ePAL - Combinatorial Algorithms

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Outline

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1 Subset Rank/Unrank

2 Gray codes

3 Permutations

Example 1

What is the rank of the subset $[1, 3, 4, 6]$ of the base set with 8 elements?

Example 2

What is the rank of the subset $[3, 2, 5, 1, 8]$ of the base set with 9 elements?

Example 3

What is the subset with the rank 180 created from the base set of 8 elements?

Example 4

What is the subset with the rank 466 created from the base set of 9 elements?

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1 Subset Rank/Unrank

2 Gray codes

3 Permutations

Example 5

What is the Gray code for the binary code 110?

Example 6

Calculate Gray codes for number from 0 to 15.

Example 7

What is the binary code for the Gray code 101?

Example 8

Calculate binary codes for gray codes with binary representations from 0 to 15.

Example 9

What is the Gray code rank of the subset [1, 2, 3, 4, 5, 7, 8] created from
the base set of 8 elements.

Outline

Example 10

What is the lexicographic code rank of the permutation [2, 4, 1, 3] of the base set with 4 elements?

Example 11

What is the lexicographic code rank of the permutation [3, 2, 4, 5, 1] of the base set with 5 elements?

Example 12

What is the permutation related the lexicographic code rank 10 created from the base set with 4 elements?

Example 13

What is the permutation related the lexicographic code rank 57 created from the base set with 5 elements?

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