//Inheritance Example

class Base

{

private: Bprivmem;

protected: Bprotmem;

public: Bpubmem;

void Bfunc();

};

class privDerived : private Base

{

private: privDprivmem;

protected: privDprotmem;

public: privDpubmem;

void privDfunc();

};

class protDerived : protected Base

{

private: protDprivmem;

protected: protDprotmem;

public: protDpubmem;

void protDfunc();

};

class pubDerived : public Base

{

private: pubDprivmem;

protected: pubDprotmem;

public: pubDpubmem;

void pubDfunc();

};

//each of the functions privDfunc(), protDfunc() and pubDfunc() can access

//any of the members in their own class, as well as the protected and

//public members of the class Base

void main()

{

Base bobj;

privDerived privDerobj;

protDerived protDerobj;

pubDerived pubDerobj;

bobj.privDprivmem; //not valid

bobj.privDprotmem; //not valid

bobj.privDpubmem; //valid

privDerobj.Bprivmem; //not valid

privDerobj.Bprotmem; //not valid

privDerobj.Bpubmem; //not valid

privDerobj.privDprivmem; //not valid

privDerobj.privDprotmem; //not valid

privDerobj.privDpubmem; //valid

protDerobj.Bprivmem; //not valid

protDerobj.Bprotmem; //not valid

protDerobj.Bpubmem; //not valid

protDerobj.protDprivmem; //not valid

protDerobj.protDprotmem; //not valid

protDerobj.protDpubmem; //valid

pubDerobj.Bprivmem; //not valid

pubDerobj.Bprotmem; //not valid

pubDerobj.Bpubmem; //valid

pubDerobj.protDprivmem; //not valid

pubDerobj.protDprotmem; //not valid

pubDerobj.protDpubmem; //valid

}

The following table shows the access specifier of an inherited function or data member in a derived class given the access specifier of that member in the base class and the type of inheritance.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Access Specifier in Derived Class | | |
| Base Class Member Specifier | private Derived Class | protected Derived Class | public Derived Class |
| **private** | (hidden) | (hidden) | (hidden) |
| **protected** | private | protected | protected |
| **public** | private | protected | public |