

ALGORITHM AND DATA STRUCTURE PRACTICUM

PRACTICUM 9



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1.

a. $n = 10$

1) Level minimum = 3

2) Level maximum = 9

b. $n = 35$

1) Level minimum = 6

2) Level maximum = 34

c. $n = 76$

1) Level minimum = 7

2) Level maximum = 75

d. $n = 345$

1) Level minimum = 8

2) Level maximum = 344

2.

$$C_n = (2n)! / (n+1)! * n!$$

$$= (2*5)! / (5+1)! + 5!$$

$$= 10! / 6! * 5!$$

$$= 3628800 / 86400$$

$$= 42 \text{ kemungkinan}$$

3.

a. $h = 3$

$$\text{Jumlah max simpul} = \text{level 0} + \text{level 1} + \text{level 2}$$

$$= 1 + 2 + 4$$

$$= 7$$

b. $h = 4$

$$\text{Jumlah max simpul} = \text{level 0} + \text{level 1} + \text{level 2} + \text{level 3}$$

$$= 1 + 2 + 4 + 8$$

$$= 15$$

c. $h = 5$

$$\text{Jumlah max simpul} = \text{level 0} + \text{level 1} + \text{level 2} + \text{level 3} + \text{level 4}$$

$$= 1 + 2 + 4 + 8 + 16$$

$$= 31$$

d. $h = 6$

$$\begin{aligned}\text{Jumlah max simpul} &= \text{level 0} + \text{level 1} + \text{level 2} + \text{level 3} + \text{level 4} + \text{level 5} \\ &= 1 + 2 + 4 + 8 + 16 + 32 \\ &= 63\end{aligned}$$

4.

a.

- 1) Penuh
- 2) Sempurna
- 3) Komplit dan penuh
- 4) Komplit
- 5) Komplit

b.

- 1) 7
- 2) 15
- 3) 14
- 4) 7
- 5) 11

c.

- 1) 4
- 2) 4
- 3) 8
- 4) 4
- 5) 4

d.

- 1) 2
- 2) 8
- 3) 2
- 4) 3
- 5) 5

5.

a.

- 1) Preorder traversal = 14-78-39-52-83-17-9-41-2-60-23-4-19

2) Inorder traversal = 39-78-17-83-9-52-41-14-60-2-4-23-19

3) Postorder traversal = 39-17-9-83-41-52-78-60-4-19-23-2-14

b. 39, 17, 9, 41, 60, 4, 19

c. 14, 78, 52, 83, 2, 23

d. 17, 9

e.

1) 83 = 15-7-5-83

2) 39 = 14-78-39

3) 4 = 14-2-23-4

4) 9 = 14-78-52-83-9

f.

1) 83, 41

2) 78, 14

3) 39

g.

1) level 1

2) level 2

3) level 2

4) level 3