Kuncheng Feng
CSC 466 Presentation

3/7/2023 Better user interactions

Demo

```
[1]> (load "Main.l")
;; Loading file Main.l ...
;;   Loading file Board.l ...
;;   Loaded file Board.l
;;   Loading file Row.l ...
;;   Loaded file Row.l
;;   Loading file Cell.l ...
;;   Loaded file Cell.l
;;   Loading file Ship.l ...
;;   Loaded file Ship.l
;; Loaded file Main.l
T
[2]> (setf board (newBoard 10 10))
#<BOARD #x1AAC32D1>
[3]> (place board)
     A   B   C   D   E   F   G   H   I   J
   +---+---+---+---+---+---+---+---+---+---+
 0 |   |   |   |   |   |   |   |   |   |   |
   +---+---+---+---+---+---+---+---+---+---+
 1 |   |   |   |   |   |   |   |   |   |   |
   +---+---+---+---+---+---+---+---+---+---+
 2 |   |   |   |   |   |   |   |   |   |   |
   +---+---+---+---+---+---+---+---+---+---+
 3 |   |   |   |   |   |   |   |   |   |   |
   +---+---+---+---+---+---+---+---+---+---+
 4 |   |   |   |   |   |   |   |   |   |   |
   +---+---+---+---+---+---+---+---+---+---+
 5 |   |   |   |   |   |   |   |   |   |   |
   +---+---+---+---+---+---+---+---+---+---+
 6 |   |   |   |   |   |   |   |   |   |   |
   +---+---+---+---+---+---+---+---+---+---+
 7 |   |   |   |   |   |   |   |   |   |   |
   +---+---+---+---+---+---+---+---+---+---+
```

```
8 |   |   |   |   |   |   |   |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
9 |   |   |   |   |   |   |   |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
Placing CARRIER, size 5
Enter position 1: a 0
Enter position 2: e 0
     A   B   C   D   E   F   G   H   I   J
  +---+---+---+---+---+---+---+---+---+---+
0 | 5 | 5 | 5 | 5 | 5 |   |   |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
1 |   |   |   |   |   |   |   |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
2 |   |   |   |   |   |   |   |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
3 |   |   |   |   |   |   |   |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
4 |   |   |   |   |   |   |   |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
5 |   |   |   |   |   |   |   |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
6 |   |   |   |   |   |   |   |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
7 |   |   |   |   |   |   |   |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
8 |   |   |   |   |   |   |   |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
9 |   |   |   |   |   |   |   |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
Placing BATTLESHIP, size 4
Enter position 1: g 1
Enter position 2: g 4
     A   B   C   D   E   F   G   H   I   J
  +---+---+---+---+---+---+---+---+---+---+
0 | 5 | 5 | 5 | 5 | 5 |   |   |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
1 |   |   |   |   |   |   | 4 |   |   |   |
  +---+---+---+---+---+---+---+---+---+---+
2 |   |   |   |   |   |   | 4 |   |   |   |
```

```
    +---+---+---+---+---+---+---+---+---+---+
  3 |   |   |   |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  4 |   |   |   |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  5 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  6 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  7 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  8 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  9 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
Placing CRUISER, size 3
Enter position 1: b 9
Enter position 2: d 9
      A   B   C   D   E   F   G   H   I   J
    +---+---+---+---+---+---+---+---+---+---+
  0 | 5 | 5 | 5 | 5 | 5 |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  1 |   |   |   |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  2 |   |   |   |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  3 |   |   |   |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  4 |   |   |   |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  5 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  6 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  7 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  8 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
  9 |   | 3 | 3 | 3 |   |   |   |   |   |   |
```

```
    +---+---+---+---+---+---+---+---+---+---+
Placing SUBMARINE, size 3
Enter position 1: c 3
Enter position 2: c 5
     A   B   C   D   E   F   G   H   I   J
    +---+---+---+---+---+---+---+---+---+---+
 0 | 5 | 5 | 5 | 5 | 5 |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 1 |   |   |   |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 2 |   |   |   |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 3 |   |   | 2 |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 4 |   |   | 2 |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 5 |   |   | 2 |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 6 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 7 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 8 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 9 |   | 3 | 3 | 3 |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
Placing DESTROYER, size 2
Enter position 1: i 1
Enter position 2: j 0
Error: Ship needs to be either vertical or horizontal.
     A   B   C   D   E   F   G   H   I   J
    +---+---+---+---+---+---+---+---+---+---+
 0 | 5 | 5 | 5 | 5 | 5 |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 1 |   |   |   |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 2 |   |   |   |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 3 |   |   | 2 |   |   |   | 4 |   |   |   |
```

```
    +---+---+---+---+---+---+---+---+---+---+
 4 |   |   | 2 |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 5 |   |   | 2 |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 6 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 7 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 8 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 9 |   | 3 | 3 | 3 |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
Placing DESTROYER, size 2
Enter position 1: f 6
Enter position 2: f 7
      A   B   C   D   E   F   G   H   I   J
    +---+---+---+---+---+---+---+---+---+---+
 0 | 5 | 5 | 5 | 5 | 5 |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 1 |   |   |   |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 2 |   |   |   |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 3 |   |   | 2 |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 4 |   |   | 2 |   |   |   | 4 |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 5 |   |   | 2 |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 6 |   |   |   |   |   | 1 |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 7 |   |   |   |   |   | 1 |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 8 |   |   |   |   |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
 9 |   | 3 | 3 | 3 |   |   |   |   |   |   |
    +---+---+---+---+---+---+---+---+---+---+
All ships have been placed.
```

```
NIL
[4]>
```

New Code (I doubt people want to read everything)

```lisp
; Placing ships
-------------------------------------------------------------------
----
(defmethod place((b board))
    (placeShips b shipTypes)
)

(defmethod placeShips((b board) (shipTypes list) &aux shipName ship
x1 y1 x2 y2)
    (display b)
    (setf shipName (car shipTypes))
    (cond
        ((equal shipName nil)
            (format t "All ships have been placed.~%")
        )
        (t
            (format t "Placing ~A, size ~A~%" shipName (get
'shipSize shipName))
            (format t "Enter position 1: ")
            (setf x1 (read))
            (setf x1 (letterToCell x1))
            (setf y1 (read))
            (format t "Enter position 2: ")
            (setf x2 (read))
            (setf x2 (letterToCell x2))
            (setf y2 (read))
            (setf ship (newShip shipName))
            (if (placeShip x1 y1 x2 y2 ship b)
                (placeShips b (cdr shipTypes))
                (placeShips b shipTypes)
            )
        )
    )
)
```

)