

The background features three vertical bars on the left: a wide light red bar, a narrower teal bar, and a narrow light beige bar. In the top right and bottom right corners, there is a grid of small, light red dots that fades out towards the center.

CSC-151

Monday November 10

Fall 2025



AGENDA

1. Announcements

2. Reading Review

3. Lab

4. Wrap-up



ANNOUNCEMENTS

Coding Challenges

- **Coding Challenge 8 out**
 - due Thursday
 - Any questions?
- **Upcoming redo deadlines:**
 - CC4: November 11
 - CC5: November 10

Quiz 8 Wednesday

New topics:

- Lambda-free procedures
- Dictionaries

Survey up on Gradescope

- Due by the end of the day
- Pick which redo problem to focus on

CS Events this week

CS Table

- Tuesday at Noon
- Topic?

Faculty candidate talk

- Tuesday 4pm
- Token event
- Noyce 2022
- Free food!!

VECTOR REVIEW

1

Review: What is the difference between a vector and a list in Scheme?

2

Consider the following "operations"

- Changing the length by adding values
- Changing the length by removing values
- Updating a value in a specific location
- Looking to find if a particular value exists

Which of these operations would you expect to be "faster" on a list? On a vector?

VECTOR REVIEW

3 Which of the following code snippets will correctly change a vector from `[0 1 2]` to `["a" "b" "c"]`?

```
(vector-set! v 0 "a")  
(vector-set! v 1 "b")  
(vector-set! v 2 "c")
```

```
(define change-values  
  (lambda (vec)  
    (vector-set! vec 0 "a")  
    (vector-set! vec 1 "b")  
    (vector-set! vec 2 "c")))  
(change-values v)
```

```
(define change-values  
  (lambda (vec)  
    (begin  
      (vector-set! vec 0 "a")  
      (vector-set! vec 1 "b")  
      (vector-set! vec 2 "c"))))  
(change-values v)
```

```
(define change-values  
  (lambda (vec)  
    (let*  
      ([temp0 (vector-set! vec 0 "a")]  
       [temp1 (vector-set! vec 1 "b")]  
       [temp2 (vector-set! vec 2 "c")])  
      void)))  
(change-values v)
```

```
(vector-set!  
  (vector-set!  
    (vector-set! v 0 "a")  
    1 "b")  
  2 "c")
```

*Adapted from materials from Alexis Korb

READING REVIEW

4

What property of vectors breaks our mental model of tracing the execution of Scheme programs?

Questions?



LAB

- **Today you will do tracing, and there are A LOT of steps. One problem has 30+ steps.**
- **Then, practice writing procedures that recurse over vectors**



DON'T FORGET...

- **Prepare for Wednesday's quiz!**
- **Work on coding challenge 8**
- **Work on coding challenge redos if needed**