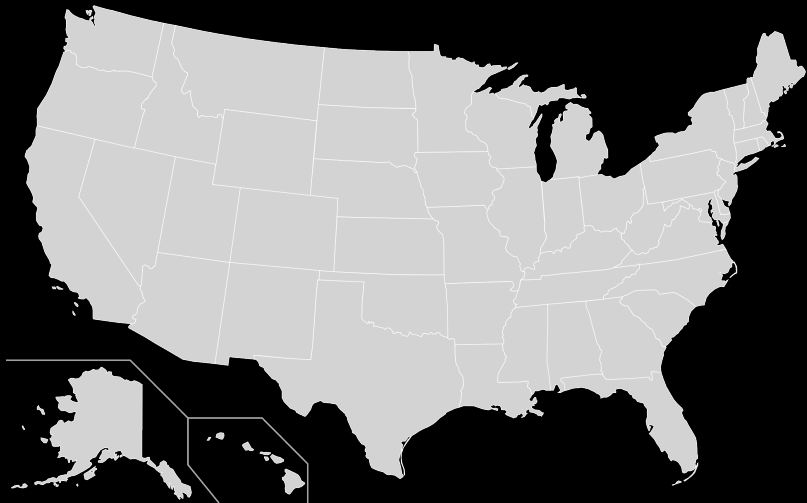


Fifteen Hundred Students A Year

Prabhakar Ragde (University of Waterloo)





University
of Waterloo

Faculty of Mathematics

1500
students
a year

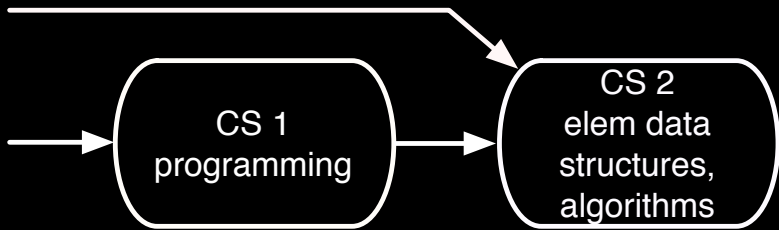
Racket

How?

Lessons?

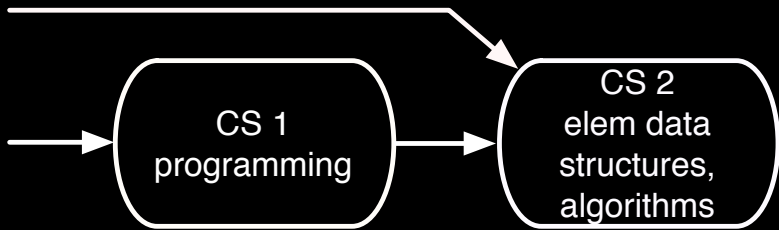
What next?

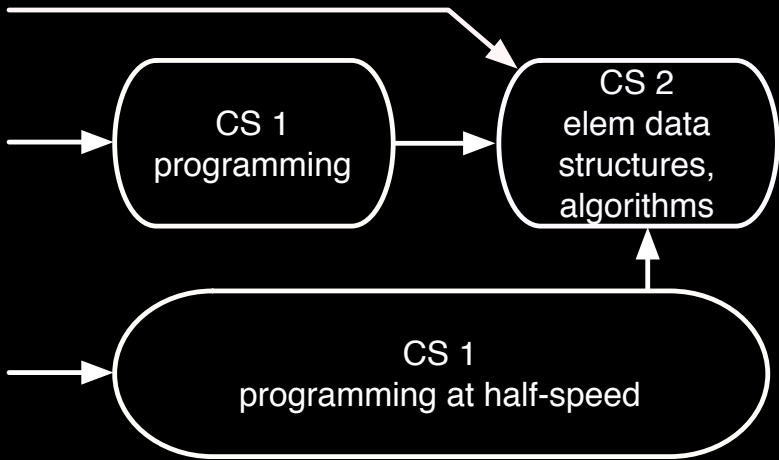
Some
history...



1988: Pascal

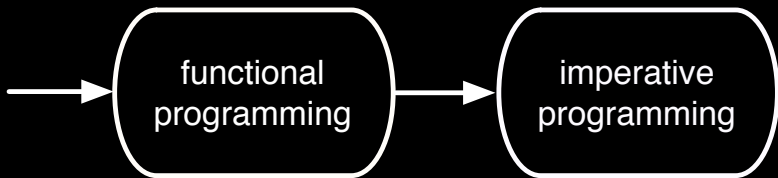
1998: Java



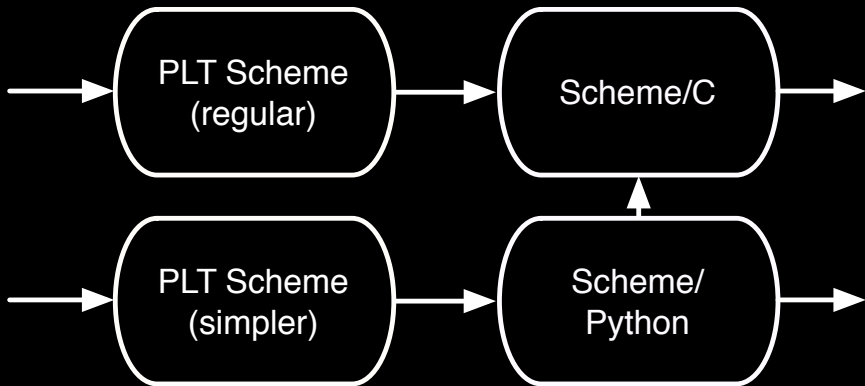


2004:

PLT Scheme



2008: no Java



Benefits

Benefit:
simple syntax

Benefit:
simple
semantics

Benefit:
language
levels

Benefit: early
CS content

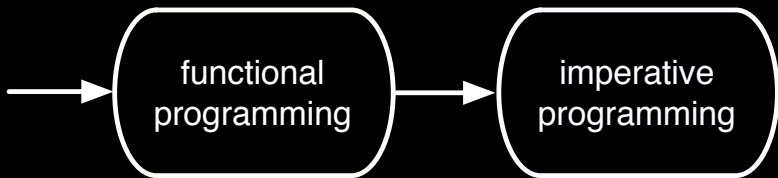
Benefit:
proper design
process

Problems

Problem:
counter-
revolution

Problem:
indifference of
curriculum

Problem:
brittle 2nd
course



The future

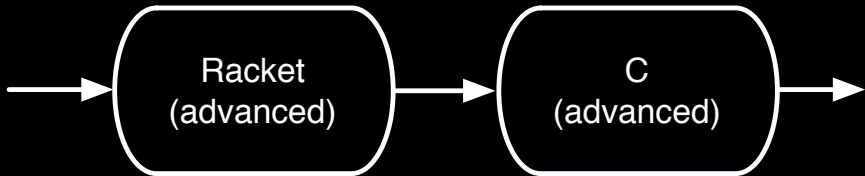
#lang racket/bsl

```
(require 2htdp/image)
```


(provide my-function)

HtDP/2e

Advanced
stream



```
data Nat
  = Z | S Nat
```

```
plus x Z = x
```

```
plus x (S y)
```

```
  = S (plus x y)
```

recursion

induction

invariants

O, Ω, Θ

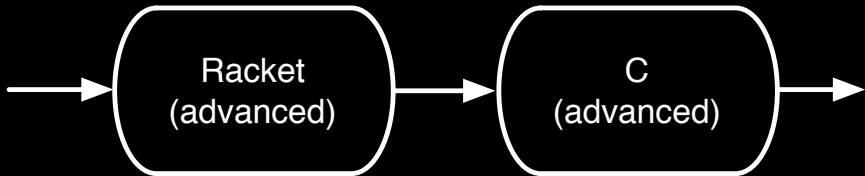
λ

scope

binary, 2's comp

Braun, AA trees

CPS



Scribble

```
#lang scribble/base
```

```
@(require "slide-utilities.rkt"  
      (for-label racket))
```

```
@title[#:style @slide-title-style]  
      {Fifteen Hundred Students A Year}
```

```
@author{Prabhakar Ragde (University of Waterloo)}
```

```
@white-on-black
```

```
@frame{  
@image["US-map.pdf" #:scale 0.6]  
}
```

Rendering math

```
#lang scribble/base
```

```
@(require "math-utilities.rkt")
```

```
@setup-math
```

```
@title{Math 135 Assignment 1}
```

```
@author{Prabhakar Ragde}
```

```
@section{First Test}
```

This **should** be a formula: $x^2 + y^2$.

```
@section{Second Test}
```

This is a **displayed** equation.

```
@math-disp{x=\sum_{i=0}^n y^i}
```

```
#lang racket/base

(require scribble/html-properties
         scribble/base
         scribble/core)

(provide setup-math math-in math-disp)

(define mathjax-source
  "http://cdn.mathjax.org/mathjax/latest/MathJax.js?config=TeX-AMS-HTML")

(define setup-math
  (paragraph (style #f (list (alt-tag "script")
                             (attributes '((type . "text/javascript")
                                             (src . ,mathjax-source )))))
             '()))

(define (mymath start end . strs)
  (make-element (make-style "relax" '(exact-chars)) '(,start ,@strs ,end)))

(define (math-in . strs) (apply mymath "\\(" "\\)" strs))

(define (math-disp . strs) (apply mymath "\\[" "\\]" strs))
```

Conclusion

Opportunities

Customization

Flexibility