

Design and Analysis of Algorithms I

Introduction

Merge Sort (Overview)

Why Study Merge Sort?

- Good introduction to divide & conquer
 - Improves over Selection, Insertion, Bubble sorts
- Calibrate your preparation
- Motivates guiding principles for algorithm analysis (worst-case and asymptotic analysis)
- Analysis generalizes to "Master Method"

The Sorting Problem

Input: accorded a numbers, unsorted.

[5/4/1/8/7/2/6/3] Assume

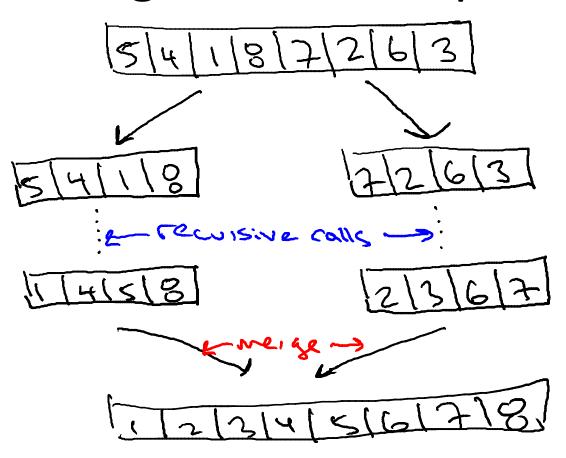
Output: Same numbers, sorted in distinct

In creasing or der.

[1/2/2/4/5/6/7/8]

Tim Roughgarden

Merge Sort: Example



Tim Roughgarden