



Data Structure

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Content

Introduction

Linked list

Stack and Queue

Binary Tree

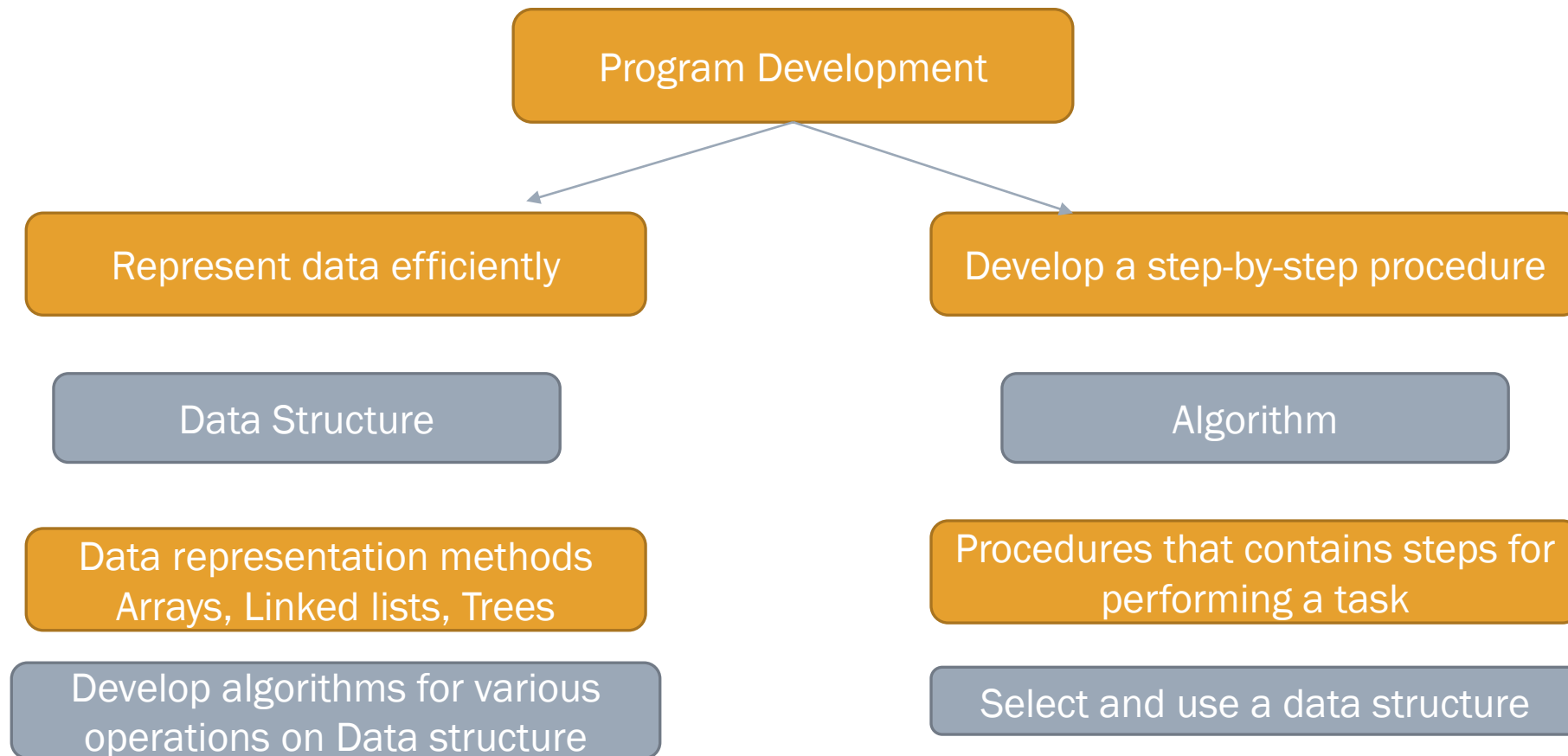
Binary Search Tree

Sorting

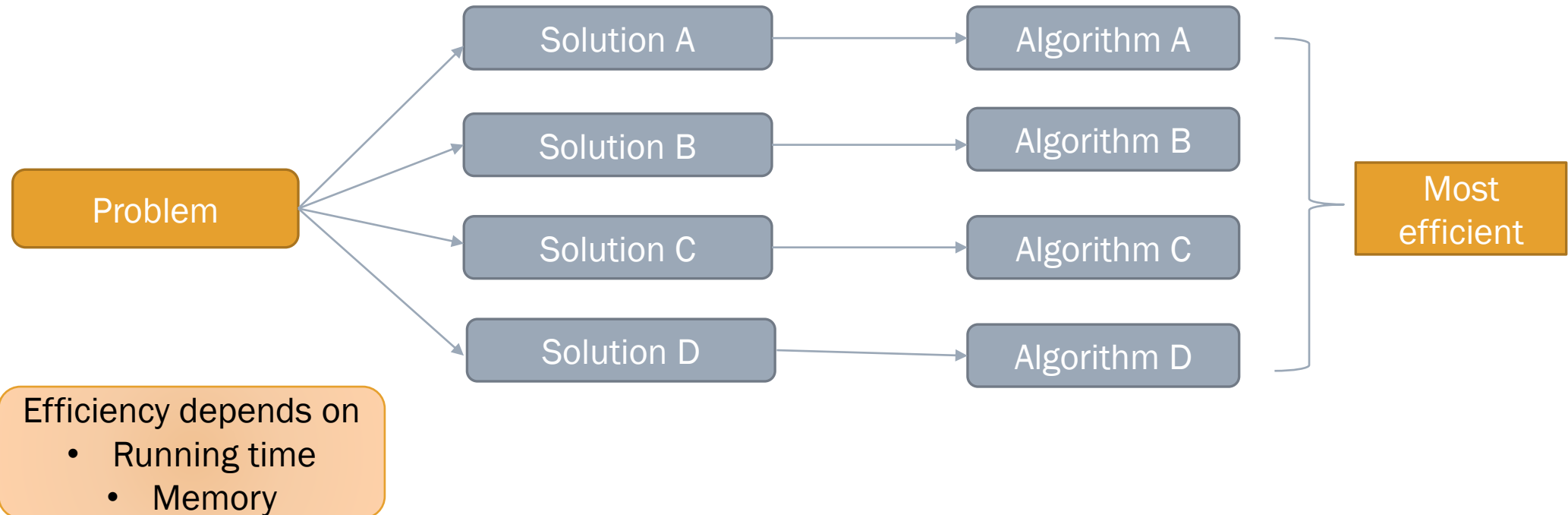
Searching

Hashing

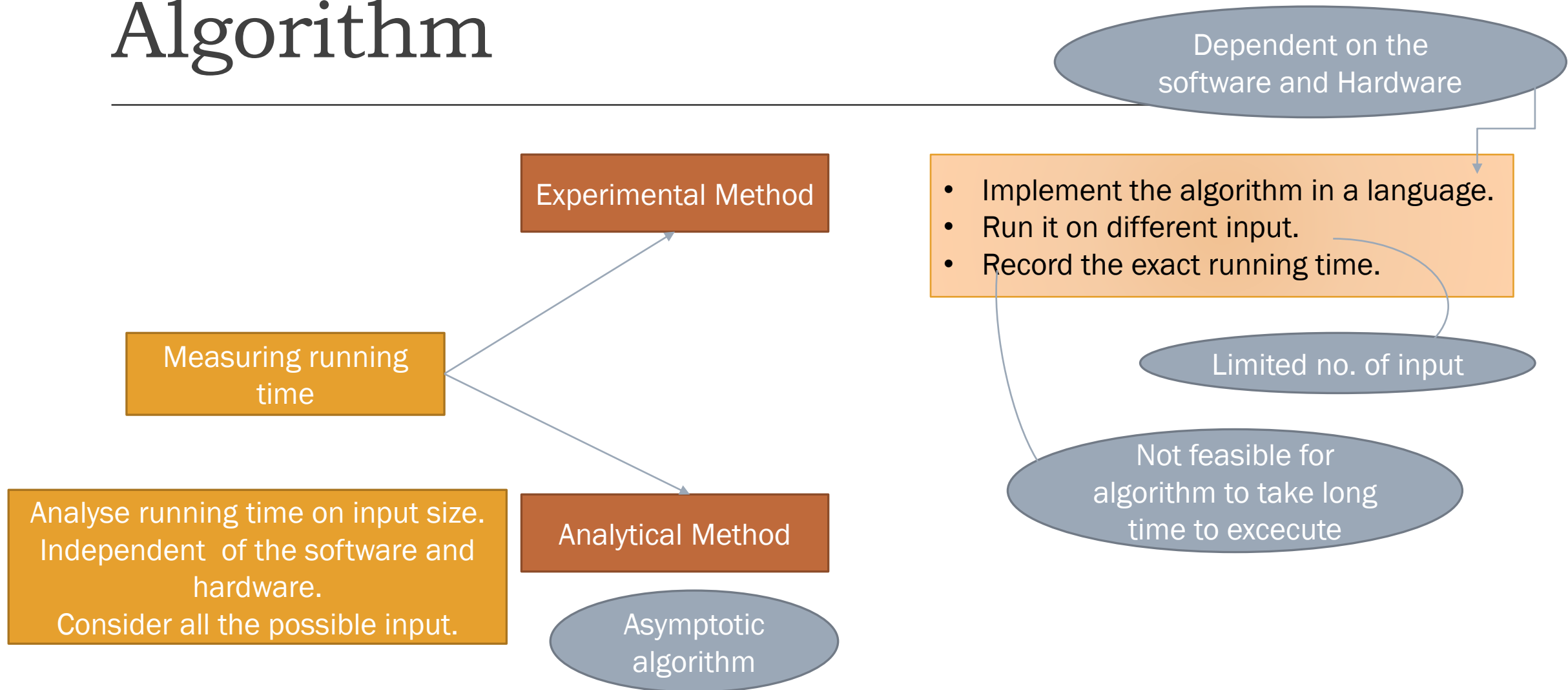
Introduction



Algorithms



Measuring Running Time of An Algorithm



Asymptotic Analysis

Size of input (n) ←

Running time

Small input size

Less running time

Big input size

More running time

Input size is increases

Running time also increases

running time might be double

Input size is doubled

running time might be quadruple

running time might be 20 times

running time might be 40 times

How the running time of algorithm increases with increase in input size

Asymptotic Analysis

Input size n	2	4	7	100	1000	10000
Algorithm A	4	8	14	200	2000	20000
Algorithm B	4	16	49	10000	1000000	100000000

To determine efficiency of an algorithm \longrightarrow How the algorithm behaves when the input size is increased.

To find the rate of growth of running time \longrightarrow Big O Notation