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algol, n<
<u>begin</u>
   comment
         buffer N=60 no for:
         Time classic: 408.109
         Time turbo:
                          375.170 8.1pct
   integer procedure LEQ1(N, M, A, eps);
   value N, M, eps;
   integer N, M;
   array A;
   real eps;
   <u>begin</u>
      integer i, j, k, i1, j1;
      real max, f2, factor;
      integer array p[1:N];
      M := N + M;
      LEQ1 := 0;
      for i := 1 step 1 until N do
      <u>begin</u>
          max := 0;
          for j := 1 step 1 until N do
          \max := \max + A[i,j] \nmid 2;
          \underline{if} max > 1 \vee max < 0.25 \underline{then}
          <u>begin</u>
              f2 := 2 \wedge (-\text{entier}(\ln(\max)/1.3863 + 1));
             for j := 1 step 1 until M do
             A[i,j] := A[i,j] \times f2
          end if max
       end for i: equilibration;
       for k := 1 step 1 until N do
      <u>begin</u>
          max := 0;
          for i := k step 1 until N do
          for j := k step 1 until N do
          <u>begin</u>
              factor := abs(A[i,j]);
             if \max \leq factor then
             <u>begin</u>
                 max := factor;
                 i1 := i;
                 j1 := j
             end if larger
          <u>end;</u>
          if max < eps then</pre>
          <u>begin</u>
             LEQ1 := 1;
             go to EX
          end error exit;
          \max := A[i1, j1];
          if i1 \neq k then
          for j := k step 1 until M do
          <u>begin</u>
             factor := A[k,j];
             A[k,j] := A[i1,j];
             A[i1,j] := factor
          end for j: row interchange;
          p[k] := k;
          if j1 \neq k then
          begin
             p[k] := j1;
             for i := 1 step 1 until N do
             begin
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factor := A[i,k];
                  A[i,k] := A[i,j1];
                  A[i,j1] := factor
              end for i
          end interchange of columns;
          for i := k + 1 step 1 until N do
          begin
              factor := A[i,k]/max;
              \underline{\text{for}} j := k + 1 \underline{\text{step}} 1 \underline{\text{until}} M \underline{\text{do}}
              A[i,j] := A[i,j] - A[k,j] \times factor
          <u>end</u>
       end for k;
       for k := N + 1 step 1 until M do
       for i := N step -1 until 1 do
       <u>begin</u>
          factor := A[i,k];
          for j := i + 1 step 1 until N do
          factor := factor - A[i,j] \times A[j,k];
          A[i,k] := factor/A[i,i]
       end solving;
       if M \neq N then
       <u>for</u> i := N - 1 <u>step</u> -1 <u>until</u> 1 <u>do</u>
       <u>begin</u>
          i1 := p[i];
          <u>if</u> i1 = i <u>then</u>
          for k := N + 1 step 1 until M do
          <u>begin</u>
              factor := A[i,k];
              A[i,k] := A[i1,k];
              A[i1,k] := factor
          end for k
       end for i and solution interchange;
EX: end LEQ1;
   real procedure clock count;
   code clock count;
   1, 37;
                  , grf p-1
                               ; RF:=clock count; stack[p-1]:=RF;
     z1
   e;
   real procedure RANDOM;
   <u>begin</u>
       integer new, mod;
       mod := 2796203;
       new := 125xoldrand;
       oldrand := new - modxentier(new/mod);
       RANDOM := oldrand/mod-0.5
   end RANDOM;
   integer oldrand, N;
   <u>real</u> time, maxerror;
   select(17);
   oldrand:=100001;
   writecr;
   writetext(<<N: >);
   N:=60;
   writeinteger (\langle p \rangle, N);
   begin
       array A[1:N,1:N+1];
       integer i, j;
       real sum;
       for i:=1 step 1 until N do
       <u>begin</u>
          sum:=0;
          for j:=1 step 1 until N do
          begin
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A[i,j]:=RANDOM;
               sum:=sum+A[i,j]
           <u>end</u>;
           A[i,N+1] := sum
       <u>end;</u>
       writecr;
       clock count;
       <u>if</u> LEQ1(N, 1, A, 1_{10}-12)=1 <u>then</u> writetext(\langle < Error. \rangle);
       time:=clock count;
       write(≮ddddd.ddd≯,time);
       writecr;
       maxerror:=0;
       for i:=1 step 1 until N do
       <u>begin</u>
           sum:=abs(A[i,N+1]-1);
           if sum>maxerror then maxerror:=sum
       end for;
       write($\dddddd_{10}-dd$\right\, maxerror)
   end inner block
<u>end</u>
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