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| | **AIR UNIVERSITY** |
| | **DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING** |
| | **EXPERIMENT NO 5** |

**Lab Title:** Operator Overloading

**Student Name:** _____ **Reg. No:** _____

**Objective:** _____

_____

**LAB ASSESSMENT:**

| Attributes | Excellent (5) | Good (4) | Average (3) | Satisfactory (2) | Unsatisfactory (1) |
|---|---|---|---|---|---|
| **Ability to Conduct Experiment** | | | | | |
| **Ability to assimilate the results** | | | | | |
| **Effective use of lab equipment and follows the lab safety rules** | | | | | |

Total Marks: _____ Obtained Marks: _____

**LAB REPORT ASSESSMENT:**

| Attributes | Excellent (5) | Good (4) | Average (3) | Satisfactory (2) | Unsatisfactory (1) |
|---|---|---|---|---|---|
| **Data presentation** | | | | | |
| **Experimental results** | | | | | |
| **Conclusion** | | | | | |

Total Marks: _____ Obtained Marks: _____

Date: _____ Signature: _____

# LAB TASK#3

```cpp
#include <iostream>
using namespace std;

class Book
{
    int Days,Pages;
    public:
    Book()
    {
        Days=32;
        Pages=12;
    }
    Book(int d,int p)
    {
        Days=d;
        Pages=p;
    }
    void display()
    {
        cout<<"\n\nDays: "<<Days;
        cout<<"\nPages: "<<Pages;
    }
    Book operator + (Book b)
    {
        Book temp;
        temp.Pages = Pages + b.Pages;
        return temp;
    }
    void operator == (Book b)
    {
        if (Pages==b.Pages)
        {
            cout<<"\nPages of both books are equal"<<endl;
        }
        else
        {
            cout<<"\nThe pages of both book are not equal"<<endl;
        }
    }
    void operator > (Book b)
    {
        if (Pages>b.Pages)
        {
            cout<<"\nThe pages of Book # 1 are greater than the pages of Book # 2"<<endl;
        }
        else
        {
            cout<<"\nThe pages of Book # 1 are less than the pages of Book # 2"<<endl;
        }
    }
    friend void total(Book b);
};
void total(Book temp)
{
    cout<<"\n\nThe total pages of both books: "<<temp.Pages<<endl;
}

int main()
{
    Book b1,b2(44,66),total_pages;
    b1.display();
    b2.display();
    total_pages = b1+b2;
    total(total_pages);
    cout<<"\n\n";
    b1 > b2;
    cout<<"\n";
    b1==b2;
    cout<<"\n\n\n";
}
```

## OUTPUT

```
Days: 32
Pages: 12

Days: 44
Pages: 66

The total pages of both books: 78


The pages of Book # 1 are less than the pages of Book # 2


The pages of both book are not equal
```

## LAB TASK # 4

```cpp
#include <iostream>
using namespace std;

class word
{
    string random_string;
    public:
    word()
    {
        random_string = "Muhammad Suhaib Salman";
    }
    word (string name)
    {
        random_string = name;
    }
    void display()
    {
        cout<<"\n\nThe string is: "<<random_string<<endl;
    }
    word operator + (word x)
    {
        word temp;
        temp.random_string = random_string + x.random_string;
        return temp;
    }
    void operator == (word x)
    {
        if (random_string.length()==x.random_string.length())
        {
            cout<<"\n\nLength is equal"<<endl;
        }
        else
        {
            cout<<"\n\nNot equal"<<endl;
        }
    }

    void operator = (word x)
    {
        random_string = x.random_string;
    }
};

```

```
43
44  int main()
45  {
46      word O1,O2(" Ali"),O3;
47      O3 = O1+O2;
48      O1.display();
49      O2.display();
50      O3.display();      //Sum of O1 and O2
51      O1==O2;
52      O1=O2;
53      O1.display();
54      return 0;
55  }
```

## OUTPUT

```
The string is: Muhammad Suhaib Salman

The string is:  Ali

The string is: Muhammad Suhaib Salman Ali

Not equal

The string is:  Ali
```

## Conclusion:

I learned how to perform operator overloading in classes. I also learned how to perform different arithmetic operations using operator overloading.