

CSC104 fall 2013
Computational thinking
week 10

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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