

# Introducing brigand


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# What is brigand?

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A **brigand** is a person who usually lives in a gang and lives by pillage and robbery.



A lightweight C++ 11 meta-programming library

# Inspiration

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Boost.MPL by *Aleksey Gurtovoy and David Abrahams*

Simple C++ 11 Metaprogramming Article by *Peter Dimov*

Tiny Metaprogramming Library by *Eric Niebler*

# Goals

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Instant-  
compile time

Sustainable  
code base

Wide  
support

# Use cases

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Compile-time  
checks

Constant  
computations

Protocol  
generator

Memory data  
layout ( $NT^2$ )

And many  
more!

# Features

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## Algorithms

- Count
- Find
- Fold
- For\_each
- Remove
- Reverse
- Select
- Transform
- Wrap

## Functions

- Apply
- Arithmetic
- Comparisons
- Logical
- Repeat

## Sequences

- List
- Integral\_list
- Map
- Set
- Pair
- Range

99% of Boost.MPL is there!  
Works on Visual Studio 2013 (Update 4)!  
Macro-free!

# Type manipulation

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// this is my list, there are many like it but this one is mine

using my\_list = brigand::list<char, int, bool, void>; // yes void is supported

using my\_ptr\_list = brigand::transform<my\_list, std::add\_pointer<brigand::\_1>>;

using my\_ptr\_tuple = brigand::as\_tuple<my\_ptr\_list>;

// everything is a type list

using my\_list = std::variant<char, int, bool>;

using my\_ptr\_list = brigand::transform<my\_list, std::add\_pointer<brigand::\_1>>;

using my\_ptr\_tuple = brigand::as\_tuple<my\_ptr\_list>;

# Range based interface

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// find returns a range, not an iterator

```
using my_list = brigand::list<char, float, void *, int, bool>;
```

```
using found = brigand::find<my_list, std::is_same<int, brigand::_1>>;
```

```
using found_alt = brigand::find_element<my_list, int>;
```

// the result is brigand::list<int, bool>, you can search again

```
using found2 = brigand::find<my_list, std::is_same<int, brigand::_1>>;
```



# Go for it!

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[HTTPS://GITHUB.COM/EDOUARDA/BRIGAND](https://github.com/EDOUARDA/BRIGAND)

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