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#COMPILE EXE
#DIM ALL
  REM *** potential flow off of a step
  GLOBAL i,j,dx,iter,wsor,zz AS SINGLE
FUNCTION PBMAIN
  DIM psi(151,61) AS SINGLE
  wsor=1.94
  REM *** set psi on boundaries
  FOR i=1 TO 41
    psi(i,31)=0
  NEXT i
  FOR j=1 TO 31
    psi(41,j)=0
  NEXT j
  FOR i=42 TO 151
    psi(i,1)=0
  NEXT i
  FOR i=1 TO 151
    psi(i,61)=24
  NEXT i
  FOR j=31 TO 61
    psi(1,j)=(j-31)*0.8
  NEXT j
  FOR j=1 TO 61
    psi(151,j)=(j-1)*0.4
  NEXT j:iter=1
100 REM *** continue, this section is iterative calculation
  FOR j=2 TO 31
    FOR i=42 TO 150
      GOSUB 400
    NEXT i:NEXT j
  FOR j=32 TO 60
    FOR i=2 TO 150
      GOSUB 400
    NEXT i:NEXT j
    iter=iter+1
    PRINT iter, psi(44,20)
    IF iter>300 THEN 200 ELSE 100
200 REM *** continue
  OPEN "c:POTflowOFFstep.dat" FOR OUTPUT AS #1
  FOR j=1 TO 61
    FOR i=1 TO 151
      WRITE#1,i,j,psi(i,j)
    NEXT i:NEXT j
  INPUT "Shall we continue?";zz
  IF zz>0 THEN CLOSE

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END
400 REM *** subroutine for SOR iteration
      psi(i,j)=psi(i,j)+wsor/4*(psi(i+1,j)+psi(i-1,j)+psi(i,j+1)+psi(i,j-1)-4*psi(i,j))
      RETURN
END FUNCTION
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