

# Algorithms and Data Structures for Data Science

## lab\_dynamic

CS 277

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Brad Solomon



UNIVERSITY OF  
**ILLINOIS**  
URBANA - CHAMPAIGN

Department of Computer Science

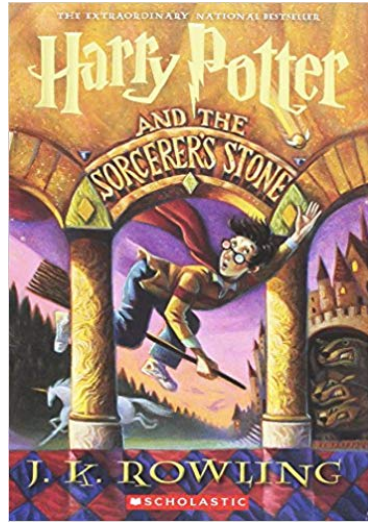
# Learning Objectives

Practice using built-in dictionaries in Python

Conceptualize dynamic programming

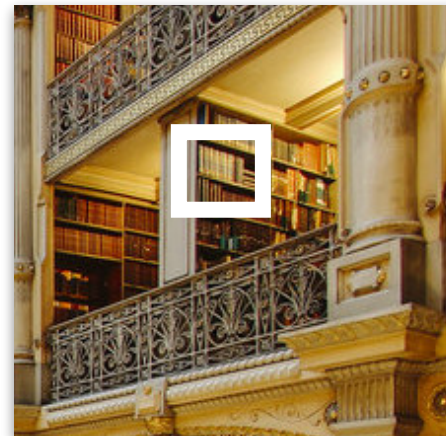
Measure time differences to observe performance differences

# A Hash Table based Dictionary



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CHAPTER ONE  
The Boy Who Lived

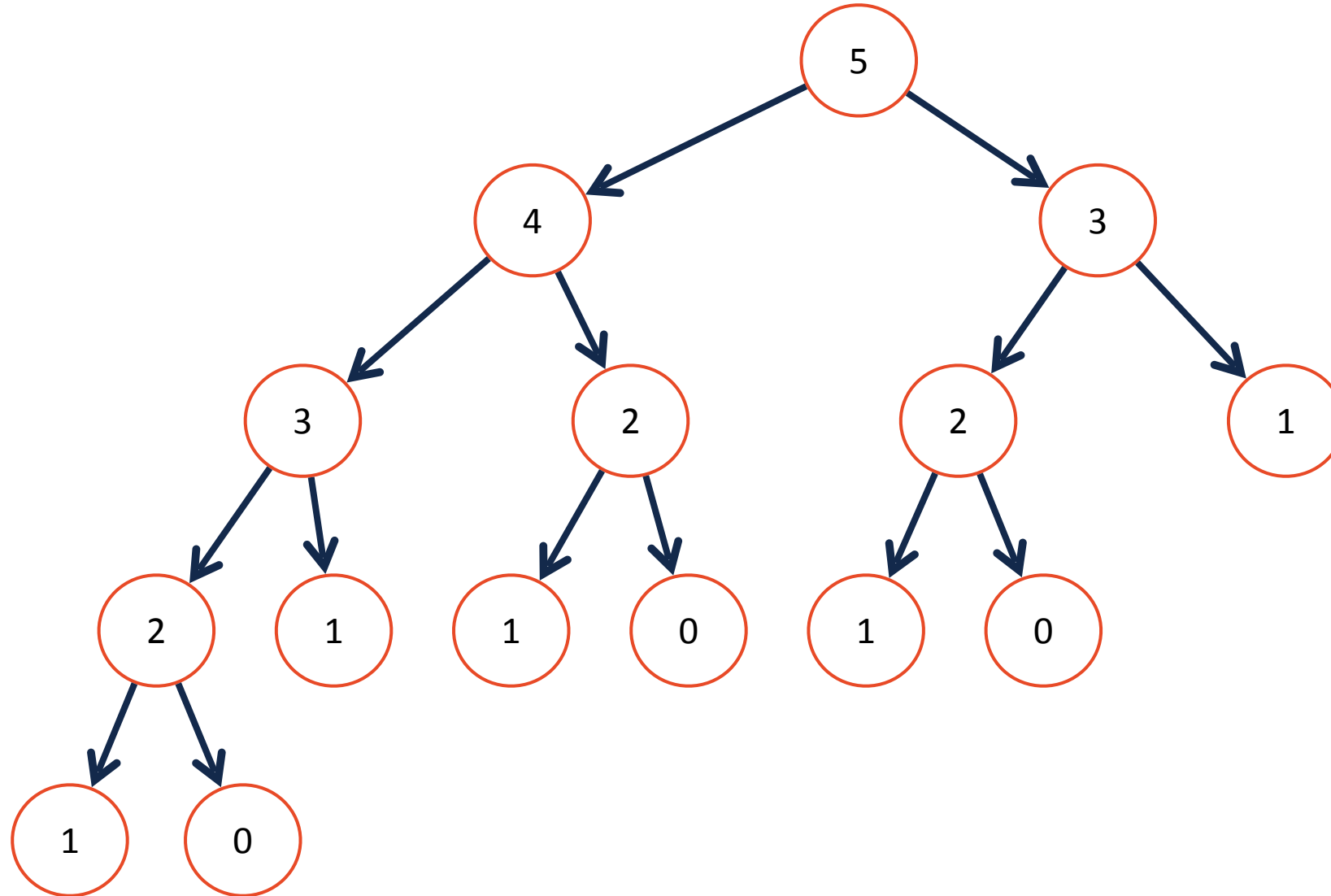
Mr and Mrs Dursley, of number four, Privet Drive, were proud to say that they were perfectly normal, thank you very much. They were the last people you'd expect to be involved in anything strange or mysterious, because they just didn't hold with such nonsense.

Mr Dursley was the director of a firm called Grunnings, which made drills. He was a big, beefy man with hardly any neck, although he did have a very large moustache. Mrs Dursley was thin and blonde and had nearly twice the usual amount of neck, which came in very useful as she spent so much of her time craning over garden fences, spying on the neighbours. The Dursleys had a small son called Dudley and in their opinion there was no finer boy anywhere.

The Dursleys had everything they wanted, but they also had a secret, and their greatest fear was that somebody would discover it. They didn't think they could bear it if anyone found out about the Potters. Mrs Potter was Mrs Dursley's

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# Recursive Fibonacci



# Dynamic Fib

Key	Value
0	
1	
2	
3	
4	
5	

# Rod Cutting Problem



Key	Value
0	0
1	1
2	3
3	4
4	5
5	8

Key	Optimal V
0	
1	
2	
3	
4	
5	