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:

Read numeric data

```
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
```

Read string data

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

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
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 the average of two numbers.

```
MORE:
        READ A,B
        LET SUM=A+B
        PRINT SUM/2
GOTO MORE
DATA 1,3,2,4,57,122,6,-9
```

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:

```
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!!!
```