

$$\text{Median} = 72.65$$

$$\text{Max} = 85$$

$$\text{fun } f \ l \rightarrow (f \ (\text{List.hd } l)) :: l$$

$$\begin{array}{ccccccc} x & & x & & x & & x \\ \left(\frac{'a \rightarrow 'a}{\quad} \right) & \rightarrow & \frac{'a}{\quad} \text{ list} & \rightarrow & \frac{'a}{\quad} \text{ list} \end{array}$$

$$(::) : 'a * 'a \text{ list} \rightarrow 'a \text{ list}$$

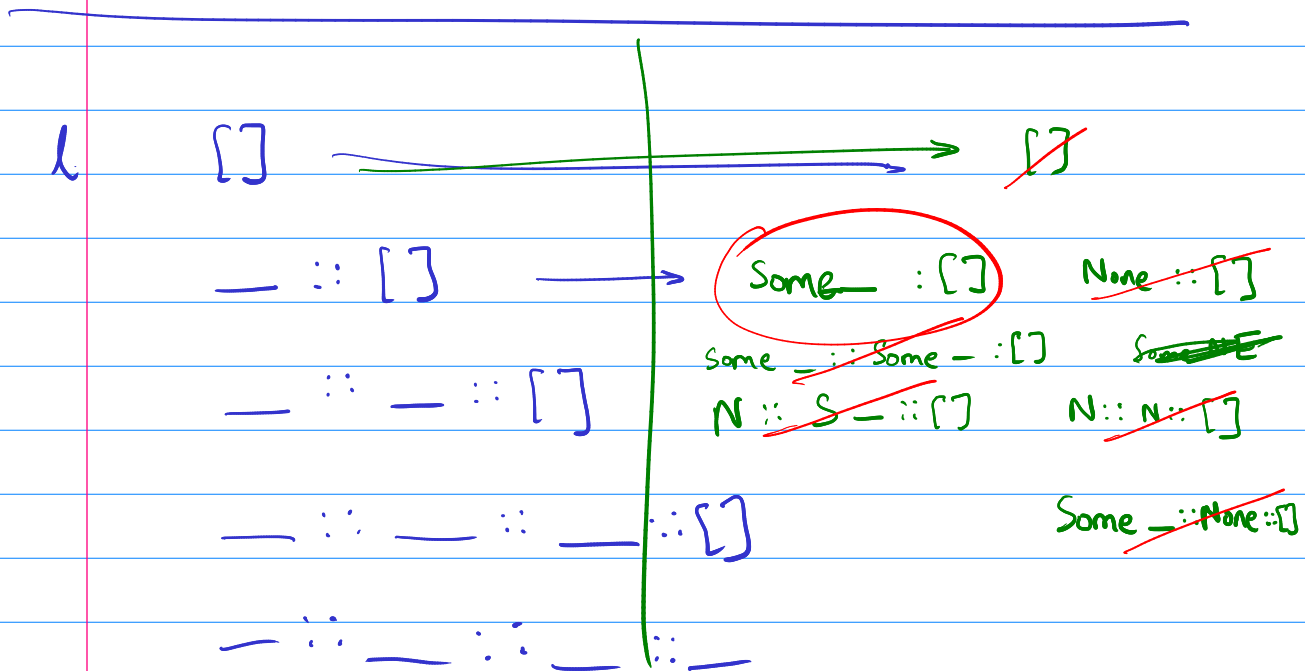
$$('a \rightarrow 'a) \rightarrow 'a \text{ list} \rightarrow 'a \text{ list} .$$

$l = [[1 \ 2 \ 3] \ [4 \ 5 \ 6] \ [7 \ 8 \ 9]]$

$List.hd \ l = [1 \ 2 \ 3]$

$5 :: (List.hd \ l) = [5 \ 1 \ 2 \ 3]$

$[\] [\]$



map f l:

```
ans = []  
for x in l:  
    ans.append(f x)  
return ans
```

fold-left f acc l:

```
for x in l:  
    acc = f(acc x)  
return acc
```

flatten l:

acc = [] ^①

for x in l:

~~acc = acc + x~~ ~~x then acc~~
acc then x

[[1 2 3] [4] [5 6]]

[[1 2 3] [4 5 6]]

[[4 5 6]]

② [1 2 3]

③ [4 1 2 3]

Ⓟ

fold-right f l acc

for $x \in l$ reversed:

$\quad \quad \quad acc = f(x \ acc)$

return acc

map f l

$acc = []$

$l = [1 \ 2 \ 3]$ 

$f = (+1)$

for $x \in l$ reversed:

$\quad \quad \quad acc = f(x) :: acc$

$[]$

return acc

fold-right $(\text{fun } x \ acc \rightarrow (f \ x) :: acc) \ l \ []$.

filter f l

```
acc = []  
for x in l reversed:  
    if f x:  
        acc = x :: acc  
    else  
        acc = acc
```

fold-right (fun x acc →
 if f x then x :: acc
 else acc) l []

QUIZ 2 (TENTATIVELY) NOV 13

$$\frac{d}{dx} [a_0 + a_1 x + a_2 x^2 + a_3 x^3 + a_4 x^4]$$

$$= a_1 + 2a_2 x + 3a_3 x^2 + 4a_4 x^3$$

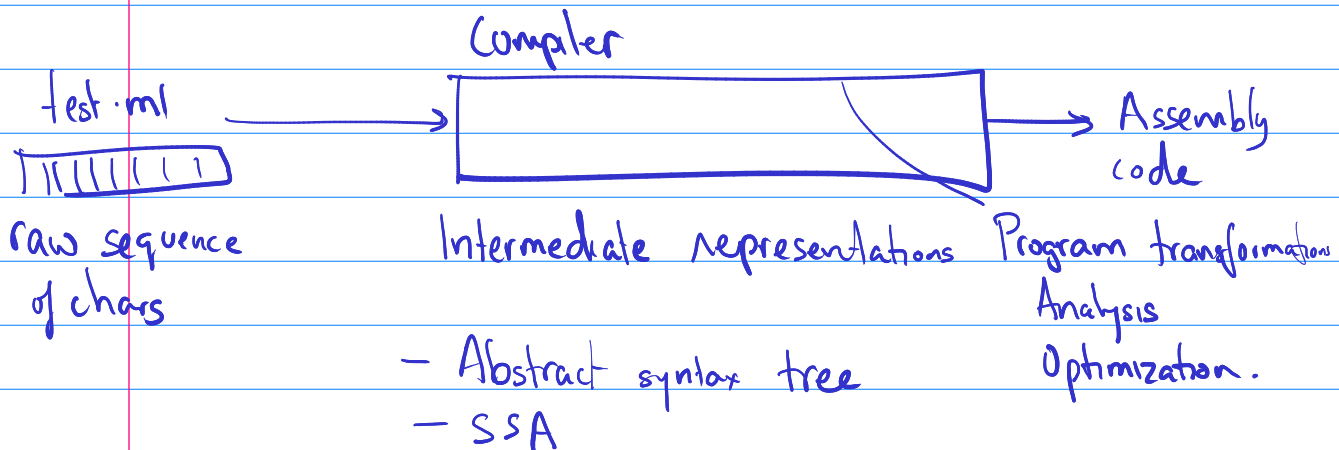
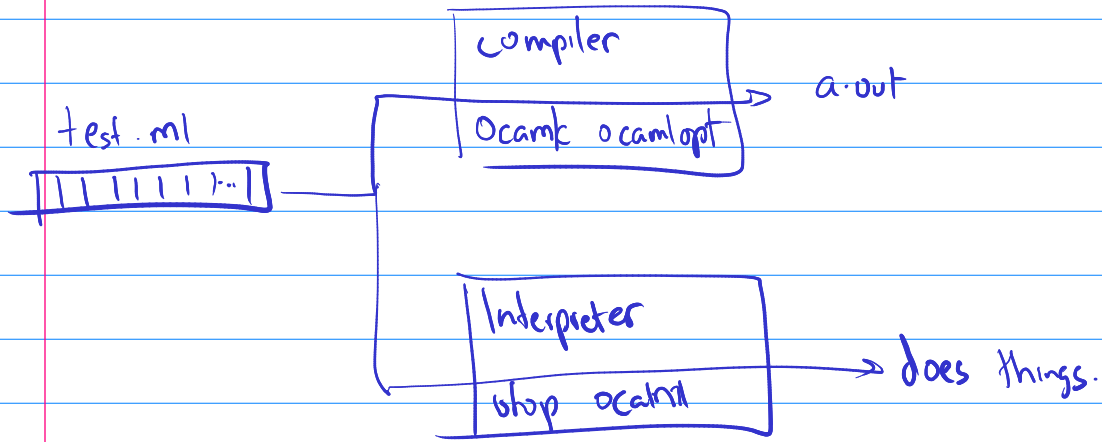
$$\frac{d}{dx} (3 + 0 \cdot x + 9 \cdot x^2)$$

$$3.0 + 0.1 + 9.2x$$

eval f x

fold-left (@) [] 1

Unit 2 : Language Implementation.



$3 + 4 \times 5$ ~~4×5~~

