Introduction to C++

Branch: S6 ECE

Faculty: Sreedivya I

History of C++

- Developed by Bjarne Stroustrup at Bell Laboratories in the early 1980’s
- It was standardized in 1998 by ANSI and ISO
- It was an extension to C
- It was called as C with classes

Features of C++

- General purpose programming language
- Compiled language
- Portable and machine independent
- Powerful and extensible
- Supports dynamic memory allocation
- Case sensitive
- Supports pointers
- Strongly typed language

Sample C++Program

```
#include<iostream>
using namespace std;
void main()
{
   cout<<“C++ is an object oriented programming language”;
}
```

Explanation of the program:

iostream – This is a header file which add the content of iostream file to the program. It should be added at the beginning of every program that use i/o statements

namespace – defines a scope for the identifiers. For using identifiers defined in the namespace scope it must include ‘using’ directive. Here ‘std’ is the namespace used where standard class libraries are defined

main() – every program has only one main() and the execution of a program starts from here

Tokens

Tokens are the smallest individual units in a program

- Keywords –reserved words(eg: int,class)
- Identifiers-variables or functions(eg: sum)
- Constants – variables with fixed value(eg: pi)
- Strings – characters(eg: “ABC”)
- Operators – used for performing some operations(eg: +,-,<<,>>)

Basic Datatypes

- Built in datatypes – int,char,float,double,void
- User Defined datatypes - class
- Derived datatypes – Arrays, Functions, Pointers

Operators

- Input Operator (>>)– extraction/get from operator.

  extracts value from keyboard and assigns it to the variable on the right

- Output Operator(<<)- insertion/put to operator

  inserts the contents of variable on its right to the objects on its left

Cascading of I/O operators

- Multiple usage of I/O operators in a single program statement.
- Eg: cout<<“Sum=“<<sum<<“\n”;

TYPE COMPATIBILTY(or Type Casting)

- Conversion from one datatype to another (like int to float, double to int etc)
- Two types

1. Implicit type casting(automatically done)
2. Explicit type casting(done by user)