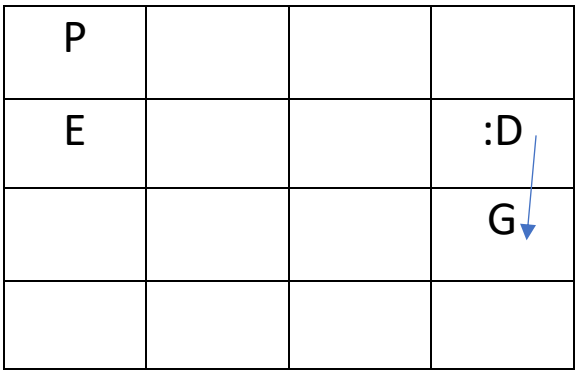

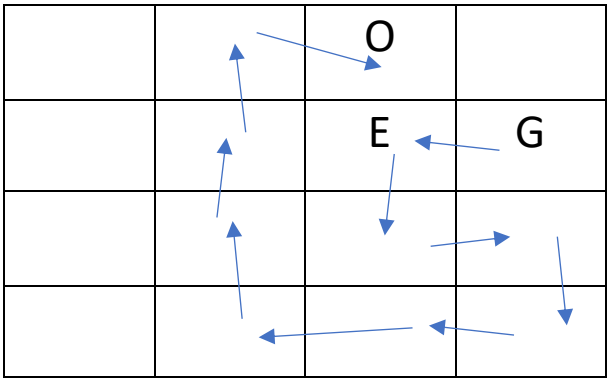

This drawing shows the shortest path from agents location (hardcoded in my case) to goal state(oven) with the egg beater(E) in the way. Arrows represent the action that lead to goal state with minimum number of steps.

This path is achieved by my q-learning algorithm multiple times, one of the execution from collab is here that expresses shortest path:

```
Step 1: Position = (1, 3), Has Egg Beater = False, Action = up, Reward = -1

Step 2: Position = (2, 8), Has Egg Beater = False, Action = teleport, Reward = -1

Step 3: Position = (2, 7), Has Egg Beater = True, Action = left, Reward = -1

Step 4: Position = (2, 8), Has Egg Beater = True, Action = right, Reward = -1

Step 5: Position = (1, 8), Has Egg Beater = True, Action = up, Reward = -1

Step 6: Position = (0, 8), Has Egg Beater = True, Action = up, Reward = -1

Step 7: Position = (0, 7), Has Egg Beater = True, Action = left, Reward = -1

Step 8: Position = (0, 6), Has Egg Beater = True, Action = left, Reward = -1

Step 9: Position = (1, 6), Has Egg Beater = True, Action = down, Reward = -1

Step 10: Position = (2, 6), Has Egg Beater = True, Action = down, Reward = -1
```

```
Step 11: Position = (3, 6), Has Egg Beater = True, Action = down, Reward = -1

Step 12: Position = (3, 7), Has Egg Beater = True, Action = right, Reward = 100
Reached goal in 12 steps with Egg Beater: True
Episode 439: Total Rewards = 89
```