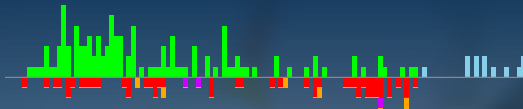


Problem

Construct an $h \times w$ grid of the letters 'K', 'I' and 'T' such that each letter occurs a given number of times and the word "KIT" appears exactly once when reading in the 8 possible directions.

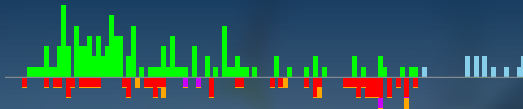
I	K	I	I	T
K	K	T	K	T
I	T	I	T	I
K	T	T	K	I



Solution

- Start with “KIT” in the top left corner.
- Then place all the remaining ‘T’s, followed by all the ‘K’s and finally all the ‘I’s.
- No extra occurrences of “KIT” possible, as no ‘I’ can be between a ‘K’ and a ‘T’.

K	I	T	T	T
T	T	T	T	K
K	K	K	K	I
I	I	I	I	I



Solution

- Start with “KIT” in the top left corner.
- Then place all the remaining ‘T’s, followed by all the ‘K’s and finally all the ‘I’s.
- No extra occurrences of “KIT” possible, as no ‘I’ can be between a ‘K’ and a ‘T’.

K	I	T	T	T
T	T	T	T	K
K	K	K	K	I
I	I	I	I	I