CS21: INTRODUCTION TO COMPUTER SCIENCE

Prof. Mathieson

Fall 2017

Swarthmore College

Handout 5

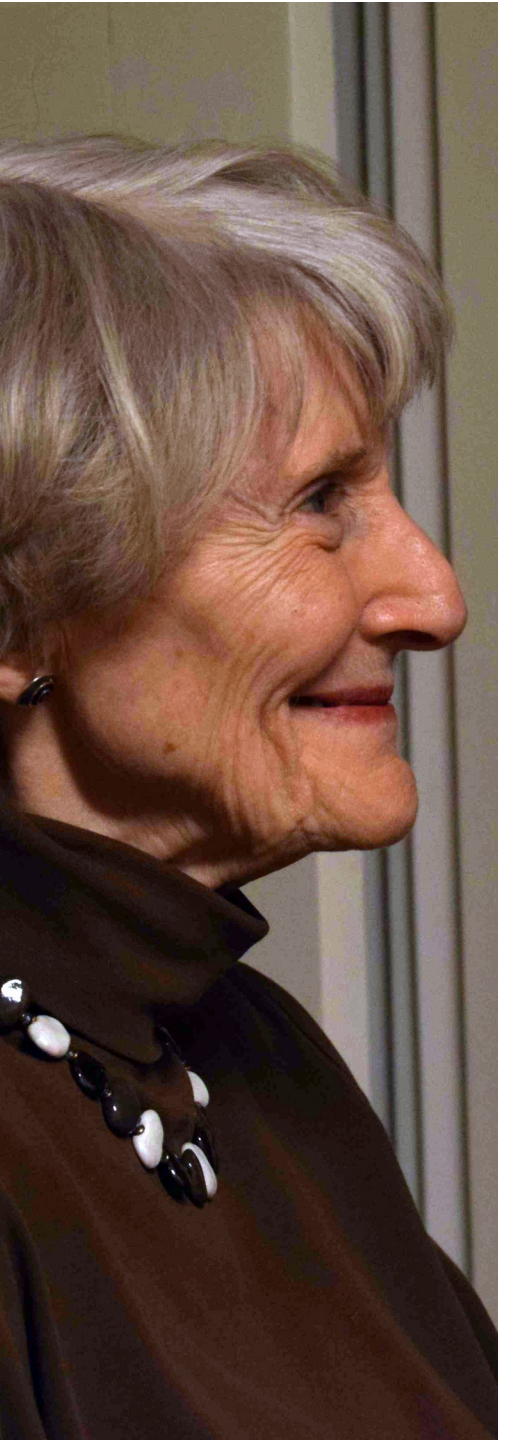
- Find a partner to work with on **Handout 5**
- **Don't use your code** to determine (low, mid, high) at each step! (pretend this is a quiz…)
- Use the second question to develop a **stopping condition** for the while loop

Outline Nov 10:

- Binary search worksheet (Handout 5)
- Runtime of binary search
- Dictionary example (searching file)
- Tips for Lab 8

Notes

•Office Hours **today 3-5pm!** (in room 240)
•Lab 7 due tomorrow night (Saturday)



Women and the LINC to Modern Computer Technology

A talk by Mary Allen Wilkes (The *first person* to use a personal computer in the home – and designer of the interactive operating system LAP6 for the LINC. Wikipedia)

Wednesday Nov. 15 at 5:00 p.m. Science Center 101

Sponsored by Computer Science, WiCS, and Sigma Xi

All are welcome!

Binary Search

Handout 5 (front page)

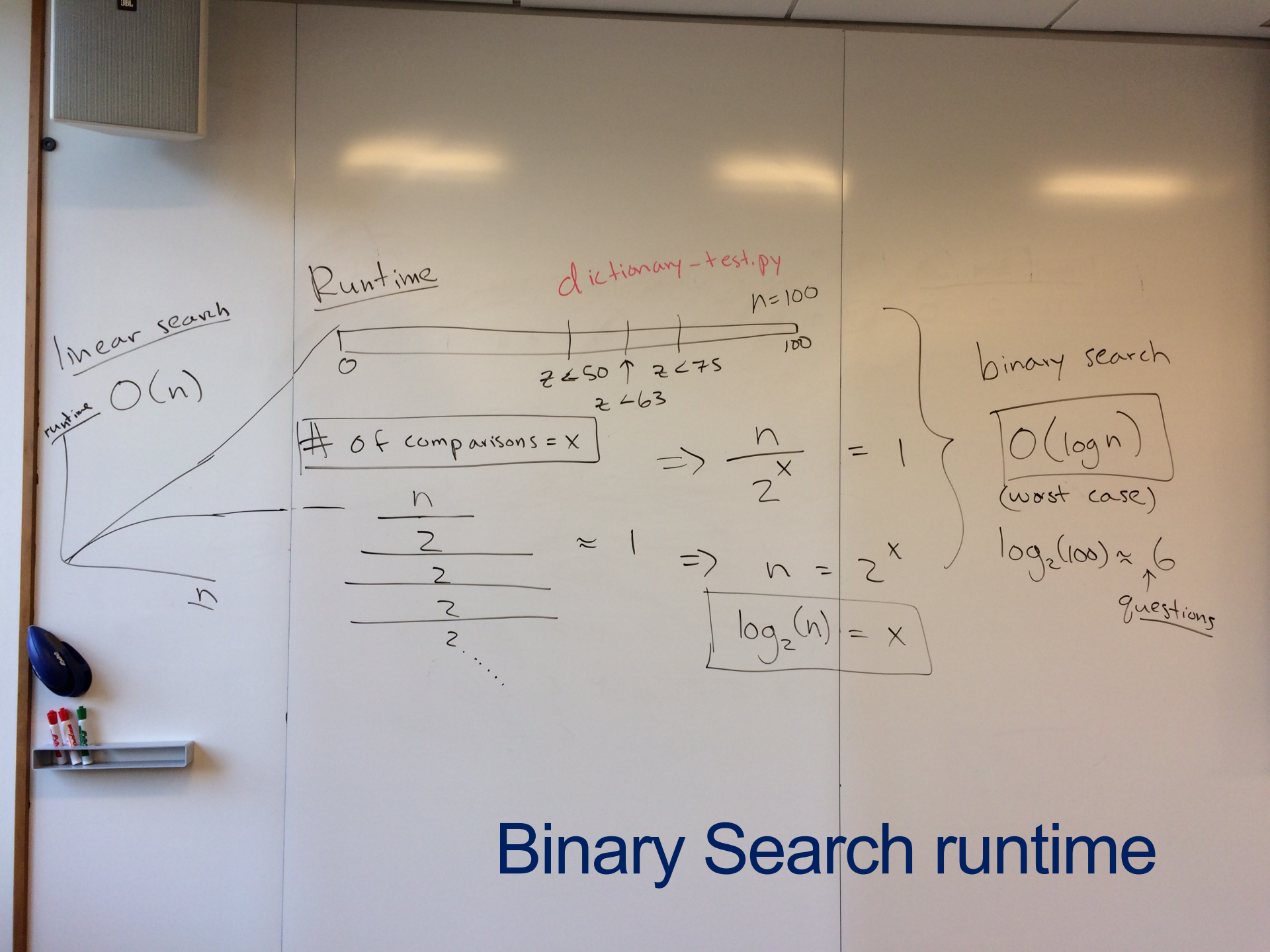
x = 99

L = [-20, -12, -4, 1, 7, 44, 45, 46, 58, 67, 99, 145]

	low	mid	high
index: 0 1 2 3 4 5 6 7 8 9 10 11	0	5	11
0 1 2 3 4 5 6 7 8 9 10 11	6	8	11
0 1 2 3 4 5 6 7 8 9 10 11	9	10	11
x = -10			
0 1 2 3 4 5 6 7 8 9 10 11	0	5	11
0 1 2 3 4 5 6 7 8 9 10 11	0	2	4
0 1 2 3 4 5 6 7 8 9 10 11	0	0	1
0 1 2 3 4 5 6 7 8 9 10 11	1	1	1
0 1 2 3	2		1

$\frac{0+11}{2} = 5.5 \rightarrow 5$

return 10



Binary Search runtime

Tips for Lab 8

Tips for Lab 8

- **Read the entire lab before starting!**
- **Use string formatting to right-align strings or numbers**

```
lst = ["anya","christina","clarissa","michelle","pravadh","rachel","rye","scout","tristan"]

for name in lst:
    print("%20s" % name)

            anya
       christina
        clarissa
        michelle
         pravadh
          rachel
             rye
           scout
         tristan
```

- **When reading files, so far we have used list accumulators, but you can also accumulate the data as one long string**
- **When in doubt, use an accumulator :)**