

## Problem F: Huge Integers

(40% related to Lab 8)

## Problem Description

Modify the code for class HugeInt in Fig. 11.22 ~ Fig. 11.24 to make main() function work correctly. Here, it is assumed that all numbers are non-negative numbers. You are asked to add the following overloaded functions to make this class more powerful:

- Overload operator+ to perform int + HugeInt and string + HugeInt. This may require overloading the operator as a global function.
- Overload operator += to do HugeInt = HugeInt + int and HugeInt = HugeInt + anotherHugeInt.
- Overload the operator++ to perform prefix and postfix increment. You can refer to the example in Fig. 11.10.
- Overload the operator<= to perform a comparison of HugeInt <= HugeInt, HugeInt <= int, int <= HugeInt, HugeInt <= string, and string <= HugeInt, where string contains only decimal digits. If the comparison is true, return true, otherwise, return false.
- Overload the assignment operator= for doing HugeInt = HugeInt, HugeInt = int, and HugeInt = string.

You should not change the private data members in HugeInt. Also make the static constant digits=50;

## Input format

No input.

## Output format

The output should be exactly same as the printout in the example output.

## Requirements

The `main()` function is given below. You should not modify it.

```
int main()
{
    HugeInt n1( 123456789 );
    HugeInt n3( "99999999999999999999999999999999" );
    HugeInt n4( "1" );
    HugeInt n5(n4);
    cout << "n1 is " << n1 << "\nn3 is " << n3
        << "\nn4 is " << n4 << "\nn5 is " << n5 << "\n\n";
    cout << "n3 is " << n3 << endl;
    HugeInt n6;
    cout << "n6 = " << n6 << endl;
    cout << "n6 = n3 + n4 = " << n3 << " + " << n4 << " = " << n3+n4<< "\n\n";
    cout << "1 + n1 = " << 1 + n1 << " " << "1" + n1 << " " << n1+1 << endl;
    cout << "n4+100+900+n5= " << n4+100+"900"+n5 << endl;

    cout << "n3++ = " << n3++ << endl;
    cout << "n3 = " << n3 << endl;
    cout << "++n3 = " << ++n3 << endl;
    cout << "n3 = " << n3 << endl;
}
```

```
n3 += 119;
cout << "n3+=119: " << n3 << endl;
    HugeInt n7, n8, n9;
n7 = 101;
n8 = "1000000000000000000000000000000000000000000000000";
n9 = n6 + n4;
cout << "n7 = " << n7 << "      n8 = " << n8 << "      n9 = " << n9 << endl;
cout << "\nn7+n8+n9 = " << n7+n8+n9 << endl;
// cout << "\nTotal number of digits = " << n1.getNumDigits()+n3.getNumDigits()+n4.getNumDigits()+
// n5.getNumDigits()+n6.getNumDigits()+n7.getNumDigits()+n8.getNumDigits()+n9.getNumDigits() << endl;
if(n3 <= n1)
    cout << "\nyes-1" << endl;
else cout << "\nno-1" << endl;
    if(n7 <= 100)
        cout << "yes-2" << endl;
    else cout << "no-2" << endl;
        if(100 <= n7)
            cout << "yes-3" << endl;
        else cout << "no-3" << endl;
            if(n3 <= "100")
                cout << "yes-4" << endl;
            else cout << "no-4" << endl;
                if("100" <= n3)
                    cout << "yes-5" << endl;
                else cout << "no-5" << endl;
                    if(n3 <= n3)
                        cout << "yes-6" << endl;
                    else cout << "no-6" << endl;
return 0;
} // end main
```

### Example Input:

No input

### Example Output (containing input):

[illegible]