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FYCS

OOP Assignment 2

Operator Overloading in Python

Code:

```
# Python program to show the use of
# + operator for different purposes.

print(1 + 2)

# concatenate two strings
print("FY"+"CS")

# Product two numbers
print(3 * 4)

# Repeat the String
print("Akshat"*4)
```

Output:

```
3
FYCS
12
AkshatAkshatAkshatAkshat
```

Code 1:

```
# Python Program illustrate how
# to overload an binary + operator
class A:
    def __init__(self, a):
        self.a = a

    # adding two objects
    def __add__(self, o):
        return self.a + o.a
ob1 = A(1)
ob2 = A(2)
ob3 = A("FY")
ob4 = A("CS")
print(ob1 + ob2)
print(ob3 + ob4)
```

Output:

```
3
FYCS
```

Code 2:

```
# Python Program to perform addition
# of two complex numbers using binary
# + operator overloading.

class complex:
    def __init__(self, a, b):
        self.a = a
```

```
        self.b = b

    # adding two objects
    def __add__(self, other):
        return self.a + other.a, self.b + other.b

    def __str__(self):
        return self.a, self.b

Ob1 = complex(1, 2)
Ob2 = complex(2, 3)
Ob3 = Ob1 + Ob2
print(Ob3)
```

Output:

```
(3, 5)
```

Overloading comparison operators in Python :

Code 3:

```
#Python program to overload
# a comparison operators

class A:
    def __init__(self, a):
        self.a = a
    def __gt__(self, other):
        if(self.a>other.a):
            return True
        else:
            return False
ob1 = A(2)
ob2 = A(3)
if(ob1>ob2):
    print("ob1 is greater than ob2")
else:
    print("ob2 is greater than ob1")
```

Output:

```
ob2 is greater than ob1
```

Overloading equality and less than operators:

Code 4:

```
# Python program to overload equality
# and less than operators


class A:
    def __init__(self, a):
        self.a = a
    def __lt__(self, other):
        if(self.a<other.a):
            return "ob1 is lessthan ob2"
        else:
            return "ob2 is less than ob1"
    def __eq__(self, other):
        if(self.a == other.a):
            return "Both are equal"
        else:
            return "Not equal"

ob1 = A(2)
ob2 = A(3)
print(ob1 < ob2)

ob3 = A(4)
ob4 = A(4)
print(ob1 == ob2)
```

Output:

```
ob1 is lessthan ob2
Not equal
```