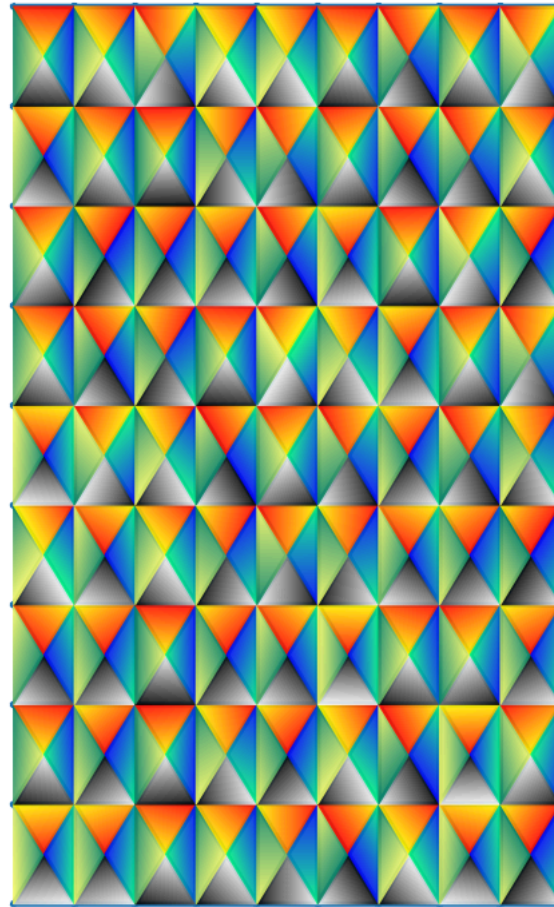


Triangles algorithm specification  
How to build model for python's Triplot



## Vertices

xy meshgrid

(0,0)	(1,0)	(2,0)	(3,0)	(4,0)	(5,0)	(6,0)	(7,0)	(8,0)	(9,0)
(0,1)									
(0,2)									
(0,3)									
(0,4)									
(0,5)									
(0,6)									
(0,7)									
(0,8)									
(0,9)									

```
Indexing = 'xy' format
X = linspace(0,1, 10)
Y= linspace(0,1,10)
```

xx meshgrid

[illegible]

yy meshgrid

[illegible]

## Cell Indices

ij meshgrid

(0,0)	(0,1)	(0,2)	(0,3)	(0,4)	(0,5)	(0,6)	(0,7)	(0,8)
(1,0)								
(2,0)								
(3,0)								
(4,0)								
(5,0)								
(6,0)								
(7,0)								
(8,0)								

```
Indexing = 'ij' format
cii = arange(0,9)
cjj = arange(0,9)
```

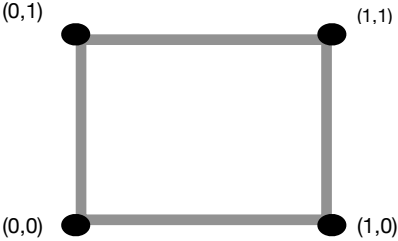
- ii meshgrid

0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8

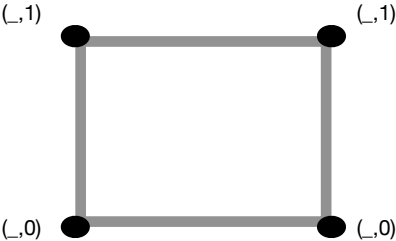
```
jj meshgrid
```

[illegible]

Cell



j component of  
cell vertices



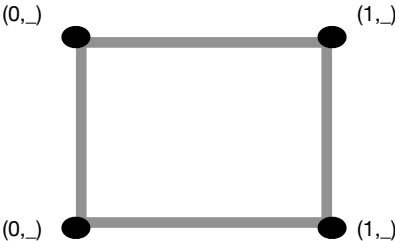
+

jj cell vertices

0	1	2	3	4	5	6	7	8
0	1	2	3	4	5	6	7	8
0	1	2	3	4	5	6	7	8
0	1	2	3	4	5	6	7	8
0	1	2	3	4	5	6	7	8
0	1	2	3	4	5	6	7	8
0	1	2	3	4	5	6	7	8
0	1	2	3	4	5	6	7	8
0	1	2	3	4	5	6	7	8



i component of  
cell vertices

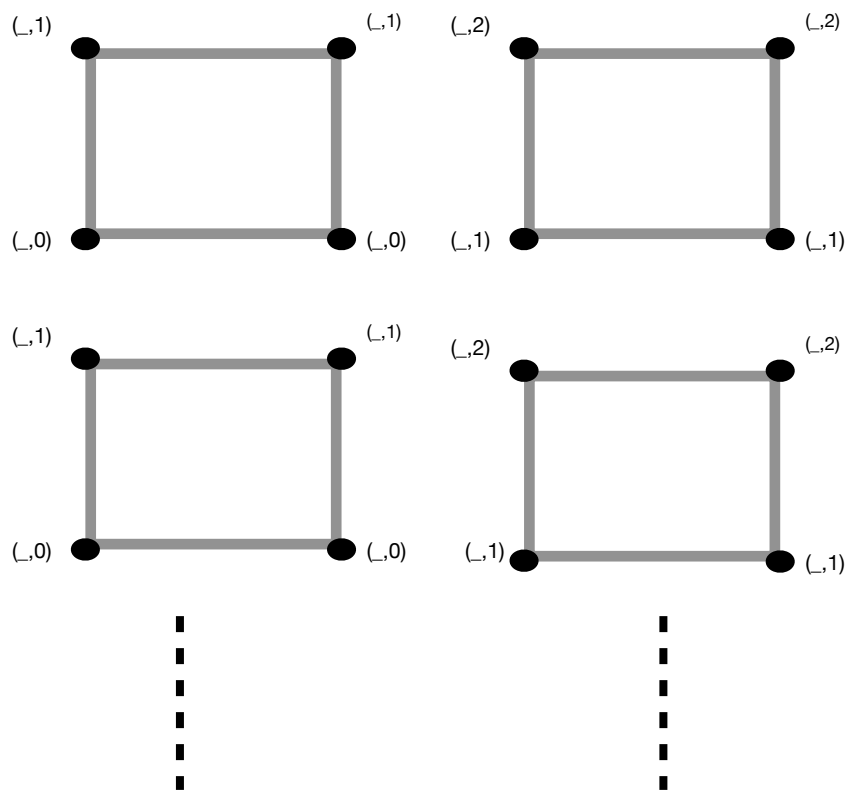


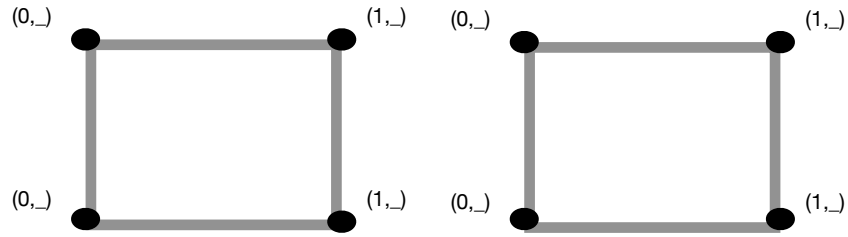
+

ii meshgrid vertices

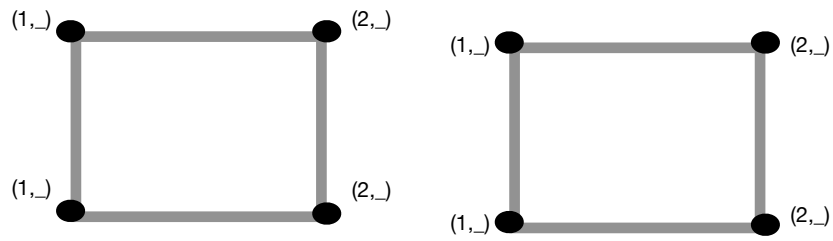
0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8







.....

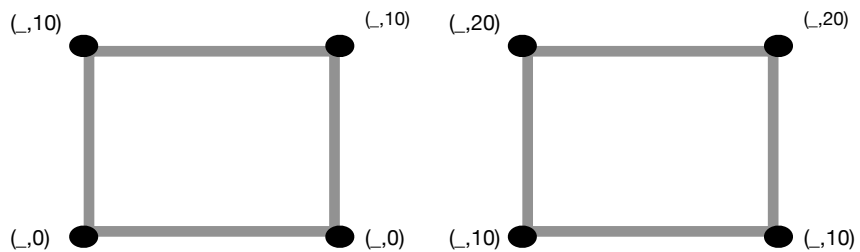


.....

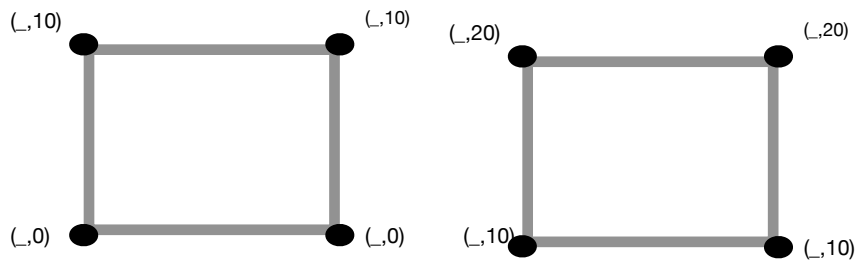
.....

.....

★ × 10



.....

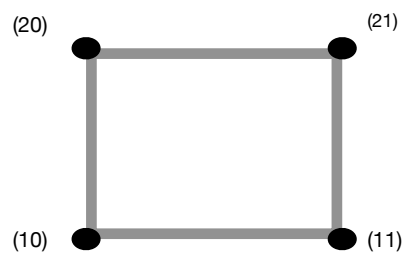
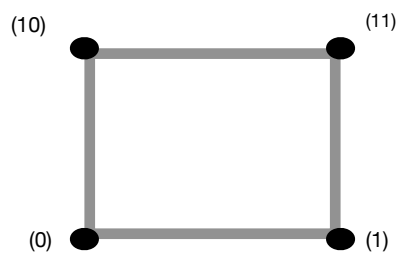


.....

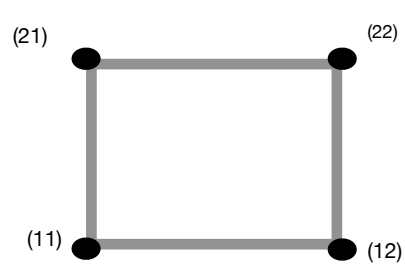
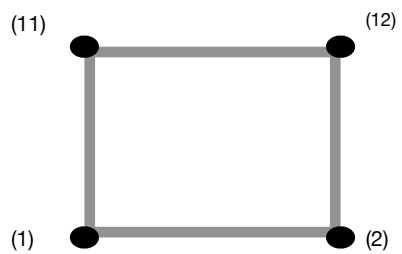
.....

.....

$$\star_J \times 10 + \star_I$$



.....



.....

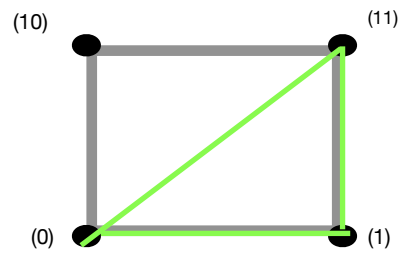
.....

.....



Indices are used to triangulate (create triangles)

For example, suppose triangulate function accepted  $[0, 1, 11]$ . The result is the triangle below:



Another example, suppose triangulate function accepted vertices arrays  $[0, 1, 11]$ ,  $[88, 89, 99]$ . The result is a triangle in the bottom left corner and top right corner

