



DNA

It is known that the human DNA is represented by an integer number. On a microscopical level, the DNA consists of numerous genes. Considering the binary representation of the corresponding number of the DNA, we notice the following rule: digit 1 on the i^{th} position indicates the presence of the i^{th} gene, whereas digit 0 indicates its absence (i is a positive integer). Moreover, it was observed that any two distinct adults can give birth to a child whose DNA only contains the i^{th} gene if and only if the DNAs of both of the adults contain that gene.

TASK

Generate an array of **2000** non-negative integers representing the DNAs of a group of adults so that the total number of children with distinct DNAs that can be born from adults belonging to this group is as big as possible. (as big as possible doesn't mean optimum). The scoring will respect the table below.

LIMITS AND CONSTRAINTS

- **ATTENTION!** This problem is “output-only”. You are expected to upload a .txt file.
- The demanded array must contain non-negative integers from the range $[0, 2^{20}-1]$.
- All children must come from different adults, meaning that any 2 children must have at least one different parent.
- The two parents of a child must be distinct.

SCORE

	Score	NR-the number number of children with distinct DNAs
1	37	$200,000 \leq NR \leq 549,999$
2	74	$550,000 \leq NR \leq 600,000$
3	$74 + 1.5 \times \left(\frac{X - 600,001}{40,000} + 1 \right)$	$600,000 < NR \leq 999,999$
4	100	$1,000,000 \leq NR$

EXAMPLE

Considering that the adults have the following DNAs: 1, 5, 3, 6, 9, 12, the distinct DNAs of the children will be 1, 0, 4, 2, 8.