(K) Kings, Queens, and Counts (1/6)

Suppose your computer asks you, “What is the meaning of life?” Not being much of a philosopher, you decide to interpret the question as “What is the definition of the word *life*?” because that question is much more straightforward than “What is the purpose of existing?”

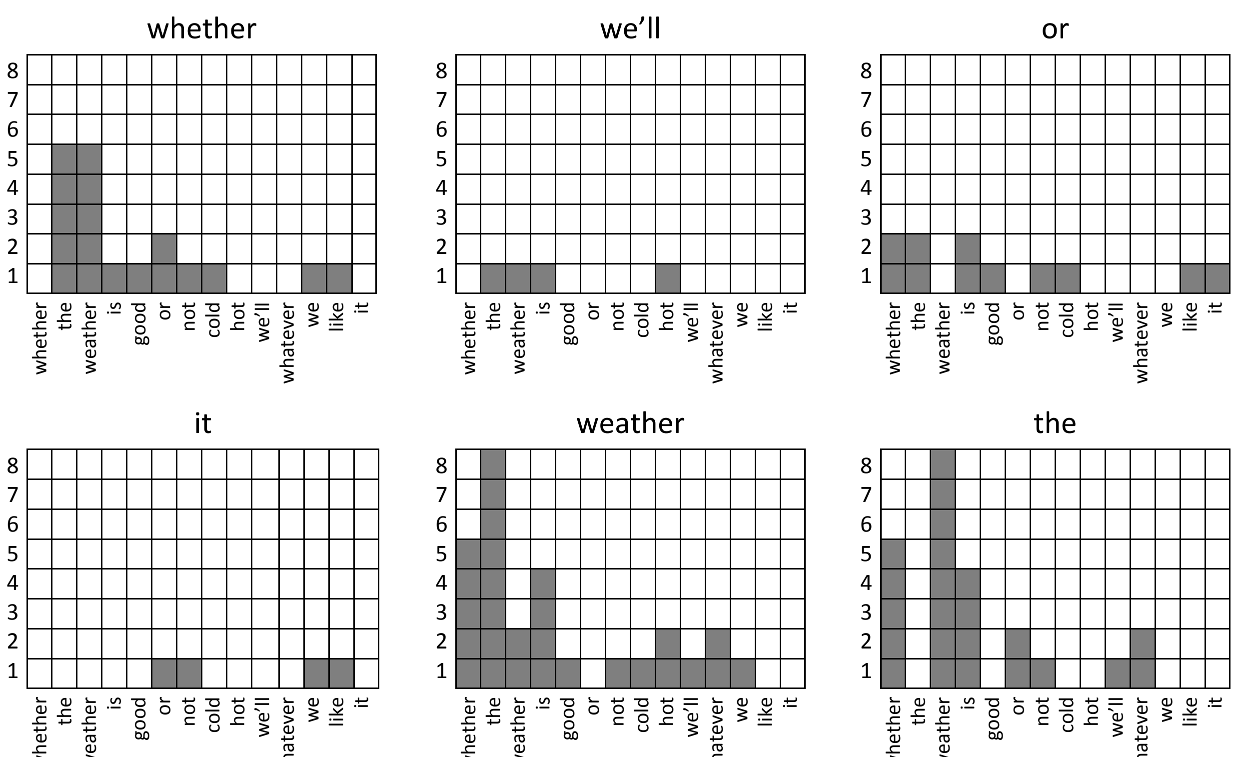
Even though you’ve simplified the problem, it’s still not very easy. Language users have so much background knowledge wrapped up in their mental definitions of words that it is tough to teach a computer all the shades of meaning encompassed by each word.

One of the most effective ways of defining words for computers is also one of the simplest: Get a sample of text and define each word by counting how often it occurs near each other word. Using this method, *life* might be defined as “the word that occurs 657 times near *the*, 423 times near *a*, 11 times near *bug’s*, 0 times near *gumption*, 0 times near *ellipsis*, 8 times near *preserver*, …” and the list would continue for every word in the sample of text. The following questions deal with this method of representing word meaning.

K1. For question K1, the following poem will be the sample text used to obtain word counts:

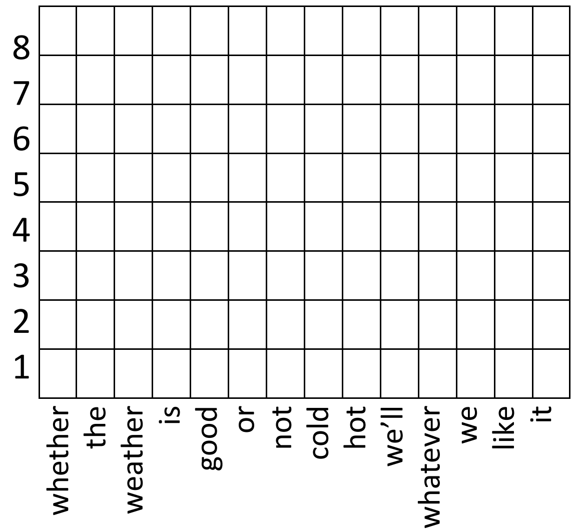
Whether the weather is good, or whether the weather is not,
Whether the weather is cold, or whether the weather is hot,
We’ll weather the weather—whatever the weather—
Whether we like it or not.

The representations of some words from this poem are shown below as obtained by counting how often each other word occurs in a certain window around the word in question. Your task: shade in the provided graph on the next page to give the representation of the word *is*.



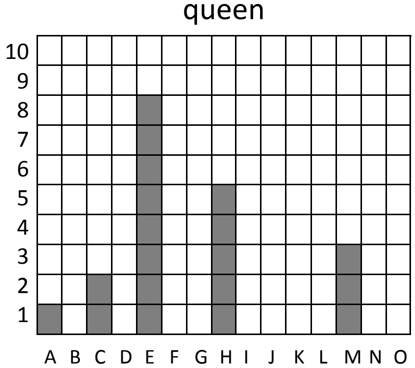
(K) Kings, Queens, and Counts (2/6)

is

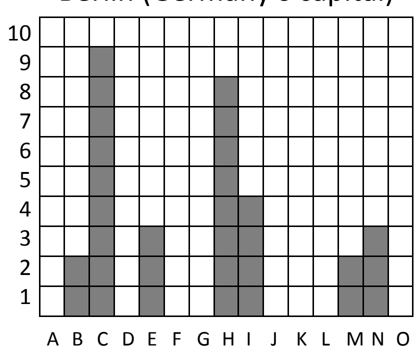


Below are 33 word representation graphs. These were obtained from a different sample text and show the counts of 15 words (word A through word O), but the identities of these 15 words are not given. Your task: Study these 33 word graphs and then answer the questions that follow.

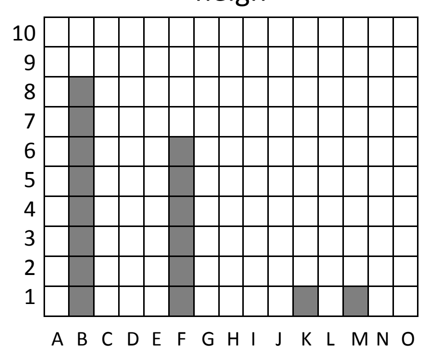
queen



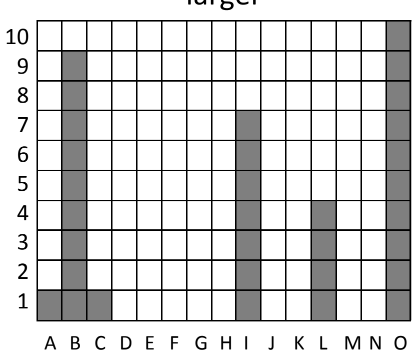
Berlin (Germany's capital)



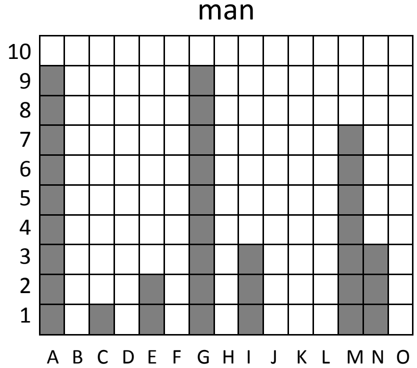
neigh



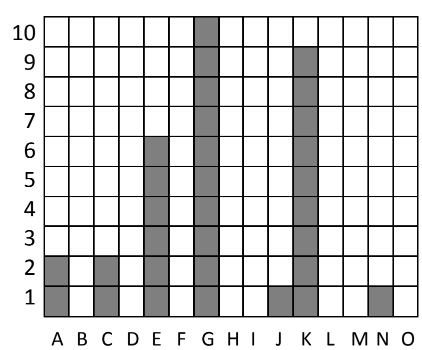
larger



man

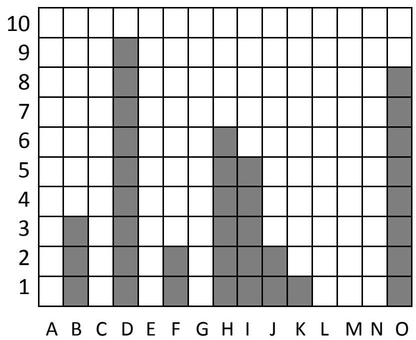


Roussef (Brazil's current president)

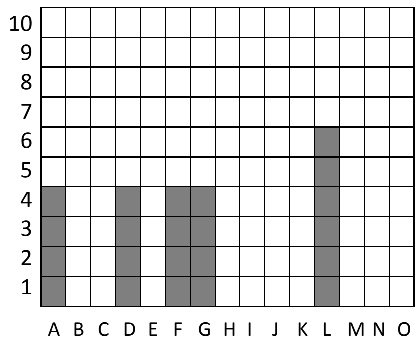


(K) Kings, Queens, and Counts (3/6)

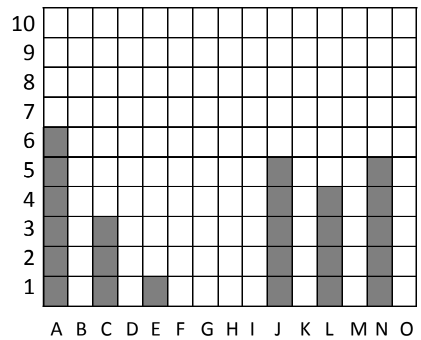
India



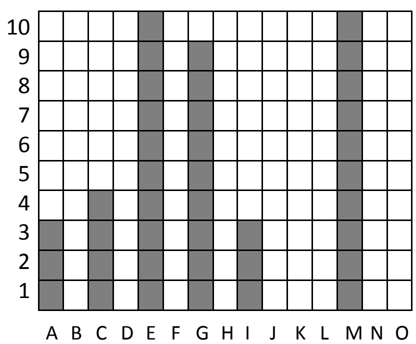
ariary (Madagascar’s currency)



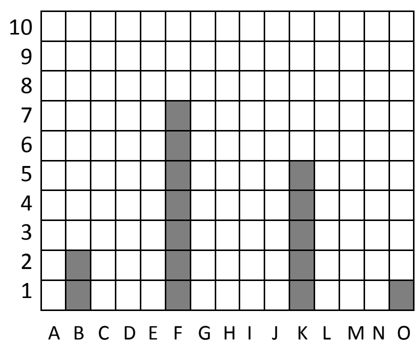
kings



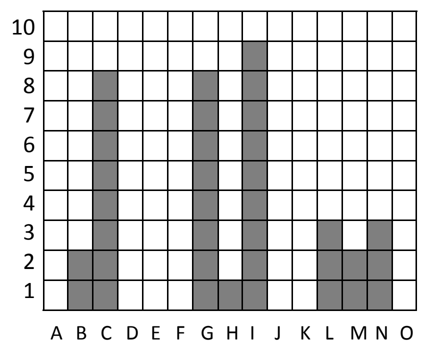
woman



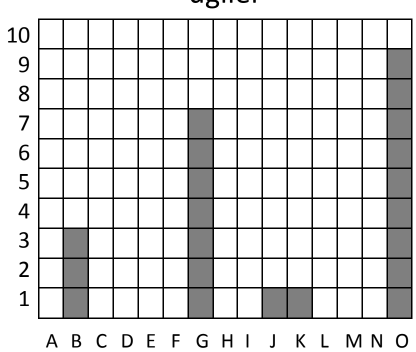
horse



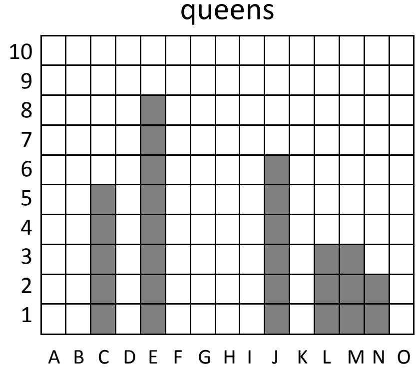
Merkel (Germany’s chancellor)



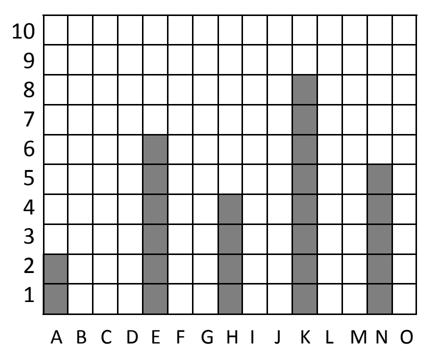
uglier



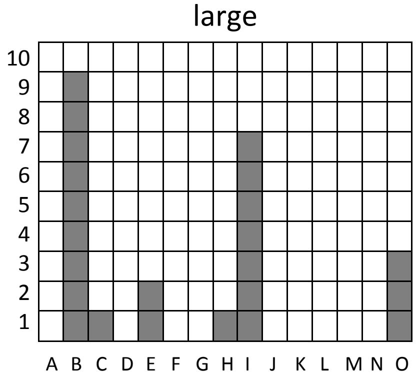
queens



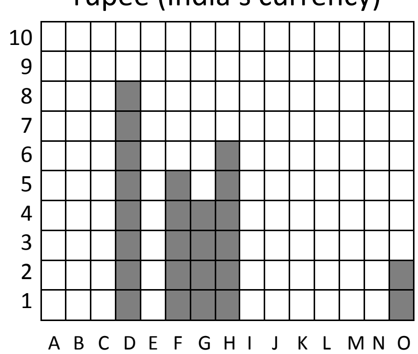
Brazilian



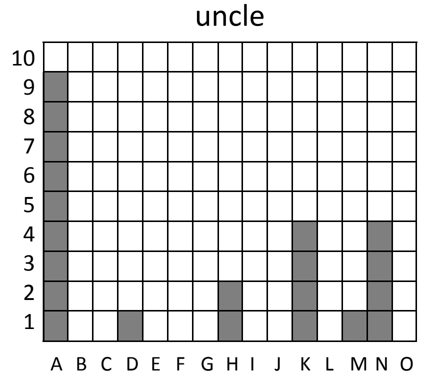
large



rupee (India’s currency)

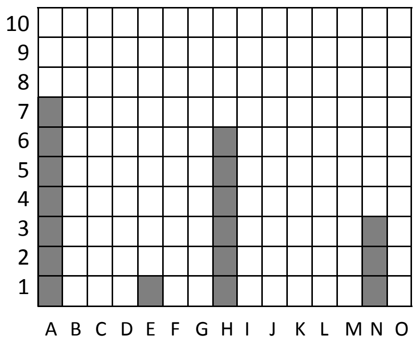


uncle

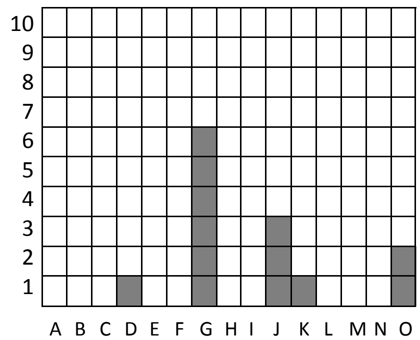


(K) Kings, Queens, and Counts (4/6)

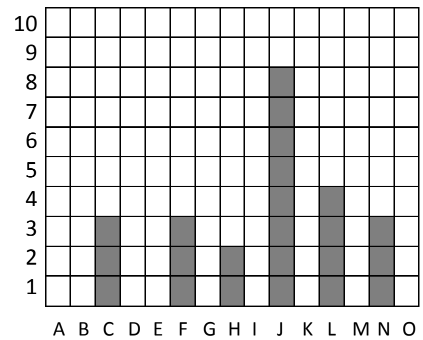
king



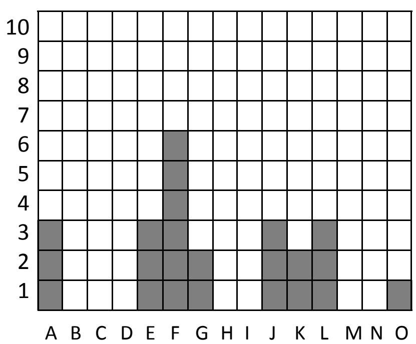
ugliest



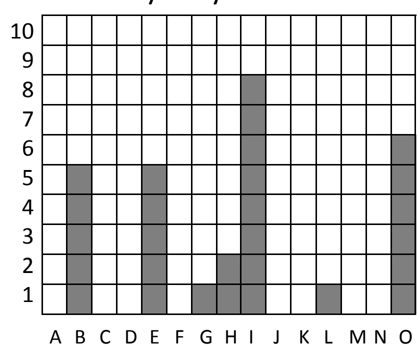
cans



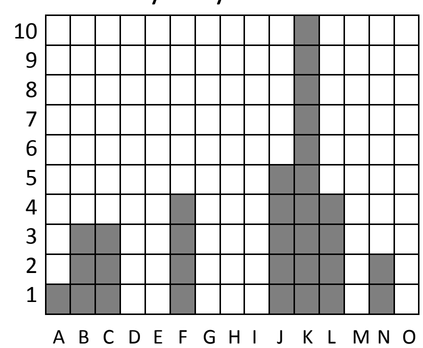
Antananarivo (Madagascar's capital)



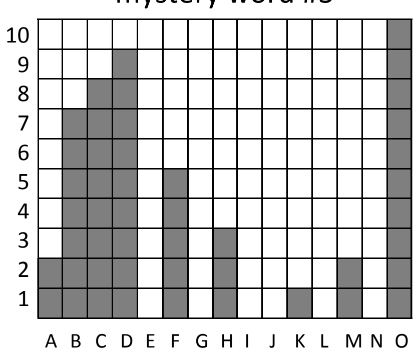
mystery word #1



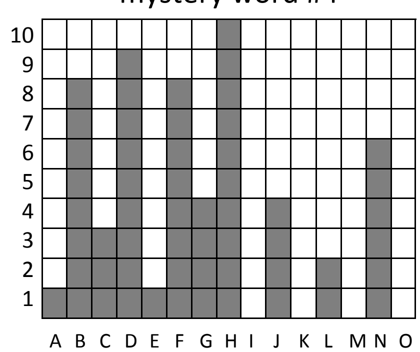
mystery word #2



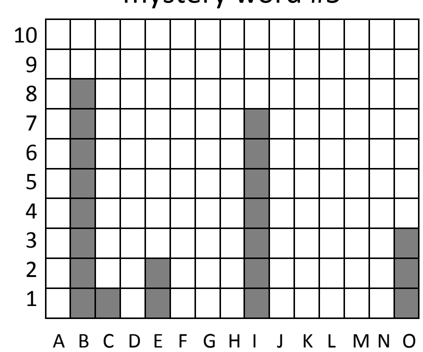
mystery word #3



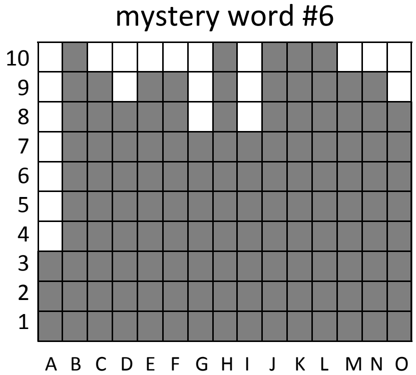
mystery word #4



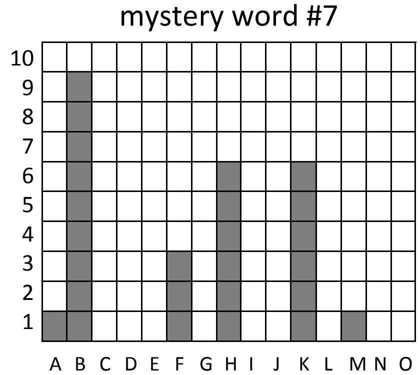
mystery word #5



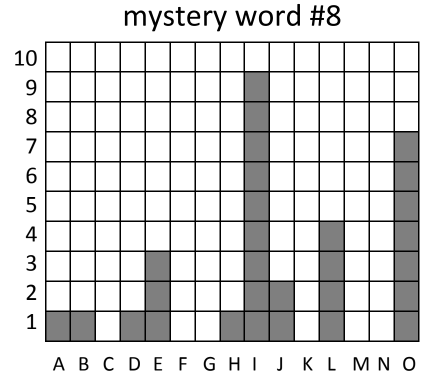
mystery word #6



mystery word #7

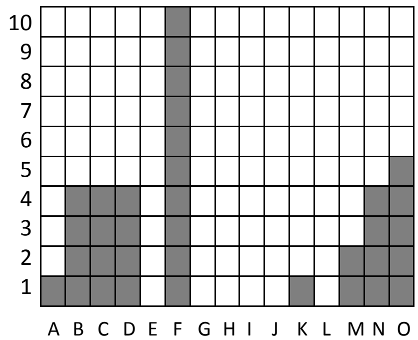


mystery word #8

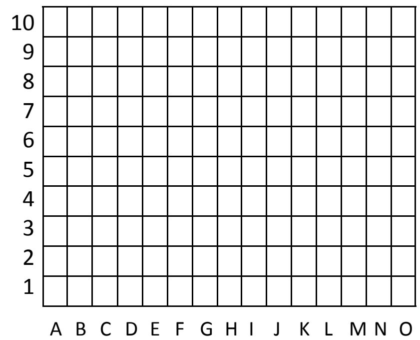


(K) Kings, Queens, and Counts (5/6)

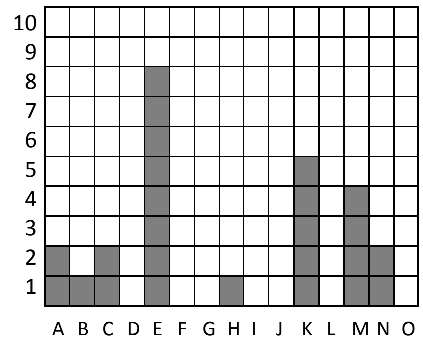
mystery word #9



mystery word #10



mystery word #11



K2. The 11 mystery words have the following definitions (but not in this order):

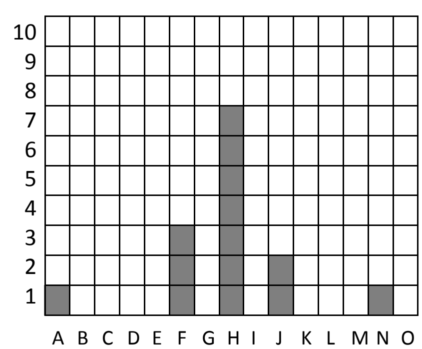
a. antismartnessesquely
b. aunt
c. big
d. can
e. cats
f. Kenya
g. Kenyan
h. meow
i. strange
j. strangest
k. the

Write the number of the mystery word corresponding to each definition.

a. ☐ b. ☐ c. ☐ d. ☐ e. ☐ f. ☐ g. ☐ h. ☐ i. ☐ j. ☐ k. ☐

K3. You might expect the graph for mystery word #4 to look something like the graph below, but it does not. Explain why.

expected graph for mystery word #4



(K) Kings, Queens, and Counts (6/6)