Read / Data Statements

READ / DATA statements are another way of assigning values to variables. When the computer comes to a READ statement it looks for the DATA statement.

Example:

REM Read and Data statements
READ x, y, z
PRINT " x="; x
PRINT " y="; y
PRINT " z="; z
PRINT "sum= "; x + y + z
DATA 10,20,30
END

REM Words as Data
READ A$, B$, C$
PRINT A$, B$, C$
DATA "Material","Density"
DATA "Hardness"
END

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**Example:** All the following programs processing just one set of data, it computes the perimeter of only one rectangle.

```
DATA 6.5, 2.3
READ L, W
LET P= 2*L+2*W
PRINT "Perimeter =", P
END

READ L, W
DATA 6.5, 2.3
LET P= 2*L+2*W
PRINT "Perimeter =", P
END

READ L, W
LET P= 2*L+2*W
DATA 6.5, 2.3
PRINT "Perimeter =", P
END
```

The following program compute the perimeter for three rectangles.

```
TOP:
    READ L, W
    LET P= 2*L+2*W
    PRINT "Perimeter =", P
GOTO TOP
DATA 6.5, 2.3, 7.86, 6.03, 21, 17
END
```
**Program: Find the Largest Number:**

MORE:

```
READ X
IF X=-1 THEN GOTO FINISH
IF X> LARGEST THEN GOTO UPDATE
GOTO MORE
```

UPDATE:

```
LARGEST = X
GOTO MORE
```

GOTO MORE

DATA 6,2,4,8,5,12,45,56,18,54,28,64,53,95,75,51,20,15,30,88,-1

FINISH:

```
PRINT “Largest is ”; LARGEST
```

END

**Program: Find Consecutive Products.**

MORE:

```
READ N
O=N+1
P=N+2
Q=N+3
PRINT N*O*P*Q
GOTO MORE
```

DATA 9,2,45,54

END
Exercises:

REM Reading Data (Numeric)
READ A, B
PRINT A; " x "; B; "="; A * B
DATA 5,4
END

REM Reading Data (Text)
READ Name$, Age
PRINT Name$; " is"; Age
DATA "Mohammed",4
END

REM area of rectangle
READ length, wide
area = length * wide
PRINT "Length= ", length
PRINT " Width= ", wide
PRINT " Area= ", area
DATA 12,6
END

REM Average Calculation
REM variables used
REM avg=Average , sum=sum
REM n1,n2,...,n5 the scores

READ n1, n2, n3, n4, n5
sum = n1 + n2 + n3 + n4 + n5
avg = sum / 5
PRINT "Average of"
PRINT n1; n2; n3; n4; n5
PRINT "equals"; avg
DATA 3,4,5,6,7
END
GOTO:
The Syntax is:        GOTO [line label or number]

GOTO is a command that tells the computer to go to another place in the program, and continue executing the statements. GOTO tells the computer to find a line number or label, and start reading from there.

Example:
Top:
    CLS
    b=12
    h=8
    PRINT “Calculate the area for two geometries“
    55 INPUT “1. Parallelogram  2. Triangle “; Choice
    IF Choice = 1 THEN GOTO Parallel
    IF Choice = 2 THEN GOTO Tri
    GOTO What

Parallel:     PRINT “Area of Parallelogram :“; b*h
              END

Tri :          PRINT “Area of Triangle :“; 0.5*b*h
               END

What:          PRINT “Try again….to calculate”
                GOTO 55
Example 1:

Again:

PRINT “Calculate 1/n for any number (n)”
PRINT “(type a 0 to end)”
INPUT “Please Enter n:”, n%
IF n% = 0 THEN GOTO nowend
Answer# = 1# / n%
PRINT “The answer is:”; Answer#
PRINT
PRINT “Do you want to enter another n?”

TypeAgain:

INPUT “(Y/N):”, yesorno$
IF yesorno$ = “Y” THEN
GOTO Again
ELSEIF yesorno$ = “N” THEN
GOTO nowend
ELSE
GOTO TypeAgain
END IF

nowend:

END
Example 2:

```plaintext
CLS
start:

PRINT "Guess a number between 1 and 10: ";
INPUT num
IF (num < 1 OR num > 10) THEN
    PRINT "That is not between 1 and 10"
GOTO start
END IF
IF (num = 6) THEN
    PRINT "Correct!!!"
ELSE
    PRINT "Try again"
    PRINT
GOTO start
END IF
```

**Output:**
Guess a number between 1 and 10: ? 2
Try again
Guess a number between 1 and 10: ? 7
Try again
Guess a number between 1 and 10: ? 6
Correct!!!