

# COMP4500 Assignment 1

---

Andrew Whalley - 42588610

9/14/2014

# Part A

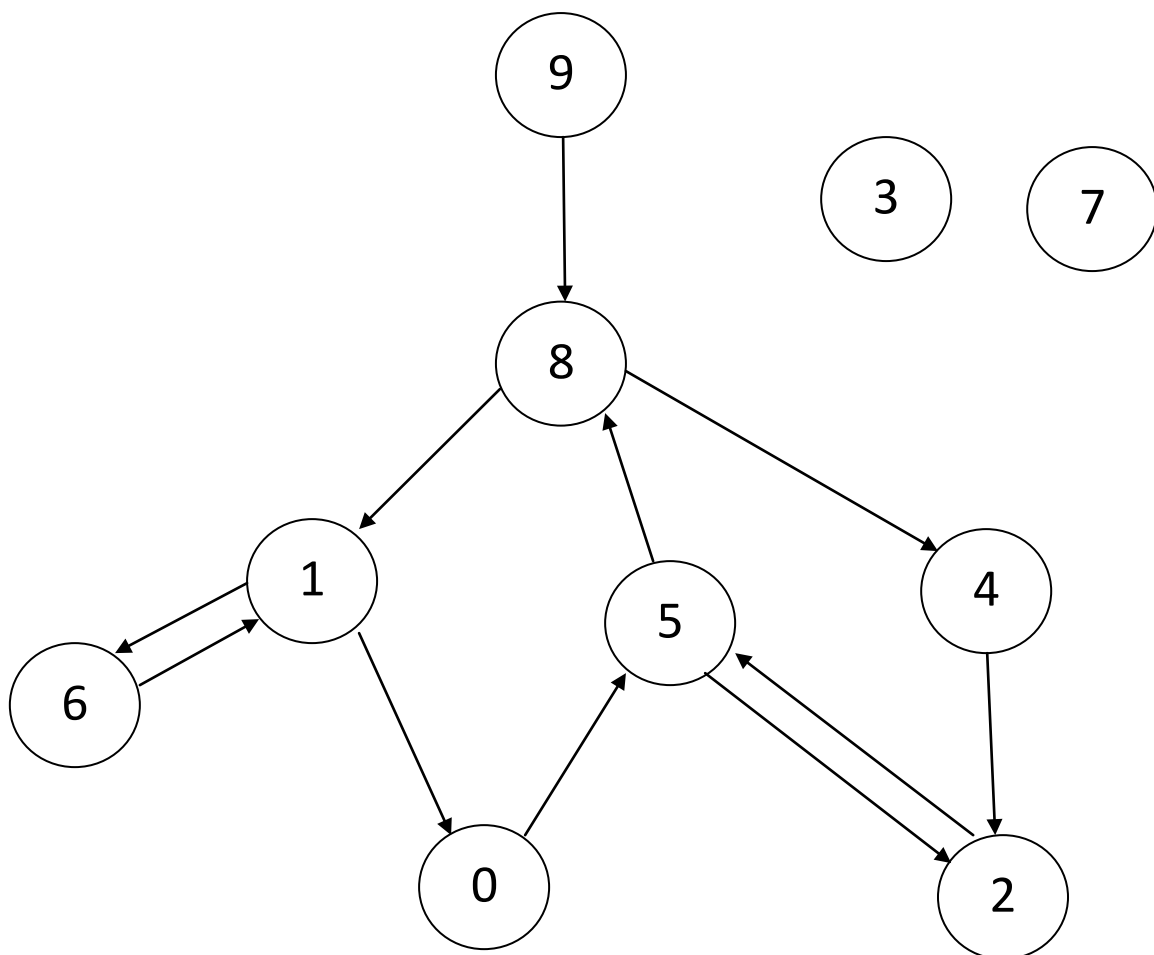
---

## Question 1. a)

Student number with prefix and postfix: 924258861052

SNI After algorithm: 924258161052

## Question 1. b)



## Question 2. a)

X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	White		0	Grey	Undefined
1	White		1	White	
2	White		2	White	
3	White		3	White	
4	White		4	White	
5	White		5	White	
6	White		6	White	
7	White		7	White	
8	White		8	White	
9	White		9	White	

X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	Grey	Undefined	0	Grey	Undefined
1	White		1	White	
2	White		2	Grey	5
3	White		3	White	
4	White		4	White	
5	Grey	0	5	Grey	0
6	White		6	White	
7	White		7	White	
8	White		8	White	
9	White		9	White	

X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	Grey	Undefined	0	Grey	Undefined
1	White		1	White	
2	Black	5	2	Black	5
3	White		3	White	
4	White		4	White	
5	Grey	0	5	Grey	0
6	White		6	White	
7	White		7	White	
8	White		8	Grey	5
9	White		9	White	

X	Colour[x]	Parent[x]
0	Grey	Undefined
1	Grey	8
2	Black	5
3	White	
4	White	
5	Grey	0
6	White	
7	White	
8	Grey	5
9	White	

X	Colour[x]	Parent[x]
0	Grey	Undefined
1	Grey	8
2	Black	5
3	White	
4	White	
5	Grey	0
6	Grey	1
7	White	
8	Grey	5
9	White	

X	Colour[x]	Parent[x]
0	Grey	Undefined
1	Grey	8
2	Black	5
3	White	
4	White	
5	Grey	0
6	Black	1
7	White	
8	Grey	5
9	White	

X	Colour[x]	Parent[x]
0	Grey	Undefined
1	Black	8
2	Black	5
3	White	
4	White	
5	Grey	0
6	Black	1
7	White	
8	Grey	5
9	White	

X	Colour[x]	Parent[x]
0	Grey	Undefined
1	Black	8
2	Black	5
3	White	
4	Grey	8
5	Grey	0
6	Black	1
7	White	
8	Grey	5
9	White	

X	Colour[x]	Parent[x]
0	Grey	Undefined
1	Black	8
2	Black	5
3	White	
4	Black	8
5	Grey	0
6	Black	1
7	White	
8	Grey	5
9	White	

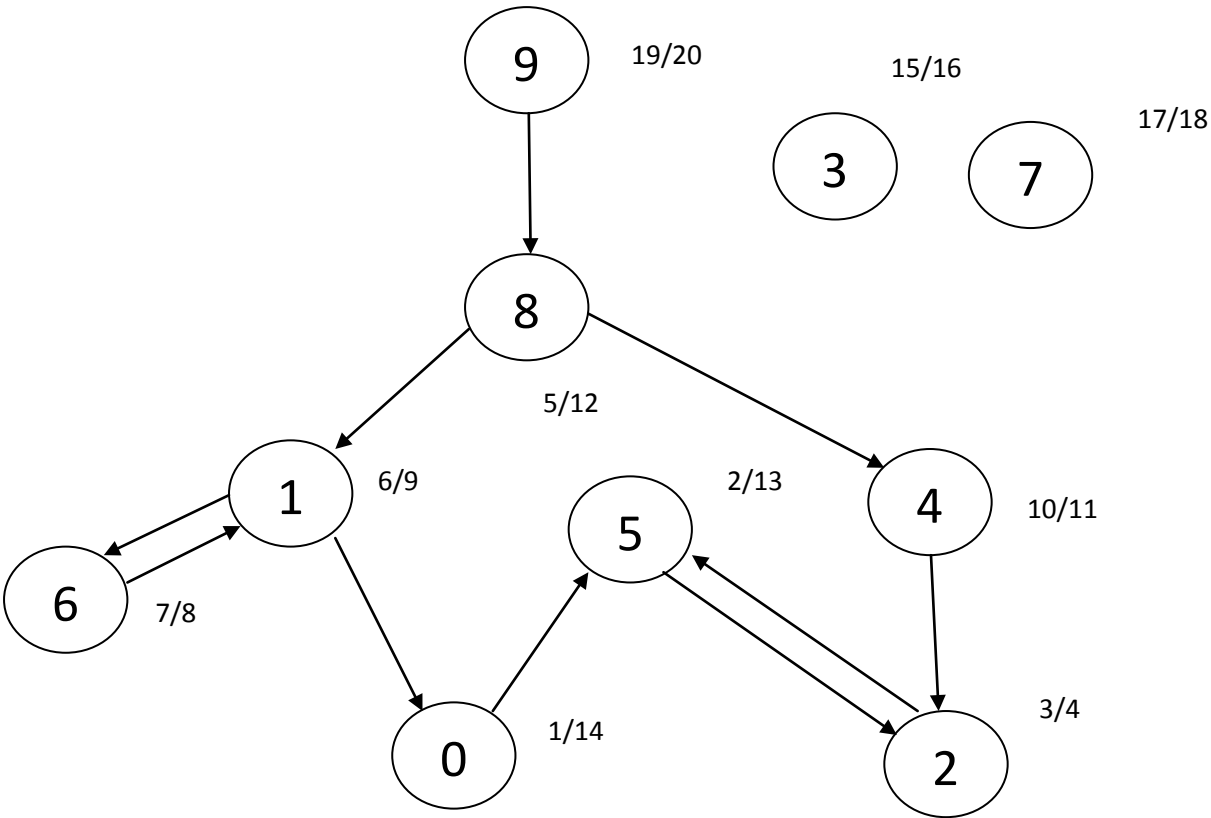
X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	Grey	Undefined	0	Grey	Undefined
1	Black	8	1	Black	8
2	Black	5	2	Black	5
3	White		3	White	
4	Black	8	4	Black	8
5	Grey	0	5	Black	0
6	Black	1	6	Black	1
7	White		7	White	
8	Black	5	8	Black	5
9	White		9	White	

X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	Black	Undefined	0	Black	Undefined
1	Black	8	1	Black	8
2	Black	5	2	Black	5
3	White		3	Grey	Undefined
4	Black	8	4	Black	8
5	Black	0	5	Black	0
6	Black	1	6	Black	1
7	White		7	White	
8	Black	5	8	Black	5
9	White		9	White	

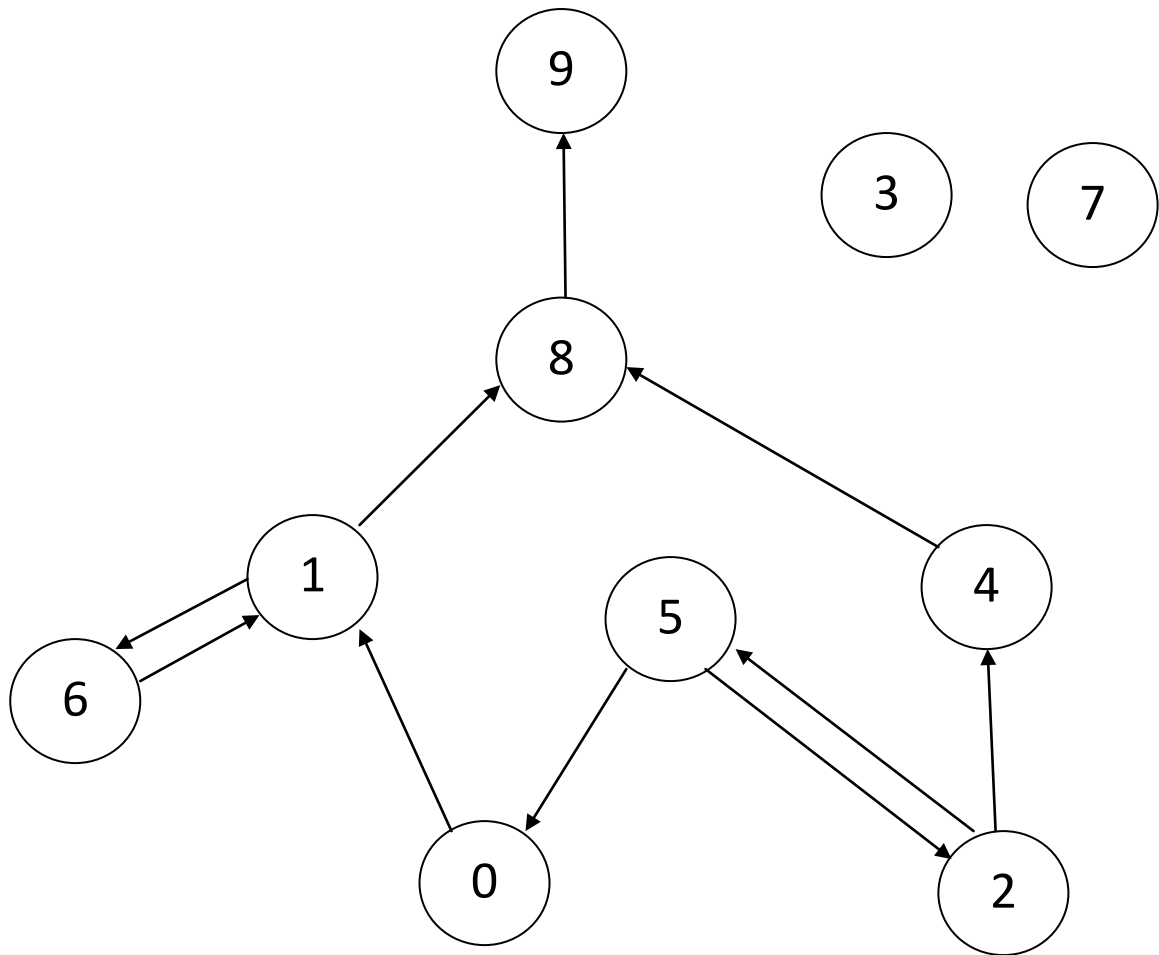
X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	Black	Undefined	0	Black	Undefined
1	Black	8	1	Black	8
2	Black	5	2	Black	5
3	Black	Undefined	3	Black	Undefined
4	Black	8	4	Black	8
5	Black	0	5	Black	0
6	Black	1	6	Black	1
7	White		7	Grey	Undefined
8	Black	5	8	Black	5
9	White		9	White	

X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	Black	Undefined	0	Black	Undefined
1	Black	8	1	Black	8
2	Black	5	2	Black	5
3	Black	Undefined	3	Black	Undefined
4	Black	8	4	Black	8
5	Black	0	5	Black	0
6	Black	1	6	Black	1
7	Black	Undefined	7	Black	Undefined
8	Black	5	8	Black	5
9	White		9	Grey	Undefined

X	Colour[x]	Parent[x]
0	Black	Undefined
1	Black	8
2	Black	5
3	Black	Undefined
4	Black	8
5	Black	0
6	Black	1
7	Black	Undefined
8	Black	5
9	Black	Undefined



Question 2. b)



## Question 2. c)

X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	White		0	White	
1	White		1	White	
2	White		2	White	
3	White		3	White	
4	White		4	White	
5	White		5	White	
6	White		6	White	
7	White		7	White	
8	White		8	White	
9	White		9	Grey	Undefined

X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	White		0	White	
1	White		1	White	
2	White		2	White	
3	White		3	White	
4	White		4	White	
5	White		5	White	
6	White		6	White	
7	White		7	Grey	Undefined
8	White		8	White	
9	Black	Undefined	9	Black	Undefined

X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	White		0	White	
1	White		1	White	
2	White		2	White	
3	White		3	Grey	Undefined
4	White		4	White	
5	White		5	White	
6	White		6	White	
7	Black	Undefined	7	Black	Undefined
8	White		8	White	
9	Black	Undefined	9	Black	Undefined



X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	White		0	Grey	Undefined
1	White		1	White	
2	White		2	White	
3	Black	Undefined	3	Black	Undefined
4	White		4	White	
5	White		5	White	
6	White		6	White	
7	Black	Undefined	7	Black	Undefined
8	White		8	White	
9	Black	Undefined	9	Black	Undefined

X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	Grey	Undefined	0	Grey	Undefined
1	Grey	0	1	Grey	0
2	White		2	White	
3	Black	Undefined	3	Black	Undefined
4	White		4	White	
5	White		5	White	
6	White		6	Grey	1
7	Black	Undefined	7	Black	Undefined
8	White		8	White	
9	Black	Undefined	9	Black	Undefined

X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	Grey	Undefined	0	Grey	Undefined
1	Grey	0	1	Grey	0
2	White		2	White	
3	Black	Undefined	3	Black	Undefined
4	White		4	White	
5	White		5	White	
6	Black	1	6	Black	1
7	Black	Undefined	7	Black	Undefined
8	White		8	Grey	1
9	Black	Undefined	9	Black	Undefined

X	Colour[x]	Parent[x]
0	Grey	Undefined
1	Grey	0
2	White	
3	Black	Undefined
4	White	
5	Grey	8
6	Black	1
7	Black	Undefined
8	Grey	1
9	Black	Undefined

X	Colour[x]	Parent[x]
0	Grey	Undefined
1	Grey	0
2	Grey	5
3	Black	Undefined
4	White	
5	Grey	8
6	Black	1
7	Black	Undefined
8	Grey	1
9	Black	Undefined

X	Colour[x]	Parent[x]
0	Grey	Undefined
1	Grey	0
2	Grey	5
3	Black	Undefined
4	Grey	2
5	Grey	8
6	Black	1
7	Black	Undefined
8	Grey	1
9	Black	Undefined

X	Colour[x]	Parent[x]
0	Grey	Undefined
1	Grey	0
2	Grey	5
3	Black	Undefined
4	Black	2
5	Grey	8
6	Black	1
7	Black	Undefined
8	Grey	1
9	Black	Undefined

X	Colour[x]	Parent[x]
0	Grey	Undefined
1	Grey	0
2	Black	5
3	Black	Undefined
4	Black	2
5	Grey	8
6	Black	1
7	Black	Undefined
8	Grey	1
9	Black	Undefined

X	Colour[x]	Parent[x]
0	Grey	Undefined
1	Grey	0
2	Black	5
3	Black	Undefined
4	Black	2
5	Black	8
6	Black	1
7	Black	Undefined
8	Grey	1
9	Black	Undefined

X	Colour[x]	Parent[x]	X	Colour[x]	Parent[x]
0	Grey	Undefined	0	Grey	Undefined
1	Grey	0	1	Black	0
2	Black	5	2	Black	5
3	Black	Undefined	3	Black	Undefined
4	Black	2	4	Black	2
5	Black	8	5	Black	8
6	Black	1	6	Black	1
7	Black	Undefined	7	Black	Undefined
8	Black	1	8	Black	1
9	Black	Undefined	9	Black	Undefined

X	Colour[x]	Parent[x]
0	Black	Undefined
1	Black	0
2	Black	5
3	Black	Undefined
4	Black	2
5	Black	8
6	Black	1
7	Black	Undefined
8	Black	1
9	Black	Undefined

