

QBASIC STATEMENTS



To communicate with a computer, a programming language has its specific keywords and syntax. QBasic also has its own keywords and syntax which are used in giving instructions to the computer while programming.

|| ASSIGNMENT STATEMENT - LET

The Let statement or Assignment statement is used to assign a value to a variable. In QBasic, it is optional to use Let statement and line numbers.

Syntax : [Line No] [Let] <Variable Name> = <Value or Expression>

LET A=5

It will assign the value 5 to A.



Sum = A+B

It will add the value of A and B and assign the result to variable Sum.

Let A\$="QBasic program"

This statement will assign the value "QBasic Program" to the string variable "A\$".

LETA=10

B = 15

C=A * B

PRINT C

END

|| PRINT COMMAND

The PRINT command is used to display numbers, messages or values of variables on the output screen.

Syntax: [Line No] PRINT <Constant> or <"String Constant"> or <Variable> or <Expression>

PRINT 20 + 10←

It will display 30, the sum of 20 and 10.



PRINT "GOD BLESS YOU"←

It will display the message: GOD BLESS YOU.

PRINT A



It will display the current value of variable A.

PRINT "The Value of A is :";A

It will display the message "The Value of A is :" followed by the value of variable A.

The Print command can be used in different variations to print the output in different forms.

PRINT WITH SEMI-COLON (;)

PRINT with semicolon is used to display the values one after another, without any space in between.

Syntax: [Line No] PRINT (Variable) ; (Variable) ; (Variable) ; ...

LET X\$ = "MY NAME"

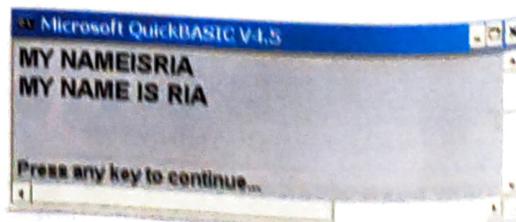
LET Y\$ = "IS"

LET Z\$ = "RIA"

PRINT X\$; Y\$; Z\$

PRINT X\$; " " ; Y\$; " " ; Z\$

END



PRINT WITH COMMA (,)

It is used to display the values one after another with plenty of spaces in between. Only five values can be printed in one line. In case of more than five values, the remaining values will be printed on the next line.

Syntax: [Line No] PRINT (Variable), (Variable),...

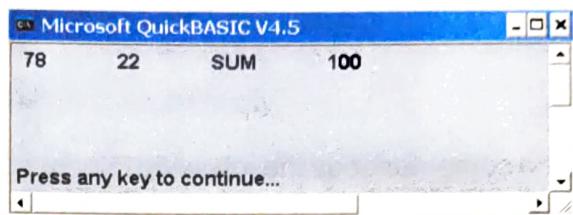
LET X = 78

LET Y = 22

Z = X + Y

PRINT X, Y, "SUM", Z

END



Let's Know More

In QBasic, whenever any item is enclosed in the square brackets [], it means it is optional.

PRINT WITH TAB FUNCTION

The TAB function is used to move the print position to the column indicated in its argument. This statement is quite suitable for printing tabular type of results. PRINT TAB statement can be used in controlling column location.

Syntax: PRINT TAB (C); "Constant / Variable / Expression"

Where C is the column number



PRINT TAB (18); "GOODEVENING"

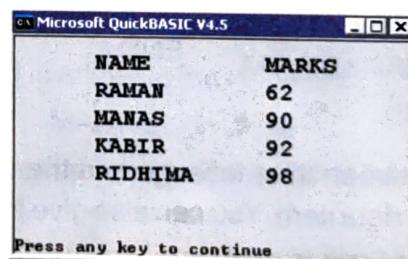
In the above example, the message "GOODEVENING" will be printed from the 18th column onwards on the screen.

Let's Know More

CLS command is used to clear the output screen. It is usually written before starting a program, so that the output of the previous program is not shown on the screen.

REM "TAB FUNCTON PROGRAM"

PRINT TAB (10) ; "NAME" ; TAB (20) ;
"MARKS"
PRINT TAB (10) ; "RAMAN" ; TAB (20) ; 62
PRINT TAB (10) ; "MANAS" ; TAB (20) ; 90
PRINT TAB (10) ; "KABIR" ; TAB (20) ; 92
PRINT TAB (10) ; "RIDHIMA" ; TAB (20) ; 98
END



Let Us Recall

Relational Operators
and
Logical Operators

INPUT STATEMENT

The INPUT statement in QBasic is used to accept the data item from the user and store it in a variable . This statement asks the user to make data entry by displaying a question mark (?) during the execution of program. The program execution is suspended till the user enters the required values and presses the Enter key.



Syntax: [LINE NO] INPUT <Numeric or String Variable Name>

Example: 10 INPUT A

You can have a list of variables in an INPUT statement but they should be separated by commas.

Syntax: [LINE NO] INPUT <Variable1>, <Variable2>, <Variable3>

Let's Know More

The values to variables are assigned according to their type - Numeric or String.

The corresponding values which you key in should also be separated by commas.



```
REM PROGRAM TO ACCEPT VALUES  
INPUT NAME$  
INPUT CLASS  
INPUT SCHOOL$  
PRINT NAME$, CLASS, SCHOOL$  
END
```



While using INPUT statement, the computer does the following things:

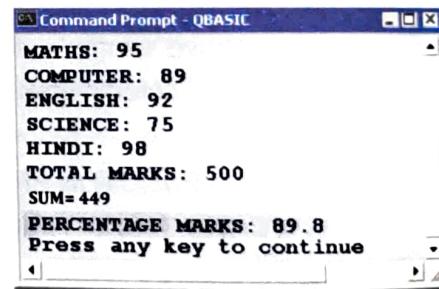
- ◆ It stops further processing of the program.
- ◆ It prints a question mark on the screen.
- ◆ It waits for the user to key in its response and press the Enter key.
- ◆ It stores or assigns the same data item into the corresponding variable mentioned in the INPUT statement.

We can further modify the Input statement by providing an optional message, separating it from the variable using semi colon (;).

Syntax: INPUT "MESSAGE"; <VARIABLE>



INPUT "MATHS:"; M	SUM = M + C + E + S + H
INPUT "COMPUTER:"; C	PER = (SUM/TM)*100
INPUT "ENGLISH:"; E	PRINT "SUM ="; SUM
INPUT "SCIENCE:"; S	PRINT "PERCENTAGE
INPUT "HINDI:"; H	MARKS :"; PER
INPUT "TOTAL MARKS:"; TM	END



Note that the punctuation between the message and the variable is a semi colon. The message and the variable name together represent one data item. You can also give Input statement in the following way.

Syntax: [LINE NO] INPUT "MESSAGE"; <VARIABLE1>, "MESSAGE"; <VARIABLE2>

|| CONTROL STATEMENT

While executing programs, sometimes it becomes essential to change the order of execution of some statements or to repeat a particular set of statements subjected to a given condition. These kinds of conditions require logical decisions. The statements that help to control the flow of a program are known as Control Statements. There are various control statements in QBasic like IF THEN, GOTO, IF THEN ELSE etc. for performing conditional checks and repetitive actions.

|| GOTO STATEMENT

In a QBasic program, GOTO statement is used to transfer the program control from one statement to another.

[Line No.] GOTO <Line No.>

Syntax:

**Example**

```

10    A = 1
20    B = A * A
30    PRINT B
40    A = A + 1
50    GOTO 20
60    END

```

OUTPUT
1
4
9
16
25
36
49
.

While executing this program, control will shift back to Line no. 20 each time it executes Line no. 50. The program will never stop. It is called **Infinite Loop**.

In our daily life, we make decisions and take actions accordingly.

Our plan to go to a movie will depend upon the availability of tickets:

**Example**

- | CONDITION | PLAN OF ACTION |
|---------------------------------|----------------------------|
| 1. If tickets are available | See the movie. |
| 2. If tickets are not available | Have food in a restaurant. |



Similarly, the computer also decides about the actions depending upon the validity or non-validity of a condition. Every decision involves a choice between the 'Yes' and 'No' result.

Quick Quiz

Which command helps to insert comments that enable us to understand what the program is all about?

|| IF...THEN STATEMENT

This statement is used for making decisions based on comparisons.

Syntax: IF <CONDITION> THEN <STATEMENT>

If the condition is TRUE, then the instruction specified after 'THEN' is executed. If the condition is FALSE, the control shifts to the next statement.

IF X > Y THEN C = C+1

It means that if X is greater than Y, then 1 is added to the value of C.



IFA\$ = "Class IX" THEN INPUT "NAME, AGE, MARKS"; N\$, A, M

The value of variables N\$, A, M will be input, only if the value of variable A\$ is equal to "Class IX".

IF C > 10 THEN PRINT C

The value of C will be printed only if the value of C is greater than 10.

40 IF C = 10 THEN GOTO 80

If C is equal to 10, then control will be transferred to the line number 80, otherwise the next statement will be executed.



Let's Know More

The condition in IF-THEN-ELSE statement is given by the relational operators: >, >=, <, <=, = and <>.



|| SIMPLE PROGRAMS

Write a program to compare two numbers.



REM PROGRAM TO FIND THE GREATER NUMBER

CLS

INPUT "ENTER TWO NUMBERS:"; N1, N2

IF N1 > N2 THEN PRINT "GREATER NUMBER IS:"; N1

Know the Fact

When an IF-THEN statement is encountered, the computer first evaluates relational expression and then determines whether it is TRUE or FALSE.

```
IF N1 < N2 THEN PRINT "GREATER NUMBER IS:"; N2  
IF N1 = N2 THEN PRINT "BOTH NUMBERS ARE EQUAL"  
END
```

- Step 1: Clear the screen.
- Step 2: Input two numbers.
- Step 3: Check whether the first number is greater than the second. If yes, then print first number as the greater number.
- Step 4: Check whether the second number is greater than the first. If yes, then print second number as the greater number.
- Step 5: Check whether both the numbers are equal. If yes, then print both numbers are equal.
- Step 6: End the program.

Write a program to find the sum or difference of two numbers, depending upon user's choice.

```
10 CLS  
20 INPUT "TWO NUMBERS"; A, B  
30 INPUT "Enter 1 FOR ADDITION, 2 FOR SUBTRACTION:"; CH  
40 IF CH = 1 THEN C = A + B  
50 IF CH = 2 THEN C = A - B  
60 PRINT C  
70 INPUT "DO YOU WANT TO EXIT (Y/N):"; Q$  
80 IF Q$ = "N" THEN GOTO 20  
90 END
```



Example

- Step 1: Clear the screen.
- Step 2: Input two numbers: A and B.
- Step 3: Enter your choice, either 1 for Addition or 2 for Subtraction in the variable CH.
- Step 4: If CH = 1, numbers will be added and the result will be stored in C.
- Step 5: If CH = 2, second number will be subtracted from first and the result will be stored in C.
- Step 6: Print C.
- Step 7: Press 'Y' to exit and 'N' to repeat the process.
- Step 8: If user types 'N', then control moves back to line number 20 and the process is repeated.
- Step 9: When a user enters "Y" the control moves forward and the program ends.

|| IF...THEN...ELSE STATEMENT

IF-THEN-ELSE is a conditional decision making statement. If the condition given after IF is true, statement(s) specified after THEN is executed. But if the condition is False, the ELSE statement will be processed.

Syntax: IF <condition> THEN <statement1> ELSE <statement2>

To print odd numbers between 1 and 100.

```

10 N = 1
20 IF N < 100 THEN GOTO 30 ELSE GOTO 60
30 PRINT N
40 N = N + 2
50 GO TO 20
60 END

```



Program to display whether a person is adult or not.

```

10 CLS
20 INPUT "ENTER YOUR NAME AND AGE "; NAM$, AGE
30 IF AGE < 18 THEN GOTO 40 ELSE GOTO 60
40 PRINT "HI "; NAM$ "YOU ARE NOT AN ADULT"
50 GOTO 70
60 PRINT "HI "; NAM$ "YOU ARE AN ADULT"
70 END

```

|| USING ELSEIF WITH IF-THEN STATEMENT

ELSEIF statement is used when we want more choices in the IF...THEN statement.

Syntax:

```

IF <Condition 1> THEN
<Action 1>
ELSEIF <Condition 2> THEN
<Action 2>
ELSEIF <Condition 3> THEN
<Action 3>
ELSE
<Alternative Condition>
ENDIF

```



To Print the division of a student, based on the marks scored.

```

INPUT "ENTER MARKS PERCENTAGE"; MP%
IF MP% >= 60 THEN
PRINT "FIRST DIVISION"
ELSEIF MP% >= 50 THEN
PRINT "SECOND DIVISION"
ELSEIF MP% >= 40 THEN
PRINT "THIRD DIVISION"
ELSE
PRINT "FAIL"
ENDIF
END

```

To calculate discount on the basis of Bill Amount.

```

CLS
INPUT "Enter Bill Amount"; AMT
IF AMT <= 2500 THEN
DISCOUNT = 0
ELSEIF AMT > 2500 AND AMT <= 5000 THEN
DISCOUNT = 0.2 x AMT
ELSEIF AMT > 5000 AND AMT <= 10000 THEN

```



DISCOUNT = 0.3 x AMT

```

ELSE
DISCOUNT = 0.4 x AMT
END IF
NET = AMT - DISCOUNT
PRINT "The Bill Amount is:" NET
END

```



Points At a GLANCE

- ◆ QBasic has its own keywords and syntax which are used in giving instructions to the computer while Programming.
- ◆ The Let statement or Assignment statement is used to assign a value to a variable.
- ◆ Control statements help to control the flow of program.
- ◆ IF...Then statement is used for making decisions based on comparisons.

Brain DEVELOPER

A. Fill in the blanks:

1. By using in a PRINT statement, the items are printed without any spaces between them.
2. TAB statement prints type of results.
3. statement instructs the computer to wait for some data to be entered.
4. command clears all the contents of the screen.
5. IF-THEN statement is used for making as well as
6. If the condition specified after IF is true, then the instruction after is executed.
7. is conditional decision making statement.
8. statement helps to control the flow of a program.

HINTS |

- | | | | | |
|-----------|----------------|-------------|---------------|-------------|
| • Input | • IF THEN ELSE | • Then | • Control | • Semicolon |
| • Tabular | • CLS | • Decisions | • Comparisons | |

B. State True or False:

1. The PRINT statement provides variations to print the output on the screen.
2. When comma is used with PRINT statement, the items get closed to each other leaving no space.
3. The condition in IF THEN ELSE statement is given by the logical operators.
4. While using INPUT statement, the punctuation between the message and the variable is a colon.
5. The INPUT statement is used to assign values to variables.
6. When INPUT statement is executed, the '?' symbol is displayed.
7. You can have only one INPUT statement in a program.



C. Application Based Questions:

1. Vishal has created a program in QBasic. He wants that the output of the program should be displayed leaving the number of spaces between the values. Suggest to him the appropriate Print command.
-

2. Smriti wants to give output of a program in infinite loop. Which statement will you suggest to her to use?
-

D. Multiple Choice Questions:

1. command helps to insert comments that enable us to understand what the program is all about.
a. LET b. REM c. CLS
2. The statement in QBasic is used to accept the data item from the user.
a. Output b. Input c. Let
3. statement can be used in controlling column location.
a. Print b. Tab c. Print Tab
4. In Basic, whenever any item is enclosed in the it means it is optional.
a. Curly brackets b. Square brackets c. Rounded brackets
5. statement is used to transfer the program control from one statement to another.
a. PRINT b. IF THEN c. GOTO
6. statement is used when we want more choices in the IF... THEN statement.
a. ELSEIF b. GOTO c. IF... THEN... ELSE

E. Identify the errors:

1. IFA=5 Rs THEN GOTO 60

.....

2. IFA>B THEN PRINT A IS GREATER

.....

3. IFA=10A THEN PRINT A\$ ELSE PRINT B

.....

4. IF Y\$="KABIR" THEN GOTO 40 OTHERWISE GOTO 80

.....

5. IF X="SUNDAY" THEN PRINT HAVE FUN ELSE PRINT "FOLLOW THE ROUTINE"

.....

F. Write Basic statements for the following statements :

1. To add values of X and Y in Z.

.....

2. Increase the value of A by 10 and store in A.

.....

3. Store the name Abhinav in A.

.....

4. Multiply two variables A and B and store the result in C.

.....

5. To print your name and surname without leaving any space between them.

.....

G. Answer the following:

1. What is the use of INPUT statement? What does a computer do when we use INPUT statement?

.....
.....
.....
.....

2. What is the use of PRINT statement using TAB function?

.....
.....
.....
.....

3. Differentiate the use of PRINT statement with comma and semicolon by using examples.

.....
.....
.....
.....

4. Define the conditional statement IF - THEN - ELSE.

.....
.....
.....

5. What is the use of GOTO statement? Explain with example.

.....
.....
.....

ACTIVITY SECTION



LAB SESSION

Perfection Through Practice

Find the output of the following programs:

Program 1

```
10 LET A$ = "GOOD "
20 LET B$ = "MORNING"
30 PRINT A$, B$
40 PRINT
50 PRINT A$; B$
60 END
```

Output 2

Program 3

```
10 INPUT "NAME"; N$
20 INPUT "CLASS"; C
30 INPUT "TAKEN SCIENCE STREAM (Yes / No)"; A$
40 IF C = 10 AND A$ = "Yes" THEN 50 ELSE 70
50 PRINT N$, "WELCOME TO SCIENCE DEPARTMENT"
60 GOTO 80
70 PRINT N$, "Sorry, you do not belong to this Class"
80 END
```

Output 4

Output 1

Program 2

```
10 REM CALCULATE THE AREA AND PERIMETER
20 INPUT L, B
30 AREA=L * B
40 PRINT TAB(5); "AREA:"; AREA
50 PERI=2 *(L+B)
60 PRINT TAB(5); "PERIMETER:"; PERI
70 END
```

Output 3

Program 4

```
10 CLS
20 PRINT "How many players are there in a football team?"
30 INPUT "Enter number of players"; A
40 IF A=11 THEN PRINT "Well Done!" ELSE PRINT
  "Incorrect"
50 PRINT
60 PRINT "Do you want to try again?"
70 INPUT "Enter choice Y/N: "; C$
80 IF C$="Y" THEN GOTO 20 ELSE 90
90 END
```

Output 5

Program 5

```
10 CLS  
20 INPUT "ENTER A NUMBER "; NUM  
30 IF NUM < 0 THEN  
40 PRINT "ENTERED NUMBER IS A NEGATIVE NUMBER"  
50 ELSEIF NUM = 0 THEN  
60 PRINT "ENTERED NUMBER IS ZERO"  
70 ELSE PRINT "ENTERED NUMBER IS A POSITIVE  
NUMBER"  
80 END IF  
90 END
```



MY ACTIVITY

Learning While Playing

Make the following programs:

1. To input any two numbers and print their sum and product by leaving two lines in between.
2. To accept values of two numbers and interchange their values.
3. To print area and circumference of a circle on a line leaving space in between.
4. To find the number of days a driver will cover a distance of 2800 km if speed of a car is 50 km per hour.
5. To find the sum of 100 natural numbers.
6. To input a number and find whether it is positive or negative.
7. To print the sum of first 10 even numbers.
8. To print the product of two numbers only if the product exceeds 400.
9. To print the odd numbers between 500 to 1000.
10. To input two numbers and depending upon the user's choice, add, subtract, multiply or divide the numbers.
11. To print the series 2, 5, 10, 17, ... 101. The loop should run for 10 times.
12. To find the percentage of marks obtained by a student in five subjects. If the percentage is greater than 80, display the message "Good Performance" otherwise display the message "Average Performance".



GROUP DISCUSSION

For Concept Clarity

Divide the class in groups and conduct a group discussion on the topic:

IF...THEN statement vs IF...THEN...ELSE statement



ONLINE LINK

Looking For More

To know more about QBasic, visit the site: www.svatopluk.com/qbtutor/tut6.htm

