BFS Algorithm Example

Find the shortest path from A to H.
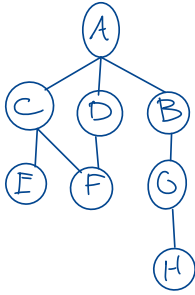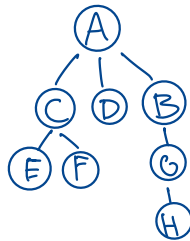

Node	Frontier	Visited
A	A̶	A
C	C̶–A	C
D	D̶–A	D
B	B̶–A	B
E	E̶–C–A	E
F	F̶–C̶–A	F
F	F̶–D–A	G
G	G̶–B–A	H
(H)	H̶–G–B–A	

Path: H–G–B–A

Draw the Breadth-First Tree

$$V_\pi = \{ v \in V / \exists\, V.\pi \} \cup \{A\} = \{A, B, C, D, E, F, G, H\} = V$$

$$E_\pi = \{ (V.\pi, V) / V \in V_\pi \setminus \{A\} \}$$

1) Max Flow
2) Strongly Connected Components
3) Minimum Spanning Tree.
4) Huffman
5) Prüfer