

Tutorial 3

Topics

Data Abstraction, Higher-Order Procedures

Upcoming Deadlines

- Problem set 3 due Tuesday, 2/24 at midnight
- Lecture 7 due Wednesday, 2/25 at 9am
- Lecture 8 due Friday, 2/27 at 9am
- Project 2 due Friday, 2/27 at 6pm

Data Abstraction and Higher-Order Procedures - Fantasy NCAA hoops

```
(define (make-player name team position)
  (list name team position))

(define (make-stats player points rebounds assists)
  (list player points rebounds assists))

(define (make-fantasy proc-pts proc-rebs proc-asts)
  (lambda (s)
    (+ QUESTION-1 QUESTION-2 QUESTION-3)))

; Accessors

(define player-name QUESTION-4)
(define player-team QUESTION-5)
(define player-position QUESTION-6)

(define get-player QUESTION-7)
(define get-points QUESTION-8)
(define get-rebounds QUESTION-9)
(define get-assists QUESTION-10)
```

```

; Create a few players:

(define channing-frye (make-player "Channning Frye" "Arizona" "center"))
(define frye-stats (make-stats channing-frye 18 13 1))

(define salim-stoudamire (make-player "Salim Stoudamire" "Arizona" "guard"))
(define stoudamire-stats (make-stats salim-stoudamire 12 2 3))

(define craig-smith (make-player "Craig Smith" "Boston College" "forward"))
(define smith-stats (make-stats craig-smith 11 6 2))

; Create our fantasy point system:

; Every 5 points is one fantasy point
(define (point-pts points)
  QUESTION-11)

; Every 2 rebounds is one fantasy point
(define (rebound-pts rebounds)
  QUESTION-12)

; Every assist is one fantasy point
(define (assist-pts assists)
  QUESTION-13)

; Define our fantasy system
(define fantasy
  QUESTION-14)

; Create a fantasy team from a list of players:
(define my-team (list frye-stats stoudamire-stats smith-stats))

; Compute fantasy points for the entire team
(define (team-pts team fantasy)
  QUESTION-16)

; Get all guards on the team
(define (get-guards team)
  QUESTION-17)

```