

Object-Oriented Programming (List 5)

Due: April 21th 2010

1. Write a function

```
std::vector< unsigned int >  
reverse( std::vector< unsigned int > v )
```

that reverses the vector v.

2. Write a function

```
void printvector( std::vector< unsigned int > v )
```

that prints a vector as a set, using parentheses and commas. It is important that the function places parentheses and commas in the correct way.

```
{ }  
{ 1 }  
{ 1, 2 }  
{ 1, 2, 3 }
```

3. Write a function

```
std::vector< unsigned int > addvectors(  
    std::vector< unsigned int > v1,  
    std::vector< unsigned int > v2 );
```

that adds the vectors elementwise. You may assume that v1 and v2 have equal length. If $v_1 = \{1, 2, 3\}$, and $v_2 = \{10, 11, 12\}$, then the result should be $\{11, 13, 15\}$.

4. Write a function

```
std::vector< unsigned int > flatten(  
    std::vector< std::vector< unsigned int > > v )
```

that collects the elements in the vector of vectors v into a single vector.
The result of $\{ \{1\}, \{2,3\}, \{4\} \}$ should be $\{1,2,3,4\}$.

5. Write a function

```
bool equals( std::vector< unsigned int > v1,  
            std::vector< unsigned int > v2 )
```

that returns **true** if the vectors v_1 and v_2 are equal.

In case you forgot:

```
v. size( )      :      Length of vector.  
v. push_back( i ) : Append i at the end of v.  
v. pop_back( ) :      Remove last element from vector.  
v[i] :            i-th element of vector.
```