

STUDENT NAME: LEE YU XIANG

STUDENT NUMBER: 7233164

ELECTRICAL SERVICE JOB SHEET

1) 5 read blocks as salary consist of 5 data blocks

RE

2) 20 read blocks as position consist of 20 data blocks

NO

3)  $\log_{10} 10^3 + 1 + 1 = 5$  read blocks

4) Index processing:  $\log_{10} 10^3 + 1 = 4$

best case:  $1000 / (20 \times 10) = 5$

worst case:  $1000 / 20 = 50$

avg:  $(50 + 5) / 2 = 27.5$

$4 + 27.5 = 31.5$  read blocks

5)  $(\log_{10} 10^2 + 1) + (\log_{10} 10^2 + 1) = 6$  read blocks

6) 5 read blocks as salary consist of 5 data blocks

7) chance of position:  $\frac{1}{50}$

chance of salary:  $\frac{1}{20}$

best case at position:  $\frac{50}{10}$

worst case at position:  $\frac{50}{1}$

best case at salary:  $\frac{20}{10}$

worst case at salary:  $\frac{20}{1}$

$(\frac{1}{50} \times \frac{1}{20}) \times 1000 = 1$

$(\frac{50}{10} + \frac{50}{1}) / 2 = 27.5$

$(\frac{20}{10} + \frac{20}{1}) / 2 = 11$

$4 + 27.5 + 11 + 3.5$

$= 45.5$  read blocks

8) total number of rows/blocking factor:  $1000 / 100 = 10$  read blocks

a)  $20 \times 5 = 100$  read blocks

10) 5 read blocks + 100 data blocks = 105 read blocks