

```

;; empty-env  :: Env
;; extend-env :: Symbol Loc Env -> Env
;; lookup-env :: Symbol Env -> Value

;; Implementation of the ADT

;; <env> ::= mtEnv
;;         | (aEnv <id> <loc> <env>)
(deftype Env
  (mtEnv)
  (aEnv id loc env))

(define empty-env (mtEnv))

(define extend-env aEnv)

(define (lookup-env x env)
  (match env
    [(mtEnv) (error 'lookup-env "free identifier: ~a" x)]
    [(aEnv id loc rest) (if (symbol=? id x)
                             loc
                             (lookup-env x rest))]))

```