

# Unit testing library: Catch2

Victor Eijkhout, Susan Lindsey

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# 1. Don't reinvent the wheel: use a library

Many things you want to program have been thought of before:  
see if there is a library for it.

Library: 'program without main':  
you supply the main, functionality comes from library

## 2. External libraries: usage

Suppose the 'fancy' library does what you need.

1. Include a header file
2. Then use the functions defined there.

```
#include "fancylib.h"
```

```
int main() {  
    x = fancyfunction(y);  
}
```

### 3. External libraries: compile

1. Compiler needs to know where the header is:

```
icpc -c yourprogram.cxx -I/usr/include/fancylib
```

2. You may need to link a library file:

```
icpc -o yourprogram yourprogram.o \  
-L/usr/lib/fancylib -lfancy
```

(not for 'header only' libraries)

## 4. Where to find libraries

Search . . . There is a lot of stuff on github.

## 5. Example: catch2

Clone development version  
(better than the 2.x releases)

```
git clone https://github.com/catchorg/Catch2.git catch-git
```

Build:

```
mkdir build
cd build
cmake -D CMAKE_INSTALL_PREFIX=../installation \
      ../catch-git
make
make install
```

## 6. Usage

See the TDD slides.