# Coding Problem:

**Submission Deadline - 11:55PM, 16th August, 2017.**

**Name**: Manne Naga Nithin

**Roll**: \*\*\*\*\*\*\*\*\*

Heuristics Used:

1. Zero
2. Manhattan Distance: Sum of Manhattan Distances of all nodes from their gaol locations
3. Misplaced Tiles: Number of tile misplaced from their goal locations
4. Linear Conflict: Two tiles are in Linear Conflict if they are both in their goal line, but are on opposite sides

All these Heuristics are optimal, admissible and consistent.

Performance:

**(These are for successes and are approximate values)**

**A\*:**

**Zero:**

**Nodes Explored: ~100000**

**Time Taken: ~5s**

**Manhattan:**

**Nodes Explored: ~1000**

**Time Taken: ~0.1s**

**Misplaced Tiles:**

**Nodes Explored: ~5000**

**Time Taken: ~0.5s**

**Linear Conflict:**

**Nodes Explored: ~500**

**Time Taken: ~0.2s**

**IDA\*:**

**Zero:**

**Time Taken: ~60s**

**Manhattan:**

**Time Taken: ~0.5s**

**Misplaced Tiles:**

**Time Taken: ~2s**

**Linear Conflict:**

**Time Taken: ~0.5s**