

①. Solve 8 Puzzle using following 1P201P

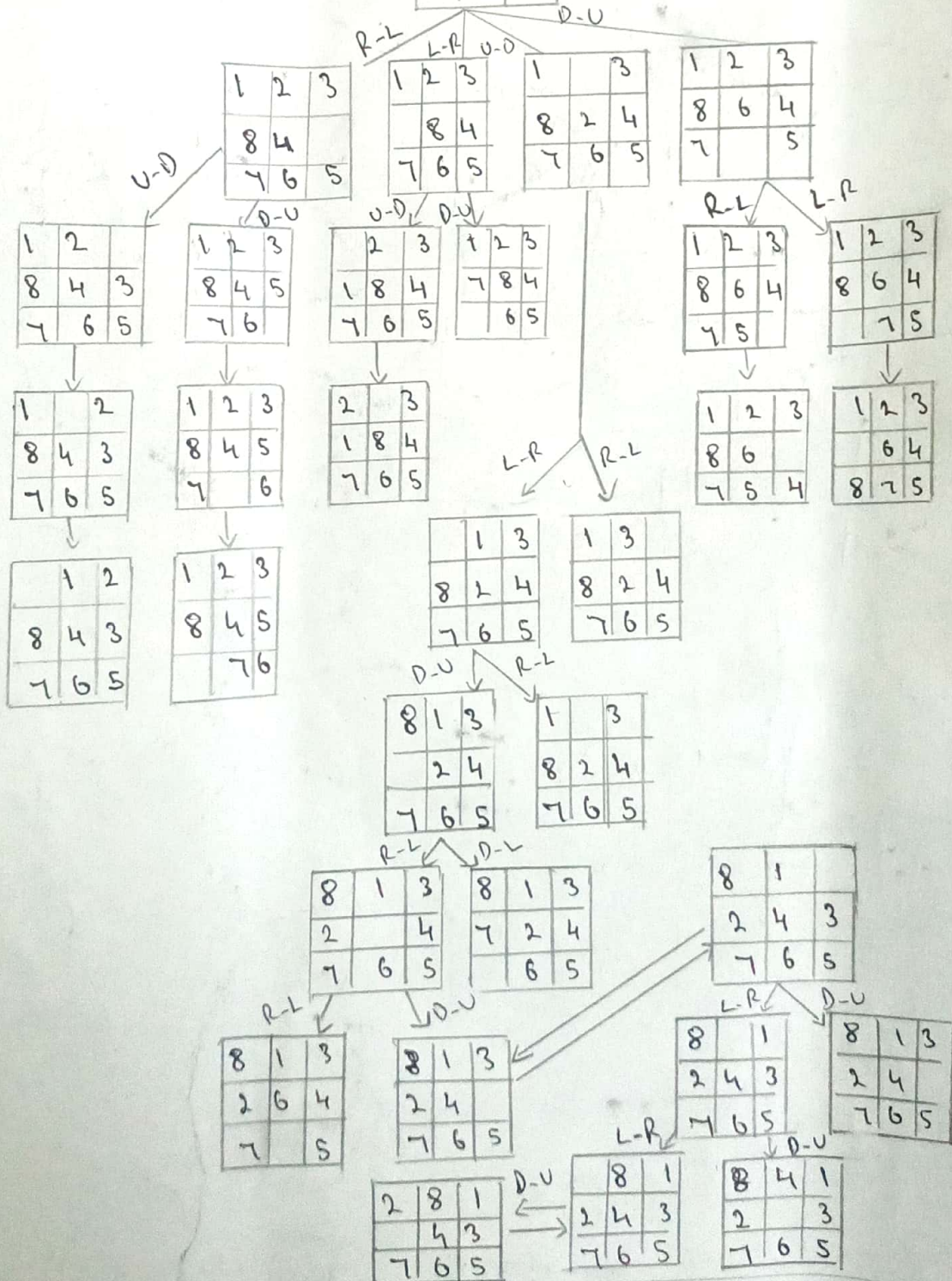
|   |   |   |
|---|---|---|
| 1 | 2 | 3 |
| 8 |   | 4 |
| 7 | 6 | 5 |

Initial  
State

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

Goal  
State

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





② Solve the 8-Queen Problem using the following i/p & o/p.

\* In 8 queen Problem we use simple technique to get solution.

\* There are total 92 solutions.

\* The Placing of queen is not allowed to affect the another queen by rows, column & diagonal.

\* we check the every rows, column and diagonal of a queen while placing.

\* Here the two solution, of 8-queen puzzle

\* These are the solutions which is got

output from Python Program.

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 7 |   |   |   | Q |   |   |   |
| 6 | Q |   |   |   |   |   |   |
| 5 |   |   | Q |   |   |   |   |
| 4 |   |   |   |   | Q |   |   |
| 3 |   | Q |   |   |   |   |   |
| 2 |   |   |   |   |   | Q |   |
| 1 |   |   |   | Q |   |   |   |
| 0 | Q |   |   |   |   |   |   |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Ans. (0,0) (6,1) (3,2) (5,3)  
(7,4) (4,6) (2,7) (1,5)

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
|   | Q |   |   |   |   |   |   |
|   |   |   | Q |   |   |   |   |
|   | Q |   |   |   |   |   |   |
|   |   |   |   |   |   | Q |   |
|   |   |   | Q |   |   |   |   |
|   |   | Q |   |   |   |   |   |
|   |   |   |   |   | Q |   |   |
| Q |   |   |   |   |   |   |   |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Ans. (0,0) (1,6) (2,3) (3,5) (4,7)  
(5,7) (6,4) (7,2)

- ③ Solve the water Jug Problem using the following i/p & o/p Diagram:



You have three jugs. They can hold 12 liters, 8 liters and 5 liters, respectively. Your 12 liter jug is full of water. How can you split up with water to give away exactly 6 liters, and keep 6 liters P.

Solution:

The goal  $\Rightarrow (12, 0, 0)$

The output  $\Rightarrow (6, 6, 0)$

The solution is

①  $\Rightarrow$   $\Rightarrow$  Pour from 12 into 8L.

②  $\Rightarrow$   $\Rightarrow$  Pour from 8 into 5L

③  $\Rightarrow$   $\Rightarrow$  Pour 5 into 12L.

④  $\Rightarrow$   $\Rightarrow$  Pour 8 into 5L

⑤  $\Rightarrow$   $\Rightarrow$  Pour from 12 into 8L

⑥  $\Rightarrow$   $\Rightarrow$  Pour from 8 into 5L

⑦  $\Rightarrow$   $\Rightarrow$  Pour from 5 into 12L  
 $\therefore$  The final answer is  $(6, 6, 0)$