
Computergrafik SoSe 2012
Übung 7

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26 Aufgabe 26

Listing 1: a26.m

```
1 M_NDC = [ 1 / tand(30) 0 0 0;  
2           0 1 / tand(30) 0 0;  
3           0 0 -101/99 -200/99;  
4           0 0 -1 0 ];  
5 M_NDC_i = inverse(M_NDC);  
6  
7 Aw = [-10,0,20,1]';  
8 Bw = [0,0,20,1]';  
9 Cw = [-1,0,18,1]';  
10 Dw = [5,0,26,1]';  
11 Ew = [7,0,20,1]';  
12 Fw = [7,0,30,1]';  
13  
14 interpolate(Aw, Bw, M_NDC, M_NDC_i)  
15 interpolate(Cw, Dw, M_NDC, M_NDC_i)  
16 interpolate(Ew, Fw, M_NDC, M_NDC_i)
```

Listing 2: interpolate.m

```
1 function v = interpolate(Aw, Bw, M_NDC, M_NDC_i)  
2     Andc = cartesianize(M_NDC * Aw);  
3     Bndc = cartesianize(M_NDC * Bw);  
4     Mndc = (Andc + Bndc) / 2;  
5     Mw = cartesianize(M_NDC_i * Mndc);  
6     lambda = [Aw Bw] \ Mw; % solve system  
7     v = lambda(2); % our solution  
8 end;
```

Listing 3: cartesianize.m

```
1 function v = cartesianize(v)  
2     % manipulate a homogenous vector to have w = 1  
3     v = v / v(4);  
4 end;
```