2023 12 08

input output operations

```
/*
    cout ve cin bir sınıf nesnesidir.


                    ios_base

                basic_ios<c, t> ios

        basic_istream       basic_ostream
            istream             ostream

                    basic_iostream
*/
```

```
int main()
{
    using namespace std;

    cout << "mert sirakaya\n";
    operator<<(cout, "mert sirakaya\n");

    cout << 'A';  //--A
    operator<<(cout, 'A'); // char  --A
    cout.operator << ('A'); // int  --65
}
```

```
class ostream
{
    public:
        ostream& operation<<(int);
        ostream& operation<<(double);
        ostream& operation<<(float);

        ostream& operation<<(ostream&(*)(ostream&)); // function pointer
};
// global fonksiyonlar
operator<<(ostream&, const char*);
operator<<(ostream&, char);
```

```
/*
        format state
        on-off flags

        on          off         default
    true-false      1/0           off
    showpos
    uppercase

*/
```

```cpp
// ios::boolalpha
int main()
{
    using namespace std;
    cout << true << false << "\n"; // 10
    cout.setf(ios::boolalpha);
    cout.setf(cout.flags() | ios::boolalpha);
    cout << true << false << "\n"; // truefalse


    if (cout.flags() & ios::boolalpha)
    {
        cout << "true false olarak yazar\n";
    }
    else
    {
        cout < "1 0 olarak yazar\n";
    }

    cout.flags(cout.flags() & ~ios::boolalpha);
    cout.unsetf(ios::boolalpha);

    cout << true << false << "\n"; // 10
}
```

```cpp
/ios::showpoint

int main()
{
    using namespace std;

    double dval = 4.;
    cout << dval << "\n"; // 4
    cout.setf(ios::showpoint);
    cout << dval << "\n"; // 4.0000000000
}
```

```cpp
/*
    Gerçek sayıların gösterimi
    a) fixed            ios::fixed
    b) scientific       ios::scientific
    c) büyüklüğüne bağlı

*/

int main()
{
     cout.setf(ios:fixed, ios::floatfield);
     cout << "ios: :fixed : " << (cout. .flags (() & ios::fixed ? "set" " :
"unset") << "\n";
     cout << "ios::scientific: " << (cout.flags() & ios::scientific? "set" :
"unset") << "\n";
     cout << 7324.72345 << "\n";
     cout << 8732480245453.872345<< "\n";

}
```

```cpp
// ostream manipulator
class ostream
{
    public:
        ostream& operator<<(int);
        ostream& operator<<(double);
        ostream& operator<<(ostream&(*fp)(ostream&))
        {
            return fp(*this);
        }
        // cout << endl  end fonksiyonuna cout göndermiş oluyoruz
};

///////

std::ostream& Boolalpha(std::ostream& os)
{
    os.setf(std::ios::boolalpha);
    return os;
}
std::ostream& NoBoolalpha(std::ostream& os)
{
    os.unsetf(std::ios::boolalpha);
    return os;
}

int main()
{
    std::cout << Boolalpha << (10 > 5) << NoBoolalpha << (10 > 5=;

    std::cout << std::boolalpha << (10 > 5) << std::noboolalpha << (10 > 5=;
}
```

```cpp
std::ostream& dline(std::ostream& os)
{
    return os << "\n----------------------------";
}

int main()
{
    cout << 12 << dline << dline << 23.5 << "emre";
}
```