Project 1

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To complete this assignment, I consulted:

* Blind Search and Heuristic Search slides
* Notes take during lecture
* C++ documentation
  + <https://www.cplusplus.com>

All code is original except for subroutines for **vector**, **priority\_queue**, and **string** functions

* **vector** and **priority\_queue** is used to handle queuing nodes
* **string** is used to represent the nodes.
  + subroutines **compare** and **find** and used to compare and find elements inside the string

Outline:

manhattan heuristic on just distance between 1 and sergeant is bad because 1 barely moves at the beginning. This results in the heuristic having a small enough fluctuation where it basically acts like Uniform Cost Search.