ASSIGNMENT-5

7	18d	A DE LA COMPANIE DE L
	Database Dais	1
	Database Design	
	Assignment E	
1	Assignment-5	
1	al li ci	
1	1. Block Size B = 512 bytes	
1	Buch pointer P = 6 bytes	Cyl
1	Kecord pointer PR = 7 bytes	
1	7 = 3000	
1	to the latest to the state of t	
1	a) Record size R = 30 (NAME) + 10 (S	5SN) +
1	10 (PEPART MENT CODE) + 30 (ADDRESS)	+
1	10 (PHONE) + 10 (BIRTHDATE) + 1 (GE	NDER) +
1	4 (JOBCODE) + 4(SALARY) +1 (Additio	nal byte
1	for deletion marker) = 110	(111)
1	:. R = 110 bytes	
1		
1	b) Blocking factor bfr = [B div R] = [51	2 div 110
1	= 4 records) ble	ock
1	Number of file blocks = [x/bfx] = [3	
1	= 750 file block	s 'I
1		
1	a) is Fiden blocking factor bifri = 18d	IV RIL
1	c) i) Index blocking factor bfr; = LBd = 1512 div(10+6)) = 32 reco	mes/block
+		
1	ii) Number of fixt-level index entries Number of fixt-level index blocks = = 24 index	= 750
+	11) Number of first-level little eraber	[450]2-7
1	Number of first-level makes olders	h10/82/
1	Number of first = 24 index	Occup
+	ARTEM TO THE TOTAL PROPERTY OF THE PARTY OF	01 - 811
1	iii) Number of second-level index entri	1 - Taul 7
1	Number of second-level index block	1 Noch
1		dex DICK
+	Number of Levels needed = 2	
1	ordinate q	1
	A THE PARTY OF THE	

	Assignment-5	
	iv) Total number of blocks required = 1+24 = 25	
	10 AC 1 A STANDER A SER AND A SER AN	
	v) Number of block accesses = 3	
	Record pointer PR 7 bytes + i. (b	
	Index blocking factor by; = [512 div(10+6)]	
	= 32 entries/ block	
	Wumber of fixt level index entries = 3000	
260	Number of fixt level index entries = 3000 Number of fixt level index blocks = [3000]32]	
7 7		
sha.	+ (TOBCODE) + 4(SALARY) +1 (Additional	
	III) Number of second level index entries = 94	
	Number of second level index blocks = [94/32] = 3	
TOHA	Number of third level index entries = 3 Number of third level index blocks = [3/32] = 1	
	Number of third level index blocks = 3/32/=1	
	Tromple of the mochs - 17 have -	
	Number of Levels needed = 3	
	111 110 1211 1211 - 198	
	in Total number of blocks = 94+3+1= 98	
Amid	(5)2 div(10+6) = 32 recorded	
	v) Number of block accesses = 4	
	1) Number of the level index explined (1)	
0.5	to hlocking factor bfr; = 512 div (10+6)	
152	e) i) Index blocking factor bfr; = [512 div (10+6)] = 32 entries/ block.	
45	to size = 1 bytes	
	Record polytter = 17 73 nointex / bloch	
N/A	1 block somme 100 departments work	
	3000 employees and be stored in 1 out	
	Honce each departments.	
AUN	100 blocks for 100 of	
Ayest Work	1 block can store 512 7 = 1 porties 1 block can store 512 7 = 1 porties 3000 employees among 100 departments Hence each department can be stored in 1 block Hence each department can be stored in 1 block 100 blocks for 100 departments.	

iii) Number of first level index entries = 100 Number of first level index blocks = [100/32]=4

Number of Second level index entries = 4
Number of Second level index blocks = [4/32] = 1

. Number of Levels = 2

- v) Number of blocks required = 12+4=\$5

 Blocks used in extra level of indirection = 100
- vi) Number of block accesses = 3+30 = 33.
- f) i) Index blocking factor bfr i = [512 | (10+6)]
 = 32 entries | block

 ii) Number of fixt level index entries = 100

 Number of fixt level index blocks = [100] 327 = 4
- Number of second level index entries = 4

 Number of second level index blocks = [4/32] = 1

 Number of levels = 2
- iv) Total number of blocks = 1+4=5
- v) Number of block accesses = 2+8 = 10
- g) calculation of order p:i) block pointer P=6 bytes

 SSN = 10 bytes

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Let number of pointers be p
   then (p \times 6) + [(p-1) \times 10] \le 512

6p + 10p - 10 \le 512

16p \le 522
                  Max (p) = 32
  Calculation of p-leaf:
             (Pleaf x7) + (Pleaf x10) + P < 5,2
(17xPleaf) + 6 < 5,12
                 17 Pleaf = 506
                 Max (pleaf) = 29
11) Each leaf node will hold 0.69 x max (pleaf)
                      = 6.69 × 29 = 20 record pointers
Number of leaf level blocks = $3000/207 = 150
(ii) Each internal node will hold 0.69x32 = 22 pointer
                                   2 21 values
   Number of first internal level nodes = 1507 = 8
          second level require one black
            Total = 3 levels.
iv) Root 1 node 20 keys 22 pointers
Level 22 nodes 440 keys 484 pointors
Level 240 nodes 9680 keys
Level 440 nodes 9680 keys
73600
   No. of Levels = 2
Total block required = 440+22+1=463
v) No of block access = 3+1=4
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