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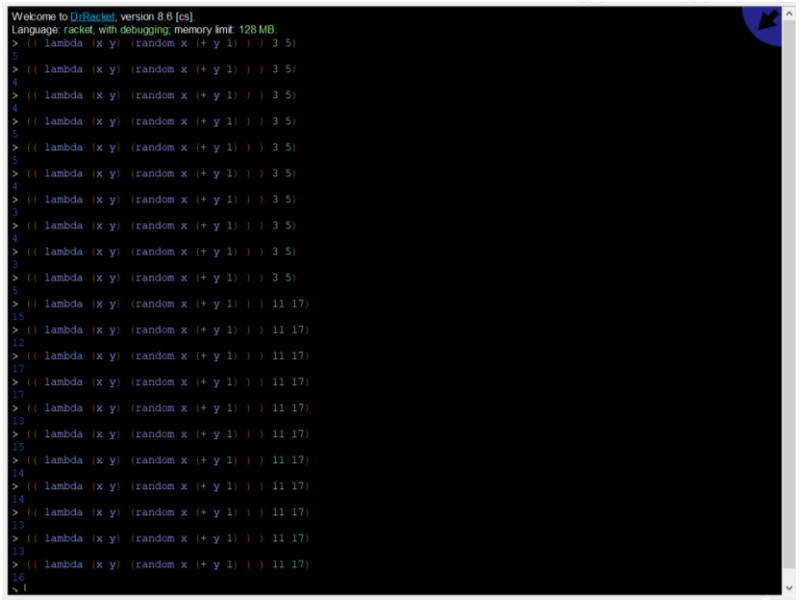
CSC 344 Programming Languages

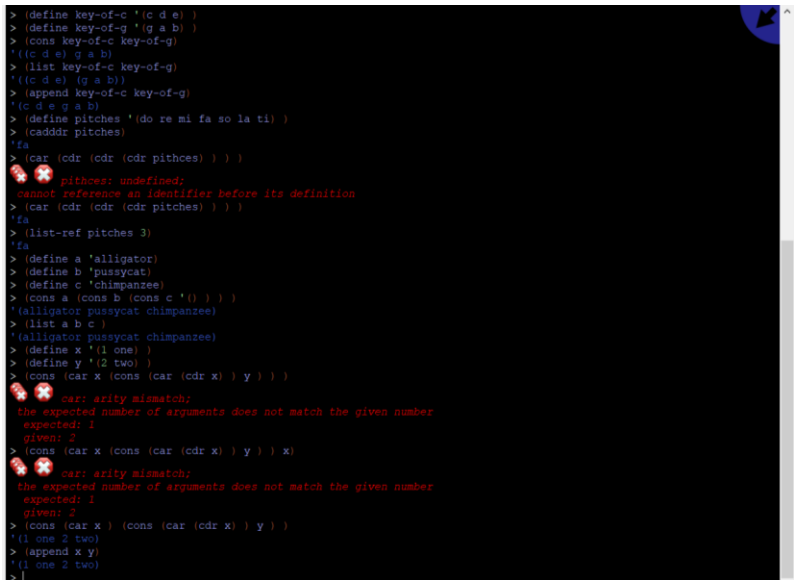
Racket Assignment 4 – Lambda and Basic Lisp

Learning Abstract: This assignment introduces us to Lambda and Basic Lisp in Racket. This assignment helped me gain a deeper understanding of the Lambda function in Racket as well as Lisp which overall helps improve my problem solving skills.

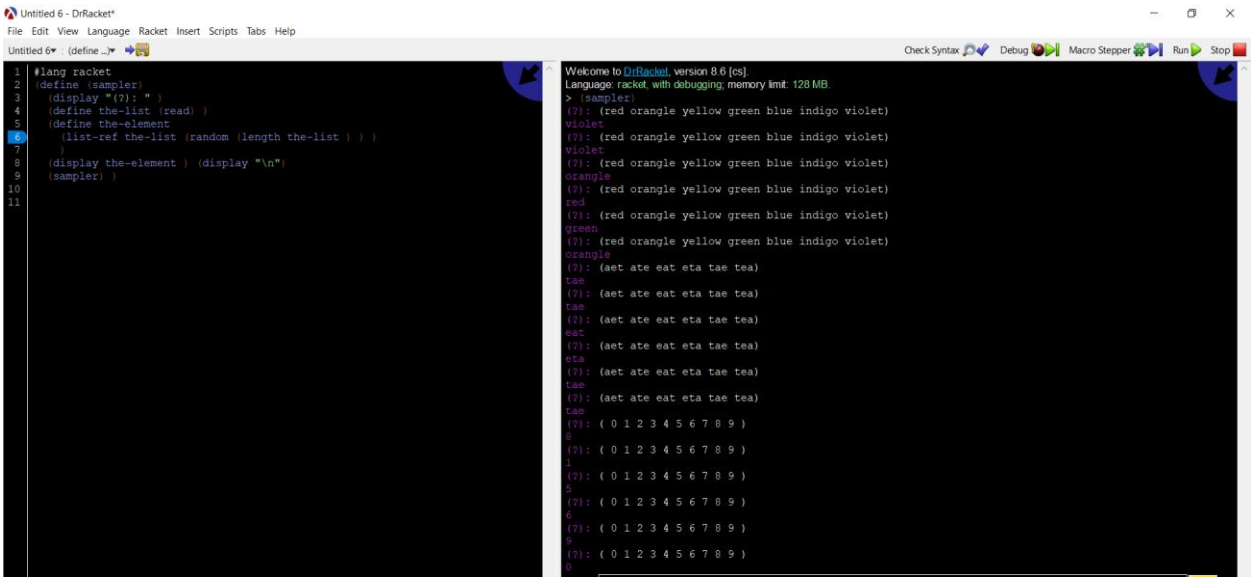
Task 1A, B and C Demos:



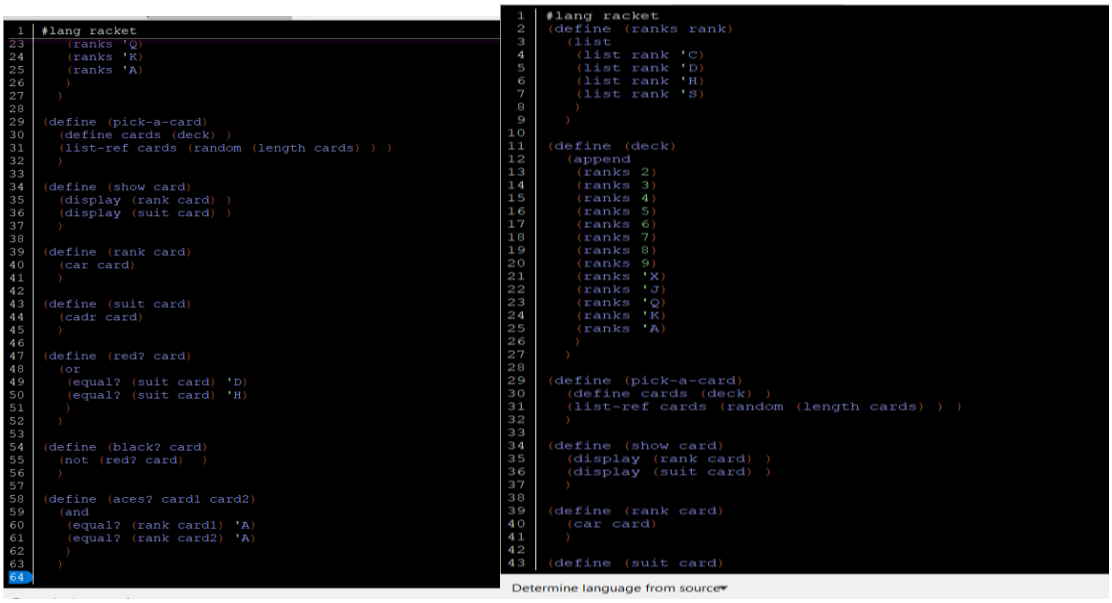
Task 2 Demos:

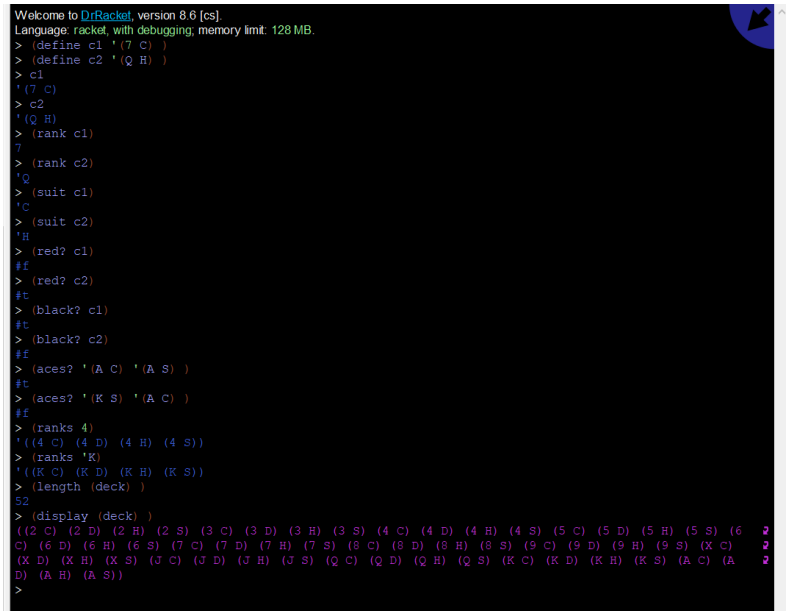


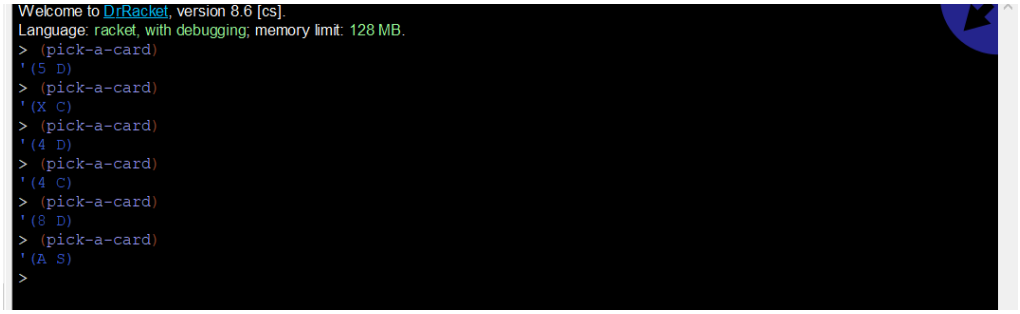
Task 3 Code and Demo:



Task 4 Demo and Code:




Welcome to DrRacket, version 8.6 [cs].
Language: racket, with debugging; memory limit: 128 MB.
> (define c1 '(7 C))
> (define c2 '(Q H))
> c1
'(7 C)
> c2
'(Q H)
> (rank c1)
7
> (rank c2)
'Q
> (suit c1)
'C
> (suit c2)
'H
> (red? c1)
#f
> (red? c2)
#t
> (black? c1)
#t
> (black? c2)
#f
> (aces? '(A C) '(A S))
#t
> (aces? '(K S) '(A C))
#f
> (ranks 4)
'((4 C) (4 D) (4 H) (4 S))
> (ranks 'K)
'((K C) (K D) (K H) (K S))
> (length (deck))
52
> (display (deck))
((2 C) (2 D) (2 H) (2 S) (3 C) (3 D) (3 H) (3 S) (4 C) (4 D) (4 H) (4 S) (5 C) (5 D) (5 H) (5 S) (6 C) (6 D) (6 H) (6 S) (7 C) (7 D) (7 H) (7 S) (8 C) (8 D) (8 H) (8 S) (9 C) (9 D) (9 H) (9 S) (X C) (X D) (X H) (X S) (J C) (J D) (J H) (J S) (Q C) (Q D) (Q H) (Q S) (K C) (K D) (K H) (K S) (A C) (A D) (A H) (A S))
>


Welcome to DrRacket, version 8.6 [cs].
Language: racket, with debugging; memory limit: 128 MB.
> (pick-a-card)
'(5 D)
> (pick-a-card)
'(X C)
> (pick-a-card)
'(4 D)
> (pick-a-card)
'(4 C)
> (pick-a-card)
'(8 D)
> (pick-a-card)
'(A S)
>