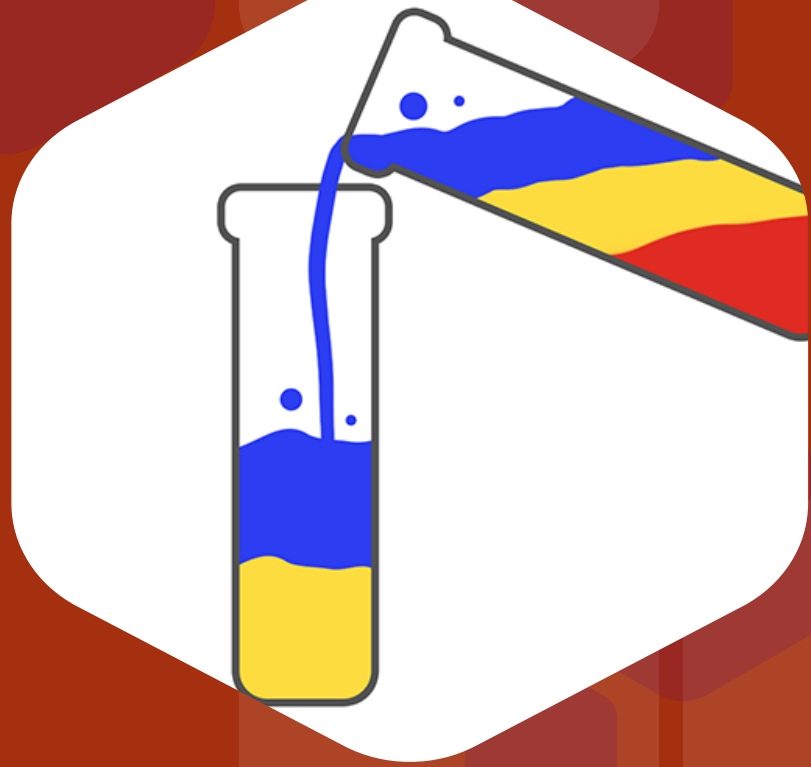# WATER SORT PUZZLE

TEAM PRESENTATION

Sara Mohammadzadeh   Farnood Sotoudeh   Parmida Hosseinmardi

Contents

- Introduction
- Problem Statement
- Methods
- Conclusion

Introduction

Problem Statement

Rules

- Pour is possible only if two glasses have same colors on top

- We can only pour top water from one glass to other

- Two same colors are merged into one with more volume

- Each glass can have certain amount of water and cannot be poured more

Win State

The goal is to reach the state in which same colors are poured into one glass.
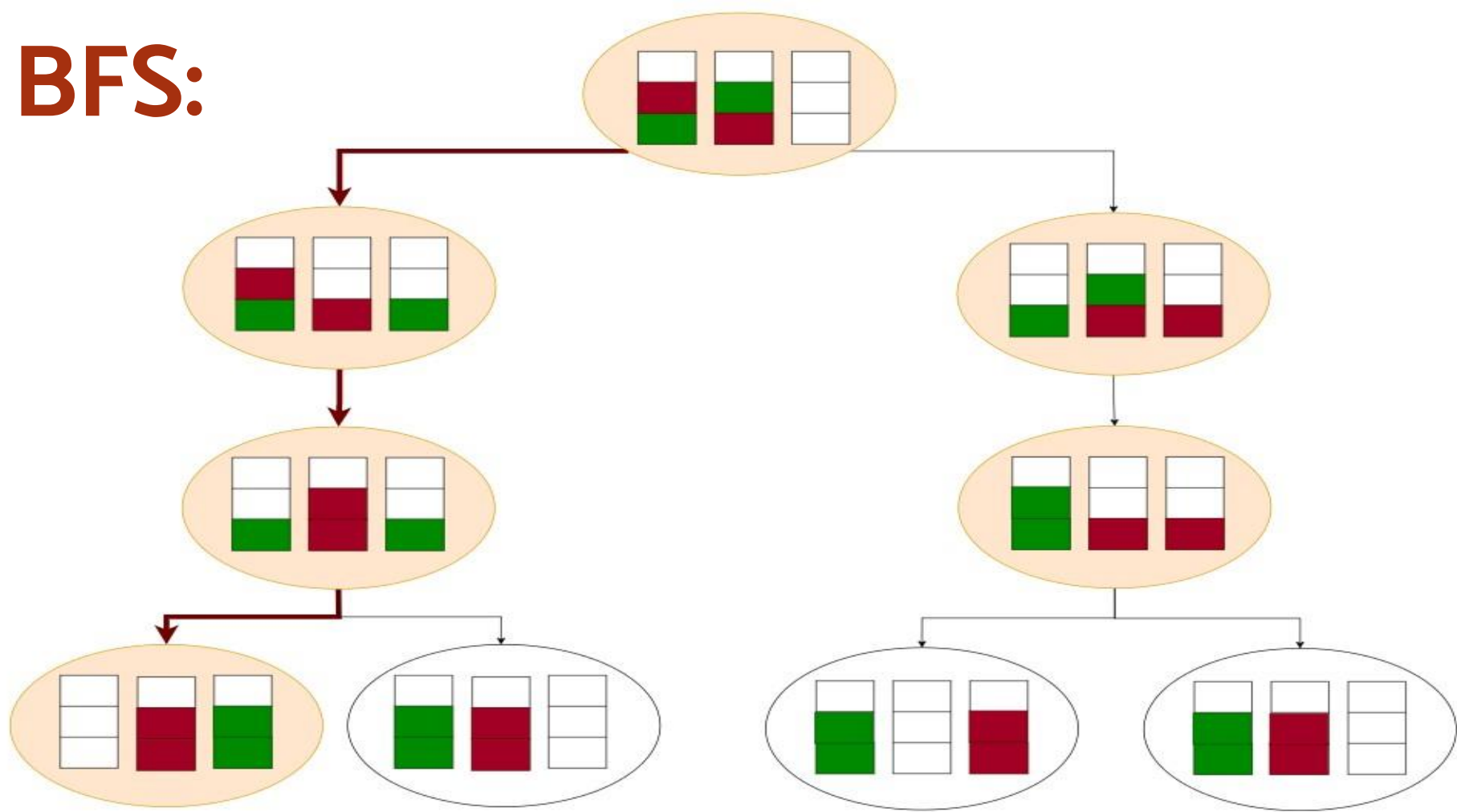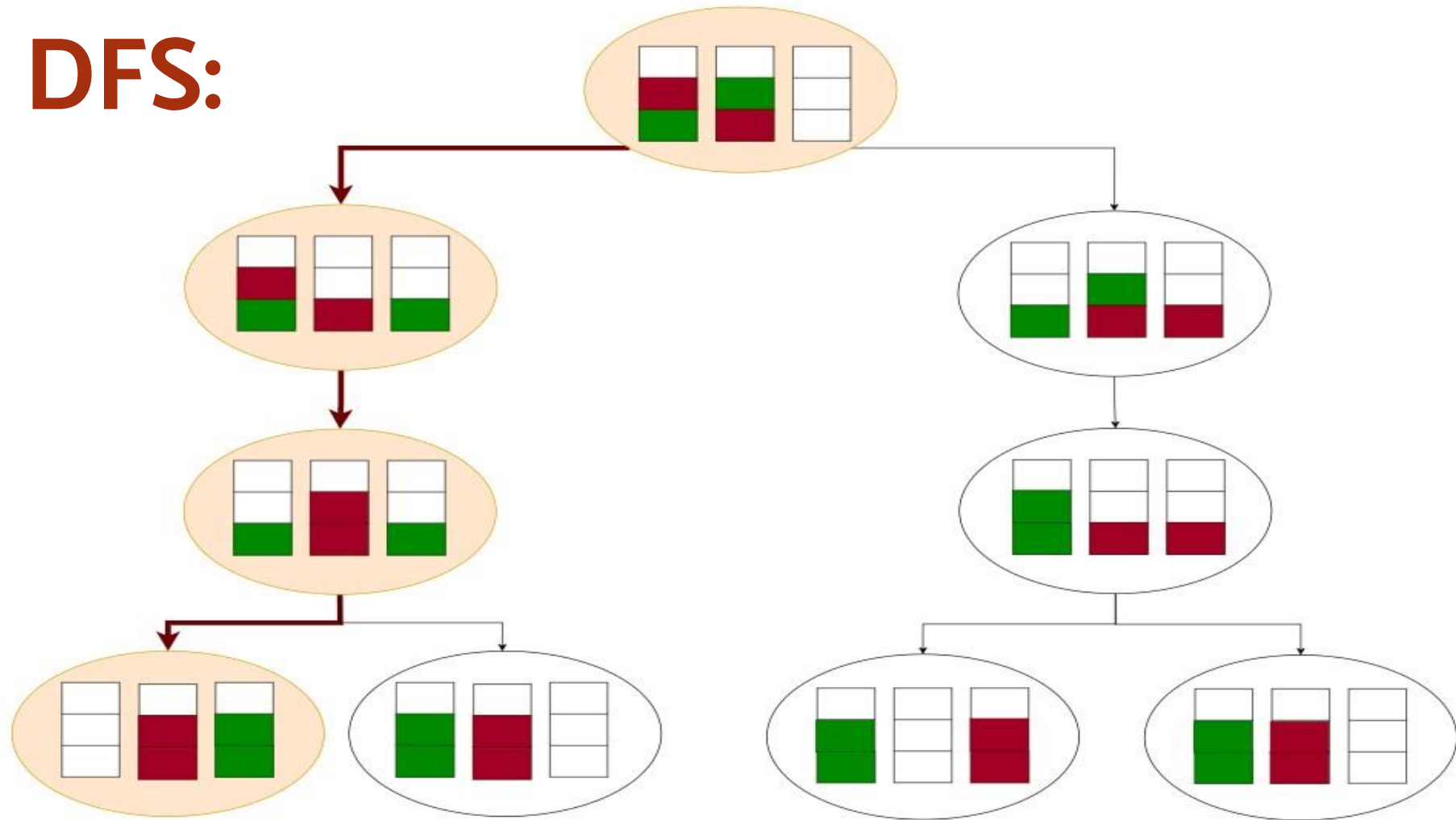
Methods

Methods

- A* Search
- Greedy Search
- UCS(Uniform Cost Search)
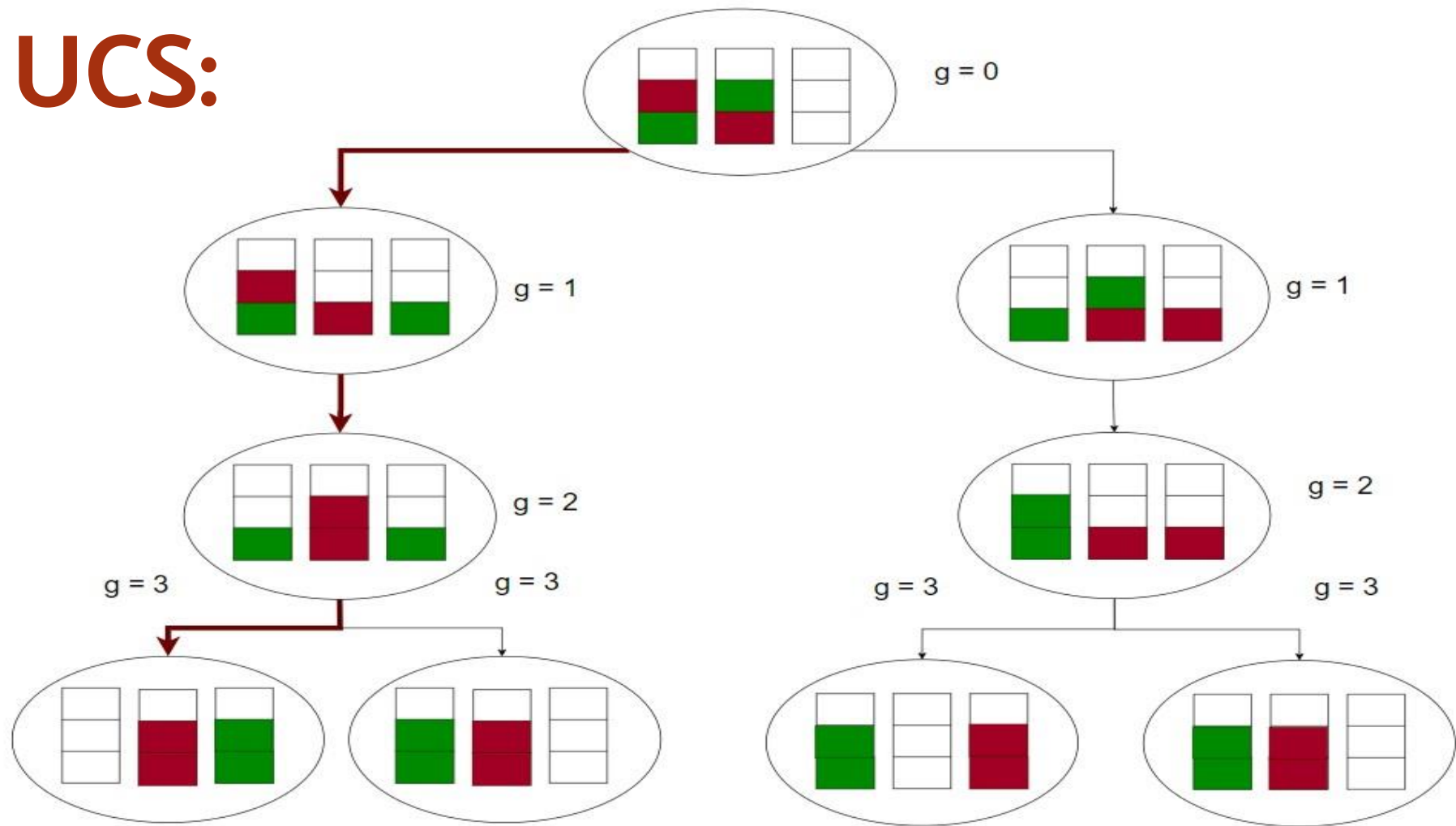- BFS(Breath First Search)
- DFS(Depth First Search)
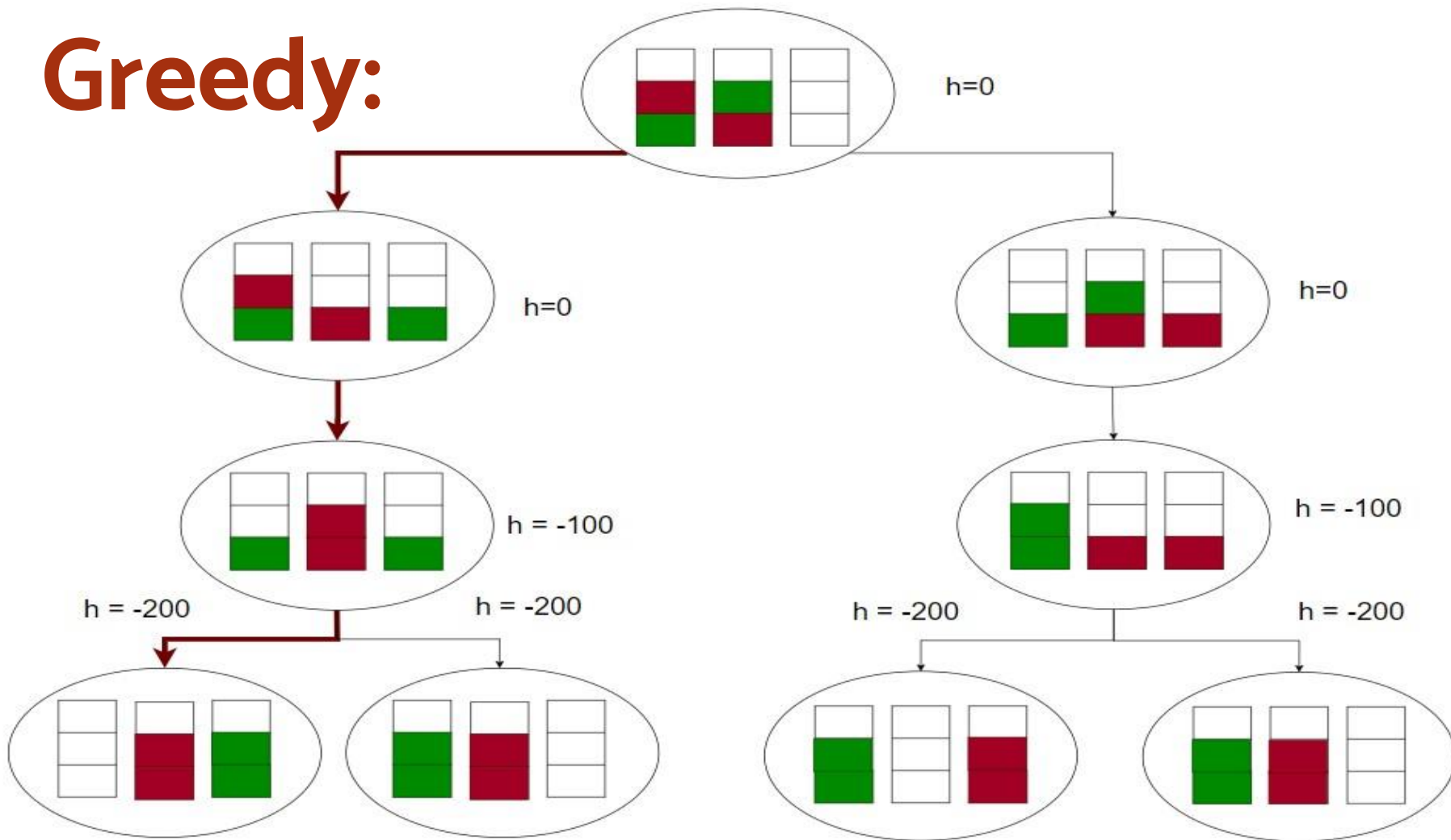
BFS:
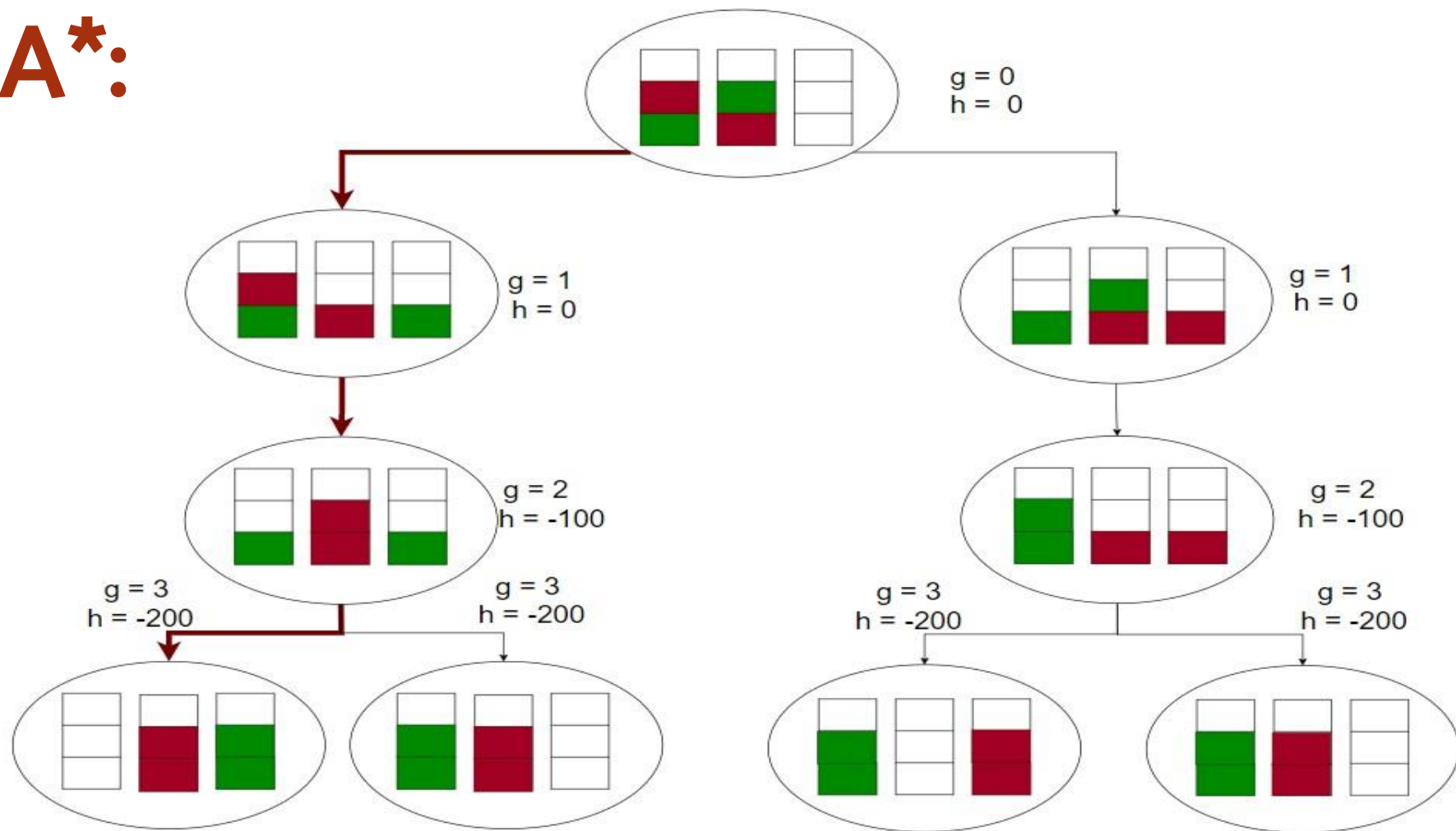
DFS:

UCS:

Heuristic:

$$h_1 = 0 \quad h_2 = 0 \quad h_3 = -300 \quad h_4 = -100$$

$$h = -400$$

Greedy:

A*:

g = 0
h = 0

g = 1
h = 0

g = 1
h = 0

g = 2
h = -100

g = 2
h = -100

g = 3
h = -200

g = 3
h = -200

g = 3
h = -200

g = 3
h = -200

Result

Algorithm	Node expanded	Move's number
DFS	73	19
BFS	1684	10
UCS	1684	10
Greedy	87	10
A*	87	10

Conclusion

Thankyou For Your Attention!