Examples with vectors.

- Print stdin in reverse (see 13.pdf).
- "Filters" E.g. write a function that takes a vector of int, and returns another vector containing only the even integers from the input.

```
vector<int> evens(vector<int> V)
{
    vector<int> E; // return value.
    for (int i=0; i< V.size(); i++) {
        // V[0], ... V[V.size()-1] are
        // the elements.
        if(V[i]%2 == 0) {
            // save V[i]
            E.push_back(V[i]);
        }
    }
    return E;
}
```

Note: this is probably a better prototype:

```
vector<int> evens(const vector<int>& V)
{
    V.push_back(0); // won't compile!

    //Note the const, by reference pattern.
    // It's like by value (V won't be modified),
```

```
// but it is efficient, since V doesn't have
// to be copied.
    :
}
```

Yet another version:

```
void evens(const vector<int> & V, vector<int> & E);
                 input                output
```

```
vector<int> E;
evens(V, E);
// Now E has all the even elements of V...
```

Exercise: remove duplicates from a sorted vector.

E.g. say V = 1, 1, 2, 2, 2, 3, 4, 4.

How to proceed?

[2] ← last thing we've seen.

Idea: save first element as the "last new value we've seen" (x) and save it in the output.

Then move through V looking for something else. When found, save in the output, & overwrite x.