Abstract

In this assignment I reproduced a LEL Sentence Generator to attain a greater understanding of Racket as well as its IDE Dr Racket. The generator contains functions pick, noun, verb, article, qualifier, noun-phrase, sentence, and ds which their usage is displayed in Demo for the LEL Sentence Generator

Code for the LEL Sentence Generator

```
#lang racket

;-------------------------------------
; LEL sentence generator, with helper PICK,
; several applications of APPEND, several
; applications of LIST, and one use of MAP
; with a LAMBDA function.

( define (pick list)
  ( list-ref list ( random (length list) ) )
)

( define ( noun )
  ( list ( pick '( robot baby toddler hat dog ) ) )
)

( define ( verb )
   ( list ( pick '( kissed hugged protected chased hornswoggled )))
)

( define ( article )
   ( list ( pick '( a the ) ) )
)

( define ( qualifier )
   ( pick '( ( howling ) ( talking ) ( dancing )
                         ( barking ) ( happy ) ( laughing )
                         (loving) (burly) (growling) (poisonous)
                         (drooling) (rapping)
                         )
          )
)
```

```
( define ( noun-phrase )
   ( append ( article ) ( qualifier ) ( noun ) )
)

( define ( sentence )
   ( append ( noun-phrase ) ( verb ) ( noun-phrase ) )
)

( define ( ds ) ; display a sentence
   ( map
     ( lambda ( w ) ( display w ) ( display " " ) )
     ( sentence )
     )
   ( display "") ; an artificial something
)
```

Demo for the LEL Sentence Generator

```
Welcome to DrRacket, version 8.7 [cs].
Language: racket, with debugging; memory limit: 128 MB.
> ( pick '(red yellow blue ) )
'blue
> ( pick '(red yellow blue ) )
'yellow
> ( pick '(red yellow blue ) )
'yellow
> ( pick '(red yellow blue ) )
'yellow
> ( pick '( Racket Prolog Haskell Rust ) )
'Racket
> ( pick '( Racket Prolog Haskell Rust ) )
'Prolog
> ( pick '( Racket Prolog Haskell Rust ) )
'Racket
> ( pick '( Racket Prolog Haskell Rust ) )
'Prolog
> ( noun )
'(robot)
> ( noun )
'(robot)
> ( noun )
'(robot)
```

```
> ( noun )
'(robot)
> ( verb )
'(hornswoggled)
> ( verb )
'(kissed)
> ( verb )
'(protected)
> ( verb )
'(hugged)
> ( article )
'(a)
> ( article )
'(the)
> ( article )
'(the)
> ( article )
'(the)
> ( qualifier )
'(loving)
> ( qualifier )
'(rapping)
> ( qualifier )
'(barking)
> ( qualifier )
'(dancing)
> ( qualifier )
'(poisonous)
> ( qualifier )
'(burly)
> ( qualifier )
'(drooling)
> ( qualifier )
'(happy)
> ( qualifier )
'(loving)
> ( qualifier )
'(howling)
> ( qualifier )
'(happy)
> ( qualifier )
'(rapping)
> ( qualifier )
'(rapping)
```

```
> ( qualifier )
'(poisonous)
> ( qualifier )
'(happy)
> ( qualifier )
'(talking)
> (noun-phrase)
'(the rapping toddler)
> (noun-phrase)
'(the howling robot)
> (noun-phrase)
'(a loving toddler)
> (noun-phrase)
'(a rapping hat)
> (noun-phrase)
'(a loving robot)
> (noun-phrase)
'(a burly hat)
> (noun-phrase)
'(a loving hat)
> (noun-phrase)
'(a dancing robot)
> ( sentence )
'(the drooling dog hornswoggled a loving hat)
> ( sentence )
'(a happy robot kissed a happy robot)
> ( sentence )
'(a growling hat protected the rapping robot)
> ( sentence )
'(a rapping baby kissed the drooling baby)
> ( sentence )
'(the drooling dog kissed the drooling robot)
> ( sentence )
'(a poisonous baby chased the laughing robot)
> ( sentence )
'(the loving baby chased the rapping robot)
> ( sentence )
'(the happy dog kissed a drooling robot)
> ( ds )
a laughing dog chased the poisonous dog
> ( ds )
the drooling toddler hornswoggled a rapping toddler
> ( ds )
the burly robot hugged the growling hat
```

```
> ( ds )
the loving toddler chased a growling toddler
> ( ds )
the loving toddler chased the burly hat
> ( ds )
the growling hat hornswoggled a laughing robot
> ( ds )
a laughing dog chased the rapping robot
> ( ds )
a laughing baby hornswoggled a loving dog
> ( ds )
a drooling baby hugged a laughing dog
> ( ds )
the growling toddler chased the dancing robot
> ( ds )
the dancing hat hugged the loving baby
> ( ds )
a talking hat chased a barking robot
```