



FACULTY OF ENGINEERING & TECHNOLOGY

CSPS103: Object Oriented Programming

Lecture-26

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# OBJECTIVES

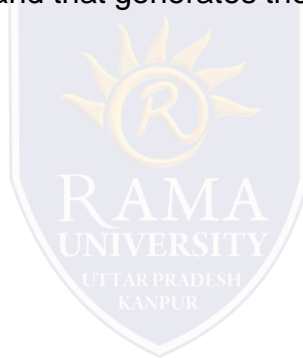
In this lecture, you will learn to:

- ❖ Overloading a unary operator using member function
- ❖ Example of Overloading unary minus operator
- ❖ Overloading binary operator
- ❖ Example of overloading binary operator



# OVERLOADING A UNARY OPERATOR USING MEMBER FUNCTION

- ❑ Overloading a unary operator using a member function, the function takes no parameters.
- ❑ Since, there is only one operand, it is this operand that generates the call to the operator function.
- ❑ There is no need for another parameter.



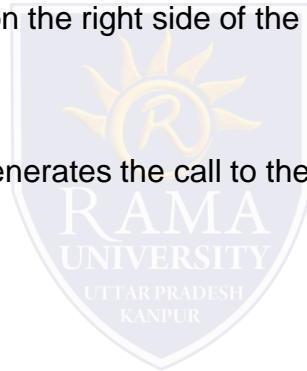
# EXAMPLE OF OVERLOADING UNARY MINUS OPERATOR

```
#include<iostream.h>
#include<conio.h>
class A {
int x,y,z;
public:
void getdata(int a,int b,int c) {
x=a;
y=b;
z=c;
}
void display() {
cout<<"\nx="<<x<<"\ny="<<y<<"\nz="<<z;
}
void operator -() //unary minus overload function
{
x=-x;
y=-y;
z=-z;
}
};
int main() {
A a;
a.getdata(2,3,4);
a.display();
-a; //activates operator -() function
a.display();
getch();
return 0;
}
```



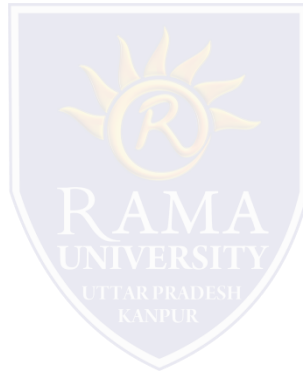
# OVERLOADING BINARY OPERATOR

- ☐ When a member operator function overloads a binary operator, the function will have only one parameter.
- ☐ This parameter will receive the object that is on the right side of the operator.
- ☐ The object on the left side is the object that generates the call to the operator function and is passed implicitly by this pointer.
- ☐ 'this' can be used in overloading + operator .



# EXAMPLE OF OVERLOADING BINARY OPERATOR

```
#include<iostream.h>
#include<conio.h>
class A{
int x,y;
public:
void input() {
    cin>>x>>y;
}
void display() {
    cout<<"\nx="<<x<<"\ny="<<y<<"\nx+y="<<x+y;
}
A operator+(A p ); //overload binary + operator
};
A A :: operator+(A p) {
    A t;
    t.x=x + p.x;
    t.y=y + p.y;
    return t;
}
int main(){
    A a1, a2, a3;
    a1.input();
    a2.input();
    a3=a2+a1; //activates operator+() function
    a3.display();
    getch();
    return 0;
}
```



# REFERENCES

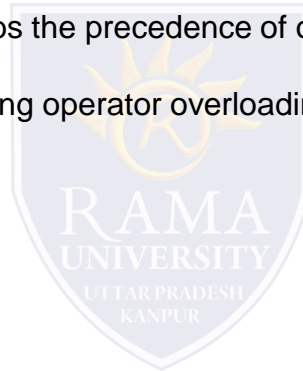
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# MULTIPLE CHOICE QUESTION

## Multiple Choice Question:

**Q1. Pick the incorrect statements out of the following.**

- a) Operator overloading does not disturbs the precedence of operators
- b) Arity of operators can be changed using operator overloading
- c) No new operators can be created
- d) All of the mentioned





# MULTIPLE CHOICE QUESTION

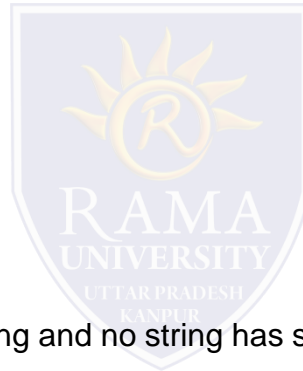
## Multiple Choice Question:

**Q2. What happens when objects s1 and s2 are added?**

```
string s1 = "Hello";
```

```
string s2 = "World";
```

```
string s3 = (s1+s2).substr(5);
```



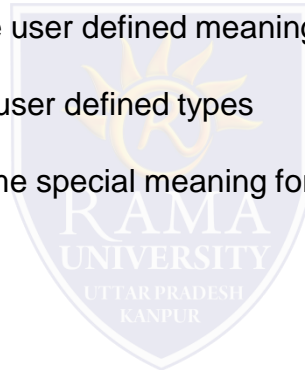
- a) Error because s1+s2 will result into string and no string has substr() function
- b) Segmentation fault as two string cannot be added in C++
- c) The statements runs perfectly
- d) Run-time error

# MULTIPLE CHOICE QUESTION

## Multiple Choice Question:

**Q3. What is operator overloading in C++?**

- a) Overriding the operator meaning by the user defined meaning for user defined data type
- b) Redefining the way operator works for user defined types
- c) Ability to provide the operators with some special meaning for user defined data type
- d) All of the mentioned



# MULTIPLE CHOICE QUESTION

## Multiple Choice Question:

**Q4. How many approaches are used for operator overloading?**

- a) 1
- b) 2
- c) 3
- d) 4

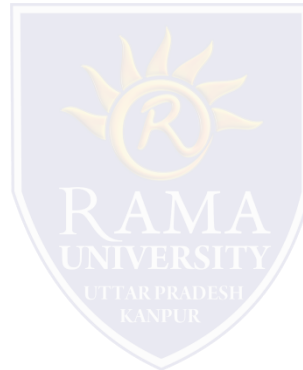


# MULTIPLE CHOICE QUESTION

## Multiple Choice Question:

**Q5. Which of the following operator cannot be overloaded?**

- a) +
- b) ?:
- c) –
- d) %



# Summary

## In this lecture, you learned that:

- Overloading a unary operator using a member function, the function takes no parameters.
- When a member operator function overloads a binary operator, the function will have only one parameter.

