

San José State University
Computer Science Department
CS267, Topics in Database Systems, Section 1, Fall 2015

Course and Contact Information

Instructor:	Fain (Frank) Butt
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Office Hours:	TR 8:45 AM - 9:15 AM, TR 8:45 PM - 10:15 PM
Class Days/Time:	TR 4:30 - 5:45 PM
Classroom:	MH222
Prerequisites:	CS157B or previous RDBMS + SQL knowledge

Course Format

All your lab assignments and programming projects must be able to compile and run before submission. Otherwise you will not earn many points if we can't verify your results. You are expected to spend 15-20 hours a week on homework or programming assignment.

Faculty Web Page and MYSJSU Messaging

Course syllabus can be located from my [home page](http://www.cs.sjsu.edu/~fbutt/) at -> <http://www.cs.sjsu.edu/~fbutt/> The rest of the course information will be published via Canvas. You are responsible for regularly checking with the messaging system through MySJSU and Canvas to learn of any updates.

Course Description

Computing topics of current interest in industrial practice. This section focuses on query optimization and performance tuning of DB2 for z/OS (70%). We will also cover internal implementation of a RDBMS (30%).

The DB2 section is divided into four parts:

- Fundamental Concepts for Query Optimization
- Understanding Access Path
- Optimizer Statistics and Access Path Selection
- Performance Tuning

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. SLO 1 - Understand the mechanism of query optimization and how the DB2 optimizer functions.
2. SLO 2 - Understand access methods.
3. SLO 3 - Understand optimizer statistics and how statistics affect access path.

Course Learning Outcomes (CLO)

Upon successful completion of this course, students will be able to:

1. CLO 1 – Understand database performance issues and know how to manage them.
2. CLO 2 - Tune application performance and SQL performance by various means.

Required Texts/Readings

Textbook

Database Systems - The Complete Book, 2nd Ed. (ISBN 0-13-187325-3)

Other Readings [Optional]

None

Other equipment / material requirements (include if applicable)

Additional Lecture Slides and class material is provided

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in [University Policy S12-3](http://www.sjsu.edu/senate/docs/S12-3.pdf) at <http://www.sjsu.edu/senate/docs/S12-3.pdf>.

There will be one exam, one project, several lab assignments, several homework and quizzes. All the exams and quizzes will be close book unless noted. There will be no laptops, or any personal digital devices allowed. I strongly suggest that you attend each class and take good notes during the semester. There will be **NO** make-up exams and quizzes.

All the labs, programming assignments, and related documentations must be handed in electronically. Programs that are handed in after the due date will not be accepted. Additional information about each project will be given in separate handouts. For your programming assignments, we will compile and grade your programs using Java 1.8 on Windows. Your program needs to be able to compile and execute before you turned it in.

NOTE that [University policy F69-24](http://www.sjsu.edu/senate/docs/F69-24.pdf) at <http://www.sjsu.edu/senate/docs/F69-24.pdf> states that “Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading.”

Grading Policy

Final Exam	350 points	35%
Project	250 points	25%
Lab Assignments	150 points	15%
HW & Quizzes	250 points	25%
Total	1000 points	100%

The final "letter" grade will be determined from a curve at the end of the semester.

Note that “All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades.” See [University Policy F13-1](http://www.sjsu.edu/senate/docs/F13-1.pdf) at <http://www.sjsu.edu/senate/docs/F13-1.pdf> for more details.

Classroom Protocol

There will be no lecture notes given out. Therefore it is to your best interests to attend class and take good notes. You must turn off any cell phone ringer at the beginning of each class!

University Policies

General Expectations, Rights and Responsibilities of the Student

As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU's policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. See [University Policy S90-5](http://www.sjsu.edu/senate/docs/S90-5.pdf) at <http://www.sjsu.edu/senate/docs/S90-5.pdf>. More detailed information on a variety of related topics is available in the [SJSU catalog](http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html), at <http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html>. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not serve to address the issue, it is recommended that the student contact the Department Chair as a next step.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's [Catalog Policies](http://info.sjsu.edu/static/catalog/policies.html) section at <http://info.sjsu.edu/static/catalog/policies.html>. Add/drop deadlines can be found on the current academic year calendars document on the [Academic Calendars webpage](http://www.sjsu.edu/provost/services/academic_calendars/) at http://www.sjsu.edu/provost/services/academic_calendars/. The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. Students should be aware of the current deadlines and penalties for dropping classes. Information about the latest changes and news is available at the [Advising Hub](http://www.sjsu.edu/advising/) at <http://www.sjsu.edu/advising/>.

Consent for Recording of Class and Public Sharing of Instructor Material

[University Policy S12-7](http://www.sjsu.edu/senate/docs/S12-7.pdf), <http://www.sjsu.edu/senate/docs/S12-7.pdf>, requires students to obtain instructor's permission to record the course and the following items to be included in the syllabus:

- “Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor's permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.”
 - It is suggested that the greensheet include the instructor's process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.

- In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.
- “Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.”

Academic integrity

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The [University Academic Integrity Policy S07-2](http://www.sjsu.edu/senate/docs/S07-2.pdf) at <http://www.sjsu.edu/senate/docs/S07-2.pdf> requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The [Student Conduct and Ethical Development website](http://www.sjsu.edu/studentconduct/) is available at <http://www.sjsu.edu/studentconduct/>.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. [Presidential Directive 97-03](http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf) at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the [Accessible Education Center](http://www.sjsu.edu/aec) (AEC) at <http://www.sjsu.edu/aec> to establish a record of their disability.

CS267, Topics in Database Systems, Section 1, Fall 2015, Course Schedule (subject to change)

Event	Date	Time	Topics, Readings, Assignments, Deadlines
First Day	8/20/2015		Introduction and Overview
Week 1	8/25/2015		Review Chapter 1, 2, 3
Week 2	9/1/2015		Part 1 Chapter 1, 2
Week 3	9/8/2015		Part 1 Chapter 3, 4, 5
Week 4	9/15/2015		Part 2 Chapter 1, 2
Week 5	9/22/2015	Regular class time	Part 2 Chapter 3, 4; Quiz #1 on 9/24/15
Week 6	9/29/2015		Part 3 Chapter 1, 2
Week 7	10/6/2015		Quiz Review; Part 3 Chapter 2, 3
Week 8	10/13/2015		Part 3 Chapter 4; Review
Week 9	10/20/2015		Review; Text Book Chapter 18
Quiz/Midterm	10/27/2015	Regular class time	Quiz #2
Week 11	11/3/2015		Quiz Review; Text Book Chapter 18
Week 12	11/10/2015		Project Review
Week 13	11/17/2015		Project Review
Week 14	11/24/2015	Regular class time	Thanksgiving Week; Quiz #3 on 11/24/15
Week 15	12/1/2015		Quiz Review; Project Review
Week 16	12/8/2015		Review for Final Exam; Project Due
Final Exam	12/11/2015	14:45-17:00	Covers all chapters in the handout and Chapter 18 of textbook