

ITEC243 –Lecture Session Notes – 20-APR-2020

alpha	beta
x:int	y:int
alpha()	beta()
getx():void	gety():void

compare() function is friends with “alpha” class and “beta” class. This function access the private data members of both class and compares the values and decides which value is greater.

We first of all create the classes and we need to provide a prototype of compare function that shows it’s friends with alpha and beta classes.

Forward Declaration must be done!!! If we have 2 different classes that the function will be able to access to the private data members of both. Forward declaration for the class that will be defined as the second class in the header file, should be done.

```
//alphaBeta.h
//forward declaration
class beta;
class alpha{
private: //default access specification
    int x;
public:
    alpha()
    {
        cout << "Enter an integer value:";
        cin >> this->x;
    }
    int getX()
    {
        return this->x;
    }
    friend void compare(alpha, beta); //prototype of friend function
};

class beta{
    int y;
public:
    beta()
    {
        cout << "Enter an integer value:";
        cin >> this->y;
    }
    int getY()
    {
        return this->y;
    }
};
```

```

        friend void compare(alpha, beta); //prototype of friend function
};
//in order to define friend function we don't need to include keyword 'friend'
void compare(alpha aobj, beta bobj)
{
    if (aobj.x > bobj.y)
        cout << "Greater value is:" << aobj.x << endl;
    else if (bobj.y > aobj.x)
        cout << "Greater value is:" << bobj.y << endl;
    else
        cout << "The values are equal." << endl;
}
//alphaBeta.cpp
#include<iostream>
using namespace std;
#include"alphaBeta.h"
void main()
{
    alpha a;
    beta b;
    compare(a,b);

    system("pause");
}

```

HOMEWORK

Modify above example and instead of integers, compare characters (ASCII CODES) A=a (??)

(due: 22-APR-2020 before 8:30 as an email)

Friend Classes example

An entire class can be a friend of another class... See the example...

```

//empBoss.h
class employee{
private:
    friend class boss; //prototype
    string name;
    double salary;
public:
    employee() //user-defined default constructor
    {
        this->name = " ";
        this->salary = 0;
    }
}

```

```

    }
    employee(string name, double salary)
    {
        this->name = name;
        this->salary = salary;
    }
    string getName()
    {
        return this->name;
    }
    double getSalary()
    {
        return this->salary;
    }
};

class boss{
public:
    void giveRaise(double amt, employee &e)
    {
        e.salary = e.salary + amt;
    }
};

//empBoss.cpp
#include<iostream>
#include<string>
using namespace std;
#include"empBoss.h"
void main()
{
    employee e("Mustafa", 3500.75);
    boss b;
    cout << e.getName() << " " << e.getSalary() << endl;
    b.giveRaise(500.10, e);
    cout << e.getName() << " " << e.getSalary() << endl;
    system("pause");
}

```