an element that already has a letter assigned. If either condition is violated, try moving in another direction. If all four directions are blocked, the program must terminate. Here's an example of premature termination:

```
A B G H I . . . . .
. C F . J K . . . .
. D E . M L . . . .
. . . . N O . . . .
. . W X Y P Q . . .
. . V U T S R . . .
. . . . . . . . . .
. . . . . . . . . .
. . . . . . . . . .
. . . . . . . . . .
```

Y is blocked on all four sides, so there's no place to put Z.

10. Modify Programming Project 8 from Chapter 5 so that the departure times are stored in an array and the arrival times are stored in a second array. (The times are integers, representing the number of minutes since midnight.) The program will use a loop to search the array of departure times for the one closest to the time entered by the user.

11. Modify Programming Project 4 from Chapter 7 so that the program labels its output:

```
Enter phone number: 1-800-COL-LECT
In numeric form: 1-800-265-5328
```

The program will need to store the phone number (either in its original form or in its numeric form) in an array of characters until it can be printed. You may assume that the phone number is no more than 15 characters long.

12. Modify Programming Project 5 from Chapter 7 so that the SCRABBLE values of the letters are stored in an array. The array will have 26 elements, corresponding to the 26 letters of the alphabet. For example, element 0 of the array will store 1 (because the SCRABBLE value of the letter A is 1), element 1 of the array will store 3 (because the SCRABBLE value of the letter B is 3), and so forth. As each character of the input word is read, the program will use the array to determine the SCRABBLE value of that character. Use an array initializer to set up the array.

13. Modify Programming Project 11 from Chapter 7 so that the program labels its output:

```
Enter a first and last name: Lloyd Fosdick
You entered the name: Fosdick, L.
```

The program will need to store the last name (but not the first name) in an array of characters until it can be printed. You may assume that the last name is no more than 20 characters long.

14. Write a program that reverses the words in a sentence:

```
Enter a sentence: you can cage a swallow can't you?
Reversal of sentence: you can't swallow a cage can you?
```

Hint: Use a loop to read the characters one by one and store them in a one-dimensional `char` array. Have the loop stop at a period, question mark, or exclamation point (the "terminating character"), which is saved in a separate `char` variable. Then use a second loop to search backward through the array for the beginning of the last word. Print the last word, then search backward for the next-to-last word. Repeat until the beginning of the array is reached. Finally, print the terminating character.

15. One of the oldest known encryption techniques is the Caesar cipher, attributed to Julius Caesar. It involves replacing each letter in a message with another letter that is a fixed number of