# Copernica coding challenge

Great to have you in the process of becoming part of the Copernica team. This is a simple C++ coding challenge that serves two purposes:

- Show off your skills,
- Give us a better understanding of your skills.

## Your mission

Implement a simple version of C++'s std::set container, specially designed for std::strings. In this simple version you can add strings, check if a certain string is already added to the container, and remove strings. You can use C++11 features for the implementation. It is up to you how you want to deal with the internal storage, but it is not allowed to just write a wrapper around std::set.

## Interface

The methods that should be available for this container are:

```
bool add(const std::string &data);
```

With this method, you can add a string. The return value indicates if the string was already added to the set or not.

## Testing your implementation

The code below should compile:

```
#include
#include "yourHeader.h"

/**
*  The main function
*/
int main()
{
  // create your set
  YourSet set;

  // add some data
  set.add(std::string("Some data"));

  // check some data
  std::cout << (set.contains(std::string("Some data")) ? "yes" : "no") <<
std::endl;
  std::cout << (set.contains(std::string("some data")) ? "yes" : "no") <<
std::endl;

  // remove some data
```

```
  std::cout << (set.remove(std::string("Some data")) ? "contained" : "did
not contain") << std::endl;
  std::cout << (set.remove(std::string("some data")) ? "contained" : "did
not contain") << std::endl;

  // done
  return 0;
}
```

Besides the standard requirements, you can show us what you know. E.g. use namespaces, make the container iterable by adding iterators to your container, add a move constructor, make it super efficient, etc.

# How to submit your work

Send your work, zipped, to the following email address: hr@copernica.com
Good luck!