



Programming and Algorithm

Lab 2: Basic Programming (String, Array)

Welcome to Basic Programming Class



What is String?



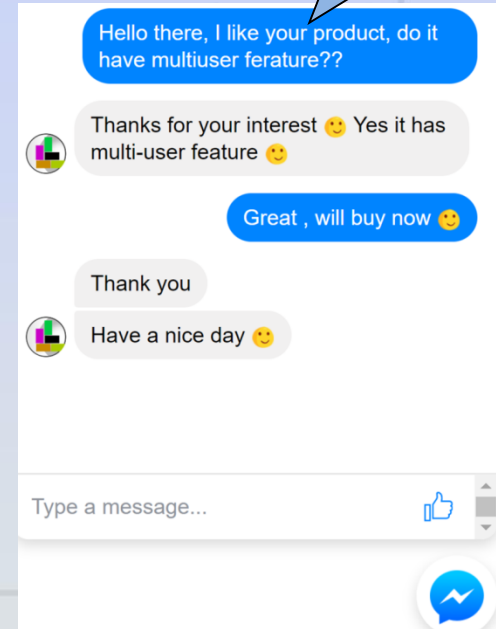
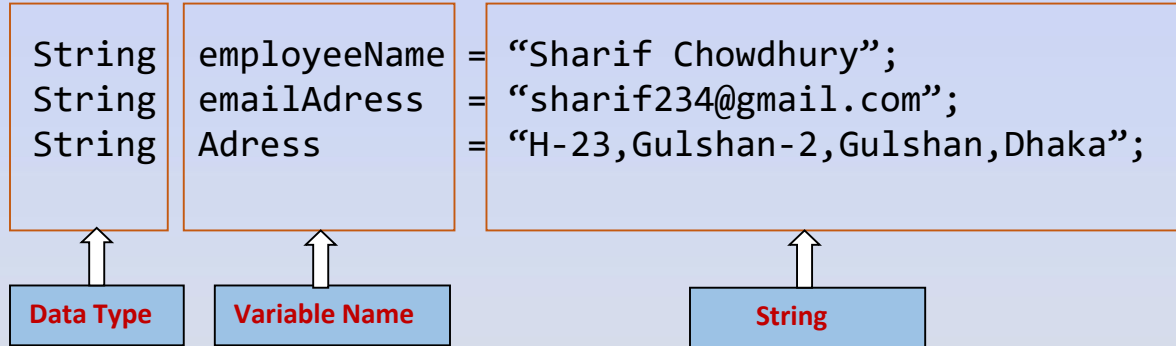
- A set of characters that may contain spaces, characters, special characters and numbers.

For instance - name, address, email e.t.c.

"Tanha Mim"
"Fahad Faysal"
"Dhanmondi,Dhaka"
"username768@gmail.com"

String in Programming languages

Each message
is considered
as a String



What is Array?



An array is a sequence of data item of homogeneous value (same type).

Two types of array:

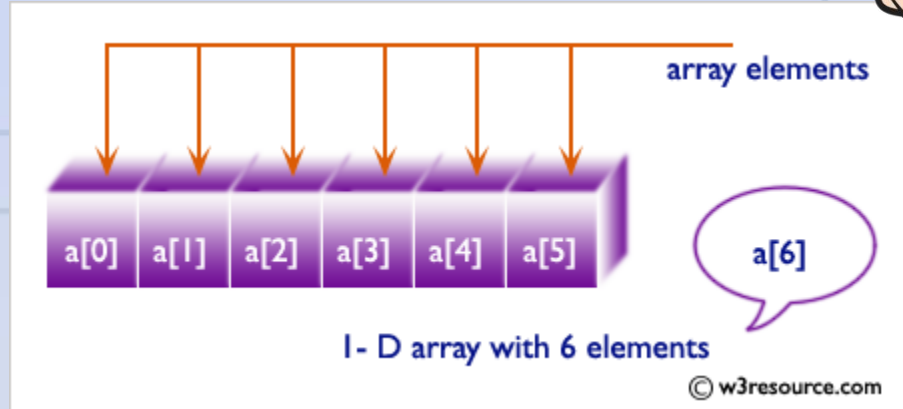
- One-dimensional array(1D)
- Multi-dimensional array(2D).

One-dimensional Array(1D)

Conceptually you can think of a one-dimensional array as a row, where elements are stored one after another.

Array1

80	65	78	52	81	68
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Two-dimensional Array(2D)

The two dimensional (2D) array is also known as matrix. A matrix can be represented as a table of rows and columns.

Array1

		Column Index			
		0	1	2	3
Row Index	0	8	6	5	4
	1	2	1	9	7
	2	3	6	4	2

Two-Dimensional Array



2D Array Example: Chess Board



Usefulness

1D: Storing and handling same type of data or element efficiently.



Usefulness

2D: Dependent element or data can be stored and handles efficiently. Matrix calculation is so much easy using 2D array.

$$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$



Today's learning:

String

Array

1d Array

2d Array



Thank You!