CMPUT 325 Wi17 - NON-PROCEDURAL PROG LANGUAGES Combined LAB LEC Wi17

Assignment 1 examples

xmember

```
>(xmember '(1) '1)
T

>(xmember '((1) 2 3) '1)
NIL

>(xmember '((1) 2 3) '(1))
T

(xmember nil nil)
NIL
(xmember '(nil) nil)
T
(xmember '((nil)) nil)
NIL
(xmember '(1 2 3 (nil)) '(nil))
T
(xmember '(nil) '(nil))
NIL
```

flatten

```
>(flatten '(a (b c) d))
(a b c d)

>(flatten '((((a))))) 
(a)

>(flatten '(a (b c) (d ((e)) f)))
(a b c d e f)
```

mix

```
>(mix '(d e f) '(a b c))
(a d b e c f)

>(mix '(a) '(1 2 3))
(1 a 2 3)

>(mix '(d e f g h) '((a) (b c)))
((a) d (b c) e f g h)

>(mix nil '(1 2 3))
(1 2 3)

>(mix '(nil) '(1 2 3))
(1 nil 2 3)
```

Notice the difference between nil, an empty list, and (nil), a non-empty list with one element (that element is an empty list).

split

```
>(split '(1 2 3 4 5 6))
((1 3 5) (2 4 6))

>(split '((a) (b c) (d e f) g h))
(((a) (d e f) h) ((b c) g))

>(split '())
(nil nil)
```

Examples combining mix and split:

```
>(split (mix '(d e f) '(a b c)))
((a b c) (d e f))

>(split (mix '(4 5) '(1 2 3)))
((1 2 3) (4 5))

>(let ((L '(a d b e c f))) (mix (cadr (split L)) (car (split L))))
(a d b e c f)

>(let ((L nil)) (mix (cadr (split L)) (car (split L))))
nil
```

Subset Sum

```
>(subsetsum 5 '(1 2 3))
(2 3)

>(subsetsum 2 '(1 5 3))
nil

>(subsetsum 29 '(1 16 2 8 4))
(1 16 8 4)

>(subsetsum 10 '(1 1 5 6 8))
(1 1 8)

>(subsetsum 5 '(1 10 100 1000 10000))
nil
```

Last modified: Saturday, 21 January 2017, 12:01 AM