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/* The following code example is taken from the book
 * "The C++ Standard Library – A Tutorial and Reference"
 * by Nicolai M. Josuttis, Addison-Wesley, 1999
 *
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 */
//#define mem_fun1 mem_fun
#include <iostream>
#include <vector>
#include <string>
#include <algorithm>
#include <functional>

class Person {
private:
    std::string name;
public:
    //...
    void print () const {
        std::cout << name << std::endl;
    }
    void printWithPrefix (std::string prefix) const {
        std::cout << prefix << name << std::endl;
    }
};

void foo (const std::vector<Person>& coll)
{
    using std::for_each;
    using std::bind2nd;
    using std::mem_fun_ref;

    // call member function print() for each element
    for_each (coll.begin(), coll.end(),
        mem_fun_ref(&Person::print));

    // call member function printWithPrefix() for each element
    // - "person: " is passed as an argument to the member function
    for_each (coll.begin(), coll.end(),
        bind2nd(mem_fun_ref(&Person::printWithPrefix),
            "person: "));
}

void ptrfoo (const std::vector<Person*>& coll)
    // ^^^ pointer !
{
    using std::for_each;
    using std::bind2nd;
    using std::mem_fun;

```

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// call member function print() for each referred object
for_each (coll.begin(), coll.end(),
          mem_fun(&Person::print));

// call member function printWithPrefix() for each referred object
// - "person: " is passed as an argument to the member function
for_each (coll.begin(), coll.end(),
          bind2nd(mem_fun(&Person::printWithPrefix),
                  "person: "));
}

int main()
{
    std::vector<Person> coll(5);
    foo(coll);

    std::vector<Person*> coll2;
    coll2.push_back(new Person);
    ptrfoo(coll2);
}

```