Friend Function and Friend Class

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What is friend?

Friend is Special One
What is difference between friend and non friend?
Friend has privileges to your private and protected stuffs.

Member Functions and Data Members

```cpp
1    #include <iostream.h>
2    #include <stdio.h>
3
4    class Box{
5        int width;
6        public:
7        void setWidth(int x)
8        {
9            width=x;
10       }
11
12       void getWidth()
13       {
14           cout<<width<<endl;
15       }
16
17   };
18
19   void main()
20   {
21
22       Box mybox;
23       mybox.setWidth(10);
24       mybox.getwidith();
25       getch();
```

Non Member Functions which is not a friend

```cpp
#include <iostream.h>
#include <conio.h>

class Box{
    int width;
    public:
    void setWidth(int x)
    {
        width=x;
    }

    void getWidth()
    {
        cout<<width<<endl;
    }
};

void display ( Box boxObj)
{
    cout<< "Hello can display anything"<<endl;
    cout<<"My width"<<boxObj.width<<endl;
}
```

```cpp
void main()
{
    Box mybox;
    mybox.setWidth(10);
    mybox.getWidth();
    display (mybox);
    getch();
}
```

Friend Function

```cpp
#include <iostream.h>
#include <conio.h>

class Box{
    int width;
    public:
    void setWidth(int x)
    {
        width=x;
    }

    void getWidth()
    {
        cout<<width<<endl;
    }
    friend void display (Box obj);
};

void display ( Box boxObj)
{
    cout<< "Hello can display anything"<<endl;
    cout<<"My width"<<boxObj.width<<endl;
}
```

```cpp
void main()
{

    Box mybox;
    mybox.setWidth(10);
    mybox.getWidth();
    display (mybox);


    getch();
}
```

Friend

Non Member Function

Want to access private and protected member of another

Keyword: friend

Friend function prototype

Friend void display(Box)

Friend function can access private and protected member of the class.

Practice

Student Class has below members
Sem, Roll number and PIN
Pin is private data member

Out side class
Function : Print () non member function

Make print function friend of student class and display PIN

Create main function to demo your class code.

Summary

What is Class,

How to write class

How to create object of class

Accessing Data from oustide class

Difference between private and protected member

Passing object as argument to function

How to make non member function friend of class.

Practice

1. Student class
2. Friend Class
3. Box
4. Student with friend

Thank you