

Recovery System Arixs 一个题 Page 29.

考试题型. 单选, 判断, 大题 \rightarrow (查询 \rightarrow 选择)

关系代数 \rightarrow 判断选择

sql 语句. 大题 \rightarrow select.

3-4-5-6. 会写 select.

E-R 模型. 会图, 会转表.

规范化. 判断, 是非, 填空.

数据存取. 设大题

索引. buffer tree 最大挑战, 树好看. 大题 10-12.
需要记忆

查询优化. 判断. 选择

事务管理

Arx.

SQL Query

Consider the following relation schemas and then answer the subsequent problems.
Note that the key attributes in the relation schemas are underlined.

Student(Sid, Name, Age)
Project(ProjectName, Sid, Score)

(1) Find the names of students who are in the project with project name 'MiniSQL'.

$\Pi_{name}(\sigma_{(student)} \bowtie (\sigma_{(projectName='MiniSQL'}(project)))$

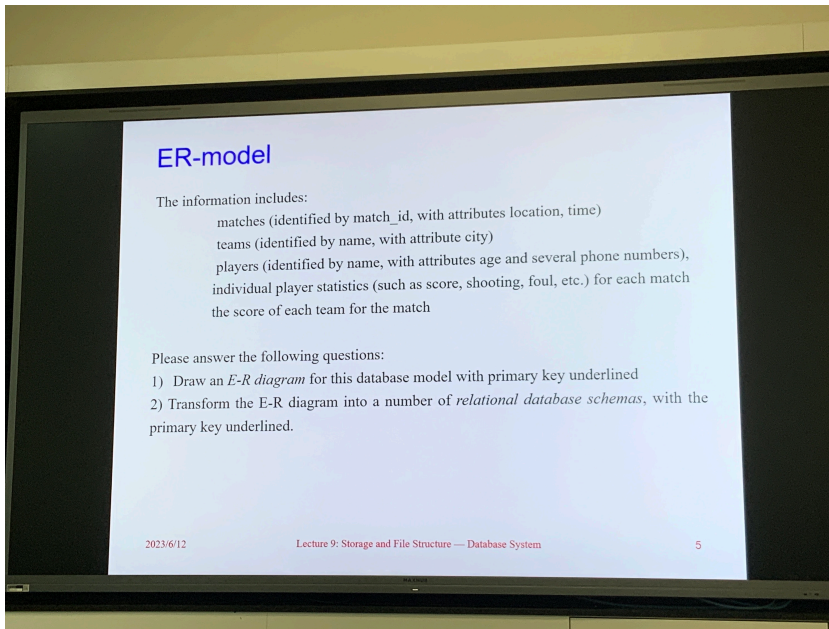
(2) Find the names of students who are the youngest.

Method 1: $\Pi_{name}(student) - \Pi_{name}(\sigma_{student.age > \pi_2.age}(student \times (\rho_{\pi_2}(student))))$

Method 2: Temp $\leftarrow \rho_{\min(Age)}(student)$;
 $\Pi_{name}(\sigma_{age=\minage}(student \times (\rho_{\pi_1(\minage)}(Temp))))$

Note: Other operations such as **Update**, **Group by**, **Avg** should be noticed.

2023/6/12 Lecture 9: Storage and File Structure — Database System 3



一个应用为基
画 E-R,

多值属性

属性属于关系

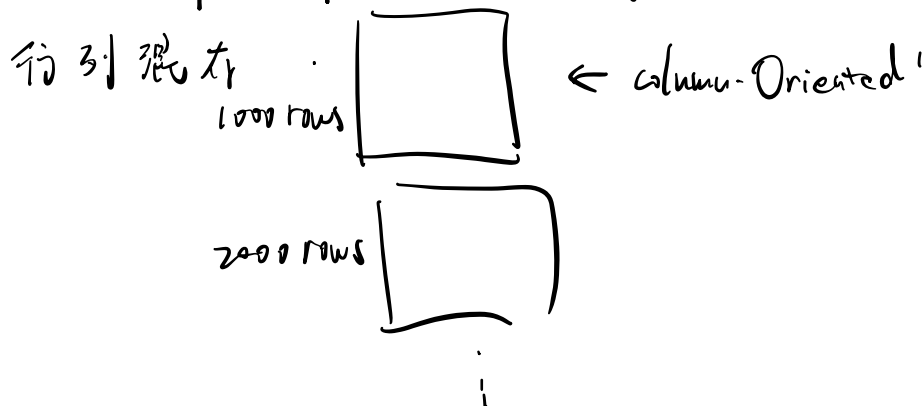
转化成表

细节

column-Oriented storage.

如: 针对数据分析, 投影, 压缩时, 数据属性相同压缩比更高

如: join 操作, tuple, 主键和删除



Index. Bptree! 针对读更快

LSM 树.

Buff Tree. \rightarrow Bptree + BuffTree.

Concurrency Control,

draw precedence graph.. explain conflict serializable.

Recovery System