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1. Demonstrate Hybrid Inheritance in C++:

Hybrid Inheritance
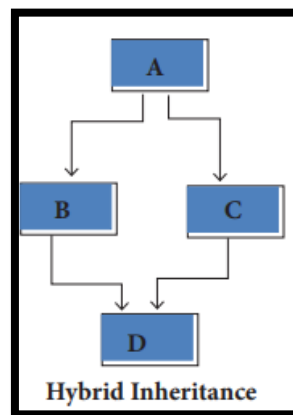
Program to display the marks of students in six subjects:

```cpp
#include<iostream>
using namespace std;
class student //base class
{
    private :
    char name[20];
    int rno;
    public:
    void acceptname()
    {
        cout<<"\n Enter Roll no:";
        cin>>rno;
        cout<<"\n Enter Name:";
        cin>>name;
    }
    void displayname()
    {
        cout<<"\n Roll no :-"<<rno;
        cout<<"\n Name :-"<<name<<endl;
    }
};
```

```cpp
class theory_mark: public student
{
    public:
    int tmark1,tmark2,tmark3,tmark4,tmark5,tmark6;
    void accept_tmark()
    {
        cout<<"\n\tEnter 6 subject theory marks.. ";
        cout<<"\nEnter Theory Mark-1:";
        cin>>tmark1;
        cout<<"\nEnter Theory Mark-2:";
        cin>>tmark2;
        cout<<"\nEnter Theory Mark-3:";
        cin>>tmark3;
        cout<<"\nEnter Theory Mark-4:";
        cin>>tmark4;
        cout<<"\nEnter Theory Mark-5:";
        cin>>tmark5;
        cout<<"\nEnter Theory Mark-6:";
        cin>>tmark6;
    }
    void display_tmark()
    {
        cout<<"\n\t Theory Marks Obtained ";
        cout<<"\n Theory mark in Language     :"<<tmark1;
        cout<<"\n Theory mark in English      :"<<tmark2;
        cout<<"\n Theory mark in Mathematics  :"<<tmark3;
        cout<<"\n Theory mark in Physics      :"<<tmark4;
        cout<<"\n Theory mark in Chemistry    :"<<tmark5;
        cout<<"\n Theory mark in Comp_Science :"<<tmark6;
    }
};
```

```cpp
class internal_and_practical_mark
{
    public:
    int ipmark1, ipmark2, ipmark3, ipmark4, ipmark5, ipmark6;
    void accept_ipmark()
    {
        cout<<"\n\tEnter 6 subject internal and Practical marks.. ";
        cout<<"\nEnter Internal and Practical Mark-1:";
        cin>>ipmark1;
        cout<<"\nEnter Internal and Practical Mark-2:";
        cin>>ipmark2;
        cout<<"\nEnter Internal and Practical Mark-3:";
        cin>>ipmark3;
        cout<<"\nEnter Internal and Practical Mark-4:";
        cin>>ipmark4;
        cout<<"\nEnter Internal and Practical Mark-5:";
        cin>>ipmark5;
        cout<<"\nEnter Internal and Practical Mark-6:";
        cin>>ipmark6;
    }
    void display_ipmark()
    {
        cout<<"\n\n\t Internal and Practical Marks Obtained ";
        cout<<"\n Internal and Practical in Language     :"<<ipmark1;
        cout<<"\n Internal and Practical in English      :"<<ipmark2;
        cout<<"\n Internal and Practical in Mathematics  :"<<ipmark3;
        cout<<"\n Internal and Practical in Physics      :"<<ipmark4;
        cout<<"\n Internal and Practical in Chemistry    :"<<ipmark5;
        cout<<"\n Internal and Practical in Comp_Science :"<<ipmark6;
    }
};
```

```cpp
class exam_result: public theory_mark, public internal_and_practical_mark
{
    public:
    int total;
    int Lang, English, Maths, Physics, Chemistry, Comp_Science;
    void result()
    {
        Lang = tmark1 + ipmark1;
        English = tmark2 + ipmark2;
        Maths = tmark3 + ipmark3;
        Physics = tmark4 + ipmark4;
        Chemistry = tmark5 + ipmark5;
        Comp_Science= tmark6 + ipmark6;
        total=Lang + English + Maths + Physics + Chemistry + Comp_Science;
    }
    void showresult()
    {
        cout<<"\n\t\t Mark in Each Subject:";
        cout<<"\n Language      :"<<Lang;
        cout<<"\n English       :"<<English;
        cout<<"\n Mathematics   :"<<Maths;
        cout<<"\n Physics       :"<<Physics;
        cout<<"\n Chemistry     :"<<Chemistry;
        cout<<"\n Comp_Science :"<<Comp_Science;
        cout<<"\n-------------------------";
        cout<<"\nTOTAL MARK SCORED : "<<total;
        cout<<"\n-------------------------";
    }
};
```

```cpp
int main()
{
    exam_result r1;
    r1.acceptname();
    r1.accept_tmark();
    r1.accept_ipmark();
    r1.result();
    cout<<"\n\t\tOUTPUT:";
    r1.displayname();
    r1.display_tmark();
    r1.display_ipmark();
    r1.showresult();
    return 0;
}
```

OUTPUT:

```
Enter Roll no:1001

Enter Name:DHANUSHRAJ

        Enter 6 subject theory marks..
Enter Theory Mark-1:45

Enter Theory Mark-2:46

Enter Theory Mark-3:47

Enter Theory Mark-4:49

Enter Theory Mark-5:45

Enter Theory Mark-6:48

        Enter 6 subject internal and Practical marks..
Enter Internal and Practical Mark-1:47

Enter Internal and Practical Mark-2:48

Enter Internal and Practical Mark-3:50

Enter Internal and Practical Mark-4:50

Enter Internal and Practical Mark-5:50

Enter Internal and Practical Mark-6:49
```

```
              OUTPUT:
Roll no :-1001
Name :-DHANUSHRAJ

        Theory Marks Obtained
Theory mark in Language     :45
Theory mark in English      :46
Theory mark in Mathematics  :47
Theory mark in Physics      :49
Theory mark in Chemistry    :45
Theory mark in Comp_Science :48

        Internal and Practical Marks Obtained
Internal and Practical in Language     :47
Internal and Practical in English      :48
Internal and Practical in Mathematics  :50
Internal and Practical in Physics      :50
Internal and Practical in Chemistry    :50
Internal and Practical in Comp_Science :49
              Mark in Each Subject:
Language    :92
English     :94
Mathematics :97
Physics     :99
Chemistry   :95
Comp_Science :97
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TOTAL MARK SCORED : 574
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-------------------------------
Process exited after 47.55 seconds with return value 0
Press any key to continue . . .
```