

# Synchronized Output Streams

Synchronized output streams allow threads to write on the same output stream without interleaving.

- Predefined synchronized output streams

```
std::ostream for std::basic_ostream<char>  
std::wostream for std::basic_ostream<wchar_t>
```

- Synchronized output streams

- Output is written to the internal buffer of type `std::basic_syncbuf`
- When the output stream goes out of scope, it outputs its internal buffer

# Synchronized Output Streams

- Permanent variable `synced_out`

```
{  
    std::osyncstream synced_out(std::cout);  
    synced_out << "Hello, ";  
    synced_out << "World!";  
    synced_out << std::endl; // no effect  
    synced_out << "and more!\n";  
} // destroys the synced_output and emits the internal buffer
```

- Temporary Variable

```
std::osyncstream(std::cout) << "Hello, " << "World!"  
    << std::endl;
```