

INTRODUCTION to BASIC

(This section is for people who have never programmed in BASIC before. Programmers can skip this section)

BASIC is designed to be a simple, easy-to-use, easy-to-learn programming language. The most notable feature is the short time from the definition of a problem to the answer. Simple BASIC programs can be written in just a few minutes and executed immediately. QuickCalc BASIC is one implementation of a BASIC interpreter which is designed for ease of use in a Windows environment. This document will serve to familiarize the reader with the fundamentals of the BASIC language. For details of the functions and facilities of this version of BASIC, please refer to the remainder of the documentation files.

The BASIC program.

A program is simple a list of statements (see below) which are executed (interpreted) by the BASIC interpreter, in sequence. The sequence may be altered by statements like **GOTO**, **GOSUB**, **RETURN**, etc., and controlled by loops such as **FOR...NEXT** and **WHILE...WEND**.

You write a list of statements (your “program”) in a .TXT file, save the file, and tell the interpreter to execute that file. If there are no errors in the program it will execute and give you the answers you desire. If errors are found, you fix them and re-run the program.

Statements.

Statements are the elements of a program. Usually, each line of the program contains one statement. Each statement tells the computer what to do or defines something.

Statements may start with a statement number, which functions as a label by which other statements may refer to this one, as in **GOTO** 123, which transfers control to the statement with the statement number 123.

There are two types of statements:

Keyword statements, like **PRINT**, **GOTO**, **READ**, etc., which tell the computer to do something or define something, and

Assignment statements, which assign a value to a variable, such as $a=25$ or $b=c+d$.

Variables.

Variables are identified by strings of characters, like *a*, *myname\$*, *lastvalue*. Names that end in \$ refer to string variables (which can contain strings of characters); all others refer to numeric variables (which can contain numbers).

Expressions.

An expression is a combination of variables, operators and constants that the computer can evaluate using the current value of all the variables referenced. Examples are $a+2$, **SQR** ($a*a + b*b$), etc. An assignment statement evaluates the expression on the right of the = sign and assigns it to the variable on the left.

A Very Simple Program.

```
INPUT a
b = SQR (a)
PRINT a, b
```

The above program will take a number that you type in and calculate its square root. Then it will print the answer.

A Slight improvement.

```
100 INPUT a
IF a < 0 GOTO 200
b=SQR (a)
PRINT a, b
GOTO 100
200 PRINT "Number must not be negative."
END
```

See if you can figure out what the above program does.

A Program Using String Variables.

```
INPUT "Enter your first name: "; first$
INPUT "Enter your last name: "; last$
name$ = first$ + " " + last$
PRINT "Your Name is "; name$
```

Now you know the basics of BASIC. The next step is to read the "Introduction to QuickCalc" and try it for yourself.

Note: An introduction to Programming using QuickCalc BASIC is available in E-book format for the Kindle reader on Amazon.com. The title is "*You Can Program Your Own Computer*" and you can download it for \$0.99.