Beginning with C++

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What is C++?

- CPP supports all features of both **structure programming** and **object-oriented programming.**
- It gives the easiest way **to handle the data hiding and encapsulation** with the help of powerful keywords like **class, private, public, protected** etc.
- **Inheritance** is the most powerful design concept supported by CPP.
- It provides **function and operator overloading**.
- CPP focuses on **function and class templates** for handling parameterized data type.
- **Exception handling** is done by extra keywords like try, catch, throw.
- Provides **friends, static methods, constructor, destructor** for the class objects.

Applications of C++

- C++ powers **game engines** like Unreal Engine, offering real-time graphics rendering and physics simulation.
- C++ is integral to **operating system** like Windows, macOS, and Linux.
- C++ is widely used in **embedded system** microcontrollers and **embedded devices** like automotive systems and IoT gadgets.
- Modern **browsers** like Google Chrome and Firefox use C++ for their rendering engines. It ensures fast webpage loading and smooth performance.
- Popular **databases** like MySQL and PostgreSQL are built using C++ for high-speed data processing.
- **Software** like AutoCAD and Maya use C++ for creating realistic 3D models and animations.

Structure of CPP Program

1. Inclusion of header files
2. Define constants
3. Declaration of global variables
4. Class declaration
5. Member functions definitions
6. Main function

Example:

```
#include<iostream.h>
void main()
{
   cout<<“Welcome to CPP!!!”;
}
```

using namespace std

- This line, namespace defines a **scope for the identifiers** that are used in a program.
- The statement **using namespace std**; in C++ is a directive that brings all the names (like functions, classes, and variables) from the std (standard) namespace into the current program scope.
- This allows you to use **standard library components** such as cout, cin, and string without having to prefix them with std:: every time.
- For using the identifiers defined in namespace scope we must include the using directive, like **using namespace std**.
- std is the namespace where ANSI C++ **standard class libraries** are defined.

Comments

- Comments are pieces of source code discarded or ignored from the code by the compiler.
- Single Line : //
- Multiline Comment : /* ……. */

CPP character set

- CPP character set consists of uppercase and lowercase alphabets, digits and special symbols.

Thank you