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.

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C. Elements of QBASIC Programming

a. QBASIC character set

b. Variable

c. Constant

d. Operator and expression

e. Keywords (Reserved words)

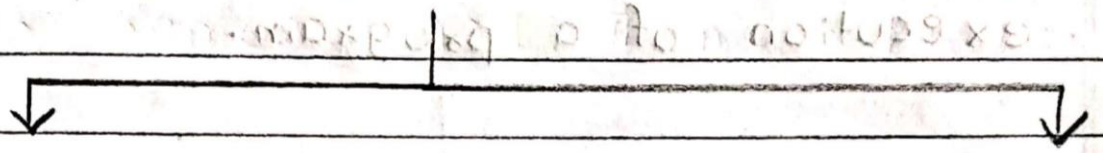
a. Character Set

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

Variable 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:

a1, area, z

b. String variable

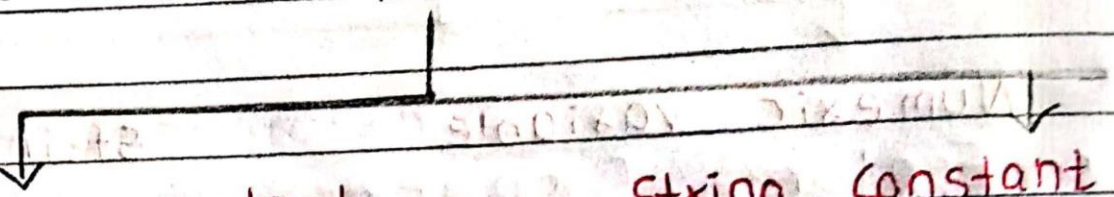
The string variable has a string of characters or alphanumeric as its value.

Ex:

A$, d1$

c. Constant

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



a. Numexic Constant

Numexic 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

Operator	Example
^	$a^2 + b^2$ a^{ab} a^2 + b^2
*	a * b
/	a / b
\	a \ b
Mod	c = a mod b
+	a + b
-	a - b

Note

Algebric Expression	BASIC Expression
$5a + 6b$	5*a + 6*b
$a^2 + b^2$	a^2 + b^2
$2(l+b)$	2*(l+b)
$(3a - 4b)/c$	(3*a - 4*b)/c
$4x^2 + 3$	4*x^2 + 3
$(2a)*b$	(2*a)*b

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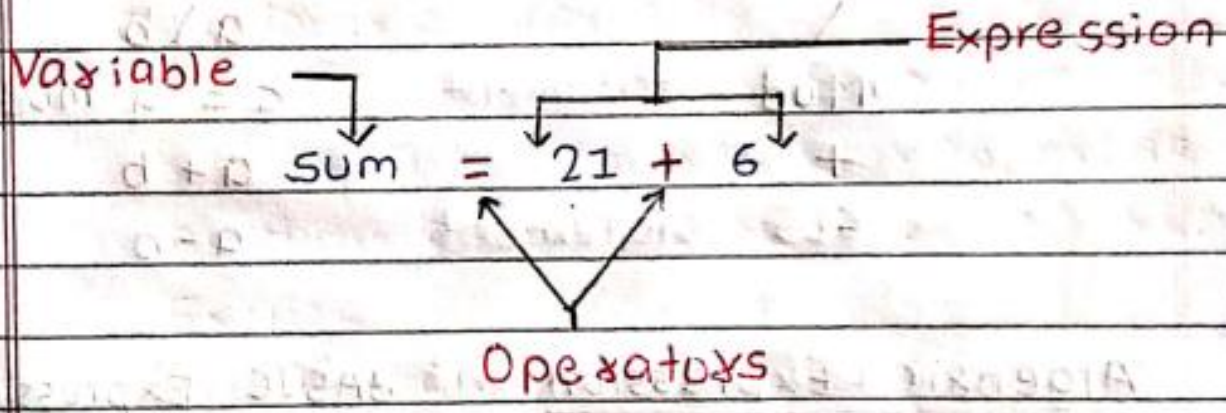
d. Operator and Expression

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

Operator	Example
=	A = B
<	A < B
>	A > B
<=	A <= B
>=	A >= B
<>	A <>

③ Logical Operators

Operator	Example
AND	A > B AND A > C
OR	A > B OR A > C
NOT	A NOT B

④ Concatenation operators

```
B$ = "Cake"
A$ = B$ + "is" + "sweet"
```

Concatenation operators

Output:

Cake is sweet

e. Keywords (Reserved words)

Ex:

CLS, PRINT, END

D. QBASIC Statements

- 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
Area = l x 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"
```

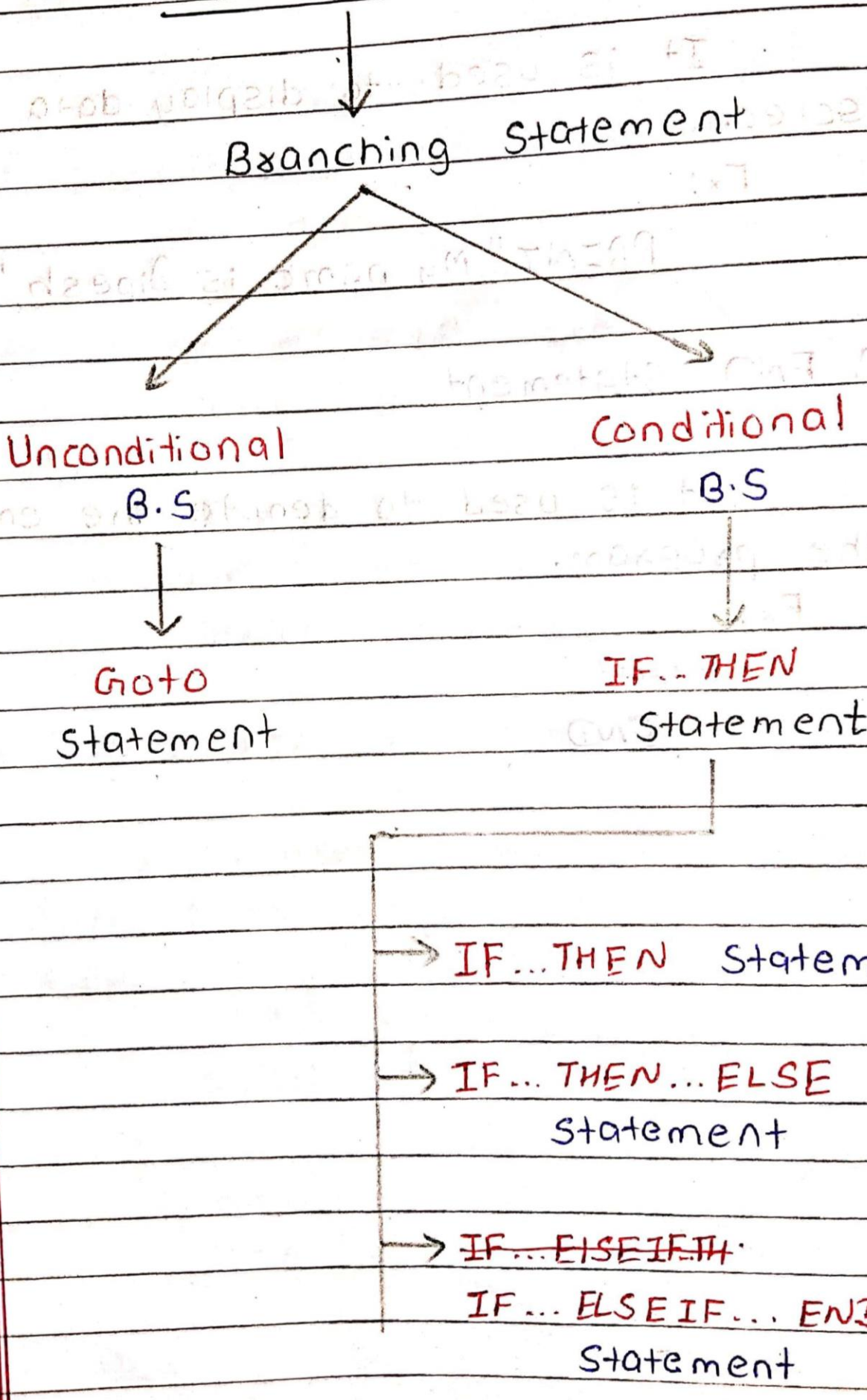
g) END Statement

It is used to denote the end of the program.

Ex:

```
~~PRINT~~
END
```

Control Statement



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a) GOTO Statement

Ex:

```
x = 1
top:
y = x * x
PRINT y
x = x + 1
GOTO top
END
```

b) IF... THEN Statement

Ex:

```
CLS
INPUT a
IF a > 0 THEN PRINT "Greater than 0"
END
```

a = 5
a = -2

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

Ex:

```
CLS
INPUT a
IF a > 1 THEN RRINT "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
```

Looping Statement

FOR...NEXT Statement

WHILE...WEND Statement

DO...LOOP Statement

Ex:

```
CLS
FOR i = 1 to 10
PRINT i
NEXT
END
```

```
CLS
i = 1
WHILE i <= 10
PRINT i
i = i + 1
WEND
END
```

```
CLS
i = 1
DO
PRINT i
i = i + 1
LOOP WHILE i <= 10
END
```

This program will print (1 to 10)

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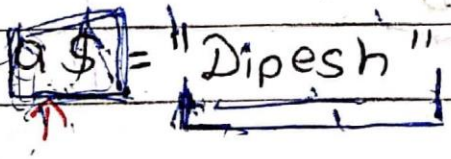
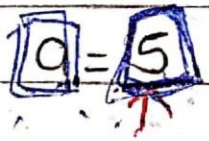
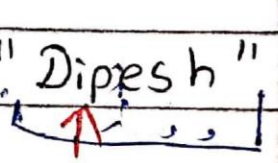
	Variable	Constant
1.	It is the storage locations in the computer's memory.	1. It is a data item whose value does not change during the execution of a program.
2.	Variables are specially written in letters or symbols.	2. Constants are usually written in numbers.
3.	Example:  Numeric variable  String variable	3. Example:  Numeric constant  String constant