## Shashank Eeda and Kate Walker

Sample input:

Enter 9 digits from 0-9 in row 1 separated by a space

530070000

Enter 9 digits from 0-9 in row 2 separated by a space 6 0 0 1 9 5 0 0 0

Enter 9 digits from 0-9 in row 3 separated by a space 0 9 8 0 0 0 6 0 0

Enter 9 digits from 0-9 in row 4 separated by a space 8 0 0 0 6 0 0 0 3

Enter 9 digits from 0-9 in row 5 separated by a space 4 0 0 8 0 3 0 0 1

Enter 9 digits from 0-9 in row 6 separated by a space 7 0 0 0 2 0 0 0 6

Enter 9 digits from 0-9 in row 7 separated by a space 0 6 0 0 0 0 2 8 0

Enter 9 digits from 0-9 in row 8 separated by a space 0 0 0 4 1 9 0 0 5

Enter 9 digits from 0-9 in row 9 separated by a space 0 0 0 0 8 0 0 7 9

## Board:

5 3 0 |0 7 0 |0 0 0 | 6 0 0 |1 9 5 |0 0 0 | 0 9 8 |0 0 0 |6 0 0 |

8 0 0 |0 6 0 |0 0 3 | 4 0 0 |8 0 3 |0 0 1 | 7 0 0 |0 2 0 |0 0 6 |

0 6 0 |0 0 0 |2 8 0 | 0 0 0 |4 1 9 |0 0 5 | 0 0 0 |0 8 0 |0 7 9 |

## Solution:

5 3 4 |6 7 8 |9 1 2 | 6 7 2 |1 9 5 |4 3 8 | 1 9 8 |3 4 2 |6 5 7 |

8 1 9 |7 6 4 |5 2 3 | 4 2 6 |8 5 3 |7 9 1 | 7 5 3 |9 2 1 |8 4 6 | 9 6 1 |5 3 7 |2 8 4 | 2 8 7 |4 1 9 |3 6 5 | 3 4 5 |2 8 6 |1 7 9 |

Runtime:  $O(n^m)$  where n is the possibilities for each square and m is the number of blank spaces.

Space complexity: O(n) because you need to fill 81 cells since it is a 9X9 board.