	10
167	476	0
168	466	10
169	456	10
170	444	7
171	442	7
172	432	10
173	422	10
174	406	16
175	396	10
176	389	7
177	373	16
178	366	7
179	359	7



ศูนย์วิทยทรัพยากร
 217 630
 ภาวการณ์มหาวิทยาลัย

180	349		10
181	334		10
182	332		7
183	332		0
184	324		3
185	299		30
186	289		10
187	279		10
188	276		3
189	260		16
190	253		7
191	243		10
192	227		16
193	220		7
194	213		7
195	203		10
196	187		16
197	177		10
198	177		0
199	161		16
200	161		0
201	145		16
202	142		3
203	112		30
204	105		7
205	95		10
206	88		7
207	88		0
208	81		7
209	74		7
210	44		30
211	34		10
212	24		10
213	17		7
214	10		7
215	3		7
216	0		30
217	596	630	7
218	566		30
219	556		10
220	546		
221	539	280 630	7
222	509		30
223	509		0
224	506		3
225	496		10
226	489		7
227	482		7
228	479		3
229	476		3
230	473		3
231	466		7
232	463		3
233	456		7
234	453		3
235	437		16
236	430		7
237	427		3
238	417		10
239	417		0
240	417		0
241	407		10
242	404		3
243	404		0
244	394		10
245	367		7

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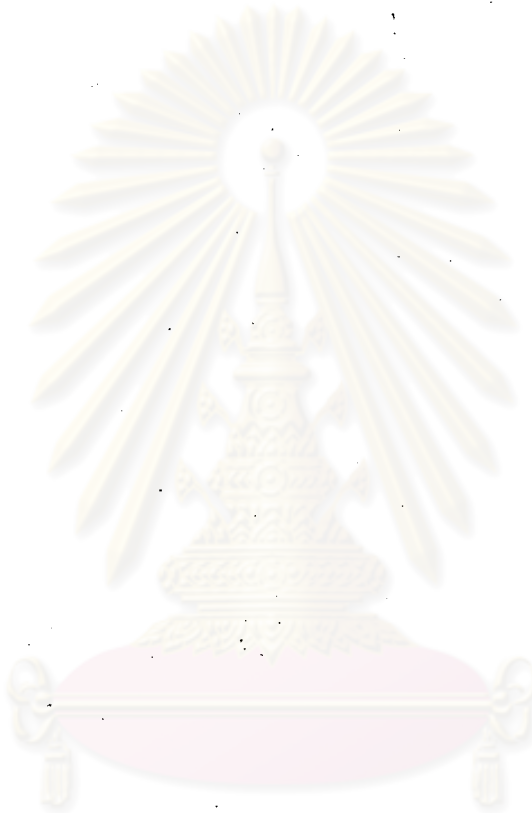
ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

362

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313	428	10
314	432	16
315	425	10
316	421	0
318	406	16
319	406	0
319	390	16
321	387	3
321	357	30
321	350	7
322	340	10
323	333	7
324	333	0
325	326	7
325	319	7
327	289	30
328	279	10
329	269	10
331	262	7
331	255	7
332	248	7
333	218	30
334	211	7
335	181	30
336	171	10
337	161	10
338	154	7
339	124	30
340	124	0
341	121	3
342	111	10
343	104	7
344	97	7
345	94	3
346	91	3
347	84	3
348	81	7
349	78	3
350	71	7
351	68	3
352	52	16
353	43	7
354	42	3
355	32	10
356	32	0
357	32	0
358	22	10
359	19	3
360	19	0



ศูนย์วิทยทรัพยากร
 จุฬาลงกรณ์มหาวิทยาลัย

TOTAL CARRYING COST = 8643.12
 TOTAL ORDERING COST = 4910
 TOTAL BACKORDER COST = 11.48
 GRAND TOTAL = 13564.6016



ภาคผนวก ง.

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

```

ID DIVISION.
PROGRAM-ID. CREATE1.
ENVIRONMENT DIVISION.
CONFIGURATION SECTION.
INPUT-OUTPUT SECTION.
FILE-CONTROL.
    SELECT TAPE1-FILE      ASSIGN TO UT-S-TAPE1.
    SELECT TAPE0-FILE      ASSIGN TO UT-S-TAPE0.
DATA DIVISION.
FILE SECTION.
FD  TAPE1-FILE
    LABEL RECORD IS OMITTED
    RECORD CONTAINS 80 CHARACTERS
    DATA RECORD IS TAPE-REC.
01  TAPE-REC                PIC X(80).
FD  TAPE0-FILE
    BLOCK CONTAINS 10 RECORDS
    RECORD CONTAINS 160 CHARACTERS
    LABEL RECORD IS OMITTED
    DATA RECORD IS OUTPUT-REC.
01  OUTPUT-REC              PIC X(160).
WORKING-STORAGE SECTION.
77  EOF-SW                  PIC X.
01  INPUT-AREA.
    03  CARD1                PIC X(70).
    03  FILLER               PIC X(10).
01  PART2 REDEFINES INPUT-AREA.
    03  CARD2                PIC X(72).
    03  FILLER               PIC X(8).
01  OUTPUT-AREA.
    03  FIRST1              PIC X(70).
    03  SECOND              PIC X(72).
    03  THIRD               PIC X(18) VALUE ZERO.
PROCEDURE DIVISION.
    OPEN INPUT TAPE1-FILE
        OUTPUT TAPE0-FILE.
    MOVE 'N' TO EOF-SW.
    READ TAPE1-FILE INTO INPUT-AREA AT END MOVE 'Y' TO EOF-SW.
    PERFORM MAIN-PROCESS THRU MAIN-PROCESSX
        UNTIL EOF-SW = 'Y'.
    CLOSE TAPE1-FILE
        TAPE0-FILE.
    STOP RUN.
MAIN-PROCESS.
    MOVE CARD1 TO FIRST1.
    READ TAPE1-FILE INTO INPUT-AREA AT END MOVE 'Y' TO EOF-SW.
    TRANSFORM CARD2 FROM SPACES TO ZEROS.
    MOVE CARD2 TO SECOND.
    WRITE OUTPUT-REC FROM OUTPUT-AREA.
    READ TAPE1-FILE INTO INPUT-AREA AT END MOVE 'Y' TO EOF-SW.
MAIN-PROCESSX.
    .EXIT.

```

ID DIVISION.

PROGRAM-ID. MASTER-UPDATE.

ENVIRONMENT DIVISION.

CONFIGURATION SECTION.

INPUT-OUTPUT SECTION.

FILE-CONTROL.

SELECT TAPE-FILE ASSIGN TO UT-S-TAPE.

SELECT CARD-FILE ASSIGN TO UT-S-CARD.

SELECT OUTPUTA-FILE ASSIGN TO UT-S-OTAPE.

SELECT OUTPUTB-FILE ASSIGN TO UT-S-PRINTER.

DATA DIVISION.

FILE SECTION.

FD TAPE-FILE

BLOCK CONTAINS 10 RECORDS

RECORD CONTAINS 160 CHARACTERS

LABEL RECORD IS OMITTED

DATA RECORD IS INPUT-REC.

01 INPUT-REC PIC X(160).

FD CARD-FILE

LABEL RECORD IS OMITTED

DATA RECORD IS CARD-REC.

01 CARD-REC PIC X(80).

FD OUTPUTA-FILE

BLOCK CONTAINS 10 RECORDS

RECORD CONTAINS 160 CHARACTERS

LABEL RECORD IS OMITTED

DATA RECORD IS OUTPUTA-REC.

01 OUTPUTA-REC PIC X(160).

FD OUTPUTB-FILE

BLOCK CONTAINS 1 RECORDS

RECORD CONTAINS 132 CHARACTERS

LABEL RECORD IS OMITTED

DATA RECORD IS OUTPUTB-REC.

01 OUTPUTB-REC PIC X(132).

WORKING-STORAGE SECTION.

77 END-SW PIC X VALUE 'N'.

77 SW PIC 9 VALUE ZERO.

77 I PIC 99.

77 MM PIC 99.

77 O-ERROR PIC X(6).

01 INPUT-AREA.

02 IN1.

03 S-STO-NO PIC X(13).

03 S-DESCRIP PIC X(20).

03 S-DATE.

05 S-DAY PIC 99.

05 S-MONTH PIC 99.

05 S-YEAR PIC 99.

03 S-ORPOINT PIC 9(04).

03 S-ORQTY PIC 9(05).

03 S-ONQTY PIC 9(05).

03 S-OUTQTY PIC 9(05).

03 S-ONHAND PIC 9(06).

03 S-UNIT-CO PIC 9(06).

02 IN2.

	03	S-MS	OCURS	12	TIMES	PIC	9(05).	
	03	S-TOT-SALE				PIC	9(06).	
	03	S-ONORDER				PIC	9(06).	
	03	FILLER				PIC	X(18).	
01		SAVE-INPUT1				PIC	X(80).	
01		SAVE-INPUT2				PIC	X(80).	
01		ADD-AREA.						
	03	A-STC-NC				PIC	X(13).	
	03	A-ADD-AR1				PIC	X(57).	
	03	A-ADD-AR2				PIC	X(60).	
	03	A-ADD-AR3				PIC	X(12).	
	03	FILLER				PIC	X(18).	
01		ADD-AREA-R	REDEFINES		ADD-AREA.			
	03	AAA				PIC	X(70).	
	03	BBB				PIC	X(72).	
	03	FILLER				PIC	X(18).	
01		CARD-AREA.						
	03	C-CODE				PIC	99.	
	03	C-STC-NO				PIC	X(13).	
	03	C-INVOICE				PIC	9(04).	
	03	C-DATE				PIC	99.	
	03	C-MQ-QTY				PIC	9(05).	
	03	C-UNIT-CO				PIC	9(06).	
	03	C-ORPOINT				PIC	9(04).	
	03	C-ORQTY				PIC	9(05).	
	03	FILLER				PIC	X(39).	
01		CARD-AREA-R1	REDEFINES		CARD-AREA.			
	03	FILLER				PIC	X(15).	
	03	CI-A				PIC	X(57).	
	03	FILLER				PIC	X(08).	
01		CARD-AREA-R2	REDEFINES		CARD-AREA.			
	03	FILLER				PIC	X(15).	
	03	CI-B				PIC	X(60).	
	03	FILLER				PIC	X(05).	
01		CARD-AREA-R3	REDEFINES		CARD-AREA.			
	03	FILLER				PIC	X(15).	
	03	CI-C				PIC	X(12).	
	03	FILLER				PIC	X(53).	
01		HEAD1.						
	03	FILLER				PIC	X(58)	VALUE SPACE.
	03	FILLER				PIC	X(13)	VALUE 'MOVING REPORT'.
01		HEAD2.						
	03	FILLER				PIC	X(11)	VALUE SPACES.
	03	FILLER				PIC	X(13)	VALUE 'STOCK NUMBER'.
	03	FILLER				PIC	X(07)	VALUE SPACES.
	03	FILLER				PIC	X(06)	VALUE 'ONHAND'.
	03	FILLER				PIC	X(05)	VALUE SPACES.
	03	FILLER				PIC	X(09)	VALUE 'UNIT COST'.
	03	FILLER				PIC	X(07)	VALUE SPACES.
	03	FILLER				PIC	X(02)	VALUE 'M1'.
	03	FILLER				PIC	X(09)	VALUE SPACES.
	03	FILLER				PIC	X(02)	VALUE 'M2'.
	03	FILLER				PIC	X(09)	VALUE SPACES.
	03	FILLER				PIC	X(02)	VALUE 'M3'.
	03	FILLER				PIC	X(09)	VALUE SPACES.

03	FILLER	PIC X(02)	VALUE 'M4'.
03	FILLER	PIC X(06)	VALUE SPACES.
03	FILLER	PIC X(07)	VALUE 'ONORDER'.
03	FILLER	PIC X(03)	VALUE SPACES.
03	FILLER	PIC X(05)	VALUE 'REFER'.
03	FILLEP	PIC X(03)	VALUE SPACES.
03	FILLER	PIC X(09)	VALUE 'ORDER CTY'.
03	FILLEP	PIC X(05)	VALUE SPACES.

01 PRT-AREA.

03	FILLER	PIC X.	
03	O-TITLE	PIC X(09).	
03	O-STO-NO	PIC 9(5)B9(5)B9(3).	
03	O-STO-NO-R	REDEFINES O-STO-NO.	
	05 FILLER	PIC X(12).	
	05 O-STO-NO1	PIC X(03).	
03	FILLER	PIC X(05)	VALUE SPACES.
03	O-ONHAND	PIC ZZZ,299.	
03	FILLER	PIC X(05)	VALUE SPACES.
03	O-UNIT-CO	PIC ZZ,299.99.	
03	FILLER	PIC X(05)	VALUE SPACES.
03	O-M1	PIC ZZ,299.	
03	FILLER	PIC X(05)	VALUE SPACES.
03	O-M2	PIC ZZ,299.	
03	FILLER	PIC X(05)	VALUE SPACES.
03	O-M3	PIC ZZ,299.	
03	FILLER	PIC X(05)	VALUE SPACES.
03	O-M4	PIC ZZ,299.	
03	FILLER	PIC X(05)	VALUE SPACES.
03	O-ONORDER	PIC ZZ,ZZZ.	
03	FILLER	PIC X(05)	VALUE SPACES.
03	O-REFER-OR	PIC XXX.	
03	FILLER	PIC X(05)	VALUE SPACES.
03	O-ORQTY	PIC ZZZ,ZZZ.	

PROCEDURE DIVISION.

BEGIN-RTN.

OPEN INPUT TAPE-FILE
 CARD-FILE
 OUTPUT OUTPUTA-FILE
 OUTPUTB-FILE.

MOVE 'N' TO END-SW.

WRITE OUTPUTB-REC FROM HEAD1 AFTER POSITIONING 0.

WRITE OUTPUTB-REC FROM HEAD2 AFTER POSITIONING 2.

PERFORM READ-CARD-RTN THRU READ-CARD-RTNX.

PERFORM READ-MASTER-RTN THRU READ-MASTER-RTNX.

PERFORM MAIN-PROCESS THRU MAIN-PROCESSX

UNTIL END-SW = 'Y'.

CLOSE TAPE-FILE
 CARD-FILE
 OUTPUTA-FILE
 OUTPUTB-FILE.

STOP RUN.

MAIN-PROCESS.

IF C-STO-NO > S-STO-NO

WRITE OUTPUTA-REC FROM INPUT-AREA

PERFORM READ-MASTER-RTN THRU READ-MASTER-RTNX

```

ELSE
  IF C-STC-NO < S-STO-NO
    PERFORM INSERT-RTN THRU INSERT-RTNX
  ELSE
    PERFORM UPDATE-DELETE-RTN THRU UPDATE-DELETE-RTNX.
MAIN-PROCESSX.
  EXIT.
INSERT-RTN.
  IF C-CODE = 88 NEXT SENTENCE
  ELSE
    MOVE 'ERROR1' TO O-ERROR
    PERFORM ERROR-RTN
    PERFORM READ-CARD-RTN THRU READ-CARD-RTNX
    GO TO INSERT-RTNX.
  MOVE C-STC-NO TO A-STO-NO.
  MOVE CI-A TO A-ADD-AR1.
  MOVE ZERO TO A-ADD-AR2.
  MOVE SPACE TO A-ADD-AR3.
  PERFORM READ-CARD-RTN THRU READ-CARD-RTNX.
  IF C-STO-NO = A-STO-NO AND C-CODE = 88
    NEXT SENTENCE
  ELSE
    GO TO WRITE-INSERT.
  MOVE CI-B TO A-ADD-AR2.
  PERFORM READ-CARD-RTN THRU READ-CARD-RTNX.
  IF C-STO-NO = A-STO-NO AND C-CODE = 88
    NEXT SENTENCE
  ELSE
    GO TO WRITE-INSERT.
  MOVE CI-C TO A-ADD-AR3.
  PERFORM READ-CARD-RTN THRU READ-CARD-RTNX.
WRITE-INSERT.
  MOVE IN1 TO SAVE-INPUT1.
  MOVE IN2 TO SAVE-INPUT2.
  MOVE AAA TO IN1.
  MOVE BBB TO IN2.
  WRITE OUTPUTA-REC FROM INPUT-AREA.
  MOVE 'INSERT' TO O-TITLE.
  PERFORM PRINT-UPDATE-RTN THRU PRINT-UPDATE-RTNX.
  MOVE SAVE-INPUT1 TO IN1.
  MOVE SAVE-INPUT2 TO IN2.
INSERT-RTNX.
  EXIT.
UPDATE-DELETE-RTN.
  IF C-CODE = '99'
    PERFORM DELETE-RTN THRU DELETE-RTNX
    PERFORM READ-MASTER-RTN THRU READ-MASTER-RTNX
    PERFORM READ-CARD-RTN THRU READ-CARD-RTNX
    GO TO UPDATE-DELETE-RTNX.
  ELSE
    IF C-CODE < 01 OR C-CODE > 07
      MOVE 'ERROR2' TO O-ERROR
      PERFORM ERROR-RTN
      PERFORM READ-CARD-RTN THRU READ-CARD-RTNX
      GO TO UPDATE-DELETE-RTNX.

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IF SW = 0
    MOVE 1 TO SW
    MOVE 'OLD' TO O-TITLE
    PERFORM PRINT-UPDATE-RTN THRU PRINT-UPDATE-RTNX.
IF C-CCDE = 01
    MOVE C-MO-QTY TO S-ONQTY
    ADD C-MO-QTY TO S-ONHAND
    MOVE ZERO TO S-ONORDER
    IF S-UNIT-CD > C-UNIT-CD
        MOVE C-UNIT-CD TO S-UNIT-CD
    ELSE
        MOVE S-UNIT-CD TO C-UNIT-CD
ELSE
IF C-CODE = 02
    MOVE C-DATE TO S-MONTH
    MOVE C-MO-QTY TO S-OUTQTY
    SUBTRACT C-MO-QTY FROM S-ONHAND
    ADD C-MO-QTY TO S-MS (C-DATE)
    ADD C-MO-QTY TO S-TOT-SALE
ELSE
IF C-CODE = 03
    ADD C-MO-QTY TO S-ONHAND
    SUBTRACT C-MO-QTY FROM S-MS (C-DATE)
    SUBTRACT C-MO-QTY FROM S-TCT-SALE
ELSE
IF C-CODE = 04
    ADD C-MO-QTY TO S-ONHAND
ELSE
IF C-CODE = 05
    SUBTRACT C-MO-QTY FROM S-ONHAND
ELSE
IF C-CODE = 06
    MOVE C-ORPOINT TO S-ORPOINT
    MOVE C-ORQTY TO S-ORQTY
ELSE
    MOVE S-ORQTY TO S-ONORDER.
MOVE 'UPDATE' TO O-TITLE.
EXHIBIT NAMED S-STO-NO.
PERFORM READ-CARD-PTN THRU READ-CARD-RTNX.
IF C-STO-NO = S-STO-NO
    NEXT SENTENCE
ELSE
    MOVE 0 TO SW
    PERFORM PRINT-UPDATE-RTN THRU PRINT-UPDATE-RTNX
    WRITE OUTPUTA-REC FROM INPUT-AREA
    PERFORM READ-MASTER-RTN THRU READ-MASTER-RTNX.
UPDATE-DELETE-RTNX.
EXIT.
DELETE-RTN.
    MOVE 'DELETE' TO O-TITLE.
    PERFORM PRINT-UPDATE-RTN THRU PRINT-UPDATE-RTNX.
DELETE-RTNX.
EXIT.
PRINT-UPDATE-RTN.
    MOVE S-STG-NO TO O-STG-NO.

```

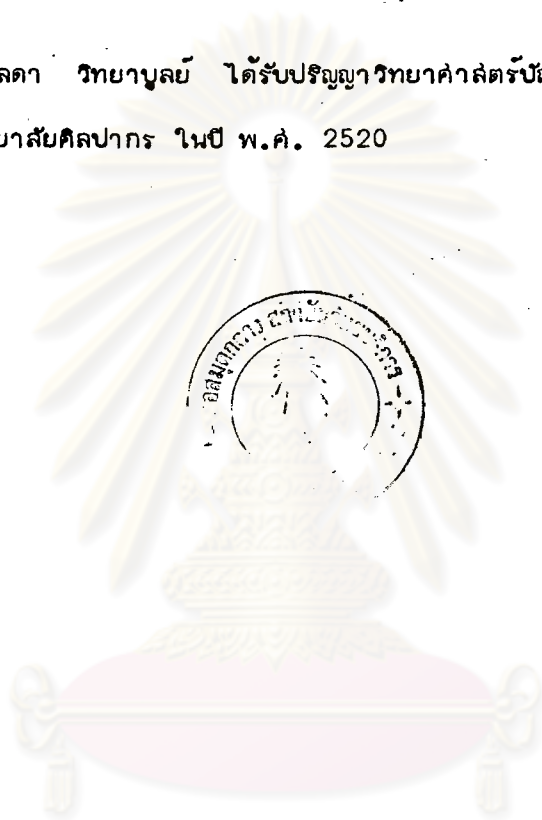
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MOVE S-ONHAND TO O-ONHAND.
MOVE S-UNIT-CC TO C-UNIT-CC.
MOVE S-MONTH TO MM.
MOVE MM TO I.
IF MM < 4
    PERFORM MOVE-LESS4-RTN THRU MOVE-LESS4-RTNX
ELSE
    PERFORM MOVE-GRT4-RTN THRU MOVE-GRT4-RTNX.
MOVE S-ONORDER TO C-ONORDER.
IF S-ONHAND < S-ORQTY AND S-ONORDER = ZERO
    MOVE '***' TO O-REFER-OR
    MOVE S-ORQTY TO C-ORQTY
ELSE
    MOVE SPACE TO C-REFER-OR
    MOVE ZERO TO C-ORQTY.
WRITE OUTPUTB-REC FROM PRT-AREA AFTER POSITIONING 2.
PRINT-UPDATE-RTNX.
EXIT.
MOVE-LESS4-RTN.
MOVE S-MS (I) TO O-M4.
SUBTRACT 1 FROM I.
IF I = 0
    GO TO MOVE-LESS4-RTNX.
MOVE S-MS (I) TO O-M3.
SUBTRACT 1 FROM I.
IF I = 0
    GO TO MOVE-LESS4-RTNX.
MOVE S-MS (I) TO O-M2.
MOVE-LESS4-RTNX.
EXIT.
MOVE-GRT4-RTN.
MOVE S-MS (I) TO O-M4.
SUBTRACT 1 FROM I.
MOVE S-MS (I) TO O-M3.
SUBTRACT 1 FROM I.
MOVE S-MS (I) TO O-M2.
SUBTRACT 1 FROM I.
MOVE S-MS (I) TO O-M1.
MOVE-GRT4-RTNX.
EXIT.
ERROR-RTN.
DISPLAY ' '.
DISPLAY O-ERROR.
DISPLAY CARD-AREA.
READ-CARD-RTN.
READ CARD-FILE INTO CARD-AREA
    AT END MOVE HIGH-VALUE TO C-STD-NO.
READ-CARD-RTNX.
EXIT.
READ-MASTER-RTN.
READ TAPE-FILE INTO INPUT-AREA
    AT END MOVE 'Y' TO END-SW.
READ-MASTER-RTNX.
EXIT.

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ประวัติการศึกษา

นางสาว ฉัตรลดา วิทยาบุญย์ ได้รับปริญญาวิทยาศาสตรบัณฑิต (สถิติ) จาก
คณะวิทยาศาสตร์ มหาวิทยาลัยศิลปากร ในปี พ.ศ. 2520



ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย