found a maze, which is now ready to be processed. Otherwise it returns NO ('0'B) and the loop is finished.

As we have said several times, the hard part of programming is controlling complexity — keeping the pieces decoupled so they can be dealt with separately instead of all at once. And the need to separate into pieces is not some academically interesting point, but a practical necessity, to keep things from interacting with each other in unexpected ways.

Writing a separate input function is a prime example of decoupling, an example which crops up frequently. To illustrate, let us examine the following program, which reads text and computes the average number of words per sentence. It is not the most general program in the world, for the input comes on exactly ten cards, but this can be readily changed.

```
      DIMENSION IA(80)
      DATA IBLK,IPER/' ','.'/
      NWDS=0
      NSEN=0
      DO 7 I=1,10
      READ(5,1) IA
1     FORMAT(80A1)
      JW=0
      J=1
5     IF(IA(J).NE.IPER) GO TO 2
      IF(JW.NE.0) NWDS=NWDS+1
      NSEN=NSEN+1
      GO TO 3
2     IF(IA(J).EQ.IBLK) GO TO 4
      JW=1
      GO TO 3
4     IF(JW.EQ.1) NWDS=NWDS+1
      JW=0
3     J=J+1
      IF(J.LE.80) GO TO 5
7     IF(JW.EQ.1) NWDS=NWDS+1
      AVG=NWDS/NSEN
      WRITE(6,6) AVG
6     FORMAT('0AVERAGE WORDS PER SENTENCE =',F10.2)
      STOP
      END
```

The program is rather involved, mainly because the card-reading (with its accompanying tests for the end of the card) is thoroughly intertwined with counting the words and sentences. With this much complexity, it's not too surprising that the code is wrong — the average is always too high. (You might like to verify this.)

Suppose we separate fetching characters from counting interesting things. Following the lead of the maze program, we define a function READCH which will read the next character from the input. READCH should take care of all the nasty details of converting the 80 characters of a card (let us say) into 80 separate characters, handed out one at a time. It should also give back a signal that no more characters are left when the end of the input is reached.

Given READCH (which we'll write in a moment) the main program simplifies quite a bit. In pseudo-code,