GOTO and <control-C>

Most program commands are executed sequentially; that is, XYBASIC executes the command with the lowest line number when a RUN is issued and then executes the following lines in increasing order. But you often want to break up this sequential flow, for example by creating a loop in your program to execute a number of commands repeatedly. The GOTO command tells XYBASIC to execute a specified line instead of the next sequential command line. If you say

```
GOTO 10
```

then XYBASIC will next execute the command at line 10. The following program shows how the GOTO command allows you to write a program where the same instructions are executed repeatedly.

```
NEW
OK
10 PRINT "A";
15 I = I + 1
20 GOTO 10
RUN
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
```

This program is an infinite loop -- it will never stop unless you interrupt it. Now depress the control (CNTL or CTRL or CNT) key and the C key simultaneously, called <control-C>, and XYBASIC will respond

```
^C
BREAK IN LINE 10                    (or perhaps 15 or 20)
OK
```

Here lines 10, 15 and 20 are executed repeatedly, and are therefore called a loop; line 20 created the loop by telling XYBASIC to execute line 10 again. Loops are one of the most essential and powerful constructs in any programming language.

The next example calculates the squares of consecutive whole numbers; again, type <control-C> to stop it.

```
NEW
OK
10 I = 0
20 PRINT I, I * I
30 I = I + 1
40 GOTO 20
RUN
 0            0
 1            1
 2            4
 3            9
 4            16
 5            25
 6            36
^C
BREAK AT LINE 20
OK
```