ALGORITHM 95
GENERATION OF PARTITIONS IN PART-COUNT FORM
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```
procedure partgen(c,N,K,G); integer N,K; integer array c;
  Boolean G;
comment This procedure operates on a given partition of the
  positive integer N into parts ≦ K, to produce a consequent
  partition if one exists. Each partition is represented by the
  integers c[1] thru c[K], where c[j] is the number of parts of the
  partition equal to the integer j. If entry is made with G = false,
  procedure ignores the input array c, sets G = true, and pro-
  duces the first partition of N ones. Upon each successive entry
  with G = true, a consequent partition is stored in c[1] thru c[K].
  For N = KX, the final partition is c[K] = X. For N = KX+r,
  1 ≦ r ≦ K−1, final partition is c[K] = X, c[r] = 1. When entry
  is made with array c = final partition, c is left unchanged and G
  is reset to false;
begin integer a,i,j;
        if ¬ G then go to first;
        j := 2;
        a := C[1];
test:   if a < j then go to B;
        c[j] := 1 + c[j];
        c[1] := a − j;
zero:   for i := 2 step 1 until j − 1
        do c[i] := 0;
        go to EXIT;
B:      if j = K then go to last;
        a := a + j × c[j];
        j := j + 1;
        go to test;
first:  G := true;
        c[1] := N;
        j := K + 1;
        go to zero;
last:   G := false;
EXIT: end partgen
```