```
function back = onlineBackpropagation()
        numOfInputs = 2;
        numOfNeurons = 2;
        maxError = 0.00001;

        myInput = [0 0; 1 0; 0 1; 1 1];
        myOutput = [0 1 1 0];

        w1 = rand(numOfInputs+1,numOfNeurons);
        w2 = rand(numOfNeurons+1,1);

        o = zeros(1,numOfInputs+1);
        o(1,numOfInputs+1) = 1;
        o1 = zeros(1,numOfNeurons+1);
        o1(1,numOfNeurons+1) = 1;

        gamma = 0.5;
        time = 0;
        page_output_immediately(1);

        do
                error = 0;
                for i=1:size(myInput,1)
                        # define some strange thing written in the pdf ;)
                        o(1,1:numOfInputs) = myInput(i,1:2);
                        o1(1,1:2) = sigmoid(o*w1);
                        o2 = sigmoid(o1*w2);
                        d2 = o2 * (1-o2);
                        d1(1,1) = o1(1,1) * (1-o1(1,1));
                        d1(2,2) = o1(1,2) * (1-o1(1,2));

                        # correct weight
                        e = o2 - myOutput(1,i);
                        error = max(error,abs(myOutput(1,i)-o2));
                        delta2 = d2*e;
                        delta1 = d1 * w2(1:2, 1) * delta2;
                        deltaw2 = -gamma*delta2*o1;
                        deltaw1 = -gamma*delta1*o;

                        w1 += deltaw1';
                        w2 += deltaw2';

                endfor
                time++;
                if (mod(time,1000) == 0)
                        error
                endif
                if (mod(time,2000) == 0)
                        gamma*=2
                endif

        until (error< maxError)

        w1
        w2

endfunction

function sig = sigmoid(x)
        c = 1;
        for i=1:size(x,1)
                for j=1:size(x,2)
                        sig(i,j) = 1 / ( 1 + exp(-c*x(i,j)));
                endfor
        endfor
endfunction
```