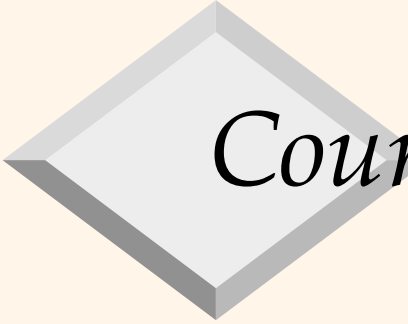# CMPT 354: Database System I

Fall 2023, Burnaby

Instructor: Ke Wang

TASC1 9235

wangk@cs.sfu.ca

Course Information

- Main textbook : *Database Management Systems*, Raghu Ramakrishnan/Johannes Gehrke, Third Edition, McGraw-Hill (answers to odd numbered questions available online)

- Reference 1. *Fundamentals of Database Systems* (sixth edition) N Ramez Elmasri and Shamkant B. Navathe, Addison-Wesley. Reference 2. *Database Systems: The Complete Book*, H. G. Molina, J.D. Ullman, and J. Widom, Perarson Prentice Hall

- Free e-versions on internet

- sfu.canvas: slides/assignments/projects (Files folder) and recordings (Zoom folder)

- Grading: assignments/projects (40%), mid-term (20%), final (35%), quiz (5%)
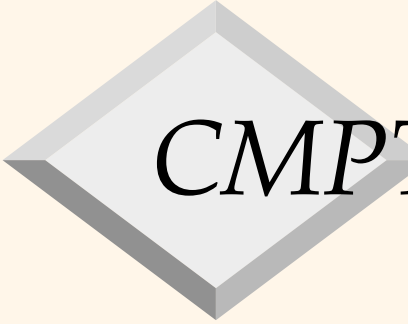
Delivery of the Course

- In-person class + ppt/recording posted in Zoom within Canvas. *No live streaming*.

- Slides are combination of
  - 354 notes from instructors
  - Some slides from the textbook and reference books
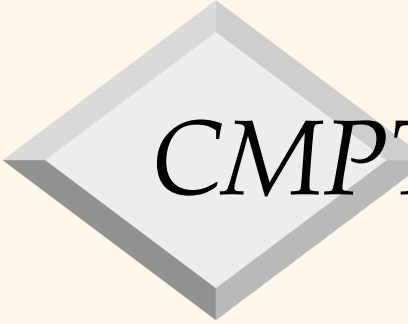
- Acknowledgements to all sources used.

"Magics" to Succeed the Course

- Participate in questions/discussion/quiz in class
  - Clarifying confusion, more examples, shortest time to learn, building confidence
- Do assignments/projects yourselves
- Seek help as early as possible, avoid accumulating the issues.
- Fully utilize the office hours for extra help

CMPT 354 and 454 Topics

- CMPT 354 – for DBMS users
  - Database design – relational model and ER model
  - Creating and accessing a database
    - Relational algebra
    - Creating and querying a DB using SQL
  - Database application development
- CMPT 454 – for DBMS designers
  - Disk and buffer management and storage
  - Query evaluation
  - Transactions and recovery
  - Advanced topics

CMPT 354 Topics

- Introduction (chap01-intro)
- Entity Relationship model (chap02-er)
- The relational model (chap03-model)
- Normalization (chap19-fd)

Conceptual Modeling

- Relational algebra (chap04-ra)
- SQL, views, constraints (chap05-sql-short)
- Database applications (chap06-embed-sql)

Query Languages

Office Hours (online only)

- Instructor: Friday 11:30am-12:30am, https://sfu.zoom.us/j/8360430493

- TA:

  - Puru Arora <paa56@sfu.ca>, Tuesday 2-3pm. Zoom link: https://meet.google.com/gcb-zqnq-qcr

  - AmirMohammad Deilami <ada135@sfu.ca>, Thursdays from 11-12am. Zoom link: https://us05web.zoom.us/j/5745402303?pwd=Y2pIamI4cUdXZnZuZHlaUWN5bTBvUT09

  - Obumneme Dukor, osd@sfu.ca: Tuesdays: 1-2 pm. Zoom Link: https://sfu.zoom.us/j/6805613931

- Start in the week of Sept 18.

Teaching Improvement

- Immediate and continuous feedback/suggestions are most useful, compared to evaluation at the semester end.
- Simply email or talk to me.