

Programming & Algorithm

Class 7

Lab Class 1

Basic Programming

Lab Objectives:

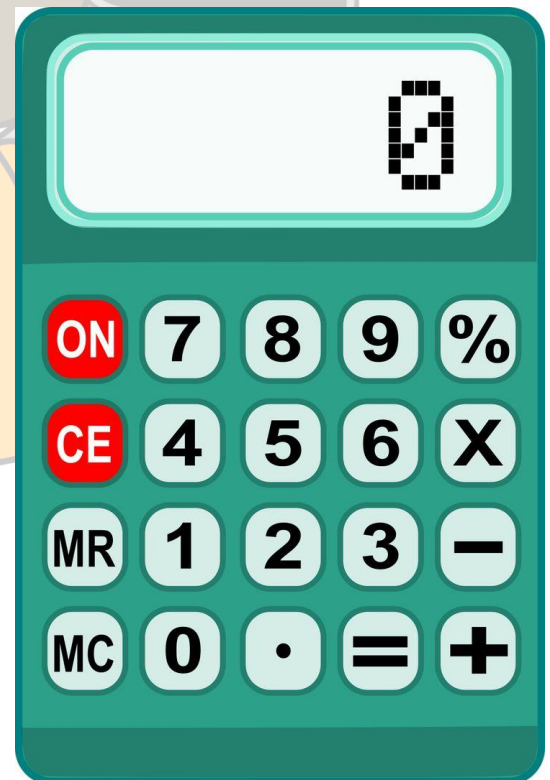
- What is Programming?
- Overview of Programming Languages.
- Variables in Programming Languages.

What is Programming?

Computer programming is a way of giving computers instructions about what they should do next. These instructions are known as code, and computer programmers write code to solve problems or perform a task.

The goal of programming is creating an executable program to solve problem using machine or computing devices.

Example: A calculator which is programmed in such a way so that it we can add, divide, multiply numbers.



What is Programming Languages?

A programming language is a vocabulary and set of grammatical rules for giving commands and instruction to a computer or computing device to perform specific tasks.

Each programming language has a unique set of keywords (words that it understands) and a special syntax for organizing program instructions.

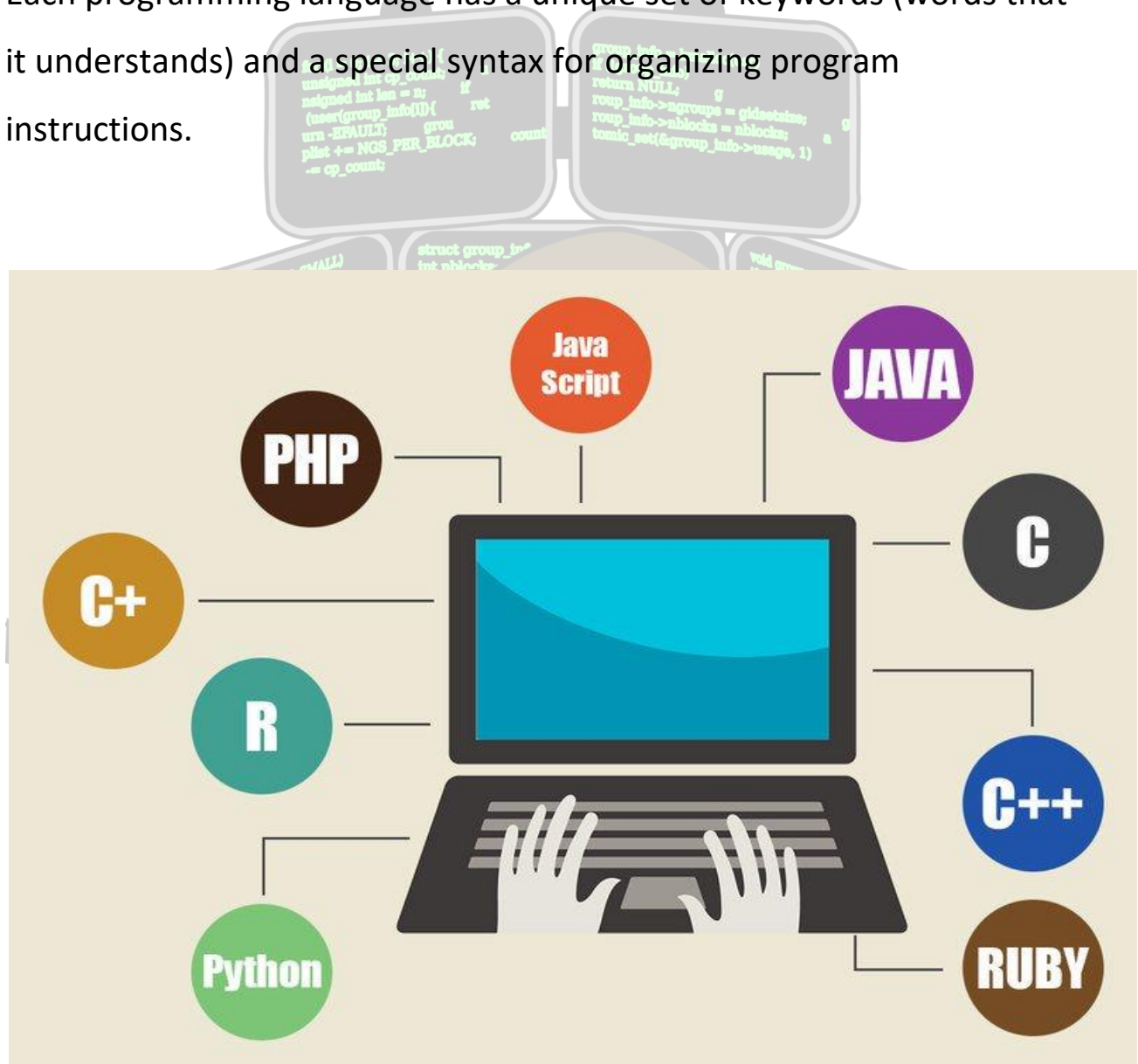
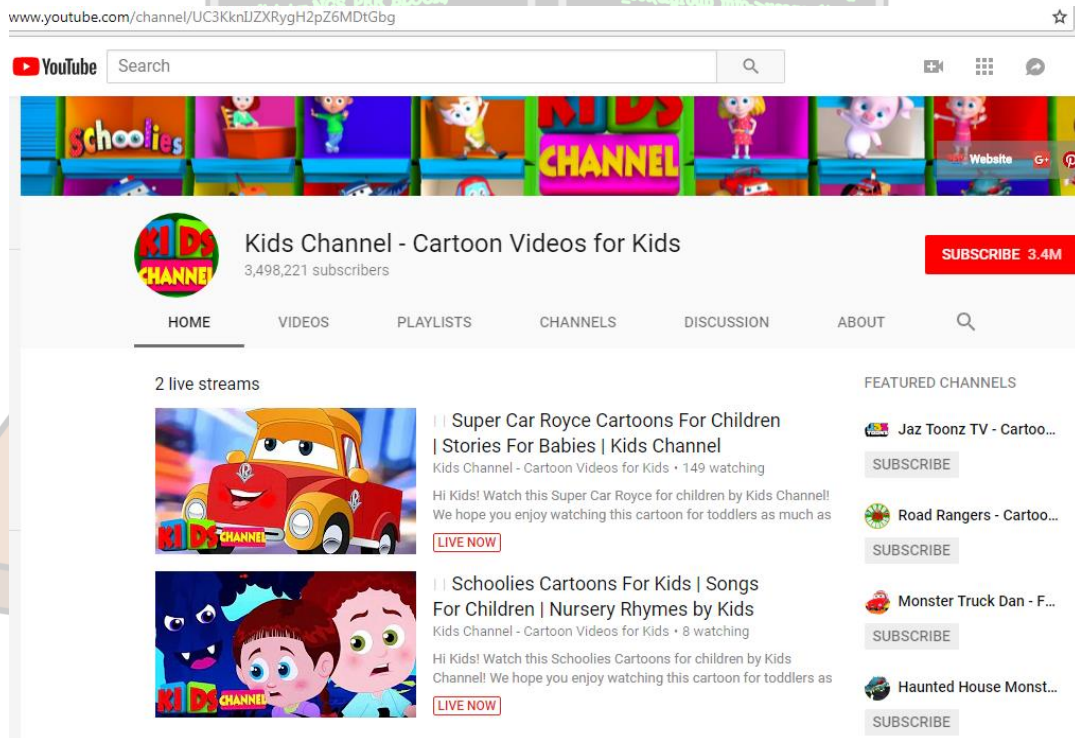


Figure 1: Some Programming Languages' Name

What can we do using Programming languages?

- Websites: YouTube, Google, Amazon etc.



- Mobile & Desktop Applications: Messenger, WhatsApp, Playstore etc.



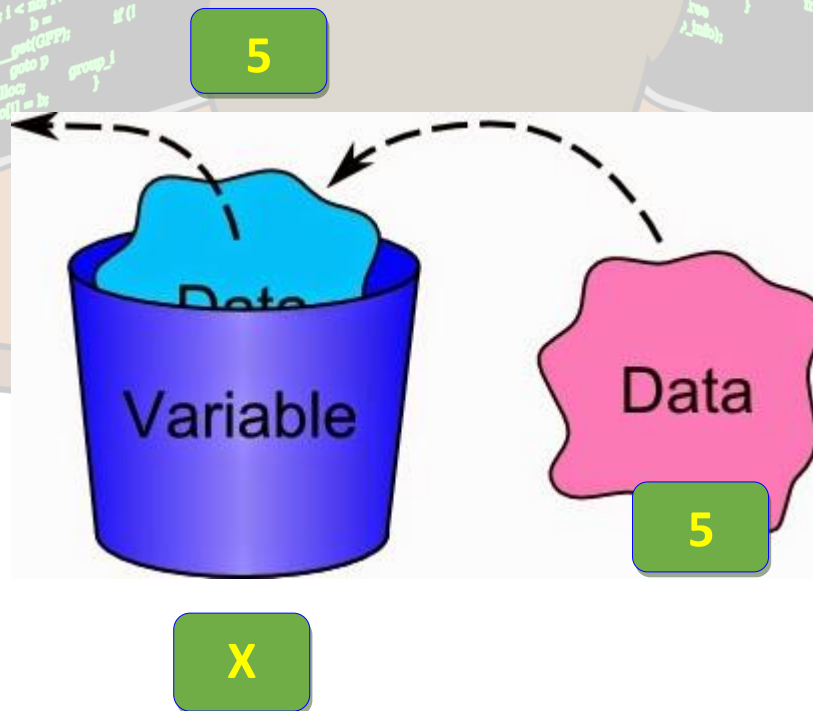
Variables

Variables are containers for storing data values.

```
var x = 5;  
var y = 6;  
var z = x + y;
```

In this example, x, y, and z, are variables. From the example above, we can expect:

- x stores the value 5
- y stores the value 6
- z stores the value 11



Exercise:

```
var price1 = 300;  
var price2 = 430;  
var total = price1 + price2;
```

So, what is the value of total?

Variables: Data Type

Most common and basic data type in programming languages are:

```
var marks = 80;
```

Integer

```
var grade = 4.50;
```

Decimal

```
var name = "Zyan"
```

String