Exercise 5. *Deadline: 6 April 2009.*

COURSE OF C++ PROGRAMMING LANGUAGE

VECTORS

University of Wrocław
Institute of Computer Science

Paweł Rzechonek

Exercise

This is a definition of the class `Vector`:

```
class Vector
{
public:
    const int size;
private:
    double *array;
public:
    Vector (int s=1, const double *a=0);
    Vector (const Vector &v);
    ~Vector ();
public:
    double & value (int i);
    double value (int i) const;
public:
    void add (const Vector &v);
    void sub (const Vector &v);
    void mult (double c);
    double mult (const Vector &v) const;
};
```

Implement all methods and constructors of the class.

Note the different between `value(int)` and `value(int) const`. The first method should be applied to the ordinary objects, and the second one to the constatnt objects.

The methods `add(const Vector&)`, `sub(const Vector&)` (addition and subtraction another `Vector`) and `mult(double)` (multiplication by a constatnt) are modifying current object. The constant method `mult(const Vector&) const` should calculate a scalar product.

Apart from this class, write a short program which will test objects of the class `Vector` for ordinary and constatnt cases.

Suggestion

Partition your code into the header and source files. Place the class `Vector` into namespace `MyCalculations`.