CSE 341 AA: Section 3

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Office Hours: Wednesdays 8:30 - 10:30am
SML Library Stuff

http://sml-family.org/Basis/manpages.html
Unnecessary Function Wrapping

Don’t do it!

Example:

```javascript
fn x => size(x) (* just use size!!! *)
```

Double check your code at a later moment/with a clean slate to spot this!
fun map (f, xs) = 
case xs of 
    [] => [] 
| x::xs' => (f x)::(map(f, xs'))
Mystery function 1

fun mystery1(p1, p2) =
    case p2 of
        [] => []
    | p::p2' => if p1 p
              then p :: mystery1(p1, p2')
              else mystery1(p1, p2')
fun filter(f, xs) =
  case xs of
   [] => []
  | x::xs' => if f x
             then x :: filter(f, xs')
             else filter(f, xs')
fun mystery2 (p1, p2, p3) =
    case p3 of
        [] => p2
    | p::p3' => mystery2 (p1, p1(p2,p), p3')
fold

fun fold (f, acc, xs) =
  case xs of
    [] => acc
    | x::xs' => fold (f, f(acc,x), xs')
Extra problems

1. Implement a function even_string_total_length that takes a list of strings and returns the total length of all of the even strings in the given list.

2. Implement flat_map using fold
Extra problems

1. Implement a function `even_string_total_length` that takes a list of strings and returns the total length of all of the even strings in the given list.

   See next slide for a possible answer...

2. Implement `flat_map` using `fold`

   ```ml
   fun flat_map (f, xs) =
      fold (fn (acc, x) => acc @ f x, [], xs)
   ```
One way to do it, but there are sooooo many!

fun even_string_total_length xs =
  let
    fun even_then_length (acc, s) =
      if size s mod 2 = 0
      then acc + size s
      else acc
    in
      fold (even_then_length, 0, xs)
  end