

HW#3

Q (a)

1.

No, it would stop for sure.

Because it allows only one process to make a decision at a time. If the initial value of nodes whose weight / (degree + 1) are the same are all set the same value, it would choose one of them, so the program would stop in the end.

2.

Yes, these results are all independent sets.

For test1.txt

```
(1, 4, 5, 7, 8, 9) : 0.493
(0, 3, 4, 5, 7, 8) : 0.507
```

For test2.txt

```
(4, 5, 6, 8) : 1.0
```

Q (b)

1.

No, it would stop for sure.

Because there is definite probability that make the nodes whose weight / (degree + 1) are the same to be set different value which means one of them would be in the Maximal independent weight set, the program would stop in the long run.

2.

Yes, these results are all independent sets.

For test1.txt

```
(0, 3, 4, 5, 7, 8) : 0.502
(1, 4, 5, 7, 8, 9) : 0.498
```

For test2.txt

```
(4, 5, 6, 8) : 1.0
```

Q (c)

