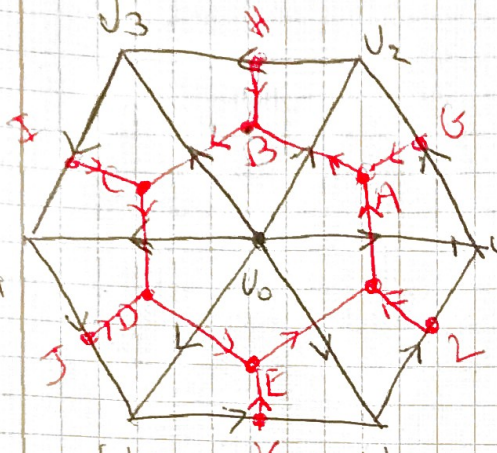
An example with boundary.



ambient orientation

Primal simplicial complex

V		E		F
0	v_0	0 01		0 012
1	v_1	1 02		1 023
2	v_2	2 03		2 034
3	v_3	3 04	d_1	3 045
4	v_4	4 05		4 056
5	v_5	5 06		5 061
6	v_6	6 12		
		7 23		
		8 34		
		9 45		
		10 56		
		11 61		

d_0

$d_0 = \partial_1^T =$ $|E| \times |V|$

	0	1	2	3	4	5	6
0	-1	1					
1	-1		1				
2	-1			1			
3	-1				1		
4	-1					1	
5	-1						1
6		-1	1				
7		-1		1			
8			-1	1			
9				-1	1		
10					-1	1	
11						-1	1

Dual cell complex (circumcentric)

2d cells $*V$		1d segments $*E$		0d vertices $*F$
ABCDEF	0	EA	0	A
GAFZv_0	1	AB	1	B
HBAGv_1	2	BC	2	C
ICBHv_2	3	CD	3	D
JDCIv_3	4	DE	4	E
KEDJv_4	5	EF	5	F
LFEKv_5	6	GA		
	7	HB		
	8	IC		
	9	JD		
	10	KE		
	11	LF		

d_1^* ← d_0^* ←

$d_1 = \partial_2^T =$ $|F| \times |E|$

	0	1	2	3	4	5	6	7	8	9	10	11
0	1	-1					1					
1		1	-1					1				
2			1	-1					1			
3				1	-1					1		
4					1	-1					1	
5	-1					1						1

$d_1^* = \partial_2^{*T} =$

	0	1	2	3	4	5	6	7	8	9	10	11
0	1	1	1	1	1	1						
1	-1						1					-1
2		-1					-1	1				
3			-1					-1	1			
4				-1					-1	1		
5					-1					-1	1	
6						-1					-1	1

$= -\partial_1$

This only works because of circumcentric duality: #edges = #dual edges.

For $d_0^* = \partial_1^{*T}$ we need to add G, H, I, J, K, L as vertices to get the matrix.