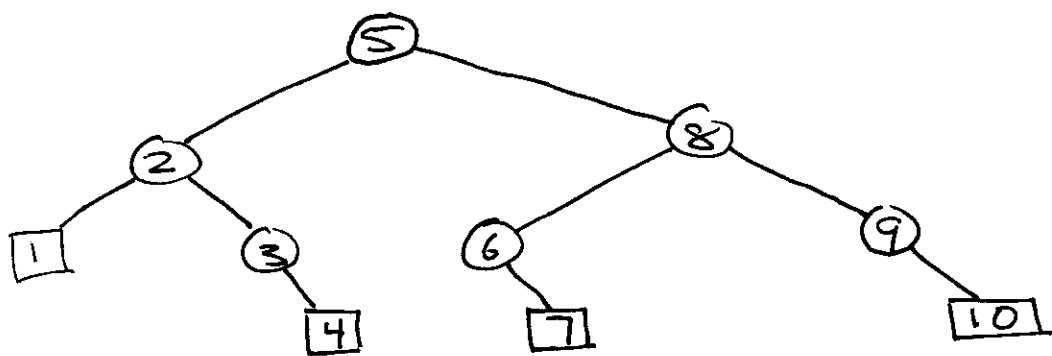


- Quiz 3 today
- Lab 3 posted
- Pa6 Posted

Exercise

re-write BinarySearch.py so
as to print the index of
target in original un-sorted list.

Efficiency of BinarySearch : [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]



#comp

1

2

3

4

Question

How many times can you halve a number n until you get 1?

$$n, \frac{n}{2^1}, \frac{n}{2^2}, \frac{n}{2^3}, \frac{n}{2^4}, \dots, \frac{1}{\frac{n}{2^k}}$$

Solve $\frac{n}{2^k} = 1$ for k

i.e. $2^k = n$

i.e. $k = \log_2(n) = \lg(n)$

if $n = 1,000,000$, then

$$k = \lceil \lg(1,000,000) \rceil = 20$$

↑
twenty questions.

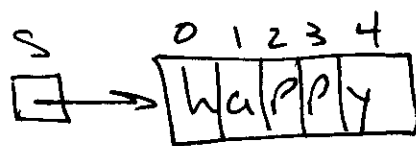
Chapter 8: Strings

3

strings & lists are both sequences:

string: seq. of characters

list: seq of anything.

`s = 'happy'` 

`len(s)` is 5

`print(s[0], s[4], s[2])` # h y p

↑ ↑ ↑
strings of length 1

`L = list(enumerate(s))`

`[(0, 'h'), (1, 'a'), (2, 'p'), (3, 'p'), (4, 'y')]`

↑ ↑
ordered pairs (tuples)

indices in strings work the same as for lists

$s[\text{len}(s)-1]$ # last char.

$s[-1]$ # something.

$s[-2] = s[\text{len}(s)-2]$

traverse a string

```
i = 0
while i < len(s):
    print(s[i])
    i += 1
```

or

```
for i in range(len(s)):
    print(s[i])
```

or

```
for c in s:
    print(c)
```