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;;;;;;;;;;;;; SI proj ;;;;;;;;;;;;;;
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;;;;;;;;;;;;;

;; missile
; Definitions for missile
(define DEF_IMG 1)
(define MIS_MOV 1)
(define BG_WIDTH 500)
(define BG_HEIGHT 500)
(define T_EDGE 0)
(define EMPTY_SCENE (empty-scene BG_WIDTH BG_HEIGHT))
(define missile-init (make-posn 100 100))

;; missile-tick: Status -> Status
; calculates the state following the given state if only
time passes
(define (missile-tick current)
  (move-up current))

;; touch-top-wall? : Status -> boolean
; determine if a given object is touching a wall on the
top.
(define (touch-top-wall? current)
  (cond
    [(<= (posn-y current) T_EDGE) true]
    [else false]
  ))
(check-expect (touch-top-wall? (make-posn 0 T_EDGE)) true)
(check-expect (touch-top-wall? (make-posn 10 10)) false)

;; move-up : Status -> Status
; move a given object to the top in 1 px
(define (move-up current)
  (if (touch-top-wall? current)
      current
      (make-posn (posn-x current)
                  (- (posn-y current) MIS_MOV)))
  ))
(check-expect (move-up (make-posn 0 10)) (make-posn 0 9))
(check-expect (move-up (make-posn 0 T_EDGE)) (make-posn 0
T_EDGE))

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; missile-render : Status -> image
; constructs an image representing the given state
(define (missile-render current)
  (place-image DEF_IMG
    (+ (posn-x current) 100)
    (+ (posn-y current) 100)
    EMPTY_SCENE))

; main function for missile
(define (main-missile current)
  (big-bang current
    (on-tick missile-tick)
    (to-draw missile-render)
    ))

(main-missile missile-init)
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