```
/** example.c
    Author: Ken Johnson
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    see /usr/include/projectX_interface.h for a list of functions
*/

#include <avs/avs.h>
#include <avs/port.h>
#include <avs/field.h>

#define DEBUG_field
#include <projectX.h>

.
.
.
    in_port = AVScreate_input_port("input",
        "field 2D 1-vector uniform float", REQUIRED);
    out_port = AVScreate_output_port("output",
        "field 2D 2-vector uniform float");
.
.
.

int compute(AVSfield_float *input, AVSfield_float *out) {
    int x,y,i;

    if (*out != NULL)
        AVS_free(*out);
    *out = new_AVS_float (input->ndim, input->dimensions, 2);
    //*out=new_AVS_float_2v(input->dimensions[0],input->dimensions[1],2);

    for (x=0; x<input->dimensions[0]; x++)  {
        for (y=0; y<input->dimensions[1]; y++)  {
            get2v(*out, x, y, 0) = cos ( get2(input, x, y) );
            get2v(*out, x, y, 1) = sin ( get2v(input, x, y, 0) );
        }
    }
    //for (i=0; i<getsize(input); i++)  {
    //  getas1v(*out, i, 0) = cos ( getas1v(input, i, 0) );
    //  getas1v(*out, i, 1) = sin ( getas1v(input, i, 0) );
    //}
    return 1;
}
```