

Problem

Find an implicit matching on the set of n bit binary strings with k ones, or report that no such matching exists. Two binary strings are adjacent if one can be transformed into the other by swapping the values at two distinct indices.

Find an implicit matching on the set of n bit binary strings with k ones, or report that no such matching exists. Two binary strings are adjacent if one can be transformed into the other by swapping the values at two distinct indices.

, then match the i -th value to the $(i \oplus 1)$ -th.

is the reversed Hamiltonian path.

There are many solutions. One is to find a Hamiltonian path, then match the i -th value to the $(i \oplus 1)$ -th.

- Build the Hamiltonian path $H(n, k)$ recursively.
- $H(n, k) = 0H(n-1, k) + 1H^R(n-1, k-1)$ where H^R is the reversed Hamiltonian path.

0 | 00001111

$$\dots \quad H(n-1, k)$$

0 | 10000111

1 | 10000011

$$\cdots H^R(n-1, k-1)$$

1 00000111



Runtime

Runtime $\mathcal{O}(n)$ if done well, $\mathcal{O}(n^2)$ also passes.



Runtime

Runtime $\mathcal{O}(n)$ if done well, $\mathcal{O}(n^2)$ also passes.

Statistics: 37 submissions, 5 accepted, 28 unknown