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10  REM CHEMIN CRITIQUE – PERT, BUIXANTUNG, 1981
20  PRINT : PRINT : PRINT
30  PRINT " CHEMIN CRITIQUE - P.E.R.T.-"
40  PRINT "-----"
50  PRINT : PRINT : PRINT
60  INPUT " CHEMIN CRITIQUE OU P.E.R.T. (C/P)";Q$
70  PRINT : PRINT : PRINT
80  INPUT "NOMBRE D'ACTIVITES (ARCS)";A
90  DIM N (A+1), E (A+1), L (A+ 1), LAG (A+1)
100 DIM T1(A), T2(A), T3(A), T(A), SD(A)
110 DIM CP (A+1), KL (A+1), P (A+1), S (A+1), R (A+1)
120 REM SOUS ROUTINE DONNEES : PRINT : PRINT
130 FOR I=1 TO A
140 PRINT: PRINT "ACTIVITE "; I; ":"
150 GOSUB 2160
160 NEXT I
170 PRINT
180 REM CLASSEMENT DES EVENEMENTS
190 N1=0
200 FOR I=1 TO A
210 FOR J=1 TO N1
220 IF P (I) =N (J) GOTO 260
230 NEXT J
240 N1=N1+1
250 N (N1) =P (I)
260 FOR J=1 TO N1
270 IF S (I) =N (J) GOTO 310
280 NEXT J
290 N1=N1+1
300 N (N1) =S (I)
310 NEXT I
320 REM IMPRESSION DES EVENEMENTS
330 PRINT "CLASSEMENT ORDONNE DES EVENEMENTS (NOEUDS):"
340 PRINT "-----"
350 PRINT
360 FOR J=1 TO N1: PRINT N (J);
370 NEXT J: PRINT: PRINT: PRINT
380 IF Q$="C" THEN 460
390 REM CALCULER LES DUREES ALEATOIRES (PERT)
400 FOR I=1 TO A
410 T (I) = (T2 (I) +4*T1 (I) +T3 (I))/6
420 SD (I) = (T3 (I)-T2 (I))/6
430 KI = 2*RND (I)-1
440 T (I) =T (I) + (SD (I) +KI)
450 NEXT I
460 PRINT: PRINT
470 PRINT "ACTIVITES ET DUREES CORRESPONDANTES :)"
480 PRINT "-----"
490 PRINT "ACTIVITE   DE   A   DELAI D'EXECUTION"
500 PRINT "                               PREVU"
510 PRINT "-----"
520 FOR I=1 TO A
530 PRINT TAB(3);I;TAB(10);P(I);TAB(15);S(I);
540 PRINT TAB (25); INT (100*T (I) +.5)/100

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550 NEXT I
560 PRINT "-----"
570 REM CLASSEMENT DES EVENEMENTS SELON L'ORDRE CROISSANT
580 REM DES POINTS DE DEPART
590 FOR I=1 TO A
60 R (I) = I
610 NEXT I
620 A1 = A
630 A1 = A1-1
640 A2 = 0
650 FOR I = 1 TO A1
660 K= R (I)
670 K1 = R (I+1)
680 IF P (K) <=P (K1) THEN 730
690 R1=R (I)
700 R (I) =R (I+1)
710 R (I+1) =R1
720 A2=1
730 NEXT I
740 IF A2=1 THEN 630
750 REM CALCULER LES DELAIS "AU PLUS TOT"
760 FOR I=1 TO A
770 K=R (I)
780 A3=P (K)
790 GOSUB 1630
800 I1=K3
810 K=R (I)
820 A3=S (K)
830 GOSUB 1630
840 I2=K3
850 K=R (I)
860 M=E (I1) +T (K)
870 IF E (I2)>=M THEN 900
880 K=R (I)
890 E (I2) =E (1) +T (K)
900 NEXT I
910 REM CLASSEMENT DES EVENEMENTS SELON L'ORDRE DECROISSANT
920 REM DES POINTS D'ARRIVEES
930 FOR I=1 TO A
940 R (I) =I
950 A1=A
960 A1=A1-1
970 A2=0
980 FOR I=1 TO A1
990 K=R (I)
1000 K1=R (I+1)
1010 IF S (K)>=S (K1) THEN 1060
1020 R1=R (I)
1030 R (I) =R (I+1)
1040 R (I+1) =R1
1050 A2=1
1060 NEXT I
1070 IF A2=1 THEN 960
1080 REM IDENTIFIER LES TEMPS LONGS

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1090 FOR I=1 TO A
1100 K=R (I)
1110 A3=S (K)
1120 GOSUB 1630
1130 I1=K3
1140 K=R (I)
1150 A3=P (K)
1160 GOSUB 1630
1170 I2=K3
1180 K=R (I)
1190 M=L (I1) +T (K)
1200 IF L (I2)>=M THEN 1230
1210 K=R (I)
1220 L (I2) =L (I1) +T (K)
1230 NEXT I
1240 K=R (I)
1250 A3=S (K)
1260 GOSUB 1630
1270 C=E (K3)
1280 FOR I=1 TO N1
1290 L (I) =C-L (I)
1300 NEXT I
1310 REM CALCULER LES INTERVALLES DE TEMPS
1320 FOR I=1 TO N1
1330 LAG (I) =L (I)-E (I)
1340 NEXT I
1350 REM IMPRIMER LES RESULTATS
1360 GOSUB 1700
1370 REM IDENTIFIER LE CHEMIN CRITIQUE
1380 KK=1
1390 FOT I=1 TO N1
1400 IF ABS (LAG (I))>=0.01 THEN 1460
1410 LAG (I) =0
1420 CP (KK) =N (I)
1430 KL (KK) =L (I)
1440 N4=KK
1450 KK=KK+1
1460 NEXT I
1470 N5=N4-1
1480 FOT I=1 TO N5
1490 I1=I+1
1500 FOR J=I1 TO N4
1510 IF KL (I)>KL (J) THEN 1540
1520 IF KL (I) <=KL (J) THEN 1600
1530 IF CP (I) <=CP (J) THEN 1600
1540 IT=KL (I)
1550 JP=CP (I)
1560 KL (I) =KL (J)
1570 CP (I) =CP (J)
1580 KL (J) =IT
1590 CP (J) =JP
1600 NEXT J: NEXT I
1610 GOSUB 1830
1620 END

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1630 REM SOUS ROUTINE DE CONTROLE
1640 FOR J=1 TO N1
1650 K (J) = J
1660 IF N (K3) =A3 THEN 1690
1670 NEXT J
1680 PRINT: PRINT "PAS DE NUMERO D'ACTIVITE"; A3
1690 RETURN
1700 REM IMPRESSION DES DELAIS
1710 PRINT : INPUT "Pour continuer tapez C";C$: PRINT: PRINT
1720 PRINT "EVENEMENTS : "
1730 PRINT "-----"
1740 PRINT " ", "----- délais -----"
1750 PRINT "Evènem. ", "au plus tôt", "au plus tard", "Ecart"
1760 PRINT "-----"
1770 FOR I=1 TO N1
1780 PRINT N (I), INT (100+E (I) +.5)/100, INT (100+ L (I) +.5)/100,
1790 PRINT INT (100+ LAG (I) +0.5)/100
1800 NEXT I
1810 PRINT "-----"
1820 RETURN
1830 REM IMPRIMER LE CHEMIN CRITIQUE ET DUREES DE REALISATION
1840 PRINT : INPUT "Pour continuer tapez C";C$
1850 T5=0 : PRINT : PRINT
1860 PRINT "ACTIVITES : "
1870 PRINT "-----"
1880 PRINT "DE A", TAB(12) ; "TEMPS" ; TAB(23) ; "TEMPS MAX SUP-"
1890 PRINT TAB(11) ; "ATTENDU" ; TAB(25) ; "PLEMENTAIRE"
1900 PRINT "-----"
1910 FOR I=1 TO A
1920 A3=P (I)
1930 GOSUB 1630
1940 I1=K3
1950 A3=S (I)
1960 GOSUB 1630
1970 I2=K3
1980 D= L (I2)-E (I1)
1990 IF ABS (T (I)-D) <0.001 THEN 2030
2000 PRINT P(I) ; TAB(4) ; S(I) ; TAB(11) ;
2010 PRINT INT (100+T (I) +0.5)/100; TAB (26); INT (100+D+.5)/100
2020 GOTO 2060
2030 PRINT P(I) ; TAB(4) ; S(I) ; TAB(11) ; INT (100+T(I) +0.5)/100 ;
2040 PRINT TAB (26); INT (100+D+0.5)/100; TAB (35); "ARC CRITIQUE"
2050 T5 = T5 + T(I)
2060 NEXT I
2070 PRINT "-----"
2080 PRINT : PRINT
2090 PRINT "Voici l'ordre du chemin critique : "
2100 PRINT "-----"
2110 FOR J=1 TO N4: PRINT CP (J);
2120 NEXT J
2130 PRINT: PRINT
2140 PRINT "... Avec une longueur estimée de : " ; T5
2150 RETURN
2160 REM SOUS-ROUTINE ENTREES DES DONNEES

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2170 INPUT "point de départ "; P(I)
2180 INPUT "point d'arrivée "; S(I)
2190 IF P (I)>=S (I) THEN PRINT "< ERREUR >": GOTO 2170
2200 IF Q$="C" THEN INPUT "durée "; T (I) : GOTO 2280
2210 INPUT "délai d'exécution le plus probable ";T1(I)
2220 REM VERIFIER ACTIVITE FICTIVES
2230 IF T1 (I) =0 THEN T2 (I) =0: T3 (I) =0: GOTO 2280
2240 INPUT "                le plus optimiste "; T2 (I)
2250 IF T2 (I)>T1 (I) THEN PRINT "<ERREUR>": GOTO 2240
2260 INPUT "                le plus pessimiste "; T3 (I)
2270 IF T3 (I) <T1 (I) THEN PRINT "<ERREUR>": GOTO 2260
2280 RETURN
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