```
while (n > 0) {
  digit = n % 10;
  if (digit_seen[digit])
    break;
  digit_seen[digit] = true;
  n /= 10;
}

if (n > 0)
  printf("Repeated digit\n");
else
  printf("No repeated digit\n");

return 0;
}
```

C99

<stdbool.h> header ➤21.5

This program uses the names `bool`, `true`, and `false`, which are defined in C99's `<stdbool.h>` header. If your compiler doesn't support this header, you'll need to define these names yourself. One way to do so is to put the following lines above the `main` function:

```
#define true 1
#define false 0
typedef int bool;
```

Notice that `n` has type `long`, allowing the user to enter numbers up to 2,147,483,647 (or more, on some machines).

Using the `sizeof` Operator with Arrays

The `sizeof` operator can determine the size of an array (in bytes). If `a` is an array of 10 integers, then `sizeof(a)` is typically 40 (assuming that each integer requires four bytes).

We can also use `sizeof` to measure the size of an array element, such as `a[0]`. Dividing the array size by the element size gives the length of the array:

```
sizeof(a) / sizeof(a[0])
```

Some programmers use this expression when the length of the array is needed. To clear the array `a`, for example, we could write

```
for (i = 0; i < sizeof(a) / sizeof(a[0]); i++)
  a[i] = 0;
```

With this technique, the loop doesn't have to be modified if the array length should change at a later date. Using a macro to represent the array length has the same advantage, of course, but the `sizeof` technique is slightly better, since there's no macro name to remember (and possibly get wrong).

One minor annoyance is that some compilers produce a warning message for the expression `i < sizeof(a) / sizeof(a[0])`. The variable `i` probably has