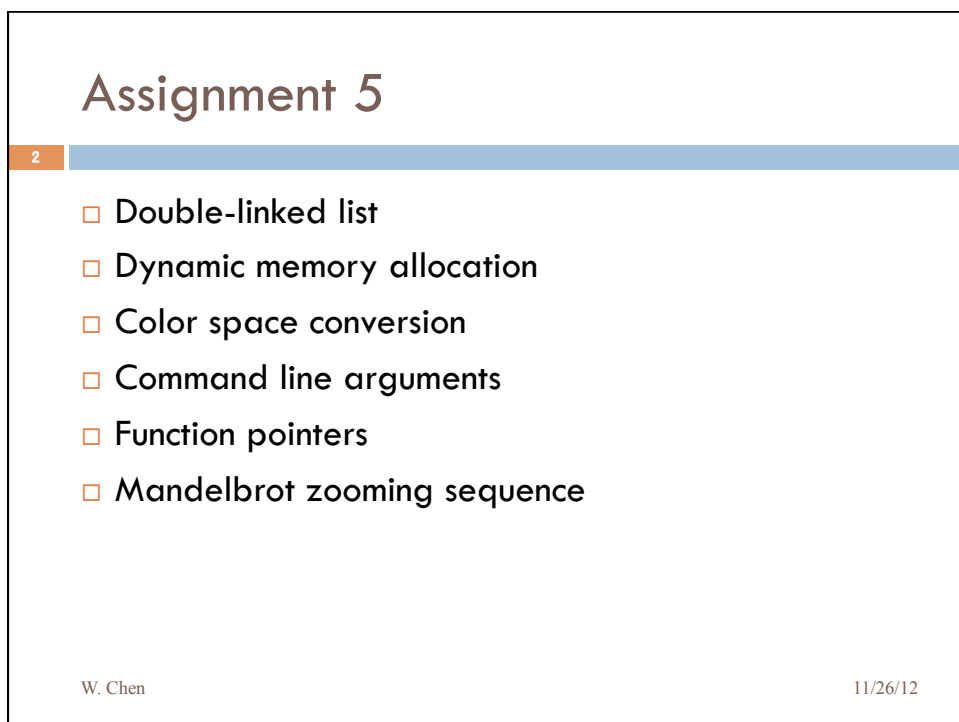


EECS22 LAB WEEK9

Weiwei Chen

The slide features a dark brown background with the text 'EECS22 LAB WEEK9' in a light beige font. Below this, there is a horizontal bar with an orange segment on the left and a light blue segment on the right containing the name 'Weiwei Chen'.



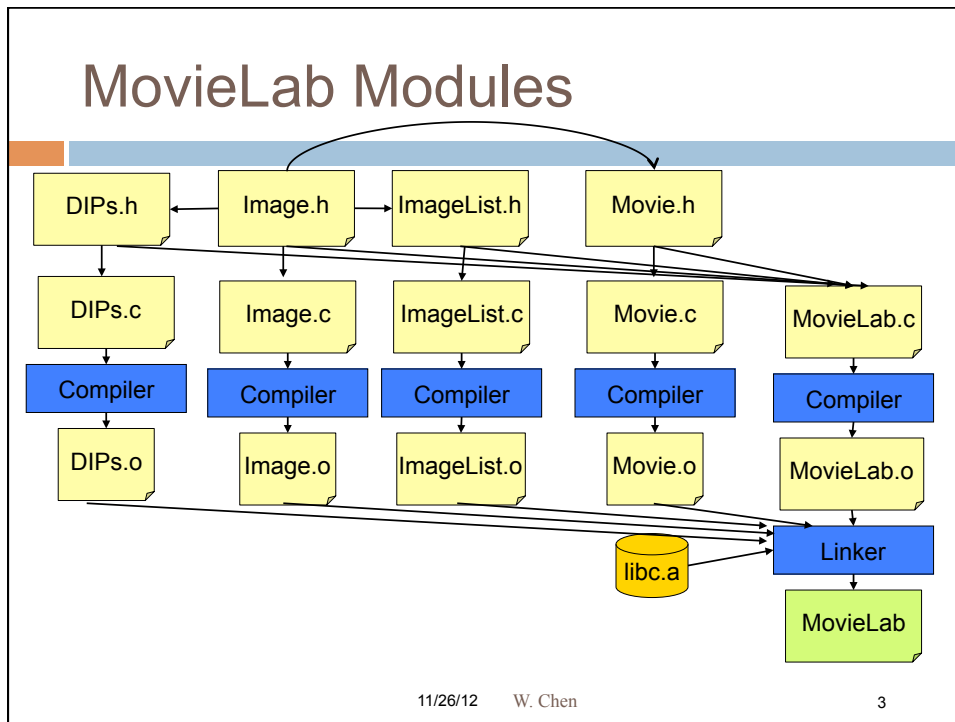
## Assignment 5

2

- Double-linked list
- Dynamic memory allocation
- Color space conversion
- Command line arguments
- Function pointers
- Mandelbrot zooming sequence

W. Chen 11/26/12

The slide has a white background with a blue horizontal bar at the top. Below the bar, the number '2' is in a small orange box. The title 'Assignment 5' is in a large, dark font. A list of six topics follows, each preceded by a square bullet point. At the bottom, the author's name 'W. Chen' and the date '11/26/12' are displayed.



## Learning Outcome

- Understand the input and output of assignment5.
- Understand the relationship between images and movies.
- Understand the representation of a movie in a C program.
- Understand the difference and relation between YUV and RGB color spaces.
- Understand double-linked list and its basic operations.

## Question1 [Yellow Group]

5

- This is a group of questions for the *MovieLab* program:
  - ▣ What is the input and output for this program?
  - ▣ What is the relation between an image and a movie?  
How do we represent a movie in computer?
  - ▣ Let's take a look at the implementation, what FileIO functions do we have for this assignment? How can we use these functions to build the movie in our program?



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## Question2 [Blue Group]

6

- This is a group of questions for color spaces:
  - ▣ Which color space are we going to use? Please compare this color space with the RGB color space that we were using for our previous assignment, same vs. difference?
  - ▣ How to do the color space conversion? Could you please write down the conversion equation? What shall we take care of to implement the color space conversion function?
  - ▣ Why do we need color space conversion for this assignment?



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## Question3 [Orange Group]

7

- This is a group of questions for double-linked list:
  - ▣ What is a double-linked list? Please draw the diagram for a double-linked list with 5 entries.
  - ▣ How many structures do we need to implement a double-linked list? What type of member variables do we need for each structure? Could you please write the definition of these structures?
  - ▣ How to add an entry to a double-linked list? How to reverse a double-linked list?



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## Question4 [Red Group]

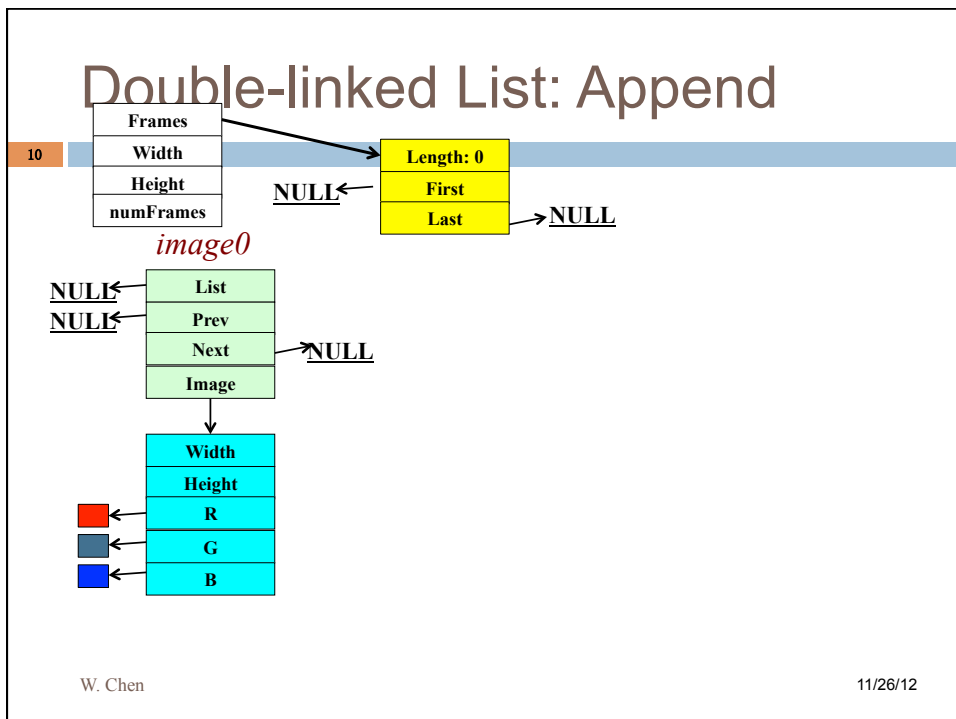
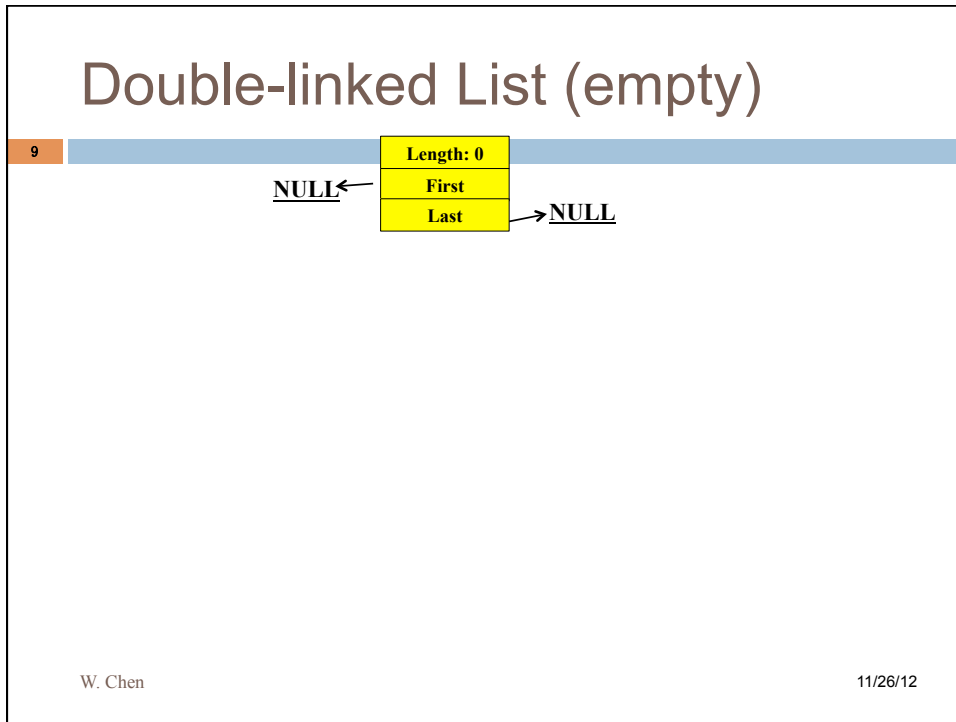
8

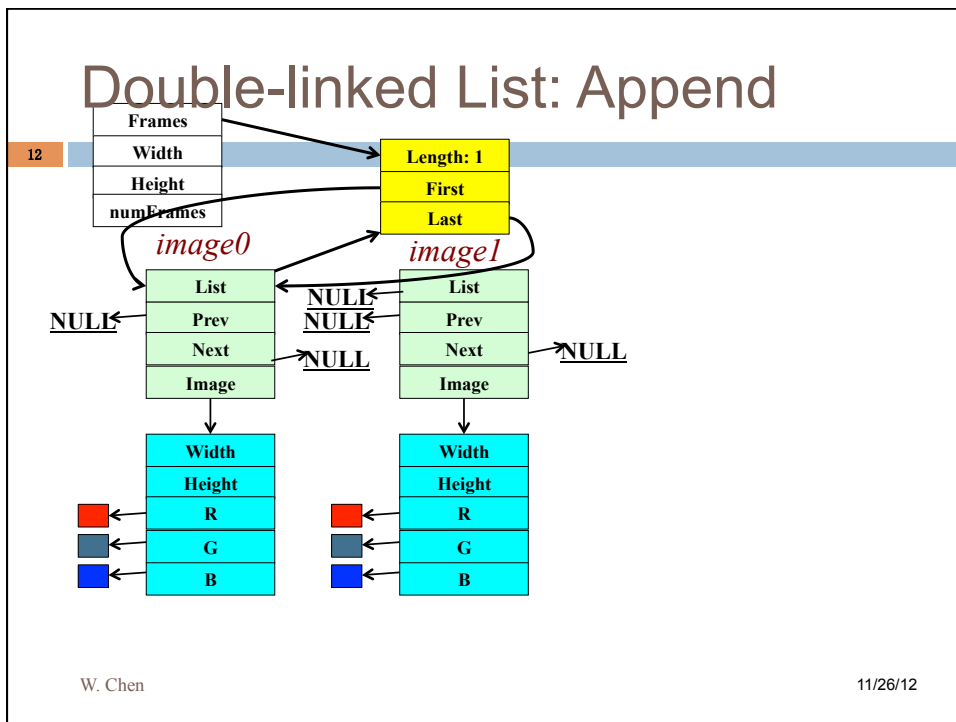
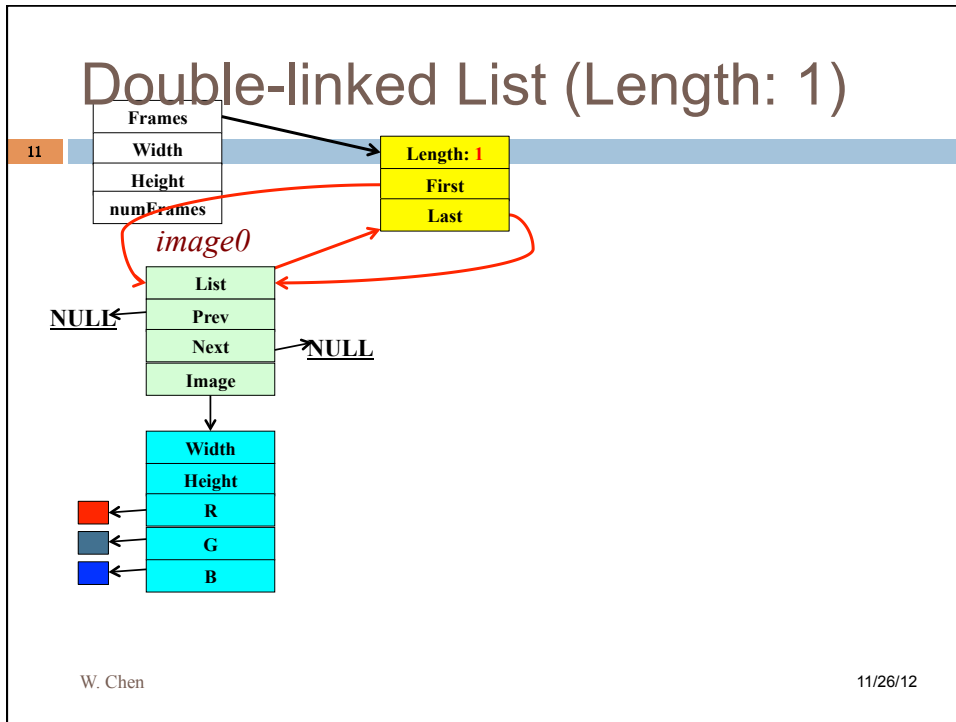
- This is a group of questions for the operations we are going to perform on the movie:
  - ▣ How can we relate the image with the movie?
  - ▣ How can we reuse our DIP functions in our previous assignments for this assignment?
  - ▣ How to perform DIP operations for the images onto the movies? How would you implement this in C?

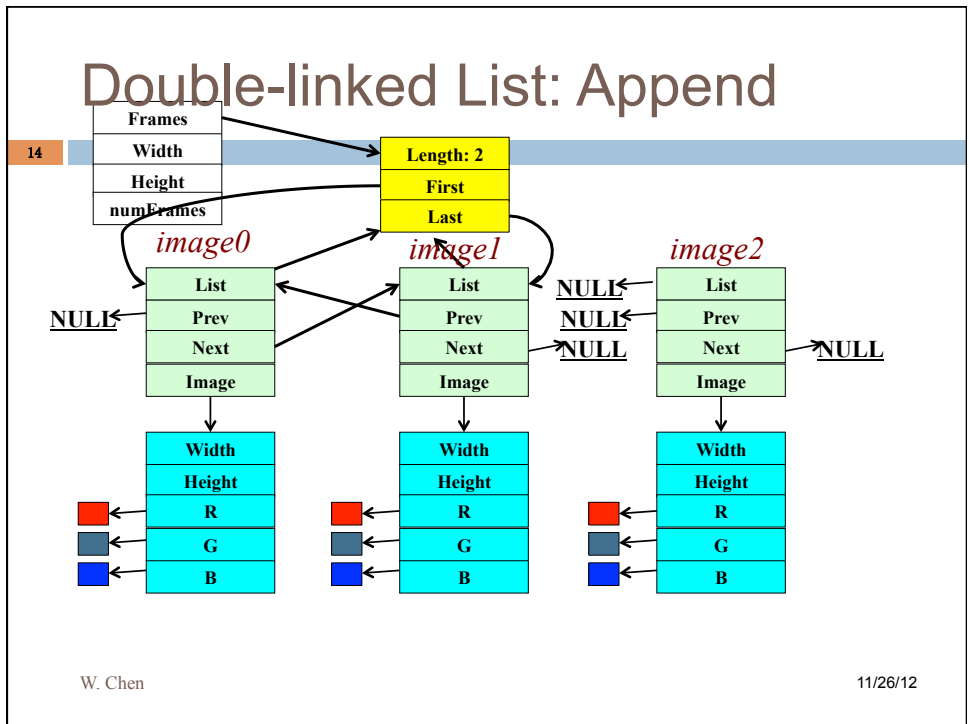
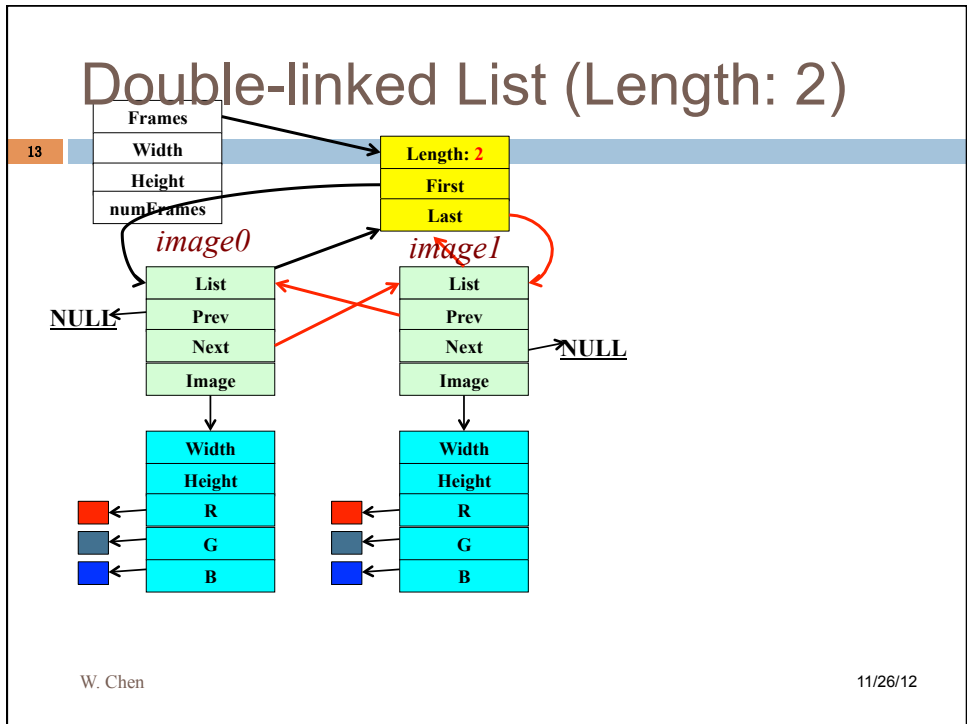


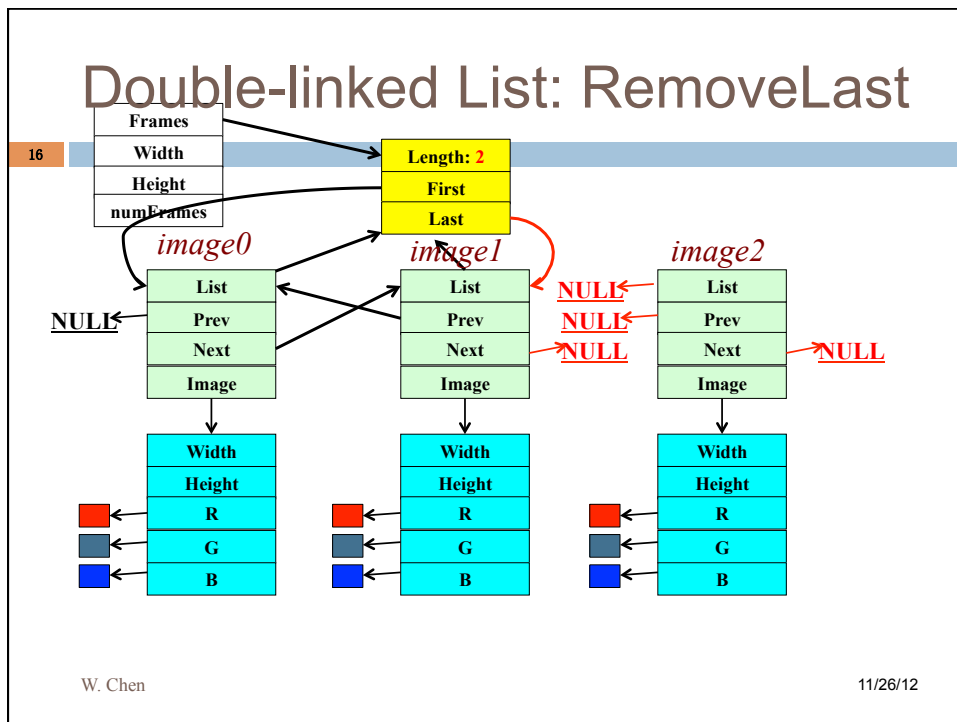
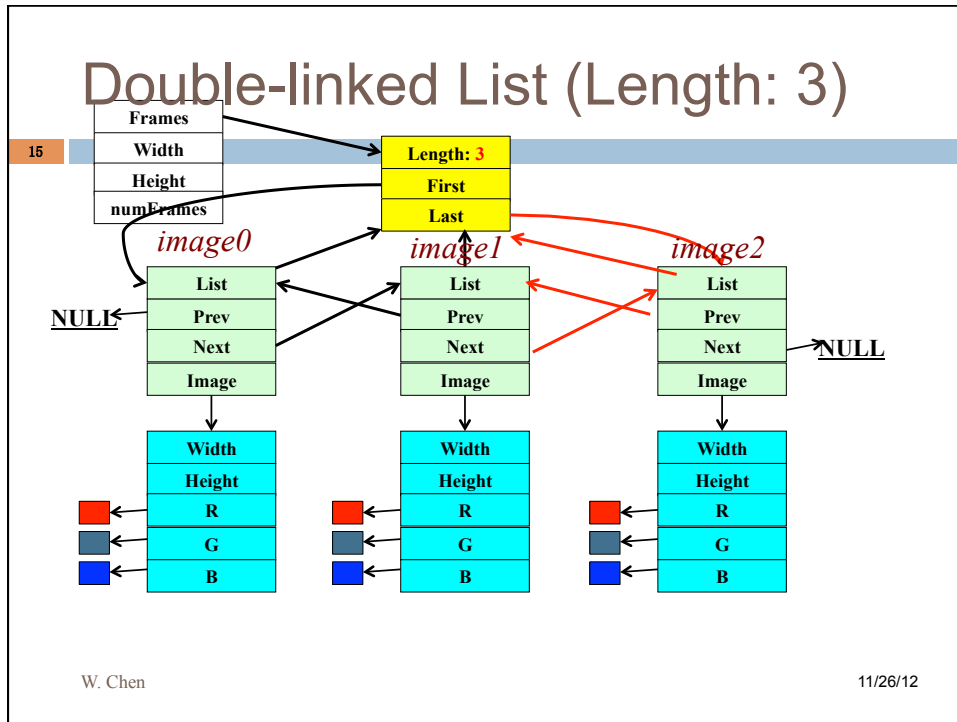
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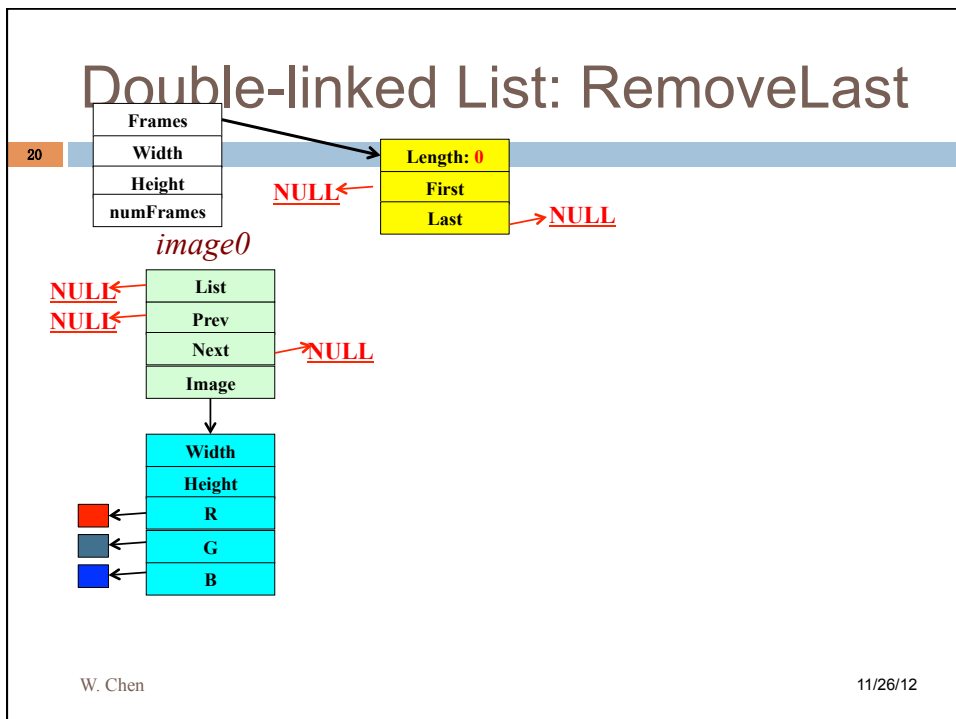
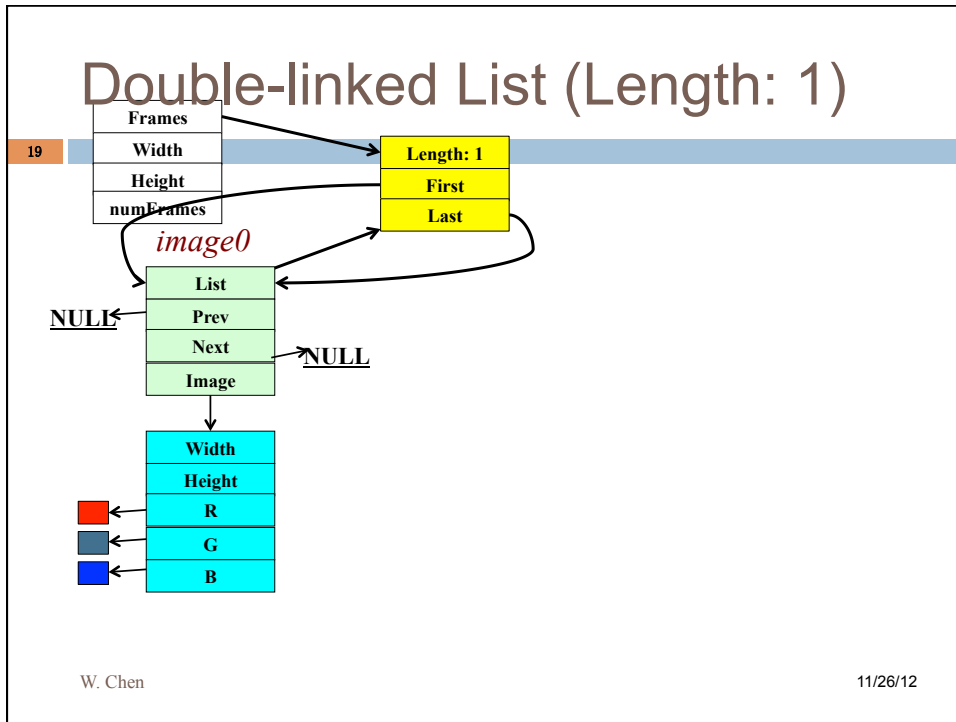


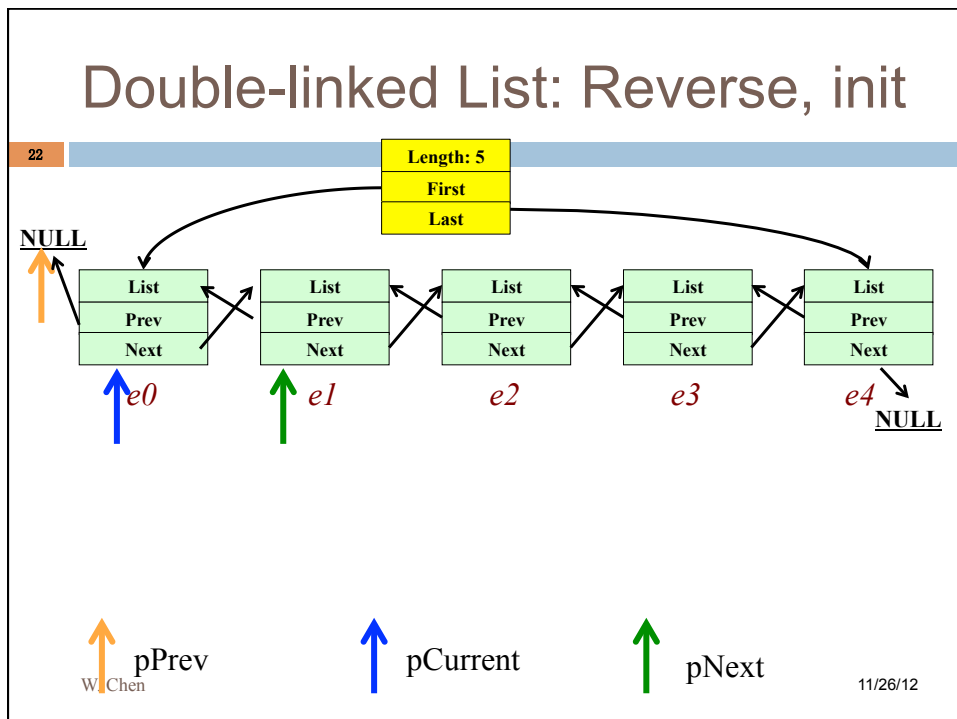
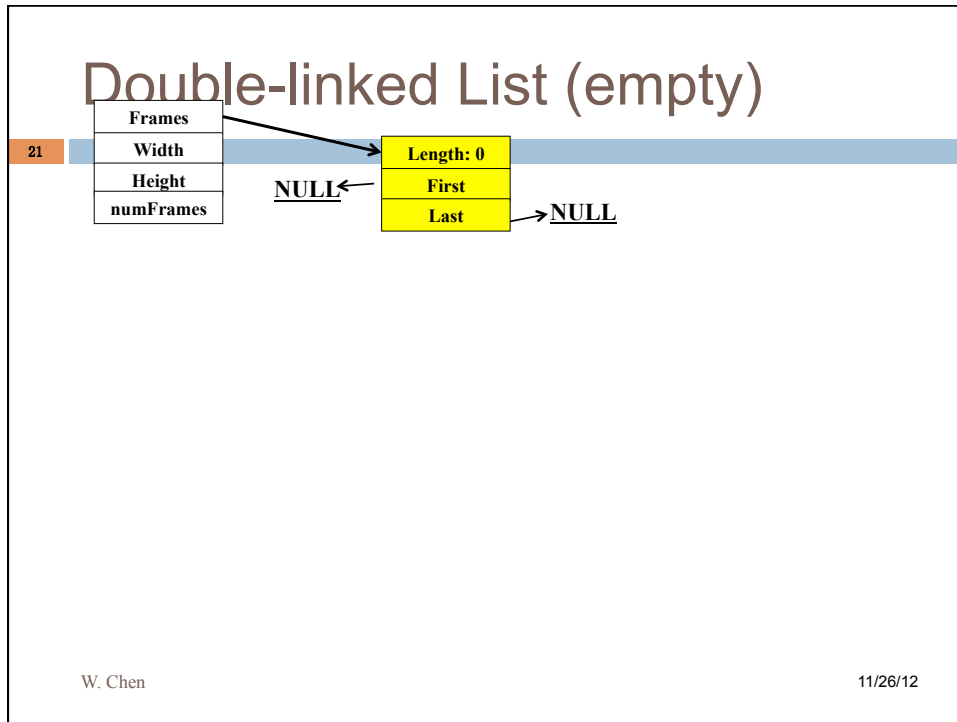


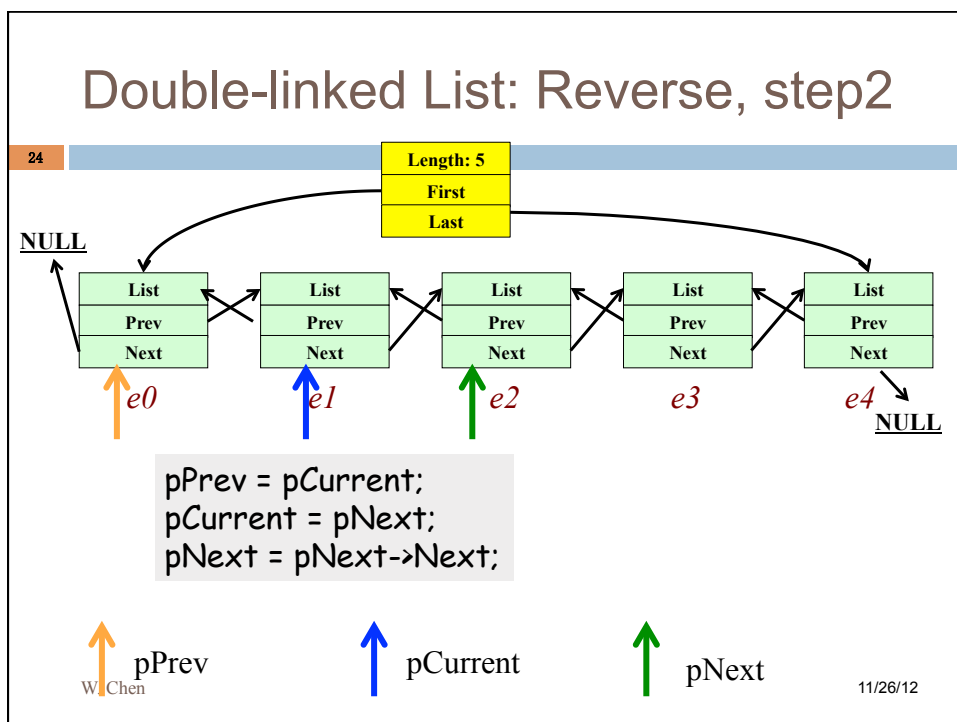
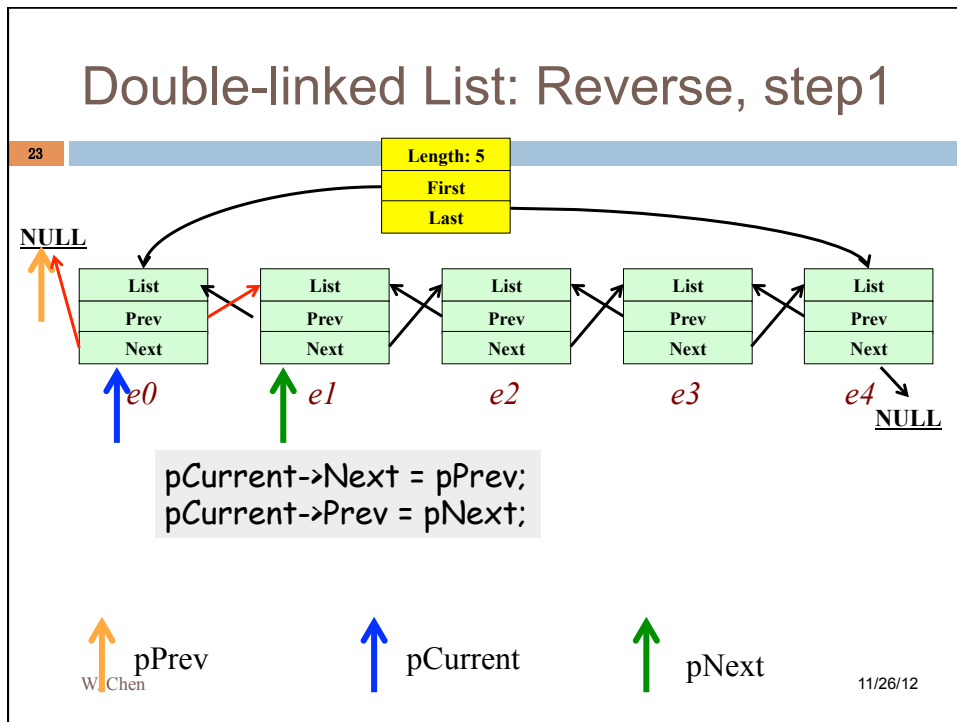


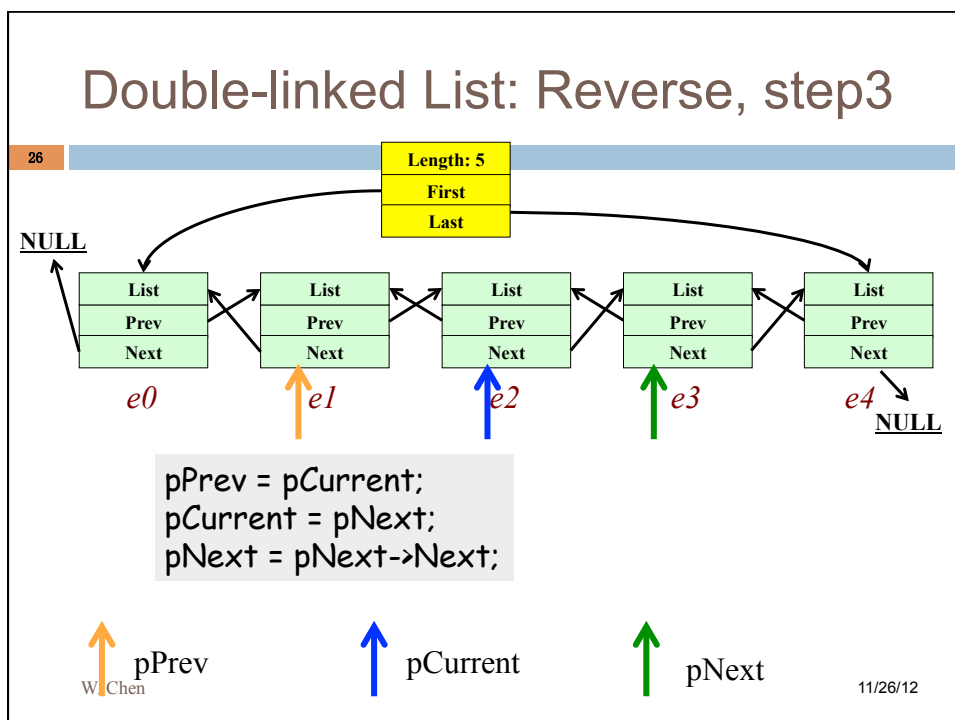
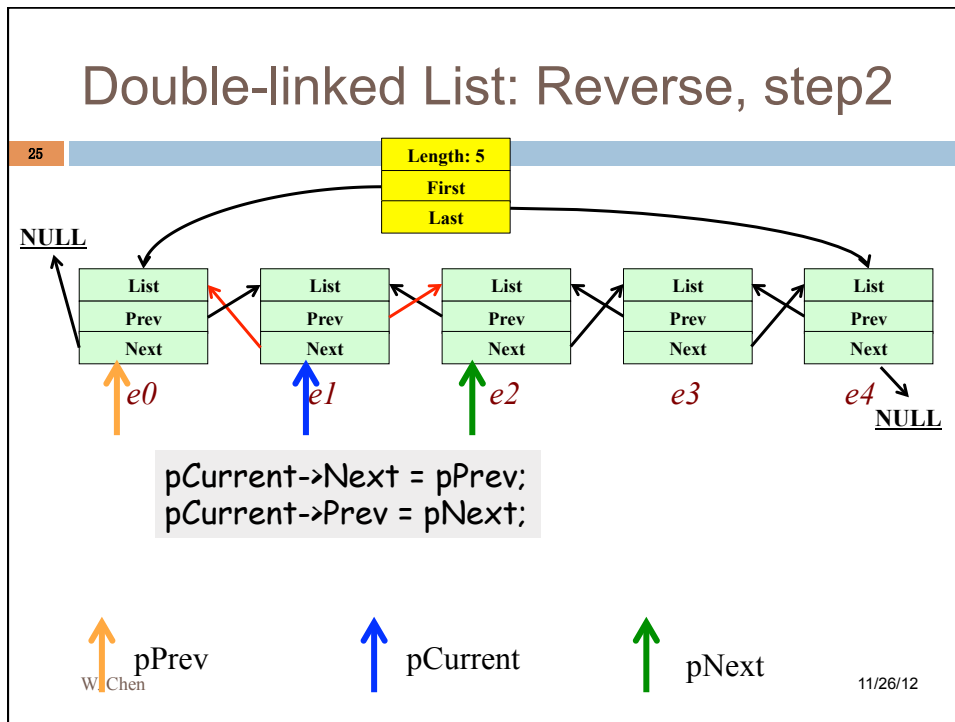


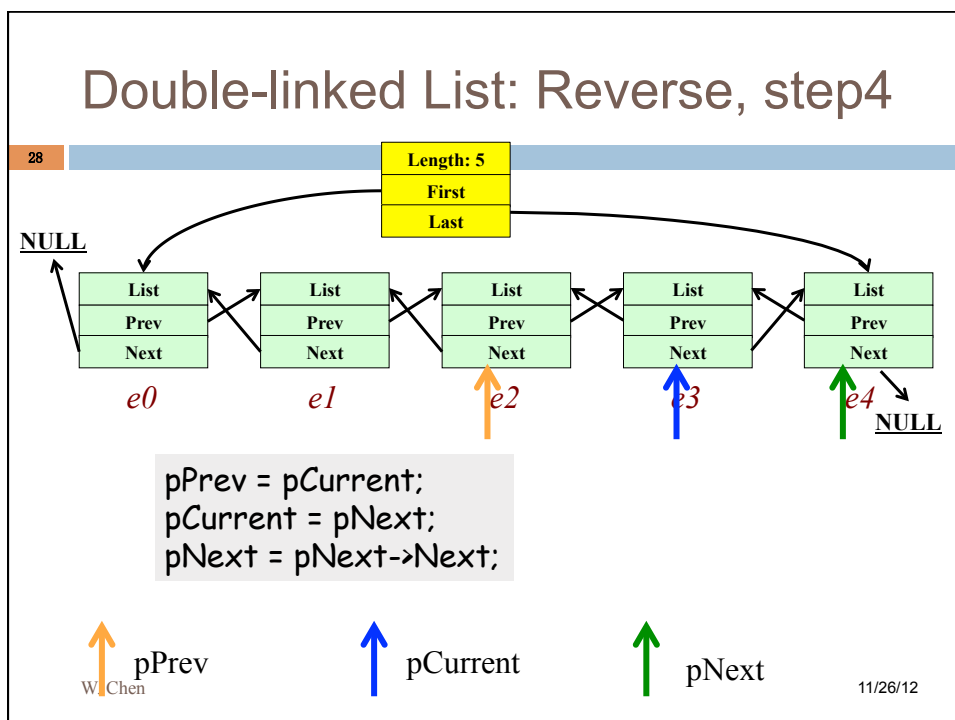
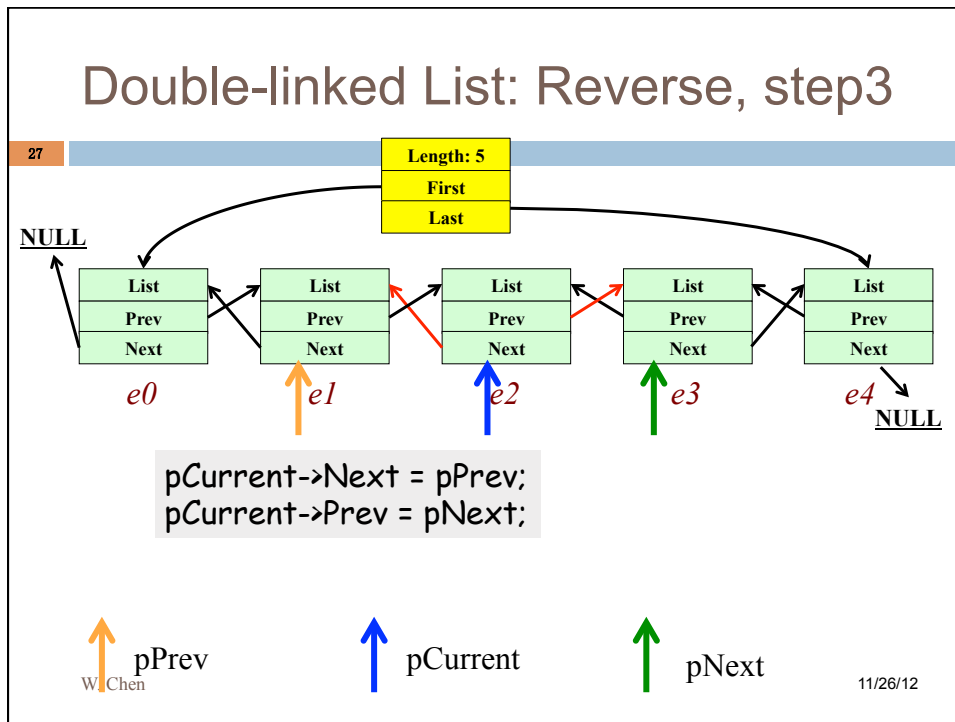


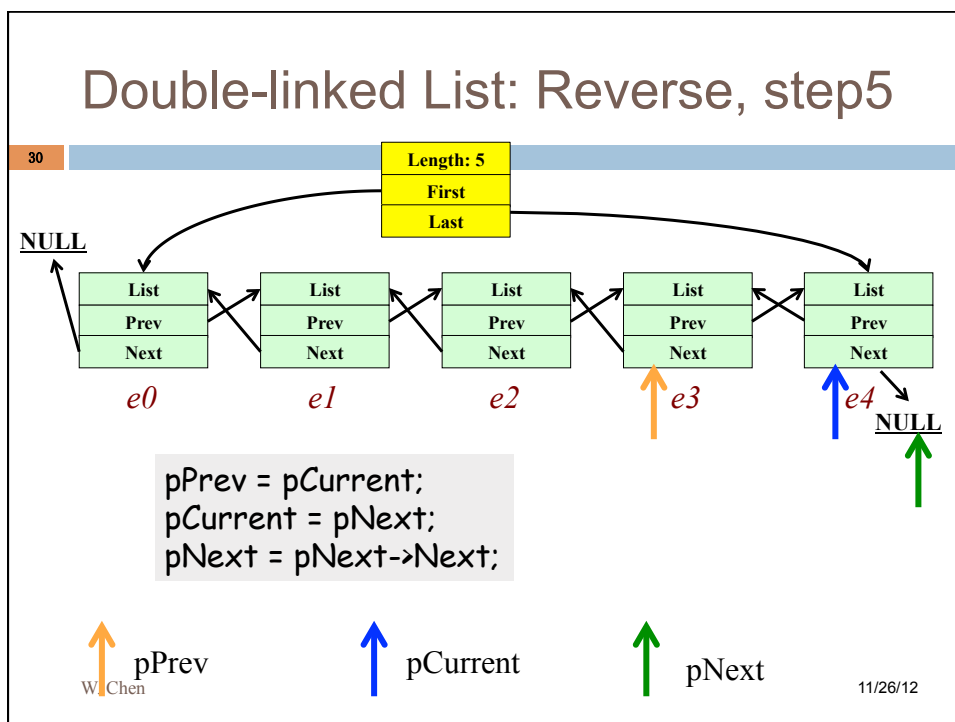
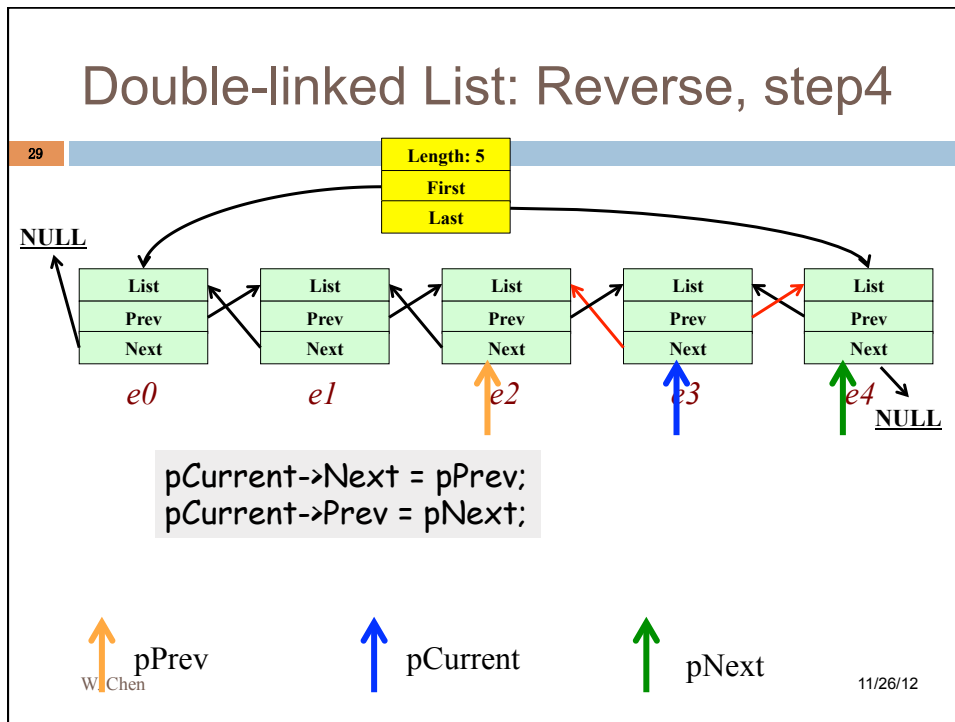


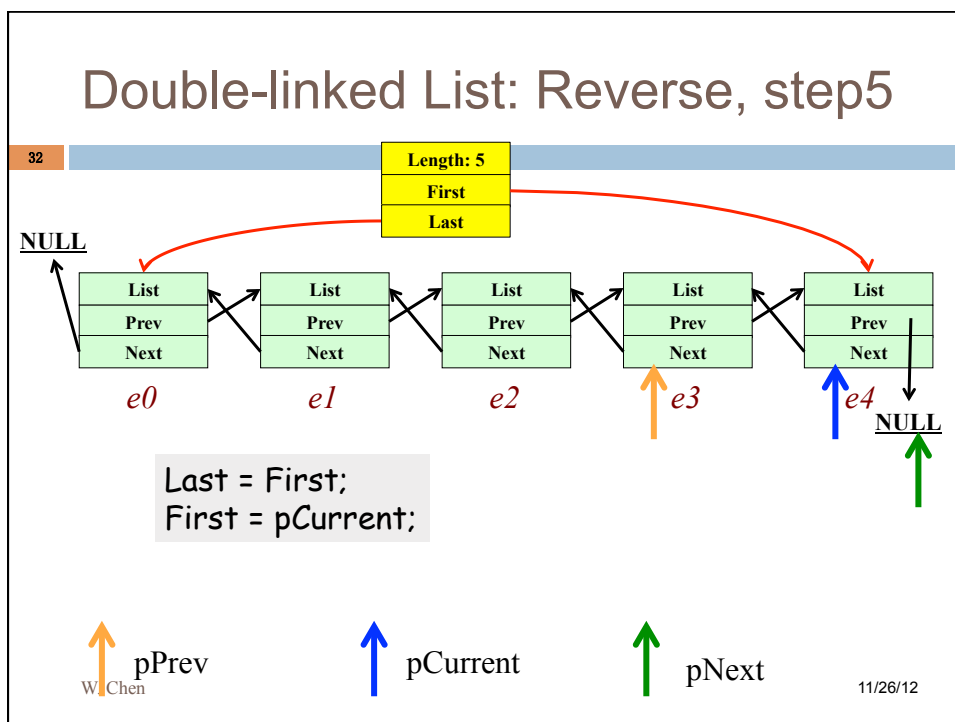
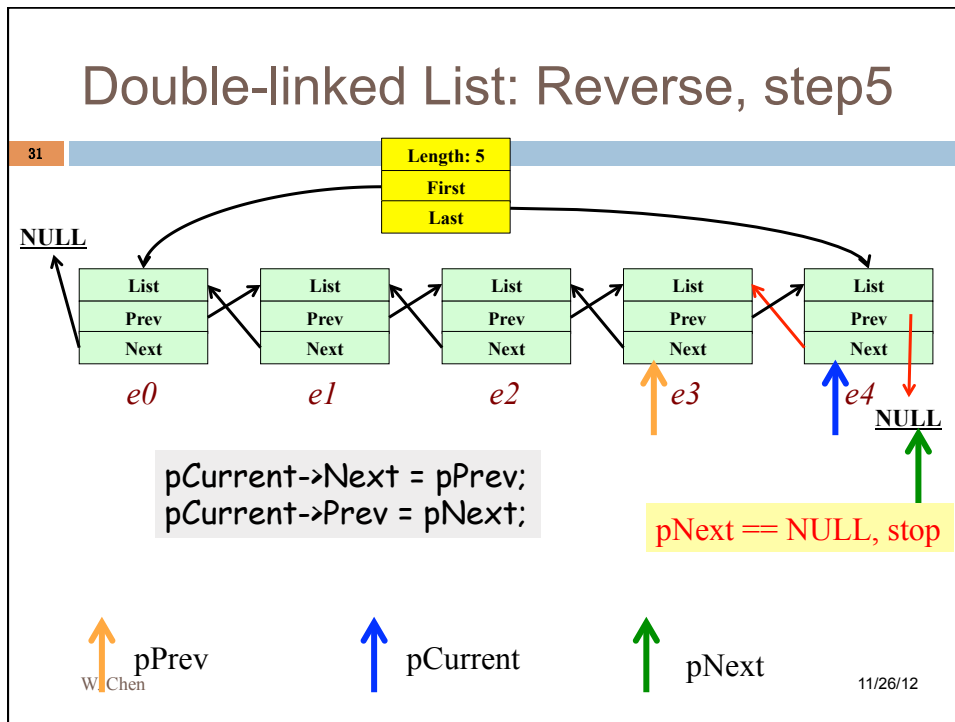














## Budgeting Your Time

33

### □ Week 1:

- Add the command-line argument support in the main() function.
- Design the ImageList.c (ImageList.h as the header file) module.
- Design the Movie.c (Movie.h as the header file) module.
- Build the Makefile.

### □ Week 2:

- Add the command-line argument support in the main() function.
- Design the MovieLab.c module.
- Finalize the Makefile.
- Use Valgrind to check memory usage. Fix the code if Valgrind complains about any errors or memory leaks.
- Script the result of your programs and submit your work.

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