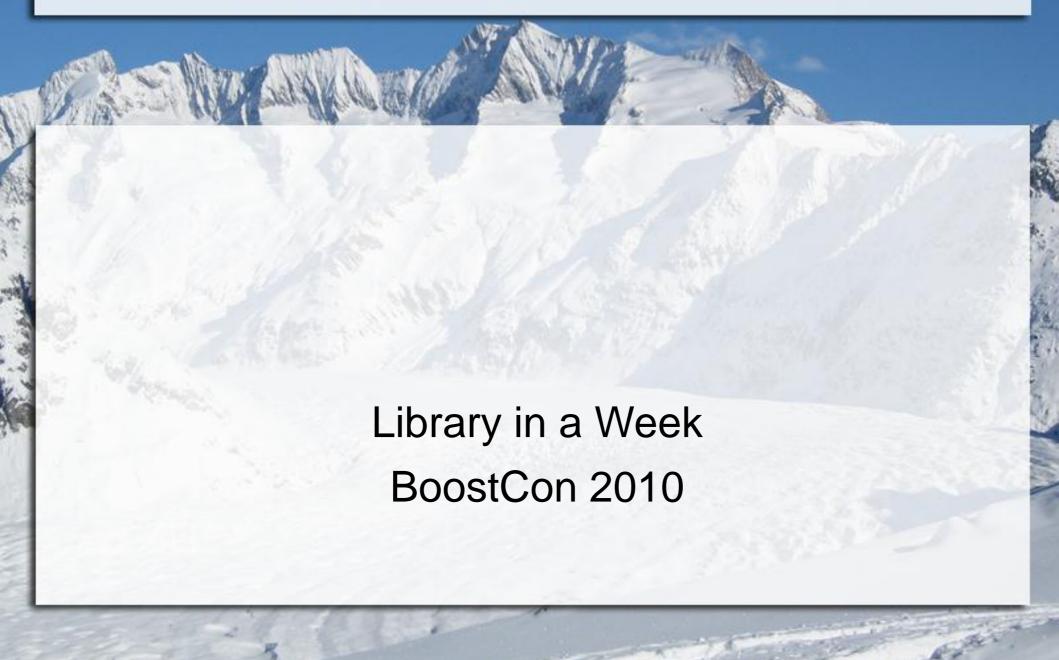
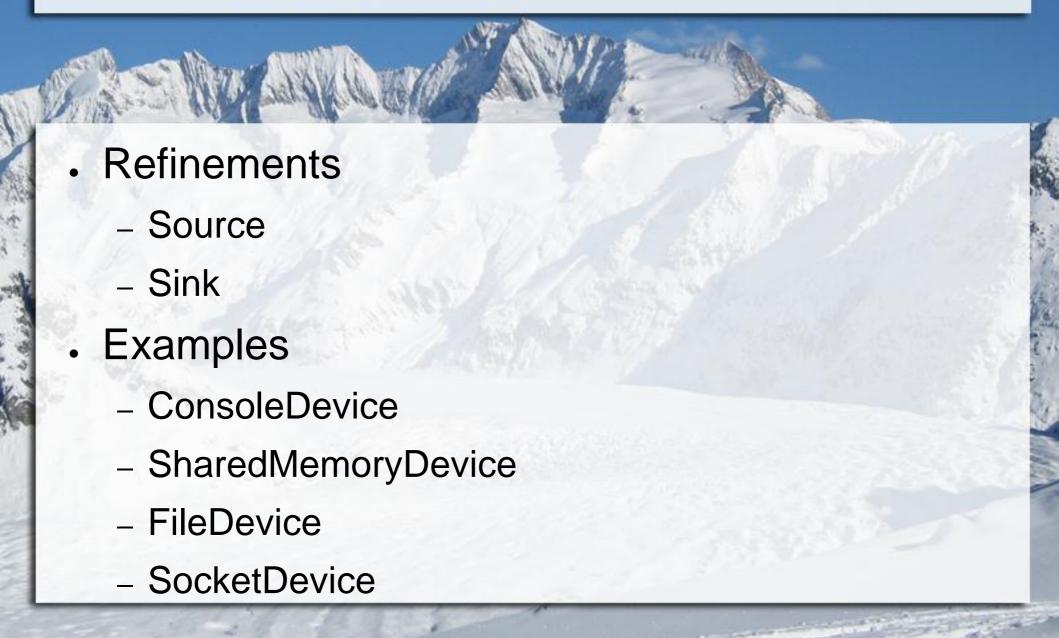
# **IOStreams Concepts Details**



### Device



### Source

#### Produces one or more bytes

```
bool read(char &);
bool read(char *, size_t);
```

### Sink

### Consumes one or more bytes

```
bool write(char);
bool write(char *, size_t);
```

### Buffer



- May be seekable
- Flushable
- Examples
  - OutputBuffer
  - InputBuffer

# OutputBuffer

- Refines Sink
- Consumes one or more bytes, may not pass along until later

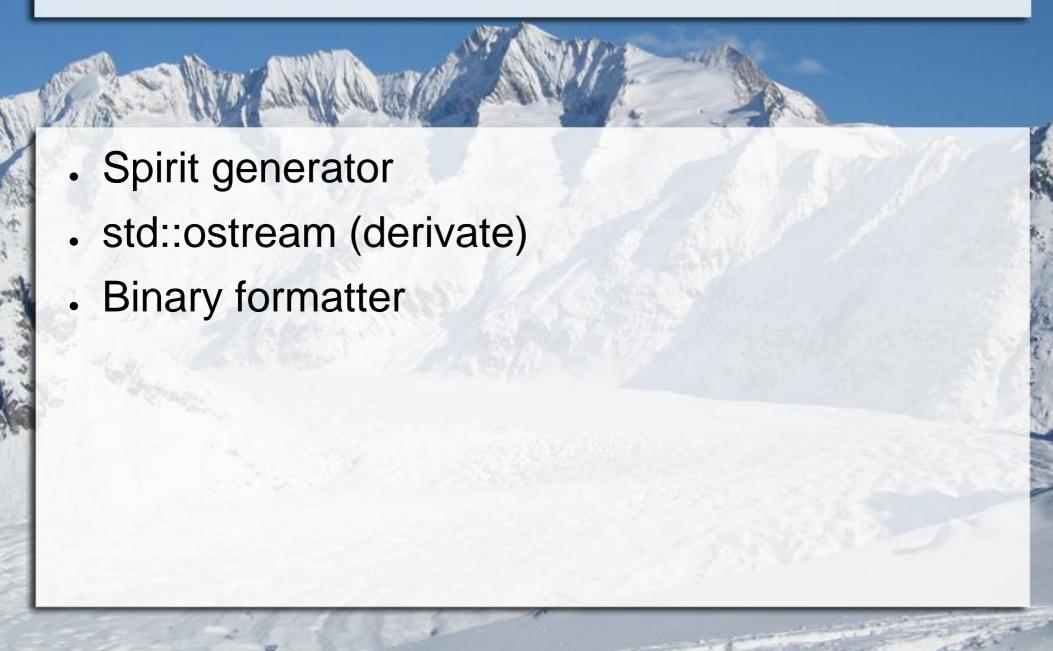
```
bool write(char);
bool write(char *, size_t);
```

#### Formatter

- Consumes and formats data
- Supports built-in types
- Extensible for UDTs

```
operator <<();
format(formatter &, UDT const &) const;</pre>
```

# Formatter Examples



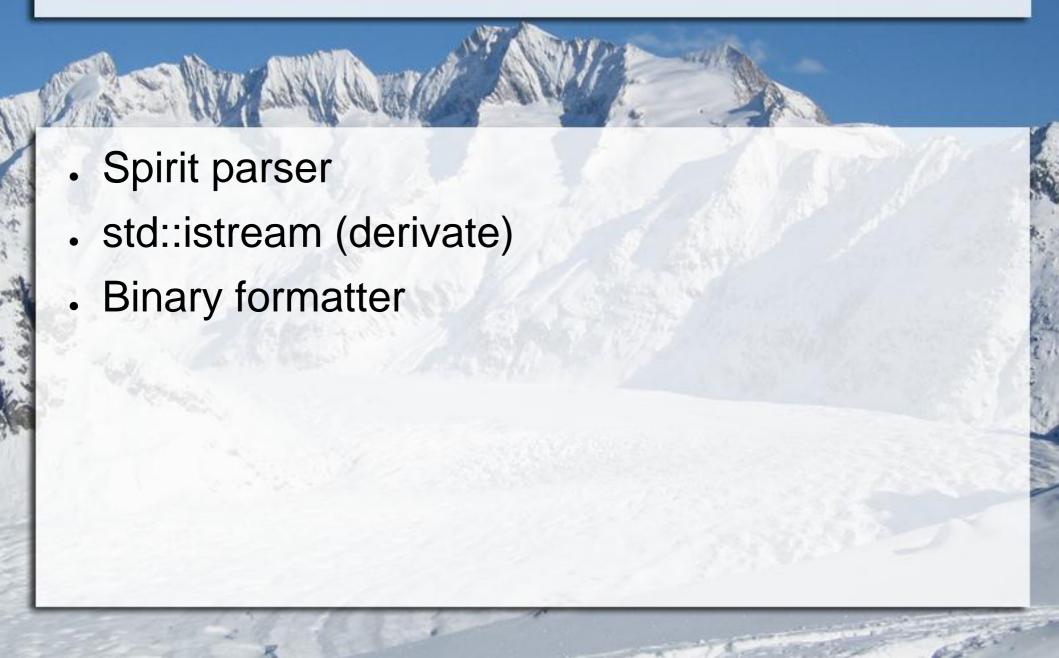
#### Parser



- Reads data from a Source and parses
  - Built-in types
  - UDTs

```
operator >>();
parse(parser &, UDT &);
```

# Parser Examples



## Filter



- InputFilter
- OutputFilter
- BidirectionalFilter
- Applies a function to the passing data
- . Can be chained

# InputFilter

- Reads from a Source and applies a function
- Produces possibly modified data

```
bool read(char &);
bool read(char *, size_t);
```

- Examples
  - ZlibDecompressionFilter
  - LineEndingFilter