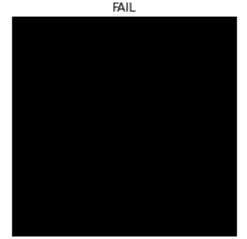
```
In [1]:
            from IPython.display import clear_output
            import numpy as np
          2
            import matplotlib.pyplot as plt
            %matplotlib inline
In [2]:
            num of wumpus = 1
            num_of_holes = 3
            def end game(dangers, pos):
In [3]:
          1
          2
                alive = True
          3
                 for danger pos in dangers.T:
                     if pos[0] == danger_pos[0] and pos[1] == danger_pos[1]:
          4
          5
                         alive = False
          6
                         clear output()
          7
                         plt.figure(figsize = (4,4))
          8
                         plt.plot(0,0, color = 'k', marker = 's', markersize = 3000)
          9
                         plt.axis('off')
                         plt.title('FAIL')
         10
         11
                         plt.show()
         12
                 return alive
In [4]:
            def win game(pos, gold):
         1
          2
                win = False
          3
                 if sum(np.array(pos)==np.array(gold))==2:
          4
                     win = True
          5
                     clear output()
                     plt.figure(figsize = (4,4))
          6
                     plt.plot(0,0, color = 'yellow', marker = 's', markersize = 3000
          7
          8
                     plt.axis('off')
          9
                     plt.title('WIN')
         10
                     plt.show()
         11
                 return win
            def plot_game(pos, wumpus, holes, gold, width = 5, height = 5):
In [9]:
         1
          2
                clear output()
          3
                plt.figure(figsize = (4, 4))
                plt.plot([pos[0]], [pos[1]], linestyle ='', marker = '*', markersiz
          4
          5
                plt.plot([gold[0]], [gold[1]], linestyle ='', marker = 'o', markers
                plt.plot([wumpus[0]], [wumpus[1]], linestyle = '', marker = 'x', ma
          6
                plt.plot([holes[0]], [holes[1]], linestyle = '', marker = 'o', mark
          7
          8
                plt.xlim(-width-1, width+1)
          9
                plt.ylim(-height-1, height+1)
         10
                plt.axis('off')
         11
                plt.show()
```

1 GOLD

```
In [9]:
            gold = np.random.randint(low = -5, high = 6, size = 2)
            pos = [0,0]
            wumpus = np.random.randint(low = -5, high = 6, size = (2, num_of_wumpus
          3
            holes = np.random.randint(low = -5, high= 6, size = (2, num_of_holes))
            alive = True
            win = False
          7
            while alive and not win:
          8
          9
         10
                plot_game(pos, wumpus, holes, gold)
         11
         12
                alive = end_game(wumpus, pos) and end_game(holes, pos)
         13
                if alive : win = win_game(pos, gold)
         14
                if alive and not win:
         15
                     # moving the player
         16
                     direction = input('Which Direction? u/d/1/r and Enter:')
         17
                     if len(direction)<1:</pre>
         18
                         clear_output()
         19
                         continue
         20
                     else :
         21
                         direction = direction[0]
         22
         23
                     if
                          direction == 'u':
         24
                         pos[1] += 1
                     elif direction == 'd':
         25
         26
                         pos[1] = 1
         27
                     elif direction == 'l':
                         pos[0] = 1
         28
         29
                     elif direction == 'r':
         30
                         pos[0] += 1
         31
                     else : break
         32
```

WIN

```
In [12]:
             gold = np.random.randint(low = -5, high = 6, size = 2)
             pos = [0,0]
             wumpus = np.random.randint(low = -5, high = 6, size = (2, num_of wumpus
             holes = np.random.randint(low = -5, high= 6, size = (2, num_of_holes))
             alive = True
           6
             win = False
           7
           8
             while alive and not win:
           9
          10
                  plot_game(pos, wumpus, holes, gold)
          11
          12
                  alive = end_game(wumpus, pos) and end_game(holes, pos)
          13
                  if alive : win = win_game(pos, gold)
          14
                  if alive and not win:
          15
                      # moving the player
                      direction = input('Which Direction? u/d/l/r and Enter:')
          16
          17
                      if len(direction)<1:</pre>
          18
                          clear_output()
          19
                          continue
          20
                      else:
          21
                          direction = direction[0]
          22
          23
                      if
                           direction == 'u':
          24
                          pos[1] += 1
          25
                      elif direction == 'd':
          26
                          pos[1] = 1
          27
                      elif direction == 'l':
          28
                          pos[0] = 1
          29
                      elif direction == 'r':
          30
                          pos[0] += 1
          31
                      else : break
          32
```



```
In [13]:
             gold = np.random.randint(low = -5, high = 6, size = 2)
             pos = [0,0]
             wumpus = np.random.randint(low = -5, high = 6, size = (2, num_of_wumpus
           3
             holes = np.random.randint(low = -5, high= 6, size = (2, num_of_holes))
             alive = True
             win = False
           7
             while alive and not win:
           8
           9
          10
                 plot_game(pos, wumpus, holes, gold)
          11
          12
                 alive = end_game(wumpus, pos) and end_game(holes, pos)
          13
                  if alive : win = win_game(pos, gold)
          14
                  if alive and not win:
          15
                      # moving the player
                      direction = input('Which Direction? u/d/l/r and Enter:')
          16
          17
                      if len(direction)<1:</pre>
          18
                          clear_output()
          19
                          continue
          20
                      else :
          21
                          direction = direction[0]
          22
          23
                      if
                           direction == 'u':
          24
                          pos[1] += 1
          25
                      elif direction == 'd':
          26
                          pos[1] = 1
          27
                      elif direction == 'l':
          28
                          pos[0] -= 1
          29
                      elif direction == 'r':
          30
                          pos[0] += 1
          31
                      else : break
          32
```

FAIL

