

# CSC104 winter 2013

## Why and how of computing week 11

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Text: **Picturing Programs**

# Outline

work

Notes

# who's got the better deal?



life with, or without,  
computers — which  
works better?



How many hours per week do you expect to work? What about your parents/grandparents? Explain labour-saving devices

## previous experience

does technological change automatically improve lives?



land cleared of people  
provides wool and hands  
for emerging factories



Some economists report that production actually dropped for the first few decades of the Industrial Revolution. The working day certainly lengthened — to 12 or even 14 hours!

# automation/computerization

what has the effect been?



Ford assembly, then  
and now  
where'd everybody go?



In 1940s, a car “cost” 35 hours. Now it’s 19 hours.

# hardware effects



storing information gets  
smaller, cheaper, faster  
by the decade...



What's the effect on working lives?

# do long hours matter?

... if you have an ergonomic chair and a fuzziBall table?

Check out **why crunch mode doesn't work**. Chart productivity/hour over a long day.

# don't operate heavy machinery...

after working (too much)



prolonged sleeplessness affects  
motor skills and  
judgement





# utopia, dystopia?



new jobs, flying cars,  
or no jobs,  
or retirement?



not just how long, but where



trade traffic for  
flexibility and time?



# flatten

```
; flatten : list -> list
(define (flatten L)
  (cond
    [(cons? L) (apply append (map flatten L))]
    [else (list L)]))

; predict what (flatten 3) does

; predict what (flatten (list 3)) does

; predict what (flatten (list 1 2 (list 3))) does
```

# depth

```
; depth : list -> number
(define (depth L)
  (cond
    [(cons? L) (+ 1 (apply max (map depth L)))]
    [else 0]))

; predict what (depth 3) does

; predict what (depth (list 3 4)) does

; predict what (depth (list 3 4 (list 5 6))) does
```

# Notes