

MIS Outputs

Example 1

We have the graph:

```
(1, 2), (1, 5), (2, 3), (3, 4), (4, 5)
```

The **QUBO Matrix** generated for this graph:

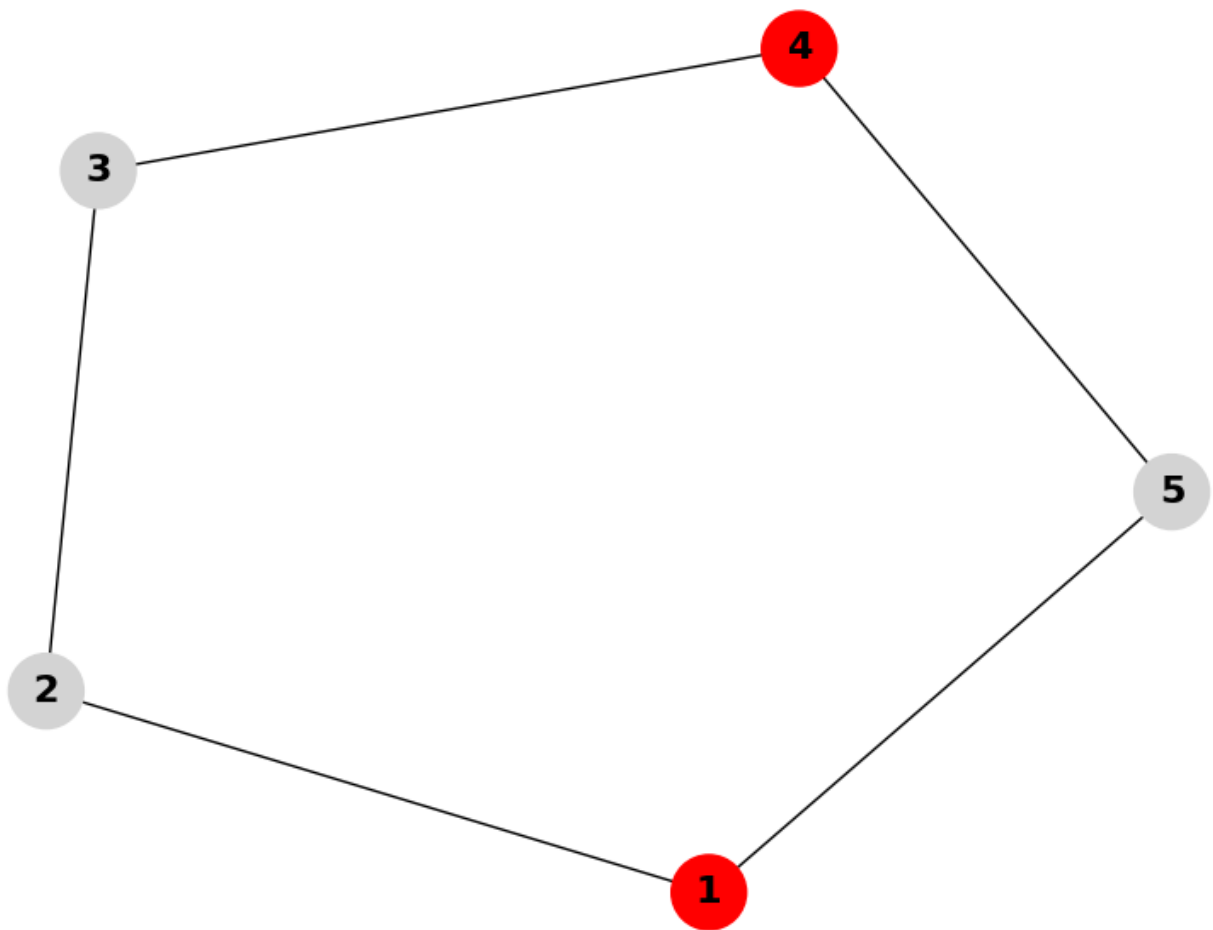
```
[ -1.  2.  0.  0.  2.]
[  0. -1.  2.  0.  0.]
[  0.  0. -1.  2.  0.]
[  0.  0.  0. -1.  2.]
[  0.  0.  0.  0. -1.]
```

The **MIS** for this graph is:

```
[1, 4]
```

The **Energy** used: -2

Graph:



Example 2

We have the graph:

```
('0', '1'), ('0', '11'),
('1', '9'), ('1', '3'),
('2', '3'),
('4', '5'), ('4', '7'),
('5', '6'),
('6', '7'),
('8', '9'),
('9', '10'),
('10', '11')
```

The **QUBO Matrix** generated for this graph:

-1.	2.	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	-1.	0.	0.	0.	2.	0.	0.	0.	0.	0.	0.	2.
0.	0.	-1.	2.	0.	0.	0.	0.	0.	0.	0.	0.	2.
0.	0.	0.	-1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	-1.	2.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	-1.	0.	0.	0.	0.	0.	0.	0.

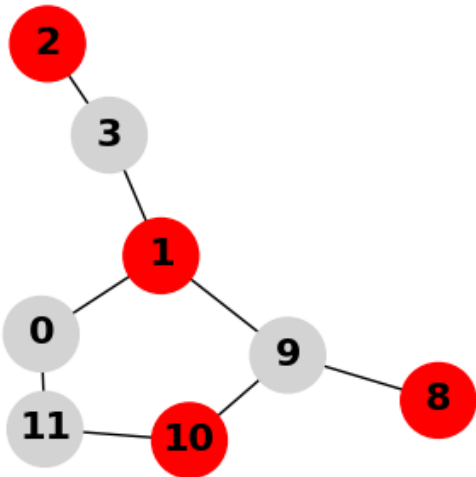
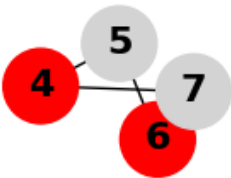
```
[ 0.  0.  0.  0.  0.  0. -1.  2.  0.  2.  0.  0.]
[ 0.  0.  0.  0.  0.  0.  0. -1.  2.  0.  0.  0.]
[ 0.  0.  0.  0.  0.  0.  0.  0. -1.  2.  0.  0.]
[ 0.  0.  0.  0.  0.  0.  0.  0.  0. -1.  0.  0.]
[ 0.  0.  0.  0.  0.  0.  0.  0.  0.  0. -1.  2.]
[ 0.  0.  0.  0.  0.  0.  0.  0.  0.  0.  0. -1.]
```

The **MIS** for this graph is:

```
['0', '1', '2', '3', '4', '5']
```

The **Energy** used: -6

Graph:



Example 3

We have the graph:

```
('0', '6'), ('0', '7'), ('0', '8'), ('0', '9'), ('0', '10'), ('0', '11'),
('1', '6'), ('1', '7'), ('1', '8'), ('1', '9'), ('1', '10'), ('1', '11'),
```

```
('2', '6'), ('2', '7'), ('2', '8'), ('2', '9'), ('2', '10'), ('2', '11'),
('3', '6'), ('3', '7'), ('3', '8'), ('3', '9'), ('3', '10'), ('3', '11'),
('4', '6'), ('4', '7'), ('4', '8'), ('4', '9'), ('4', '10'), ('4', '11'),
('5', '6'), ('5', '7'), ('5', '8'), ('5', '9'), ('5', '10'), ('5', '11')
```

The **QUBO Matrix** generated for this graph:

```
[ -1.  0.  2.  2.  0.  0.  0.  0.  2.  2.  2.  2.]
[  0. -1.  2.  2.  0.  0.  0.  0.  2.  2.  2.  2.]
[  0.  0. -1.  0.  2.  2.  2.  2.  0.  0.  0.  0.]
[  0.  0.  0. -1.  2.  2.  2.  2.  0.  0.  0.  0.]
[  0.  0.  0.  0. -1.  0.  0.  0.  2.  2.  2.  2.]
[  0.  0.  0.  0.  0. -1.  0.  0.  2.  2.  2.  2.]
[  0.  0.  0.  0.  0.  0. -1.  0.  2.  2.  2.  2.]
[  0.  0.  0.  0.  0.  0.  0. -1.  2.  2.  2.  2.]
[  0.  0.  0.  0.  0.  0.  0.  0. -1.  0.  0.  0.]
[  0.  0.  0.  0.  0.  0.  0.  0.  0. -1.  0.  0.]
[  0.  0.  0.  0.  0.  0.  0.  0.  0.  0. -1.  0.]
[  0.  0.  0.  0.  0.  0.  0.  0.  0.  0.  0. -1.]
```

The **MIS** for this graph is:

```
['0', '1', '2', '3', '4', '5']
```

The **Energy** used: -6

Graph:

