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1BM18CS077

AI LAB-3

```
def dfs(src, target, limit, visited-states);
if src== target ;
 return true
if limit <=0
 return false
visited states. apped (src)
adj = possible moves (src. visited-states)
 for ~~new~~ in adj !
   if dfs (move, target, ~~d~~ limit-1, ~~—~~ visited_states);
    return true
    return false
  def possible_moves (state, visited states):
   ind = state. index (-1)
    d = []
   if ind +3 in range(9):
     d: apped ('d')
    if ind -3 in range(9);
     d: apped('u')
    if ind not in [0, 3, 6]:
      d! apped ? ('L')
     if ind not in (2, 5, 8]:
       d: append ('r')
=> pos_moves = []
   for move in d!
     pos-moves. apped (gen(state, move, ind))
     return [move for move in pos-moves if move not
            in visited-states]
```

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```
def gen (state, m, b):
  temp = state.copy()
  if m== 'd';
    a= temp [b+3]
    temp [b+3] = temp [b]
    temp [b] = a
    elif m= 'u':
      a = temp [b-3]
      temp [b-3] = temp [b]
      temp [b] = a
    elif m== 'L':
      a = temp [b-1]
      temp [b-1] = temp [b]
      temp [b] = a
    elif m== 'r':
      a= temp [b+1]
      temp [b+1] = temp b
      temp [b] = a
    return temp
def : dfs (src, target, depth):
  visited-states []
  for i in range (1, depth +1);
    if dfs(src, target, i, visited_states):
      return True
    return False
```