

Lecture 0

강의 소개

2015년 가을학기

임 효 상

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Basic Information

- 교수
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- 조교
 - 이형석 (데이터베이스 연구실, 창조관 171호)
 - Email: tomm0423@naver.com
 - 주의! 조교와의 연락은 email을 통해서만 할 것
- 시간
 - 강의: 수요일 7,8 / 목요일 1 (창조관 515)
 - 연습: 목요일 2 (창조관 515)
 - Office Hour: 수요일 9 / 목요일 2 (email appointment recommended)

Communication

- YSCEC

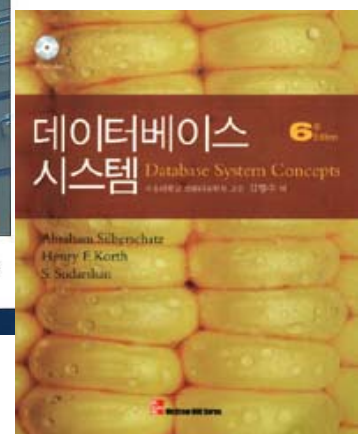
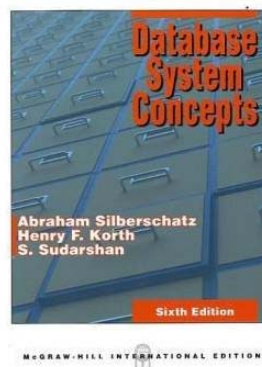
- 강의 노트, 공지 사항 등등등
- 자유 게시판
- 프로젝트 게시판
- ...



Textbook

- Database System Concepts (6th ed.)

- Abraham Silberschatz, Henry F. Korth, S. Sudarshan
- McGraw-Hill
- 약 39,000원 (알라딘 기준)
- 한글판
- 김형주 역
- McGraw-Hill Korea
- 약 38,000원 (교보문고 기준)



(강의 내용 보강, reading assignment, 숙제, 퀴즈 ...)

강의는 영어판 책을 중심으로!

Evaluation

- 중간고사 30%
- 기말고사 30% (시험범위: 전범위)
- 퀴즈 10%
- 프로젝트/숙제 20% (강의시간 시작 전까지 제출, 다음 강의 시간까지 late penalty: 20%)
- 수업참여 10% (출석 7% + 수업자세 3%)

➡ 자세한 사항은 학교 성적처리 정책을 따름

➡ **No Negotiation !!!** (will be downgraded)

➡ **Zero Tolerance !!!** (will be got F)

출석인정 관련

- 진단서, 진료확인서, 예비군확인서, 학생회활동 확인서 ...
- 상식적인 범위 내에서 인정
- 주의사항
 - 원본만 인정
 - 해당일로부터 1주일 이내 제출 원칙
 - 확인할 수 있는 연락처가 명확히 기재되어 있어야 함

출석점수 산출 공식

1. IF (결석시간 \geq $1/3 * \text{전체강의시간}$) THEN F

2. 출석점수(10점 만점) =
 $\{ (1/3 * \text{전체강의시간}) - \text{결석시간} \} / (1/3 * \text{전체강의시간}) * 10$

* 주1: 실제 강의시간을 시간(hour) 단위로 반영

* 주2: 시험시간은 강의시간에 포함되지 않음

* 주3: 강의계획서에 안내된 대로 개강일(오늘)부터 출석 반영 시작

프로젝트

- DB를 활용한 Web Application 개발
 - 마감일: 학기말 (자세한 일정은 TBA)
 - 기초적인 Web/DB 연동 기술은 강의/연습 시간에 간단히 설명할 예정임
 - 그러나, 기본적인 프로그래밍 스킬이 필수적으로 요구됨 (부족하다고 생각된다면, 프로그래밍 관련 과목을 먼저 수강할 것을 권장)
 - 약 4회에 걸친 중간 **check points**를 둘 예정임 (추후 계획이 확정되면 자세히 설명하겠음)
 - 프로젝트 미 수행시 학점을 2단계 **downgrade**함 (단 불성실하게라도 수행을 했으면 1단계만 **downgrade**함)

* 참고: 작년의 경우 66명 중 58명이 프로젝트를 수행하였고(88%), 미수행자 8명중 4명이 F를 받음

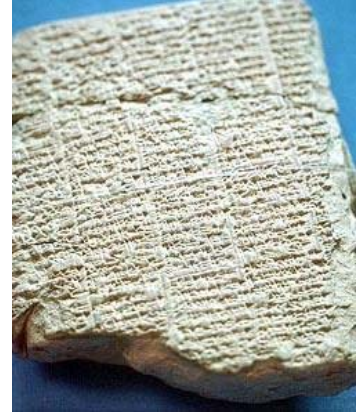
이번 학기에 배울 내용

- Ch1. Introduction
- Ch2. Introduction to the Relational Model
- Ch3. Introduction to SQL
- Ch4. Intermediate SQL
- Ch6. Formal Relational Query Language
- Ch7. Database Design and the E-R Model
- Ch8. Relational Database Design
- Ch9. Application Design and Development
- Ch10. Storage and File Structure
- Ch11. Indexing and Hashing

A Brief History of Data & Databases

- Record Keeping – How long?

- The earliest “record” may date as early as 3300 BC with the beginning of writing (Cuneiform).
- Used to keep accounts and other record keeping.
- There is evidence that other forms of record keeping (clay tokens, notched bones) were also used prior to this.



by Nancy Harris (James Madison University)

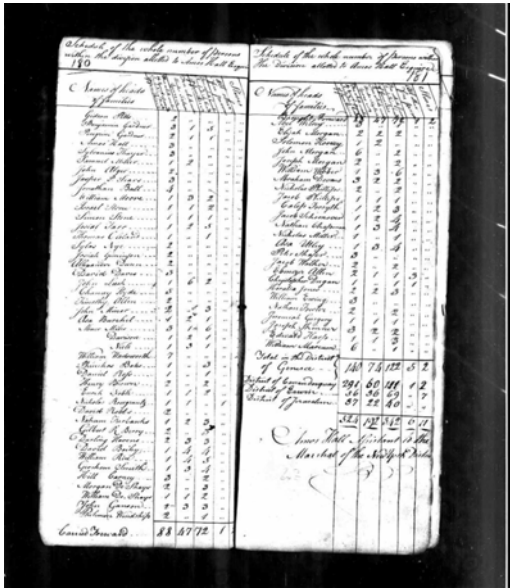
A Brief History of Data & Databases

- Database = Organized Collections of Information

- Paper records had to be cataloged in ways that made data update and retrieval possible.
- Census worked in precincts, within precinct by address. If you wanted to find one person, you had to know where they lived.
- Marriage and burial records were in books by year spans. Pages were devoted to last names in ranges or were listed chronologically.
- Paper indexes might be used to cross reference other ways of searching. Example, alphabetical people directory with a reference to a particular page.

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A Brief History of Data & Databases



Marriage book, Rochester, NY, chronological filing of marriage licenses.

From ancestry.com (1790 census, Pittsford, NY)

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A Brief History of Data & Databases

- Card Catalogs

- Interesting way to record the library collection.
- Each document (book, journal, ...) was cataloged on a number of dimensions. (subject, author, title, record number (dewey decimal system))
- Cards were hand typed and hand filed.
- Each catalog provided an index (or a pointer) to where the book was located.



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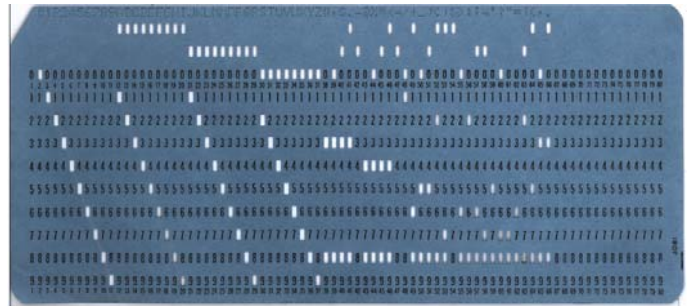
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A Brief History of Data & Databases

- Punched Cards

- The first storage device of early computing
- Roots in textiles in the early 1800's
- Jacquard Loom created cards with holes. The hole let a rod through. A set of cards defined the pattern. Binary! Either a rod went through or it didn't.
- Basis for the first computing data storage.



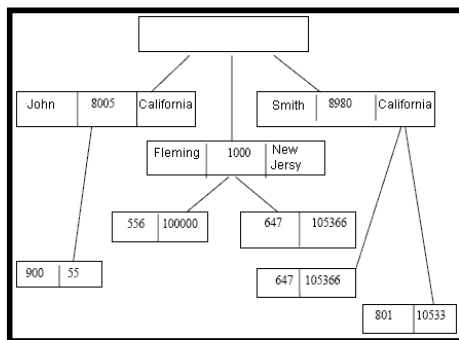
A Brief History of Data & Databases

- Electronic files – Early computing (1950s – 1970s)

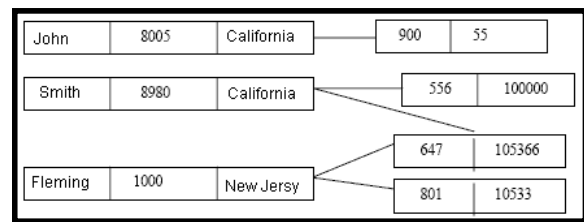
- Originally, files were associated with particular applications on particular computers. There were no generic programs (like Word or Excel). The computer and application software were customized for the different applications.
- Different kinds of data were in these different files.
- Integration of data was very difficult.
- Different uses of the data required program change.
- File storage was expensive and limited.
- File storage was primarily sequential (slow access)

A Brief History of Data & Databases

- Enter the modern database – Early 1960s
 - Records in a database can be related to one another.
 - The databases used pointers to relate one record to another.
 - *Hierarchical* – one record leads to the related record. (like a tree)
 - *Network* – allowed for multiple relationships (like a network)



Hierarchical Model



Network Model

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A Brief History of Data & Databases

- Enter the relational database – 1970s
 - Data is represented as a series of tables.
 - Based on Relational Calculus and set theory
 - by Edgar Codd (Mathematician at IBM)

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| <ul style="list-style-type: none">– U of Michigan<ul style="list-style-type: none">• MicroDBMS– IBM<ul style="list-style-type: none">• System R• First implementation of SQL | <ul style="list-style-type: none">– Led to<ul style="list-style-type: none">• Oracle• IBM DB2• Informix• Sybase• MS SQL Server |
|--|--|

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