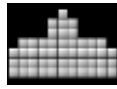
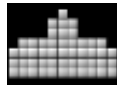


```
;;;;;;;;;;;;; SI proj ;;;;;;;;;;;;;;
;;;                Yohei Yasukawa                ;;;
;;;;;;;;;;;;;
```

```
;; Defender
; Definitions for Defender
```



```
(define DEF_IMG )
(define DEF_MOV 1)
(define BG_WIDTH 500)
(define BG_HEIGHT 500)
(define L_EDGE 0)
(define R_EDGE 100)
(define EMPTY_SCENE (empty-scene BG_WIDTH BG_HEIGHT))
(define defender-init 50)
```

```
;; defender-key: Status Key -> Status
; calculates the state following the given state if given
key is pressed
```

```
(define (defender-key current key)
  (cond
    [(string=? key "left") (move-left current)]
    [(string=? key "right") (move-right current)]
    [else current]
  ))
```

```
;; touch-left-wall? : Status -> boolean
; determine if a given object is touching a wall on the
left
```

```
(define (touch-left-wall? current)
  (cond
    [(<= current 0) true]
    [else false]
  ))
(check-expect (touch-left-wall? L_EDGE) true)
(check-expect (touch-left-wall? 10) false)
```

```
;; touch-right-wall? : Status -> boolean
; determine if a given object is touching a wall on the
right
```

```
(define (touch-right-wall? current)
  (cond
    [(>= current R_EDGE) true]
```

```

    [else false]
  ))
(check-expect (touch-right-wall? 10) false)
(check-expect (touch-right-wall? R_EDGE) true)

;; move-left : Status -> Status
; move a given object to the left in 1 px
(define (move-left current)
  (if (touch-left-wall? current)
      current
      (- current DEF_MOV)
  ))
(check-expect (move-left 10) 9)
(check-expect (move-left L_EDGE) L_EDGE)

;; move-right : DefenderStatus -> Status
; move a given object to the right in 1 px
(define (move-right current)
  (if (touch-right-wall? current)
      current
      (+ current DEF_MOV)
  ))
(check-expect (move-right 10) 11)
(check-expect (move-right R_EDGE) R_EDGE)

; defender-render : DefenderStatus -> image
; constructs an image representing the given state
(define (defender-render current)
  (place-image DEF_IMG (+ current 100) 100 EMPTY_SCENE))

; main function for defender
(define (main-defender current)
  (big-bang current
    (on-key defender-key)
    (to-draw defender-render)
  ))

(main-defender defender-init)

```