STRING MANIPULATION

- To fulfill personal requirements you can make your own functions and procedures.

Built-in Functions (Must see appendix)

- Pre-defined functions present in programming language.

① MID - Function

- Used for extraction of character/s

E.g:

MID("ABCDEFGH", 2, 3)

- "ABCDEFGH" → String
- 2 → Starting position, integer
- 3 → Length, integer

- If variable,

var = "Taha"

// (var , // , //)

Output: "BCD"

- Space bar is considered as a character
- If variable is used, instead of string, its data type must be string.

Q- "SYED ALI WAJID" , I only want ALI

- MID("SYED ALI WAJID", 6, 3)

② Length Function

· Returns integer value for the number of characters present in a string.

E.g:

LENGTH("Happy Days")

1 2 3 4 5 6 7 8 9 10 = 10

· If variable is used, instead of string, its data type must be string.

Q- "123YxWz" , find the length of password

LENGTH("123YxWz") 7

③ Left Function

- Extracts character/s from the left side of the string

LEFT("ABCDEFG", 3)
1 1 1
1 2 3

↳ returns 3 leftmost characters, integer

Output: "ABC"

④ Right Function

- Extracts character/s from the rightmost end of the string

E.g:

RIGHT("ABCDEFG", 3)

output: "FGH"

(5) Integer Function

- Outputs the whole number part of a 'REAL' data type number.

E.g:

INT (27.5415)

output: 27

- Remember it does not round off the number, it just eliminates the decimal part.

(6) Number to String Function

- converts any number (REAL and INTEGER) to STRING or CHAR data type
- Used when two strings are to be concatenated (joined together)

E.g:

NUM_TO_STRING(23.45)

output: "23.45"

- Mathematical operations can not be applied to a string or character

⑦ String To Number Function

- Converts any data type of STRING or CHAR to REAL or INTEGER data type.

E.g:

STRING_TO_NUM("83.75")

output: 83.75

⑧ ASC

- Returns ASCII value of the character, returns integer

E.g:

ASC('A')

↳ Must be a character

output: 65

A = 65 –

a = 97 –

(9) CHR

- Returns character for an ASCII value. Input must be integer, returns CHAR.

E.g:

CHR (97)

Output: 'a'

Operators

(1) & : Concatenates (Joins) two strings

"AHMAR" "ABOULLAH"

→ "AHMAR" & "ABDULLAH"

= "AHMARABDULLAH"

→ For space

"AHMAR" "ABDULLAH"

→ "AHMAR" & ' ' & "ABDULLAH"

= "AHMAR ABDULLAH"

② AND : Works on the principle of logic gates chapter

0	0	0
1	0	0
0	1	0
1	1	1

- True = 1
- False = 0

- only applies on boolean values.
- In languages boolean values are 'True' and 'False'

- E.g: · TRUE AND FALSE = FALSE
  · TRUE AND TRUE = TRUE

- In languages, only use True and False

- Always answer in data type in which the function outputs.

Basic Programming

Concept of Variable

- Variable is a temporary memory.

```
x = 2
y = 5
z = x+y
Print (z)        7
```

Q- Write a Pseudocode of a program in which user inputs two numbers and the sum of those two numbers have to be printed.

* Always leave first three lines before writing pseudocode

- DECLARE N1 : INTEGER
- DECLARE N2 : INTEGER
- DECLARE Sum: INTEGER

* for same data type:

DECLARE N1, N2, Sum : INTEGER

```
INPUT N1
INPUT N2
PRINT Sum
```

- If printing string, inverted commas must be used
- If variable used, no need for inverted commas

Operators used in Programming

- Multiplication *
- Division /
- Addition +
- Subtraction -

Q- Write pseudocode of a program in which input 2 numbers and print the product of those numbers.

```
DECLARE  N1, N2, Product : INTEGER
INPUT    N1
INPUT    N2
Product ← N1 * N2
PRINT    Product
```