**2022-2023 Fall CMPE480 Homework 2**

In our WumpusWorld, the agent always starts from grid (1,1) facing to east

| (1,1) | (1,2) | (1,3) | … |
|-------|-------|-------|---|
| (2,1) | (2,2) | (2,3) | … |
| … | … | … | … |

Each grid (except (1,1)) might contain a Wumpus that
- creates small in its 4 neighbor grids.
- can be seen from a grid,
    - if that grid is in the same row or column (direct view for the agent)
    - if the distance between two grids is 4 or less depending on agent's view…
        - E.g. if the Wumpus is at grid (1,4), it can be seen from:
            - (1,1), (1,2), (1,3) if the agent faces east
            - (1,5), (1,6), (1,7), (1,8) if the agent faces west
            - (2,4), (3,4), (4,4), (5,4) if the agent faces north
- The Wumpus becomes invisible after being seen.

At each time-step the agent can take the following actions:
- forward, counterClockWise, clockWise, hit

At each time-step, the agent might receive:
- wumpusSmell, wumpusSight, bump

The agent wins the game if it kills a Wumpus by hit action when it is next to the Wumpus and facing it.

The agent learns the location of the walls after bumping. After learning the location, its wallInFront predicate should work correctly.

Implement the logical rules for the domain above and verify them using prolog.

Submit a single file: rules.pl

Your program will be evaluated by
- concatenating rules.pl with some experience (examples below) in kb.pl
- loading kb.pl in swipl
- with isWinner()  predicate

Experience:

wumpusSight(1).
action(1,clockWise).
action(2,forward).
action(3,counterClockWise).
action(4,counterClockWise).
action(5,forward).
action(6,clockWise).
action(7,forward).
action(8,forward).
wumpusSmell(9).
action(9,hit).

Here isWinner(9) should be True


Experience:
wumpusSight(1).
action(1,clockWise).
action(2,forward).
action(3,counterClockWise).
wumpusSight(4).
action(4,counterClockWise).
action(5,forward).
action(6,clockWise).
action(7,forward).
action(8,forward).
wumpusSmell(9).
action(9,hit).

Here isWinner(9) should not be True

Experience:
action(1,forward).
bump(2).
action(2,clockWise).
action(3,forward).
action(4,counterClockWise).
action(5,forward).
action(6,counterClockWise).

Here wallInFront(7) should be True.