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CS143  
HW3

1.  
check(weight <= 5)

2.  
(a).  
CREATE VIEW EmployeeNames AS  
SELECT ename  
FROM Employees;

CREATE VIEW DeptInfo AS  
SELECT dept, AVG(Salary) avgs  
FROM Employees  
Group by dept;

(b)  
He needs to use SELECT and DELETE from Employees and SELECT of DeptInfo

(c)  
Actually he is able to find any individual's salary if he wants to. Because he can delete all elements in Employees except the one he wants then he look at the DeptInfo, the average salary is the salary of the one he wants.

(d).  
UPDATE DeptInfo SET avgs = 666666 WHERE dept = 'health';

(e).  
GRANT SELECT, UPDATE ON Employees TO Joe WITH GRANT OPTION  
GRANT SELECT, UPDATE ON EmployeeNames TO Joe WITH GRANT OPTION  
NO, Joe can not read DeptInfo. He does not have the privilege we gave to him.

3  
(a).  
 $1024(\text{byte}) * 500 * 10000 * 6 = 30\text{GB per disk}$

(b).  
time for one rotation =  $60000/6000 = 10\text{ms}$   
rotation delay =  $10\text{ms} * 1/2 = 5\text{ms}$   
transfer time =  $(1/500) * 10\text{ms} = 0.02\text{ms}$   
seek time + rotation delay + transfer time  
=  $10\text{ms} + 5\text{ms} + 0.02\text{ms}$   
=  $15.02\text{ms}$

(c).  
 $1024\text{bytes}/72\text{bytes} = 14\text{tuples/block}$

$$1000/14 = 72 \text{ blocks/table}$$

(d).

$$\begin{aligned} &\text{seek time} + \text{rotation delay} + \text{transfer time} \\ &= 10\text{ms} + 5\text{ms} + 0.02 \times 72 \\ &= 16.44\text{ms} \end{aligned}$$

(e).

$$\begin{aligned} &\text{one "3 consecutive blocks" time:} \\ &= 10\text{ms} + 5\text{ms} + 3 \times 0.02 \\ &= 15.06\text{ms}; \\ &24 \text{ "3 consecutive blocks"} \\ &24 \times 15.06 \\ &= 361.44\text{ms} \end{aligned}$$