

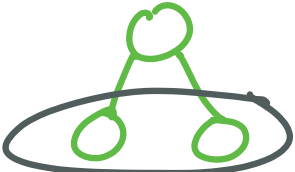
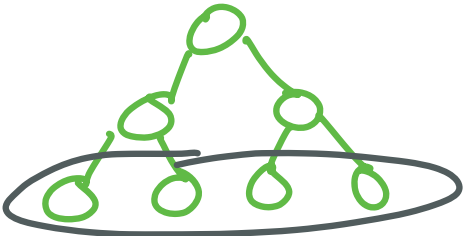
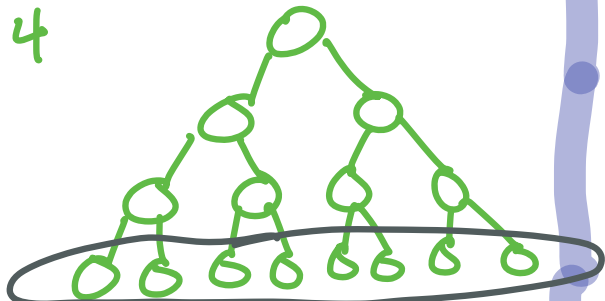


| h | Example | most nodes possible | 2^h |
|----------|---|---|-------|
| height 0 | / |  | 1 |
| height 1 |  | 1 | 2 |
| height 2 |  | 3 = 1 + 2 | 4 |
| height 3 |  | 7 = 3 + 4 | 8 |
| height 4 |  | 15 = 7 + 8 | 16 |
| 5 | | 31 = 15 + 16 | 32 |
| 6 | | 63 = 31 + 32 | 64 |
| | ⋮ | | ⋮ |

$$\# \text{ nodes } n \leq (2^h) - 1$$

$$n+1 \leq 2^h$$

$$\log_2(n+1) \leq \log_2(2^h)$$

$$\log_2(n+1) \leq h$$

$$\log_2(n+1) \leq h \leq n$$