6. Tokens and Keywords

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x = x + y;

➢ Consider the following statement :

> int number = 11;
>
> number = number + 5;

16

number

➢ The expression on the right hand side is computed (=16) and is assigned to the left hand side (the variable *number*)

➢ Similarly you can have statements like :

> number = number * 5;
>
> number = number - 2;

Practice

```cpp
#include <iostream.h>
#include <conio.h>
int main()
{

        clrscr();
        int var1 = 22;
        int var2 = 11;
        var2 = ( (var2 + var1) + (3*var2) );
        cout << var2;
        getch();
        return 0;

}
```

Output:
66

Tokens

The smallest individual unit in a program is known as token. For example, int, return, etc.

Tokens used in C++ are:

➢ Keywords

➢ Literals

➢ Identifiers

➢ Punctuators

➢ Operators

Keywords

Keywords are the certain reserved words that convey a special meaning to the compiler.

These are reserved for special purposes and must not be used as variable name, function name, etc. For example, int, return, etc.

Literals

The data items which never change their value throughout the program run. They are also known as **constants**. For example, 123, 'A', etc.

Identifiers

Identifiers are programmer defined names given to the various program elements such as **variables**, functions, arrays, objects, classes, etc.

It may contain digits, letters and underscore, and must begin with a letter or underscore. For example,

Valid identifiers   : Pen   time580   s2e3   _dos

Invalid identifiers : He-is   1is   return   x.y   (- and . are special characters)

C++ is case sensitive, hence *pen* and *Pen* are treated as distinct

Punctuators

The following characters are used as punctuators which are also known as separators in C++ : [ ] { } ( ) , ; : * … = #

Operators

Next Lecture

Exercise

Write a program which takes a **positive integer** as input from user and prints its last 2 digits.

For example,

Input :

1224

Output :

Last digit : 4

Second last digit : 2

Input :

4

Output :

Last digit : 4

Second last digit : 0

What's ahead?

In the next video, we will study about operators and errors in C++