# AI_Assignment 1

**Team Details:**

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# BFS

**Language:** JAVA

**Libraries:** HashMap , LinkedList , Map , Queue

**Dependencies:** none

**Functions:**

- add
- Left
- Down
- Up
- Right
- CheckCompletion

**HOW TO EXECUTE?**
**In Ubuntu:**

Switch to the directory which contains these files using ‘cd’ .
$ javac nBFS.java
$ java nBFS.

For the input: 123456708
The number of moves to get the output is : 1

For the input: 123456078
The number of moves to get the output is: 2

For the input: 013425786

The number of moves to get the output is: 4

For the input: 364102875
The number of moves to get the output is: The solution doesn't exist.

For the input: 132465708
The number of moves to get the output is: 19

# DFS

**Language:** PYTHON

**Functions:**

- move_left
- move_down
- move_up
- move_right
- dfs

**HOW TO EXECUTE?**
**In Ubuntu:**

python dfs.py

For the input : 123456708
The number of moves: 1

For the input : 123456078
The number of moves: 2

For the input :013425786
The number of moves: 32

For the input: 364102875
My system got hanged.

# UCS

**Language:** JAVA

**Functions:** tile , TilePos getBlank, TilePos whereIs, equals,
hashcode ,show, allValidMoves, isValidMove , moveClone , move , shuffle,
numberMisplacedTiles , isSolved , dijkstraSolved , showSolution

**HOW TO EXECUTE?**
**In Ubuntu:**

Switch to the directory which contains these files using ‘cd’ .
$ javac UCSS.java
$ java UCS.

The input here is randomly generated.

# BDS

**Language:** PYTHON

**Functions:**

- move_left
- move_down
- move_up
- move_right
- bfs

**HOW TO EXECUTE?**
**In Ubuntu:**

Switch to the directory which contains these files using ‘cd’ .
$ javac nBFS.java
$ java nBFS.

For the input: 123456708
The number of moves to get the output is : 1

For the input: 123456078
The number of moves to get the output is: 2

For the input: 013425786

The number of moves to get the output is: 5

For the input: 364102875
The number of moves to get the output is: The solution doesn’t exist.

For the input: 132465708
The number of moves to get the output is: 19