**Programming for Engineers-I**

**Lab 01**

(Introduction to Programming)

**Programming:**

* **Computer programming** is the process of
  + - Designing
    - Writing
    - Testing
    - Debugging
    - Maintaining

the **source code** of computer programs

**IDE:**

* Integrated Development Environment
* Parts:
  + - Text Editor
    - Compiler
    - Debugger

**Programming Language:**

* A programming language is a set of instructions designed to communicate with

a machine

* C
* C++

**Tool:**

* Visual Studio 2010

**Statements:**

In programming, a **statement** is simply a directive that tells the computer to do something. Think of it as a command or an instruction. In Scratch, any block whose label reads like a command is a statement.   
One such block instructs a program to say something:   
say.gif  
Another such block instructs a program to go to some location:   
goto.gif  
Sometimes, you only want a statement to be executed under certain conditions. Such conditions are defined in terms of Boolean expressions

**Variables:**

* In programming, a **variable** is a placeholder for some value, much like *x* and *y* are popular variables in algebra.

int x = 5;

|  |  |  |
| --- | --- | --- |
| Type | Width | Common Range |
| Char | 8 | -128 to 127 |
| unsigned char | 8 | 0 to 255 |
| Int | 16 | -32768 to 32767 |
| unsigned int | 16 | 0 to 65535 |
| short int | 16 | -32768 to 32767 |
| unsigned short int | 16 | 0 to 65535 |
| long int | 32 | -2,147,483,648 to  2,147,483,647 |
| unsigned long int | 32 | 0 to 4,294,967,295 |
| Float | 32 | 3.4E-38 to 3.4E+38 |
| Double | 64 | 1.7E-308 to 1.7E+308 |
| long double | 80 | 3.4E-4932 to 3.4E+4932 |

**Operators:**

* +, -, \*, / ,+=, -=

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**Exercise:**

**Code for CGPA Calculator????**

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