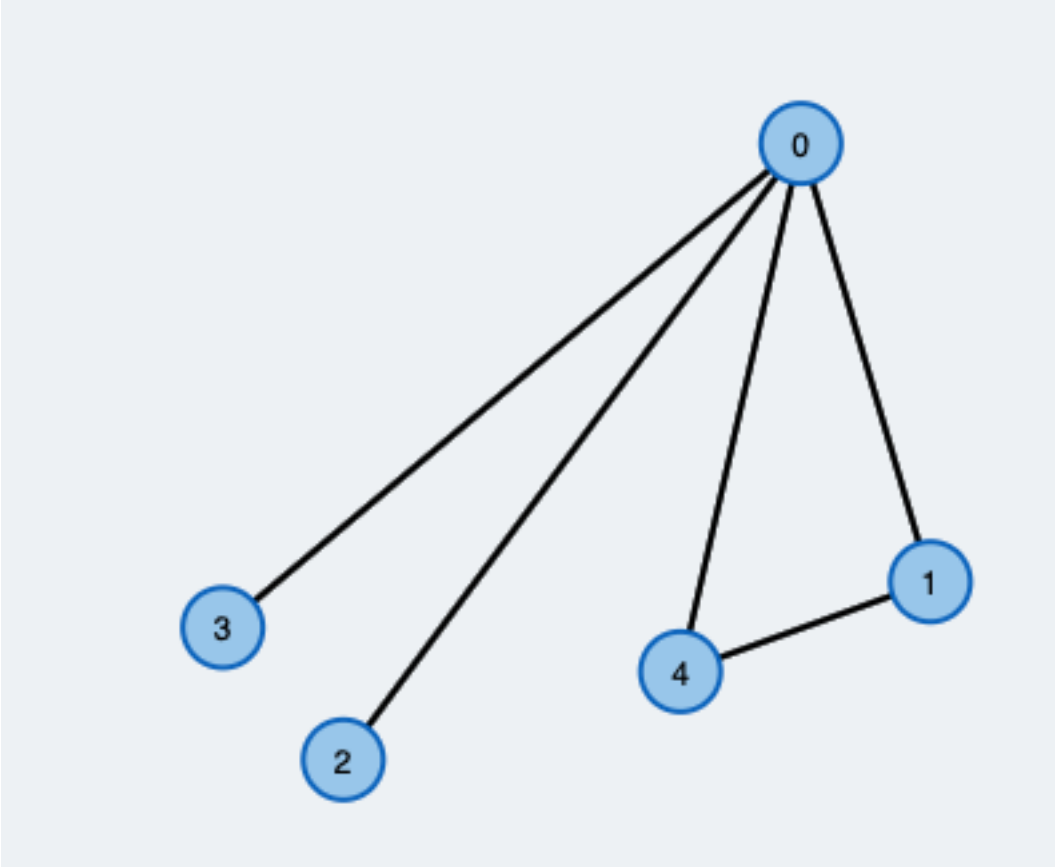
Examples for Blossoms algorithm

June 18, 2020

[1]:
```
import maximum_matching as mm
```

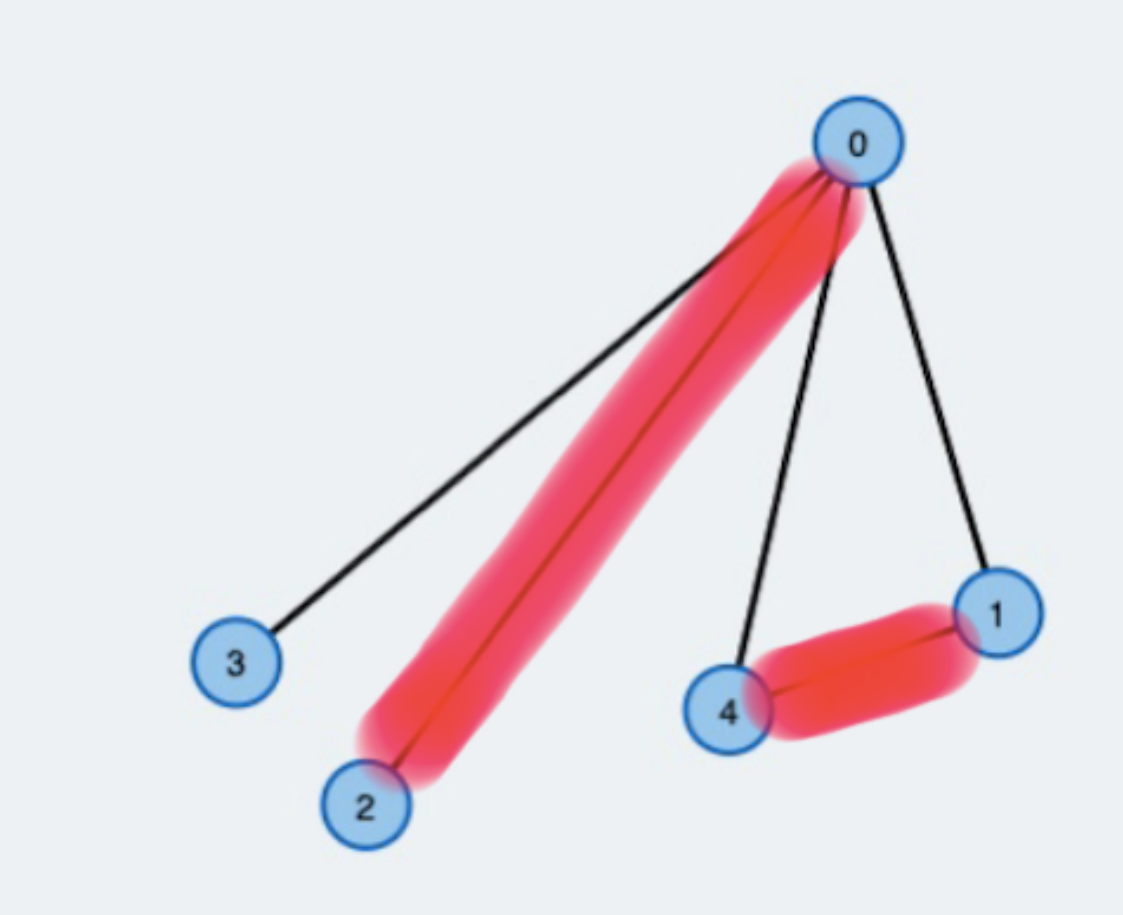
0.1 Example 1

[2]:
```
adjacency_matrix_1 = [[0,1,1,1,1],
                      [1,0,0,0,1],
                      [1,0,0,0,0],
                      [1,0,0,0,0],
                      [1,1,0,0,0]]
```



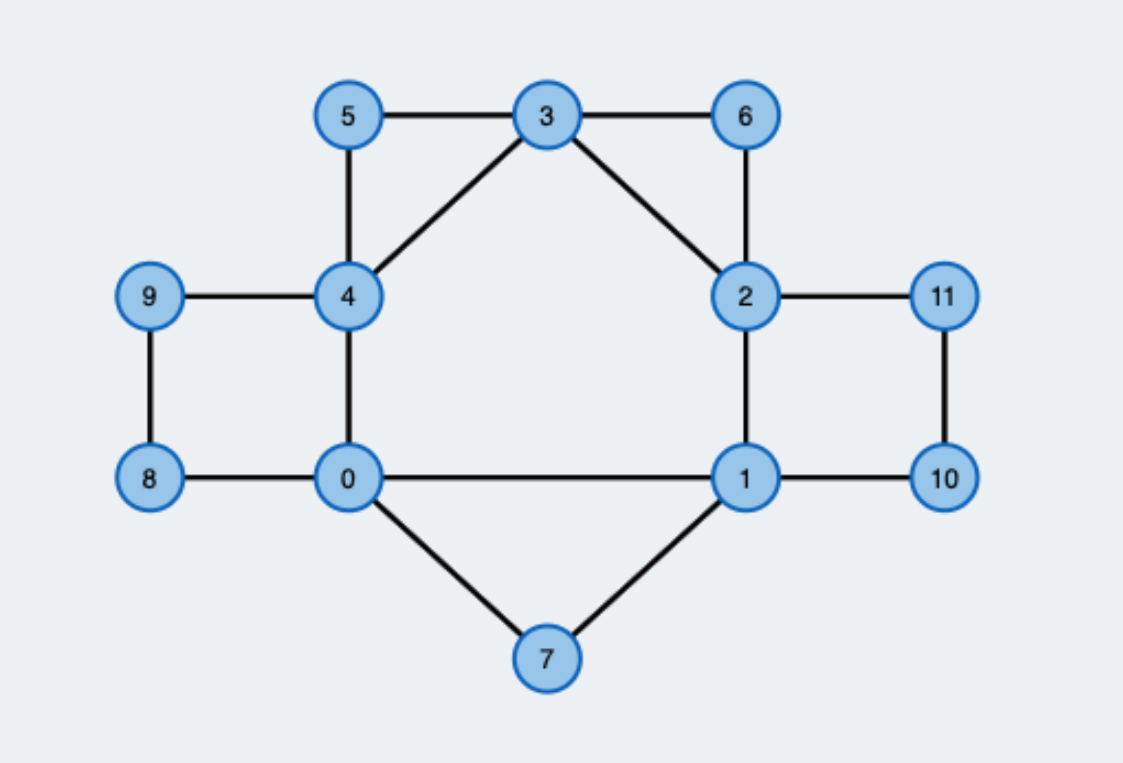
[3]:
```
mm.run_blossoms_algorithm(adjacency_matrix_1)
```

```
Maximum Matching : {0: 2, 1: 4, 2: 0, 3: None, 4: 1}
Number of matched edges : 2
Time taken : 0.0007519721984863281
```



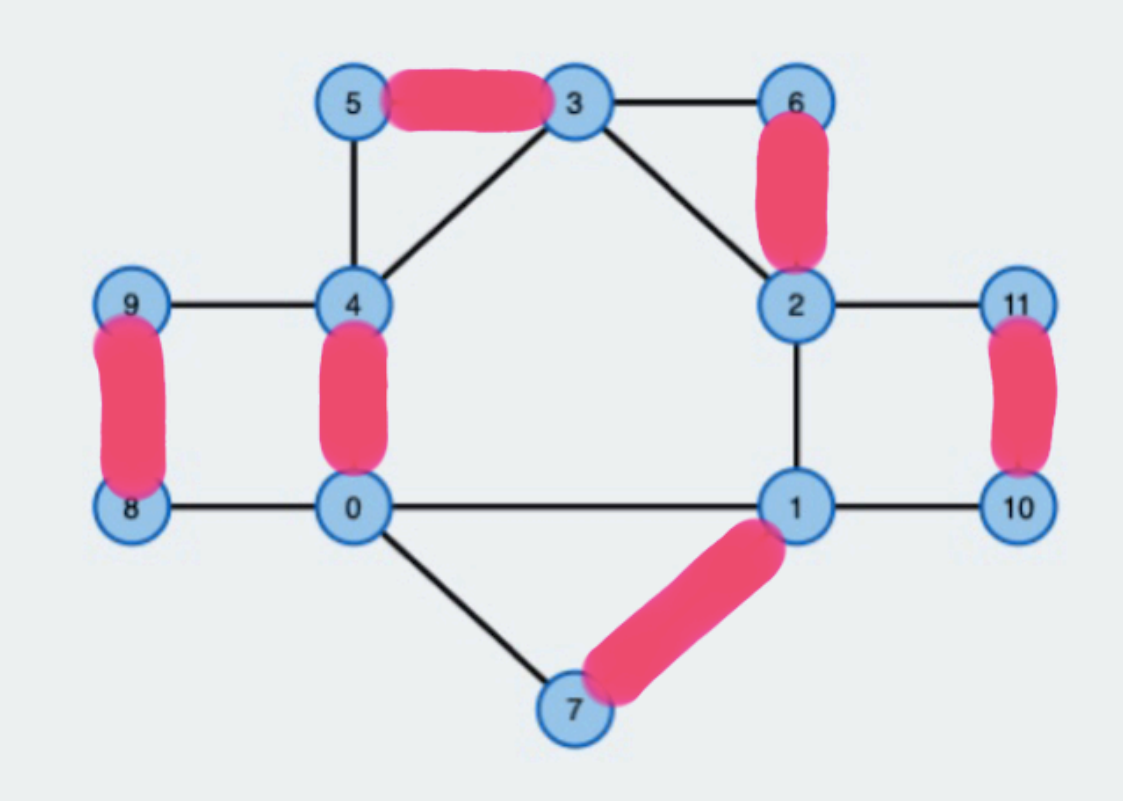
0.2 Example 2

[4]:
```
adjacency_matrix_2 = [[0, 1, 0, 0, 1, 0, 0, 1, 1, 0, 0, 0],
                      [1, 0, 1, 0, 0, 0, 0, 1, 0, 0, 1, 0],
                      [0, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1],
                      [0, 0, 1, 0, 1, 1, 1, 0, 0, 0, 0, 0],
                      [1, 0, 0, 1, 0, 1, 0, 0, 0, 1, 0, 0],
                      [0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0],
                      [0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0],
                      [1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],
                      [1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0],
                      [0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 0],
                      [0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1],
                      [0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0]]
```



[5]:
```
mm.run_blossoms_algorithm(adjacency_matrix_2)
```

```
Maximum Matching : {0: 4, 1: 7, 2: 6, 3: 5, 4: 0, 5: 3, 6: 2, 7: 1, 8: 9, 9: 8,
10: 11, 11: 10}
Number of matched edges : 6
Time taken : 0.001463174819946289
```


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

[ ]: