



RAM

Disk



and the last frame.

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```
from typing import List, Tuple
from pprint import pprint
import random

def empty_slots(board: List[List[int]]
    result = [(x//8, x%8) for x in range(64)]
    for i, row in enumerate(board):
        for j, slot in enumerate(row):
            if slot != 0:
                for k in range(8):
                    if (j, k) in result:
                        result.remove((j, k))
                    if (k, i) in result:
                        result.remove((k, i))
                for k in range(j, -1, -1):
                    if (k, i-abs(k-j)) in result:
                        result.remove((k, i-abs(k-j)))
                for k in range(j, 8):
                    if (k, i+abs(k-j)) in result:
                        result.remove((k, i+abs(k-j)))
                for k in range(i, -1, -1):
                    if (j+abs(k-i), k) in result:
                        result.remove((j+abs(k-i), k))
                for k in range(i, 8):
                    if (j-abs(k-i), k) in result:
                        result.remove((j-abs(k-i), k))

    return result

if __name__ == "__main__":
    left_queens = 8
    board = None

    while left_queens:
        left_queens = 8
        board = [[0] * 8 for _ in range(8)]
```



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```
if (j-abs(k-i), k)  
    result.remove(
```

```
return result
```

```
if __name__ == "__main__":
```

```
    left_queens = 8
```

```
    board = None
```

```
    while left_queens:
```

```
        left_queens = 8
```

```
        board = [[0] * 8 for _ in range
```

```
        while True:
```

```
            empty = empty_slots(board)
```

```
            if len(empty) == 0:
```

```
                break
```

```
            x, y = random.choice(empty)
```

```
            board[y][x] = 1
```

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            left_queens -= 1
```

```
    pprint(board)
```



```
[[0, 0, 0, 0, 0, 1, 0, 0],  
 [0, 0, 0, 1, 0, 0, 0, 0],  
 [1, 0, 0, 0, 0, 0, 0, 0],  
 [0, 0, 0, 0, 1, 0, 0, 0],  
 [0, 0, 0, 0, 0, 0, 0, 1],  
 [0, 1, 0, 0, 0, 0, 0, 0],  
 [0, 0, 0, 0, 0, 0, 1, 0],  
 [0, 0, 1, 0, 0, 0, 0, 0]]
```