CSE 414- DATABASE FINAL

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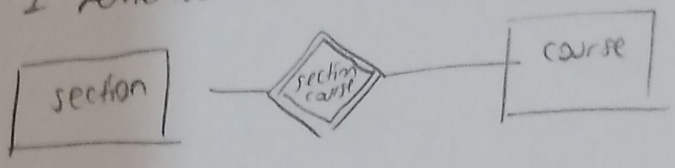
1- What is a weak entity? Give an example
2- What is referential integrity constraint? Give an example
3- What is multilevel indexes. Draw an example and explain it
4- Explain steps in query processing

1- If an entity which doesn't have sufficient attributes to form a primary key are known as weak entity. That means as the weak entities don't have any primary key, they cannot be identified on their own, so they depend on some other entity. They are represented with double rectangular for example; the bank account of a particular bank has no existence if the bank doesn't exist. Or the other example is if we create a hotel database. The existence of rooms depend on the existence of a hotel, So room is weak entity of hotel. The last example that I remember in slides In below graph, section is depend on course.



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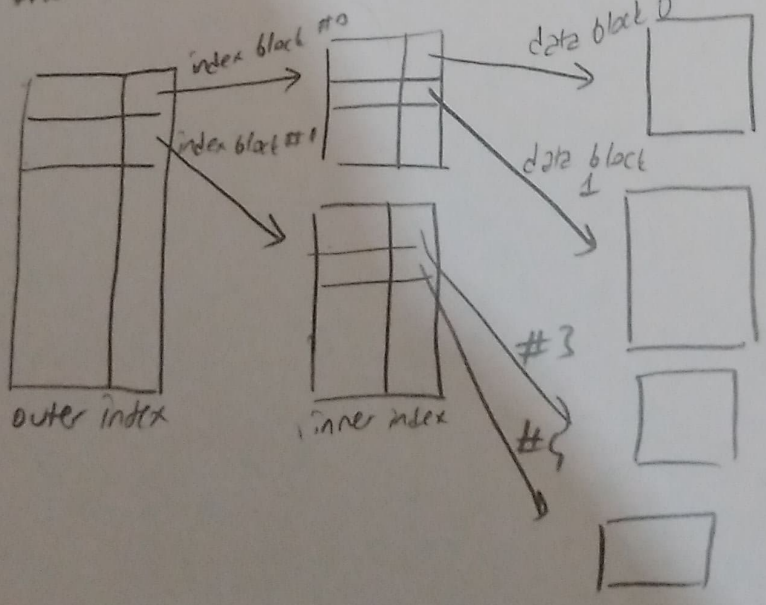
2- Referantial integrity constraint is a relational database concept, which states that table relationships must always be consistent. That means, any foreign key field must aggree with the primary key that is referenced by the foreign key. for example; if "Math" is a department name appearing in one of tuples in instructor relation, there exists a tuple in the department relation for "Math"

3- It is used for optimize the performance of database by minimizing number of disk accesses required when a query is processed. It is a technique which is used to quickly locate and access the data in database.. First index kept on a disk as sequential and construct sparse index. Outer index: A sparse index of the basic index file is inner index. If ate index is too large to fit in memory, yet another level of index can be created Of curse indexes all level must be updated on insertion or deletion. Indexing method using you can reduce the number of disk accesses.



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4 – H includes 3 steps

* 1- Parsing and Translation

During parse call, the database check syntax and semantic. Syntax check includes wrong character or not valid etc. Somantic check means the statement is meaningful or not. For example query contains a name but this name don't exist in table

* 2- Optimization

During optimization, database must perform a hard parse at least for one unique DML statement and perform optimization during this parse. Database stores the execution plans and then optimizer passes the lowest cost plan for this execution.

* 3 - Evaluation

Finally runs the query and display the required result

5-

a) select employee_name, street, city from employee, works
where employee.employee_name = works.employee_name
and company_name = "First Bank Corporation" and salary > 10000

b) select employee_name from works
where salary > all (select salary from works
where company_name = "Small Bank Corporation")

c) select company_name from works
where avg(salary) > (select avg(salary) from works
where company_name = "First Bank Corporation")