

a. What is QBASIC ?

↳ QBASIC is one of the easiest high level programming languages which was developed by Professors John Kemeny and Thomas Kurtz.

b. Feature of QBASIC

- a. Easy to learn and understand.
- b. Supports structured programming
- c. Allows us to write and run programs immediately.

## C Elements of QBASIC Programming

a. QBASIC character set

b. Variable (an unnamed identifier)

c. Constant

d. Operator and expression

e. Keywords (Reserved words)

a. Character Set

Character set is a set of valid characters that a language can recognize.

- Alphabets : A to Z (small & capital letters)

- Numbers : 0 to 9

- Special characters : ; , = - / \* ^ ( ) %

## b. Variable

Variables are the storage locations in the computer's memory.



### Numeric variable

### String variable



#### a. Numeric variable

The numeric variable has a number as its value.

Ex: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

#### b. String variable

The string variable has a string of characters or alphanumeric as its value.

Ex: A, B, C, D, E, F, G, H, I, J

A\$, B\$, C\$, D\$, E\$, F\$, G\$, H\$, I\$, J\$

### c. Constant

Constant is a data item whose value does not change during the execution of a program.

↓  
Numeric constant

String constant

#### a. Numeric Constant

Numeric constant is a sequence of positive or negative numbers on which mathematical operations can be performed.

Ex:

52, -30, +19

#### b. String Constant

String constant is a sequence of characters which may include numbers, letters and certain special characters enclosed in quotation marks.

Ex:

"Dipesh", "apple",

## ① Arithmetic Operators

Arithmetic Operators Example

point operators  $a^b$   $a^2 + b^2$

$$a^b \quad a^2 + b^2$$

addition  $a + b$   $a + b$

subtraction  $a - b$   $a - b$

$$a/b \quad a/b$$

multiplication  $a * b$   $a * b$

$$c = a \bmod b$$

$$a + b$$

$$a - b$$

Note

Algebraic Expression

$$5a + 6b$$

$$a^2 + b^2$$

$$2(l+b)$$

$$(3a - 4b)/c$$

$$4x^2 + 3$$

$$(2a)^*b$$

BASIC Expression

$$5*a + 6*b$$

$$a^2 + b^2$$

$$2*(l+b)$$

$$(3*a - 4*b)/c$$

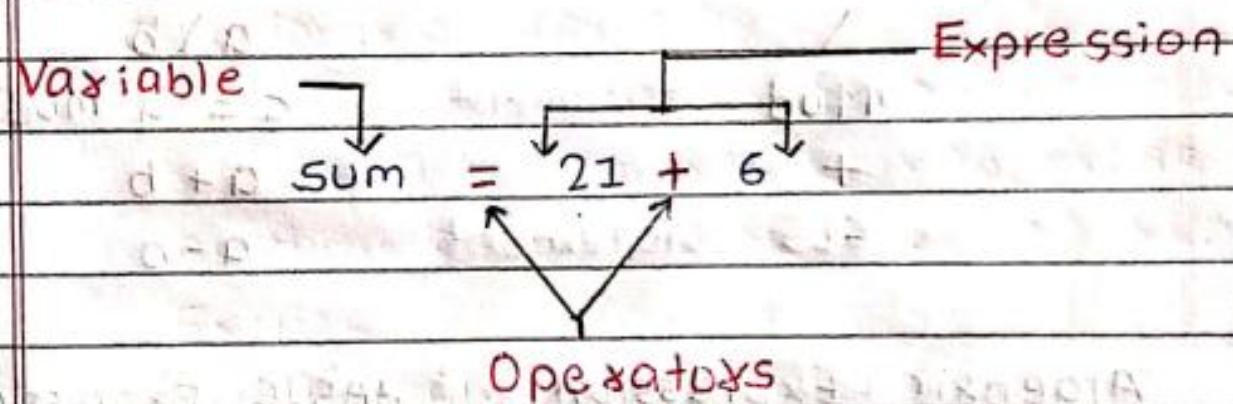
$$4*x^2 + 3$$

$$(2*a)^*b$$

## d. Operators and Expression

Operators are the symbols representing the operations they perform.

Expression is referred as the combination of an operators and its operands.



Types :

a. Arithmetic Operators

b. Relational Operators

c. Logical Operators

d. Concatenation Operators

## ② Relational operators

<u>Operator</u>	<u>Example</u>
$=$	$A = B$
$<$	$A < B$
$>$	$A > B$
$\leq$	$A \leq B$
$\geq$	$A \geq B$
$\neq$	$A \neq B$

## ③ Logical operators

<u>Operator</u>	<u>Example</u>
AND	$A > B \text{ AND } A > C$
OR	$A > B \text{ OR } A > C$
NOT	$A \neq B$

## ④ Concatenation operators

$B\$ = "Cake"$

$A\$ = B\$ + "is" + "sweet"$

Output: concatenation operators  
cake is sweet

## e. Keywords (Reserved words)

Statement

Ex:

CLS, PRINT, END

A > A

A < B

## D. QBASIC Statements

DATA

< > A

→ REM Statement

→ CLS Statement

→ LET Statement

→ INPUT Statement

→ Read.. DATA Statements

→ PRINT Statement

→ END Statement

### a) REM Statement

It is used to explain what a program does and what specific lines of code do.

Ex:

REM "This program calculate area"

### b) CLS Statement

It is used to get the fresh screen and clear the left over previous program.

Ex:

CLS

### c) LET Statement

It is used to assign the value of an expression to a variable.

Ex:

LET a=5

LET a=5

## d) INPUT Statement

It is used to accept the value of any variable from user.

Ex: CLS

INPUT "Enter length"; l

INPUT "Enter breadth"; b

$$\text{Area} = l \times b$$

PRINT "Area is"; Area

END

## e) READ. DATA Statement

It is used to read values from DATA statement and assign to variables.

Ex:

READ a,b

DATA 5,6

$$a = 5$$

$$b = 6$$

## f) PRINT Statement

It is used to display data on the screen.

Ex:

PRINT "My name is Dipesh"

## g) END Statement

It is used to denote the end of the program.

Ex:

PRINT

END

## Control Statement

Branching Statement

Unconditional

Conditional

Goto Statement

IF...THEN Statement

Goto Statement

→ IF...THEN Statement

→ IF...THEN...ELSE Statement

→ IF...ELSEIF...  
IF...ELSEIF...ENDIF Statement

## a) GOTO Statement

Ex:

$x = 1$

top: INPUT a  
IF a < 0 THEN

$y = x * x$  PRINT y

PRINT y  
IF a > 0 THEN

$x = x + 1$

GOTO top

END

## b) IF...THEN Statement

Ex:

CLS

a = 5

INPUT a

a = -2

IF a > 0 THEN PRINT "Greater than  
0"

END

## c) IF...THEN...ELSE Statement

Ex:

CLS

INPUT a

IF a > 1 THEN PRINT "Number is  
greater than 1"

ELSE PRINT "Number is less than 1"  
END

## d) IF...ELSE IF...ENDIF Statement

Ex:

CLS

INPUT a

IF a > 18 THEN

PRINT "He can drive"

ELSEIF a < 18 THEN

PRINT "He can't drive"

ELSEIF a = 18 THEN

PRINT "Visit driving center"

ELSE

PRINT "Something error"

ENDIF

END

S = 5

BEGIN

END

END

# Looping Statement

Both parts of the loop are separate statements.

Loop index variable starts from 1.

It increments by one each time it executes.

**FOR...NEXT**

**DO...LOOP**

Statement

Statement

Statement

Ex:

CLS : i = 1

FOR i = 1 to 10

PRINT i

NEXT

END

CLS : i = 1

WHILE i <= 10

PRINT i

i = i + 1

EF

WEND

END

CLS

i = 1

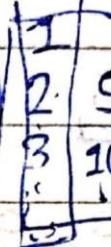
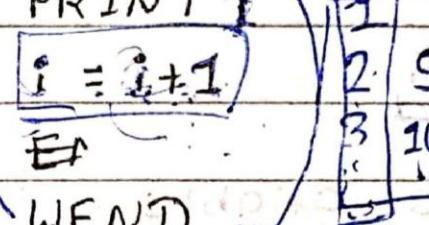
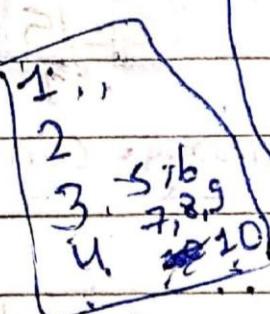
DO

PRINT i

i = i + 1

LOOP WHILE i <= 10

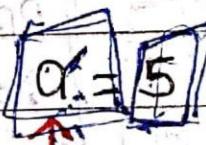
END



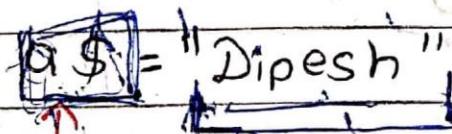
This program will print (1 to 10)

## Variable

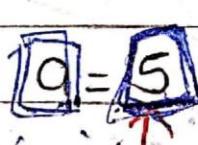
1. It is the storage locations in the computer's memory.
2. Variables are specially written in letters or symbols.
3. Example:

  
a = 5

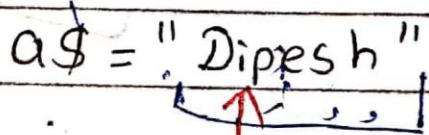
Numeric variable

  
a\$ = "Dipesh"

String variable

  
a = 5

Numeric Constant

  
a\$ = "Dipesh"

String constant