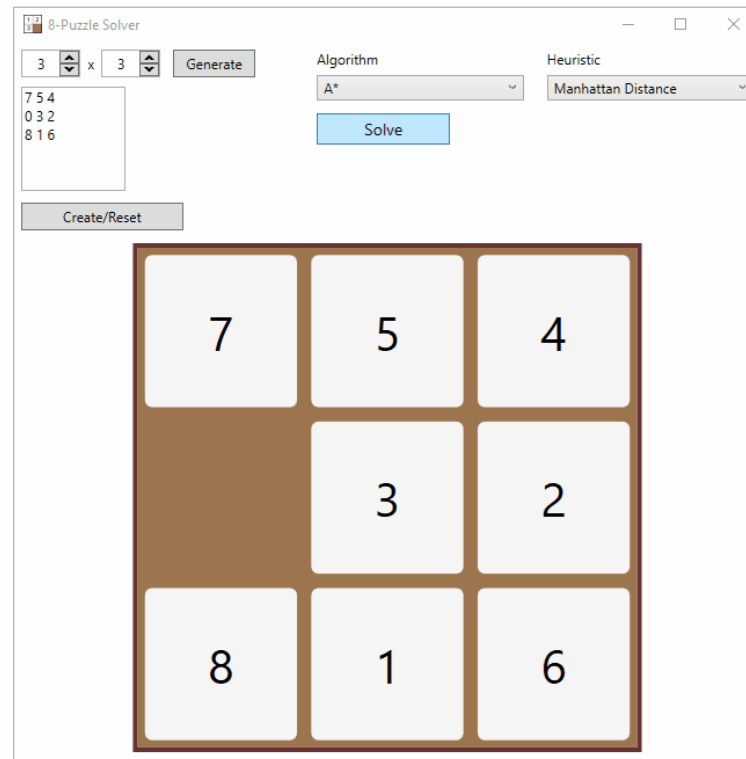


Implementation and software

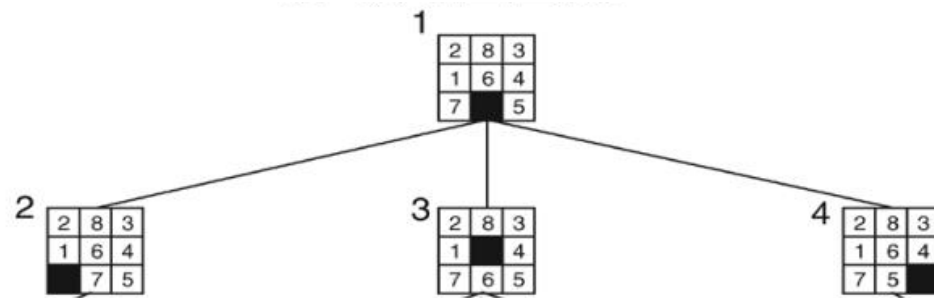
Project#1 (10 points)

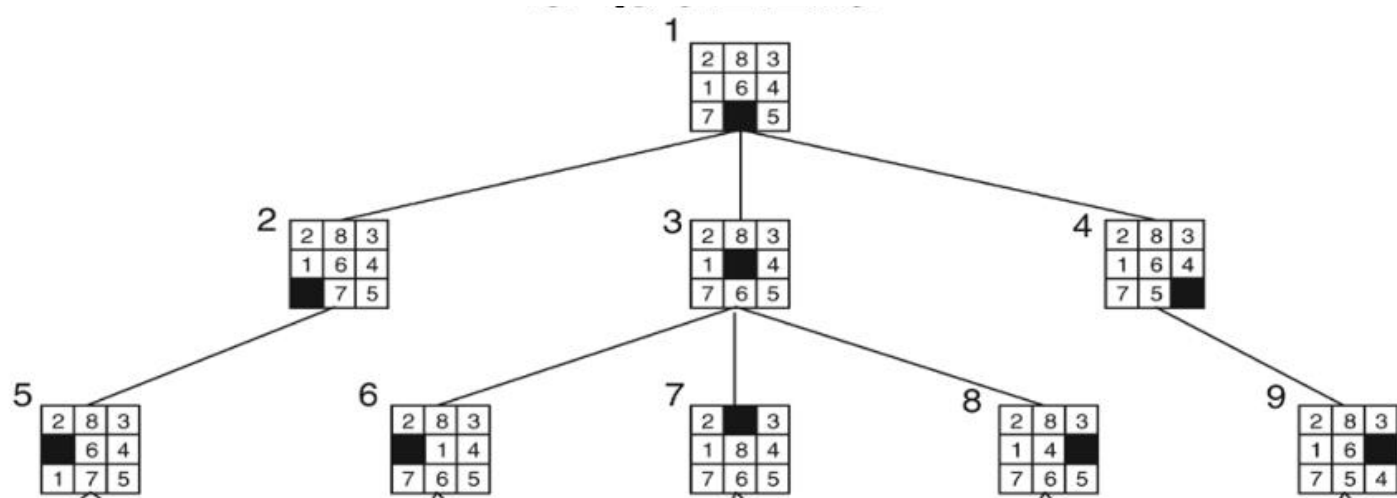


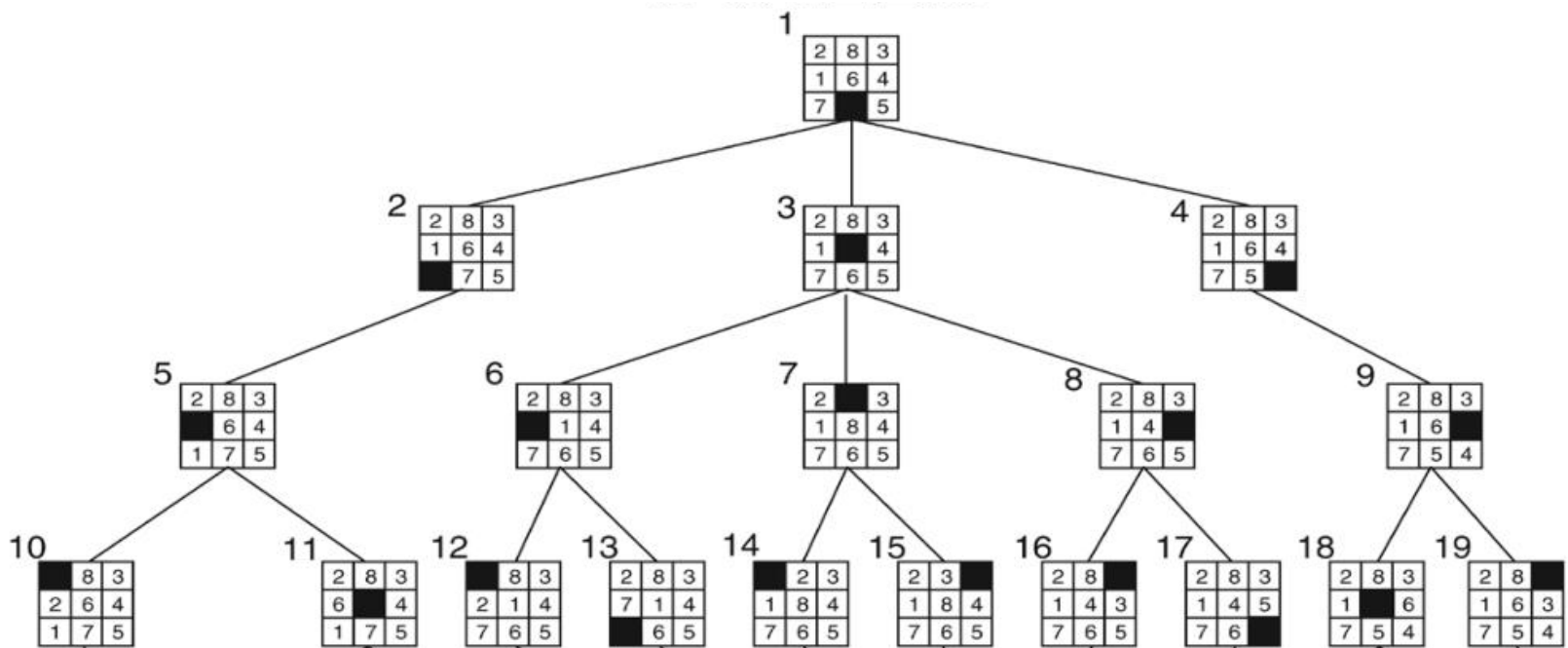
First method

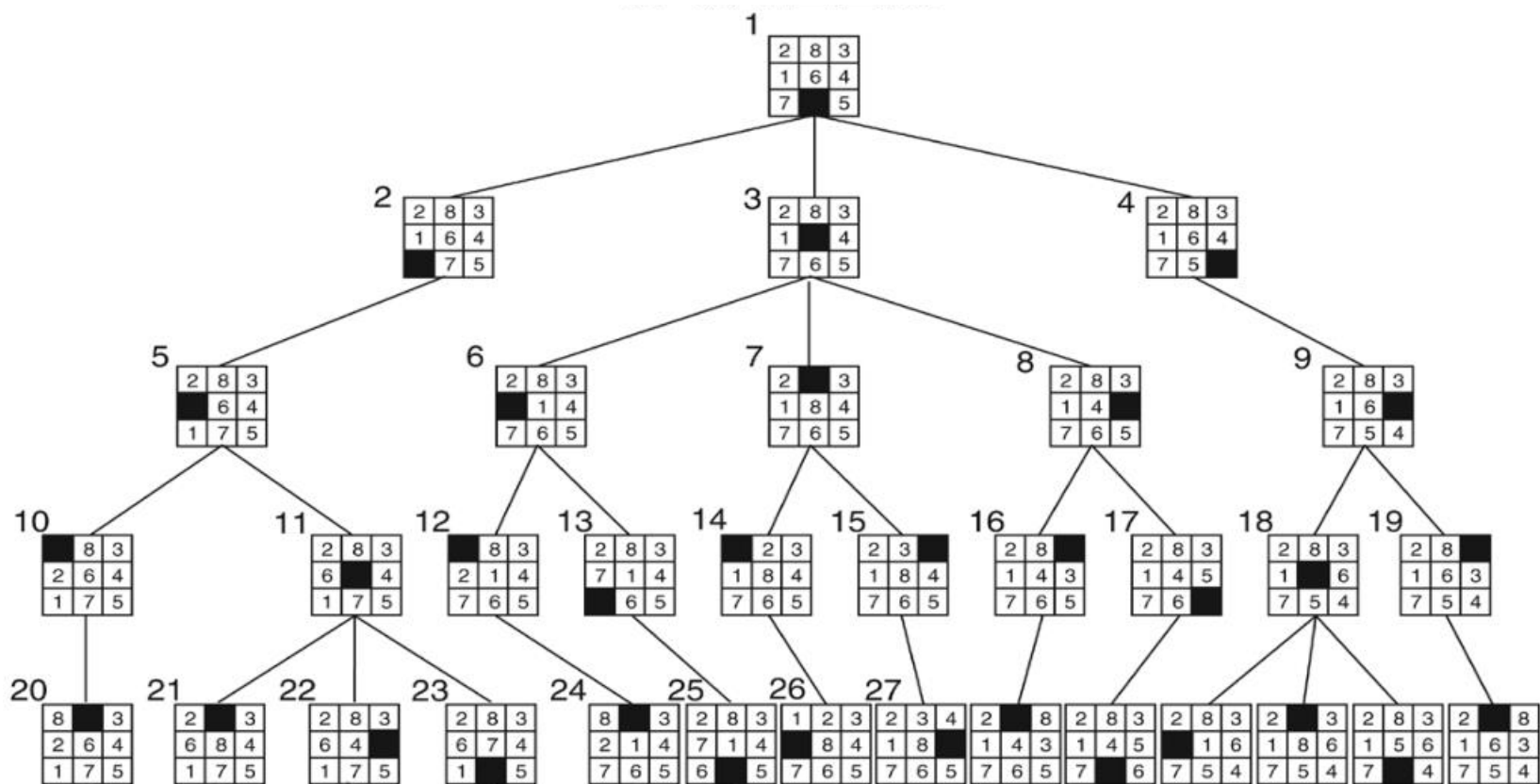
1

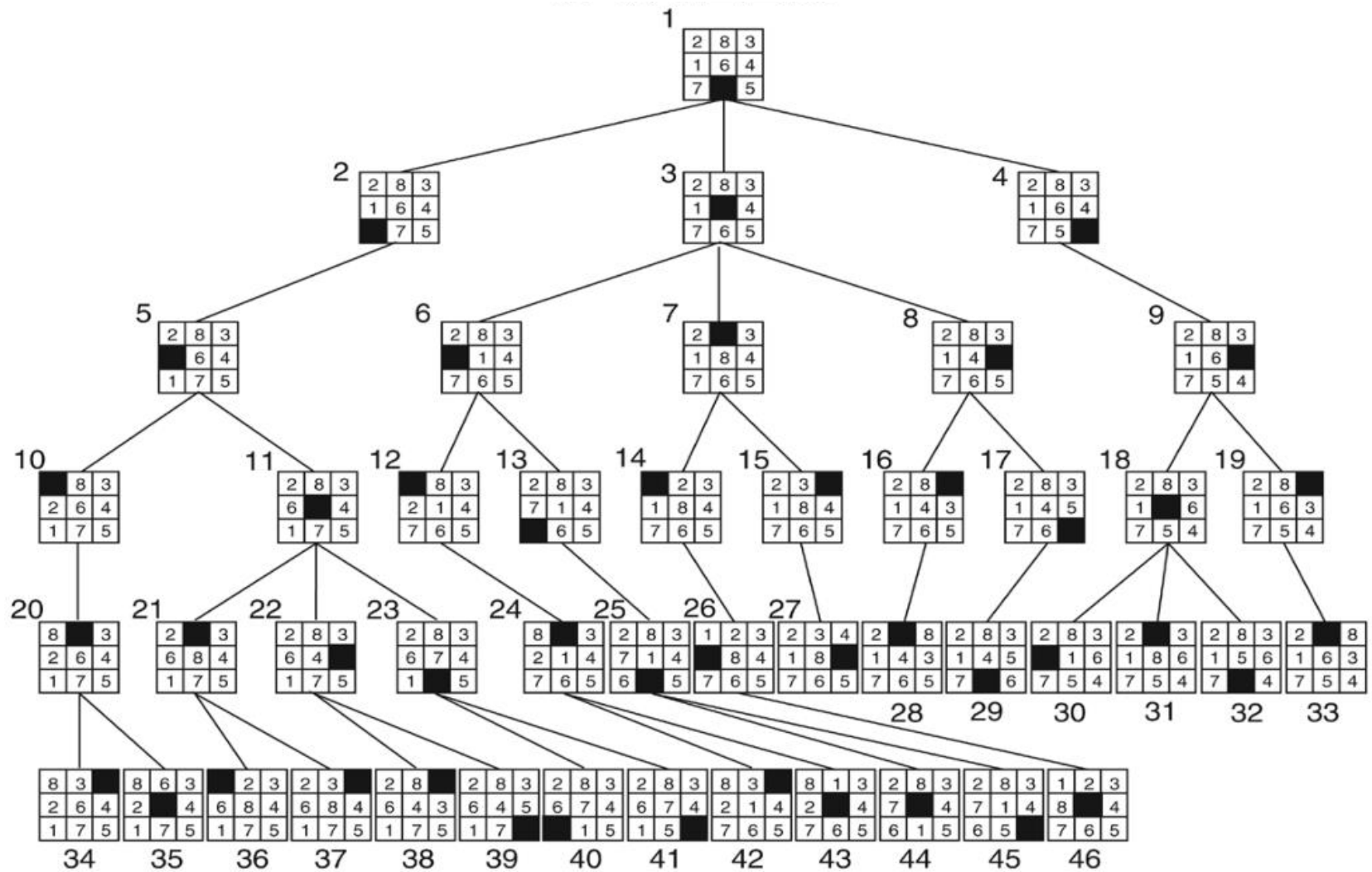
2	8	3
1	6	4
7		5











Goal

Maltab

```
Nodes= [];  
NodesInfo=[]; % NodeInfo= [ Node #, Parent node #, CostToCome]
```

```
Nodes(:,1)= [1 2 3; 4 5 6; 7 8 0];  
NodesInfo(:,1)= [1,0,0];
```

```
Nodes(:,2)= [1 2 3; 4 5 6; 7 0 8];  
NodeInfo(:,2)= [2,1,0];
```

```
NodeSet. Nodes = Nodes;  
NodeSet. NodesInfo = NodeInfo;
```

```
NodeSet. Nodes (:,2) % → Output [1 2 3; 4 5 6; 7 0 8];
```

Sub_functions:

```
[X0 Y0]=BlankTileLocation(CurrentNode);  
[Status, NewNode] =ActionMoveLeft (CurrentNode)  
[Status, NewNode] =ActionMoveRight (CurrentNode)  
[Status, NewNode] =ActionMoveUp (CurrentNode)  
[Status, NewNode] =ActionMoveDown (CurrentNode)  
AddNode (NewNode)
```

Note: Generate 100,000 nodes
NumberofNodes= size (Nodes) ;
While NumberofNodes (3) <=100000

Due Date and Deliverables

- Due date: February 23 , 6 p.m.
 - Email deliverables to the course instructor and TA
 - Deliverables:
 - Source code
 - Output matrices : Nodes and Nodesinfo
 - A word file that explains how to run the program
- Note:** Implementing a search algorithm to find the solution for this puzzle is optional