Birds-of-a-Feathers session
Basic C++ Programming Style and Idioms

ACCU 2009

Time 13:00-13:45 Friday - Blenheim Suite

Do you care about code? Are you willing to sweat the small stuff? Together we will try to improve a piece of C++ code. Bring your flamethrower and pick your battles.

(Organized by Olve Maudal)

~/myprog/foo.hpp

```cpp
namespace bar {
  class Foo {
    int _value;
    int my_magic(int a, int b);
  public:
    Foo(int seed);
    int calc(int number = 7);
    int getValue() {
      return _value;
    }
    void print(char* prefix);
  };
}
```

~/myprog/foo.cpp

```cpp
#include <iostream>
#include "foo.hpp"

using namespace std;

namespace bar {
  Foo::Foo(int seed) {
    _value = seed;
  }

  int Foo::my_magic(int a, int b) {
    return a + b - 3 + 8 - 5;
  }

  int Foo::calc(int number) {
    int result = my_magic(_value, number);
    _value += result;
    return result;
  }

  void Foo::print(char *prefix) {
    cout << prefix << _value << "\n";
  }
}
```

~/myprog/main.cpp

```cpp
#include "foo.hpp"

int main() {
  bar::Foo foo(2);
  char * prefix = "the answer=";
  for(int i=0; i<4; i++) {
    foo.calc(i);
  }
  foo.print(prefix);
  return 0;
}
```

Can you find 20+ issues in this code?

Spend a few minutes to read through the code. Imagine that this is a piece of code that you found in a larger codebase. Criticise everything you see (... apart from the fact that it is a contrived, incorrect and stupid program that does not do anything useful, and is probably better written in Python as `print "the answer=42"`). Do not spend time on the implementation of my_magic.

```
$ cd ~/myprog
$ g++ foo.cpp main.cpp && ./a.out
the answer=43
```